

ANALYTICAL REPORT

PREPARED FOR

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

Generated 5/2/2023 10:44:25 AM

JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-39082-1

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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Definitions/Glossary

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

Job ID: 380-39082-1

Qualifiers

GC/MS Semi VOA

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.

GC/MS Semi VOA TICs

Qualifier	Qualifier Description
J	Indicates an Estimated Value for TICs
N	Presumptive evidence of material.
T	Result is a tentatively identified compound (TIC) and an estimated value.

LCMS

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Subcontract

Qualifier	Qualifier Description
U	This analyte was not detected.

Glossary

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

Case Narrative

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

Job ID: 380-39082-1

Job ID: 380-39082-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative 380-39082-1

Comments

No additional comments.

Receipt

The samples were received on 3/1/2023 9:45 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.0° C.

GC/MS Semi VOA

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

LCMS

Method 537.1: The low level continuing calibration verification (CCVL) associated with batch 810-51203 recovered above the up control limit for N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) (152%). Limit 50-150%. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

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

Subcontract non-Sister

See attached subcontract report.

Organic Prep

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

Subcontract Work

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

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

Detection Summary

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

Job ID: 380-39082-1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)
PWSID Number: HI0000331

Lab Sample ID: 380-39082-1

No Detections.

Client Sample ID: MOANALUA WELLS (331-223-TP202)
PWSID Number: HI0000331

Lab Sample ID: 380-39082-2

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)
PWSID Number: HI0000331

Lab Sample ID: 380-39082-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.2		1.9	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.0		1.9	ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	1.9		1.9	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.0		1.9	ng/L	1		533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.4		1.9	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	1.9		1.9	ng/L	1		537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		1.9	ng/L	1		537.1	Total/NA
Perfluorooctanoic acid (PFOA)	2.6		1.9	ng/L	1		537.1	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)
PWSID Number: HI0000331

Lab Sample ID: 380-39082-4

No Detections.

Client Sample ID: TB: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)

Lab Sample ID: 380-39082-5

No Detections.

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

Lab Sample ID: 380-39082-6

No Detections.

Client Sample ID: TB: HALAWA WELLS UNITS 1&2
(331-206-TP065)

Lab Sample ID: 380-39082-7

No Detections.

Client Sample ID: TB:AIEA GULCH WELLS P2 (331-202-TP072)

Lab Sample ID: 380-39082-8

No Detections.

Client Sample ID: FB: HALAWA WELLS UNITS 1&2
(331-206-TP065)

Lab Sample ID: 380-39082-11

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-39082-1

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-39082-1

Date Collected: 02/27/23 10:45

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
2,4'-DDE	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
2,4'-DDT	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
2,4-Dinitrotoluene	ND		0.49	ug/L		03/08/23 09:07	03/09/23 21:48	1
2,6-Dinitrotoluene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
4,4'-DDD	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
4,4'-DDE	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
4,4'-DDT	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Acenaphthene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Acenaphthylene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Acetochlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Alachlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
alpha-BHC	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
alpha-Chlordane	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Anthracene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Atrazine	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Benz(a)anthracene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Benzo[a]pyrene	ND		0.020	ug/L		03/08/23 09:07	03/09/23 21:48	1
Benzo[b]fluoranthene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Benzo[g,h,i]perylene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Benzo[k]fluoranthene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
beta-BHC	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Bis(2-ethylhexyl) phthalate	ND		0.59	ug/L		03/08/23 09:07	03/09/23 21:48	1
Bromacil	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Butachlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Butylbenzylphthalate	ND		0.99	ug/L		03/08/23 09:07	03/09/23 21:48	1
Chlorobenzilate	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Chloroneb	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Chlorothalonil (Draconil, Bravo)	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Chlorpyrifos	ND		0.049	ug/L		03/08/23 09:07	03/09/23 21:48	1
Chrysene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
delta-BHC	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Di(2-ethylhexyl)adipate	ND		0.59	ug/L		03/08/23 09:07	03/09/23 21:48	1
Dibenz(a,h)anthracene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Diclorvos (DDVP)	ND		0.049	ug/L		03/08/23 09:07	03/09/23 21:48	1
Dieldrin	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Diethylphthalate	ND		0.99	ug/L		03/08/23 09:07	03/09/23 21:48	1
Dimethylphthalate	ND		0.99	ug/L		03/08/23 09:07	03/09/23 21:48	1
Di-n-octyl phthalate	ND		2.0	ug/L		03/08/23 09:07	03/09/23 21:48	1
Di-n-butyl phthalate	ND		2.0	ug/L		03/08/23 09:07	03/09/23 21:48	1
Endosulfan I (Alpha)	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Endosulfan II (Beta)	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Endosulfan sulfate	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Endrin	ND		0.0099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Endrin aldehyde	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
EPTC	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Fluoranthene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Fluorene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1

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Client Sample Results

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

Job ID: 380-39082-1

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-39082-1

Date Collected: 02/27/23 10:45

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
gamma-Chlordane	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Heptachlor	ND		0.040	ug/L		03/08/23 09:07	03/09/23 21:48	1
Heptachlor epoxide (isomer B)	ND		0.020	ug/L		03/08/23 09:07	03/09/23 21:48	1
Hexachlorocyclopentadiene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Hexachlorobenzene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Indeno[1,2,3-cd]pyrene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Isophorone	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
gamma-BHC (Lindane)	ND		0.020	ug/L		03/08/23 09:07	03/09/23 21:48	1
Malathion	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Methoxychlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Metolachlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Metribuzin	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Molinate	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Naphthalene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Parathion	ND		0.49	ug/L		03/08/23 09:07	03/09/23 21:48	1
Phenanthrene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Propachlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Pyrene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Simazine	ND		0.069	ug/L		03/08/23 09:07	03/09/23 21:48	1
Terbacil	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Thiobencarb	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		03/08/23 09:07	03/09/23 21:48	1
trans-Nonachlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Trifluralin	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Pendimethalin (Penoxaline)	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
Terbutylazine	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
1-Methylnaphthalene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
2-Methylnaphthalene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
cis-Permethrin	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1
trans-Permethrin	ND		0.099	ug/L		03/08/23 09:07	03/09/23 21:48	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Undecane	1.7	T J N	ug/L		3.86	1120-21-4	03/08/23 09:07	03/09/23 21:48	1
9-Octadecenamide, (Z)-	0.89	T J N	ug/L		16.36	301-02-0	03/08/23 09:07	03/09/23 21:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	93		70 - 130	03/08/23 09:07	03/09/23 21:48	1
Triphenylphosphate	105		70 - 130	03/08/23 09:07	03/09/23 21:48	1
Perylene-d12	93		70 - 130	03/08/23 09:07	03/09/23 21:48	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-39082-1

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-39082-1

Date Collected: 02/27/23 10:45

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
Perfluorodecanoic acid (PFDA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
Perfluorononanoic acid (PFNA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
Perfluorooctanoic acid (PFOA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
Perfluorobutanoic acid (PFBA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
Perfluoropentanesulfonic acid (PFPeS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 05:13	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	96		50 - 200			03/23/23 06:21	03/25/23 05:13	1
13C6 PFDA	96		50 - 200			03/23/23 06:21	03/25/23 05:13	1
13C5 PFHxA	95		50 - 200			03/23/23 06:21	03/25/23 05:13	1
13C4 PFHpA	96		50 - 200			03/23/23 06:21	03/25/23 05:13	1
13C8 PFOA	96		50 - 200			03/23/23 06:21	03/25/23 05:13	1
13C9 PFNA	97		50 - 200			03/23/23 06:21	03/25/23 05:13	1
13C7 PFUnA	95		50 - 200			03/23/23 06:21	03/25/23 05:13	1
13C2 PFDoA	92		50 - 200			03/23/23 06:21	03/25/23 05:13	1
13C4 PFBA	96		50 - 200			03/23/23 06:21	03/25/23 05:13	1
13C5 PFPeA	93		50 - 200			03/23/23 06:21	03/25/23 05:13	1
13C3 PFBS	99		50 - 200			03/23/23 06:21	03/25/23 05:13	1
13C3 PFHxS	100		50 - 200			03/23/23 06:21	03/25/23 05:13	1
13C8 PFOS	97		50 - 200			03/23/23 06:21	03/25/23 05:13	1
13C2-4:2-FTS	99		50 - 200			03/23/23 06:21	03/25/23 05:13	1
13C2-6:2-FTS	97		50 - 200			03/23/23 06:21	03/25/23 05:13	1
13C2-8:2-FTS	100		50 - 200			03/23/23 06:21	03/25/23 05:13	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-39082-1

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-39082-1

Date Collected: 02/27/23 10:45

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:23	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:23	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:23	1
Perfluorodecanoic acid (PFDA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:23	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:23	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:23	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:23	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:23	1
Perfluorononanoic acid (PFNA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:23	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:23	1
Perfluorooctanoic acid (PFOA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:23	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:23	1
Perfluorotetradecanoic acid (PFTA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:23	1
Perfluorotridecanoic acid (PFTrDA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:23	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:23	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	98		70 - 130	03/10/23 07:49	03/11/23 08:23	1
13C2 PFDA	101		70 - 130	03/10/23 07:49	03/11/23 08:23	1
d5-NEtFOSAA	102		70 - 130	03/10/23 07:49	03/11/23 08:23	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		03/02/23 00:00	03/29/23 01:03	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Acenaphthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Acenaphthylene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Anthracene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Biphenyl	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Chrysene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-39082-1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)

Lab Sample ID: 380-39082-1

Date Collected: 02/27/23 10:45

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzothiophene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		03/02/23 00:00	03/29/23 01:03	1
Fluoranthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Fluorene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Naphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Perylene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Phenanthrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 01:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	80		27 - 133				03/02/23 00:00	03/29/23 01:03	1
(d10-Phenanthrene)	87		43 - 129				03/02/23 00:00	03/29/23 01:03	1
(d12-Chrysene)	98		52 - 144				03/02/23 00:00	03/29/23 01:03	1
(d12-Perylene)	82		36 - 161				03/02/23 00:00	03/29/23 01:03	1
(d8-Naphthalene)	73		25 - 125				03/02/23 00:00	03/29/23 01:03	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			03/03/23 19:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	94		60 - 140					03/03/23 19:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.026		mg/L			03/13/23 17:59	1
JP5	ND	U	0.052		mg/L			03/13/23 17:59	1
JP8	ND	U	0.052		mg/L			03/13/23 17:59	1
MOTOR OIL	ND	U	0.052		mg/L			03/13/23 17:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOBENZENE	73		60 - 130					03/13/23 17:59	1
HEXACOSANE	101		60 - 130					03/13/23 17:59	1

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

Lab Sample ID: 380-39082-2

Date Collected: 02/27/23 09:48

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
2,4'-DDE	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
2,4'-DDT	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
2,4-Dinitrotoluene	ND		0.50	ug/L		03/08/23 09:07	03/09/23 22:15	1
2,6-Dinitrotoluene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
4,4'-DDD	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
4,4'-DDE	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
4,4'-DDT	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Acenaphthene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: 380-39082-2

Date Collected: 02/27/23 09:48

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthylene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Acetochlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Alachlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
alpha-BHC	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
alpha-Chlordane	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Anthracene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Atrazine	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Benz(a)anthracene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Benzo[a]pyrene	ND		0.020	ug/L		03/08/23 09:07	03/09/23 22:15	1
Benzo[b]fluoranthene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Benzo[g,h,i]perylene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Benzo[k]fluoranthene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
beta-BHC	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Bis(2-ethylhexyl) phthalate	ND		0.60	ug/L		03/08/23 09:07	03/09/23 22:15	1
Bromacil	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Butachlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Butylbenzylphthalate	ND		0.99	ug/L		03/08/23 09:07	03/09/23 22:15	1
Chlorobenzilate	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Chloroneb	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Chlorothalonil (Draconil, Bravo)	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Chlorpyrifos	ND		0.050	ug/L		03/08/23 09:07	03/09/23 22:15	1
Chrysene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
delta-BHC	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Di(2-ethylhexyl)adipate	ND		0.60	ug/L		03/08/23 09:07	03/09/23 22:15	1
Dibenz(a,h)anthracene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Diclorvos (DDVP)	ND		0.050	ug/L		03/08/23 09:07	03/09/23 22:15	1
Dieldrin	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Diethylphthalate	ND		0.99	ug/L		03/08/23 09:07	03/09/23 22:15	1
Dimethylphthalate	ND		0.99	ug/L		03/08/23 09:07	03/09/23 22:15	1
Di-n-octyl phthalate	ND		2.0	ug/L		03/08/23 09:07	03/09/23 22:15	1
Di-n-butyl phthalate	ND		2.0	ug/L		03/08/23 09:07	03/09/23 22:15	1
Endosulfan I (Alpha)	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Endosulfan II (Beta)	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Endosulfan sulfate	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Endrin	ND		0.0099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Endrin aldehyde	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
EPTC	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Fluoranthene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Fluorene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
gamma-Chlordane	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Heptachlor	ND		0.040	ug/L		03/08/23 09:07	03/09/23 22:15	1
Heptachlor epoxide (isomer B)	ND		0.020	ug/L		03/08/23 09:07	03/09/23 22:15	1
Hexachlorocyclopentadiene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Hexachlorobenzene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Indeno[1,2,3-cd]pyrene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Isophorone	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
gamma-BHC (Lindane)	ND		0.020	ug/L		03/08/23 09:07	03/09/23 22:15	1
Malathion	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Methoxychlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: 380-39082-2

Date Collected: 02/27/23 09:48

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Metolachlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Metribuzin	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Molinate	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Naphthalene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Parathion	ND		0.50	ug/L		03/08/23 09:07	03/09/23 22:15	1
Phenanthrene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Propachlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Pyrene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Simazine	ND		0.070	ug/L		03/08/23 09:07	03/09/23 22:15	1
Terbacil	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Thiobencarb	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		03/08/23 09:07	03/09/23 22:15	1
trans-Nonachlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Trifluralin	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Pendimethalin (Penoxaline)	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
Terbutylazine	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
1-Methylnaphthalene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
2-Methylnaphthalene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
cis-Permethrin	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1
trans-Permethrin	ND		0.099	ug/L		03/08/23 09:07	03/09/23 22:15	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Undecane	1.6	T J N	ug/L		3.87	1120-21-4	03/08/23 09:07	03/09/23 22:15	1
Cyclohexasiloxane, dodecamethyl-	0.62	T J N	ug/L		4.97	540-97-6	03/08/23 09:07	03/09/23 22:15	1
9-Octadecenamamide, (Z)-	0.62	T J N	ug/L		16.35	301-02-0	03/08/23 09:07	03/09/23 22:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	94		70 - 130	03/08/23 09:07	03/09/23 22:15	1
Triphenylphosphate	108		70 - 130	03/08/23 09:07	03/09/23 22:15	1
Perylene-d12	90		70 - 130	03/08/23 09:07	03/09/23 22:15	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafiuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
Perfluorodecanoic acid (PFDA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
Perfluorononanoic acid (PFNA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
Perfluorooctanoic acid (PFOA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: 380-39082-2

Date Collected: 02/27/23 09:48

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1
Perfluoropentanesulfonic acid (PFPeS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 02:56	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	96		50 - 200	03/24/23 06:25	03/26/23 02:56	1
13C6 PFDA	91		50 - 200	03/24/23 06:25	03/26/23 02:56	1
13C5 PFHxA	95		50 - 200	03/24/23 06:25	03/26/23 02:56	1
13C4 PFHpA	97		50 - 200	03/24/23 06:25	03/26/23 02:56	1
13C8 PFOA	96		50 - 200	03/24/23 06:25	03/26/23 02:56	1
13C9 PFNA	94		50 - 200	03/24/23 06:25	03/26/23 02:56	1
13C7 PFUnA	86		50 - 200	03/24/23 06:25	03/26/23 02:56	1
13C2 PFDoA	81		50 - 200	03/24/23 06:25	03/26/23 02:56	1
13C4 PFBA	100		50 - 200	03/24/23 06:25	03/26/23 02:56	1
13C5 PFPeA	95		50 - 200	03/24/23 06:25	03/26/23 02:56	1
13C3 PFBS	109		50 - 200	03/24/23 06:25	03/26/23 02:56	1
13C3 PFHxS	111		50 - 200	03/24/23 06:25	03/26/23 02:56	1
13C8 PFOS	107		50 - 200	03/24/23 06:25	03/26/23 02:56	1
13C2-4:2-FTS	109		50 - 200	03/24/23 06:25	03/26/23 02:56	1
13C2-6:2-FTS	112		50 - 200	03/24/23 06:25	03/26/23 02:56	1
13C2-8:2-FTS	112		50 - 200	03/24/23 06:25	03/26/23 02:56	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:02	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:02	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:02	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:02	1
Perfluorodecanoic acid (PFDA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:02	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:02	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:02	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:02	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: 380-39082-2

Date Collected: 02/27/23 09:48

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:02	1
Perfluorononanoic acid (PFNA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:02	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:02	1
Perfluorooctanoic acid (PFOA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:02	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:02	1
Perfluorotetradecanoic acid (PFTA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:02	1
Perfluorotridecanoic acid (PFTrDA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:02	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C2 PFHxA	97		70 - 130			03/10/23 07:49	03/11/23 08:02	1
13C2 PFDA	93		70 - 130			03/10/23 07:49	03/11/23 08:02	1
d5-NEtFOSAA	102		70 - 130			03/10/23 07:49	03/11/23 08:02	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		03/02/23 00:00	03/29/23 02:50	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Acenaphthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Acenaphthylene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Anthracene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Biphenyl	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Chrysene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Dibenzothiophene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		03/02/23 00:00	03/29/23 02:50	1
Fluoranthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Fluorene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Naphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Perylene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Phenanthrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 02:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	87		27 - 133				03/02/23 00:00	03/29/23 02:50	1
(d10-Phenanthrene)	90		43 - 129				03/02/23 00:00	03/29/23 02:50	1
(d12-Chrysene)	103		52 - 144				03/02/23 00:00	03/29/23 02:50	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: 380-39082-2

Date Collected: 02/27/23 09:48

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d12-Perylene)	82		36 - 161	03/02/23 00:00	03/29/23 02:50	1
(d8-Naphthalene)	78		25 - 125	03/02/23 00:00	03/29/23 02:50	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			03/03/23 19:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	87		60 - 140		03/03/23 19:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.029		mg/L			03/13/23 18:18	1
JP5	ND	U	0.058		mg/L			03/13/23 18:18	1
JP8	ND	U	0.058		mg/L			03/13/23 18:18	1
MOTOR OIL	ND	U	0.058		mg/L			03/13/23 18:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	82		60 - 130		03/13/23 18:18	1
HEXACOSANE	113		60 - 130		03/13/23 18:18	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-39082-3

Date Collected: 02/27/23 10:19

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
2,4'-DDE	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
2,4'-DDT	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
2,4-Dinitrotoluene	ND		0.49	ug/L		03/08/23 09:07	03/09/23 22:41	1
2,6-Dinitrotoluene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
4,4'-DDD	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
4,4'-DDE	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
4,4'-DDT	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Acenaphthene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Acenaphthylene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Acetochlor	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Alachlor	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
alpha-BHC	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
alpha-Chlordane	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Anthracene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Atrazine	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Benz(a)anthracene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Benzo[a]pyrene	ND		0.020	ug/L		03/08/23 09:07	03/09/23 22:41	1
Benzo[b]fluoranthene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Benzo[g,h,i]perylene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Benzo[k]fluoranthene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
beta-BHC	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-39082-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-39082-3

Date Collected: 02/27/23 10:19

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		0.59	ug/L		03/08/23 09:07	03/09/23 22:41	1
Bromacil	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Butachlor	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Butylbenzylphthalate	ND		0.98	ug/L		03/08/23 09:07	03/09/23 22:41	1
Chlorobenzilate	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Chloroneb	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Chlorothalonil (Draconil, Bravo)	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Chlorpyrifos	ND		0.049	ug/L		03/08/23 09:07	03/09/23 22:41	1
Chrysene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
delta-BHC	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Di(2-ethylhexyl)adipate	ND		0.59	ug/L		03/08/23 09:07	03/09/23 22:41	1
Dibenz(a,h)anthracene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Diclorvos (DDVP)	ND		0.049	ug/L		03/08/23 09:07	03/09/23 22:41	1
Dieldrin	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Diethylphthalate	ND		0.98	ug/L		03/08/23 09:07	03/09/23 22:41	1
Dimethylphthalate	ND		0.98	ug/L		03/08/23 09:07	03/09/23 22:41	1
Di-n-octyl phthalate	ND		2.0	ug/L		03/08/23 09:07	03/09/23 22:41	1
Di-n-butyl phthalate	ND		2.0	ug/L		03/08/23 09:07	03/09/23 22:41	1
Endosulfan I (Alpha)	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Endosulfan II (Beta)	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Endosulfan sulfate	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Endrin	ND		0.0098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Endrin aldehyde	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
EPTC	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Fluoranthene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Fluorene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
gamma-Chlordane	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Heptachlor	ND		0.039	ug/L		03/08/23 09:07	03/09/23 22:41	1
Heptachlor epoxide (isomer B)	ND		0.020	ug/L		03/08/23 09:07	03/09/23 22:41	1
Hexachlorocyclopentadiene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Hexachlorobenzene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Indeno[1,2,3-cd]pyrene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Isophorone	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
gamma-BHC (Lindane)	ND		0.020	ug/L		03/08/23 09:07	03/09/23 22:41	1
Malathion	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Methoxychlor	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Metolachlor	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Metribuzin	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Molinate	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Naphthalene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Parathion	ND		0.49	ug/L		03/08/23 09:07	03/09/23 22:41	1
Phenanthrene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Propachlor	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Pyrene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Simazine	ND		0.068	ug/L		03/08/23 09:07	03/09/23 22:41	1
Terbacil	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Thiobencarb	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		03/08/23 09:07	03/09/23 22:41	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-39082-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-39082-3

Date Collected: 02/27/23 10:19

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
trans-Nonachlor	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1	
Trifluralin	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1	
Pendimethalin (Penoxaline)	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1	
Terbutylazine	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1	
1-Methylnaphthalene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1	
2-Methylnaphthalene	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1	
cis-Permethrin	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1	
trans-Permethrin	ND		0.098	ug/L		03/08/23 09:07	03/09/23 22:41	1	
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Undecane	1.8	T J N	ug/L		3.87	1120-21-4	03/08/23 09:07	03/09/23 22:41	1
9-Octadecenamide, (Z)-	0.63	T J N	ug/L		16.36	301-02-0	03/08/23 09:07	03/09/23 22:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	91		70 - 130				03/08/23 09:07	03/09/23 22:41	1
Triphenylphosphate	106		70 - 130				03/08/23 09:07	03/09/23 22:41	1
Perylene-d12	93		70 - 130				03/08/23 09:07	03/09/23 22:41	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Perfluorodecanoic acid (PFDA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Perfluorohexanesulfonic acid (PFHxS)	2.2		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Perfluorononanoic acid (PFNA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Perfluorooctanesulfonic acid (PFOS)	2.0		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Perfluorooctanoic acid (PFOA)	1.9		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Perfluorobutanoic acid (PFBA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-39082-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-39082-3

Date Collected: 02/27/23 10:19

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Perfluoropentanoic acid (PFPeA)	2.0		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Perfluoropentanesulfonic acid (PFPeS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:09	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	75		50 - 200			03/24/23 06:25	03/26/23 03:09	1
13C6 PFDA	53		50 - 200			03/24/23 06:25	03/26/23 03:09	1
13C5 PFHxA	83		50 - 200			03/24/23 06:25	03/26/23 03:09	1
13C4 PFHpA	80		50 - 200			03/24/23 06:25	03/26/23 03:09	1
13C8 PFOA	73		50 - 200			03/24/23 06:25	03/26/23 03:09	1
13C9 PFNA	60		50 - 200			03/24/23 06:25	03/26/23 03:09	1
13C7 PFUnA	55		50 - 200			03/24/23 06:25	03/26/23 03:09	1
13C2 PFDoA	56		50 - 200			03/24/23 06:25	03/26/23 03:09	1
13C4 PFBA	88		50 - 200			03/24/23 06:25	03/26/23 03:09	1
13C5 PFPeA	83		50 - 200			03/24/23 06:25	03/26/23 03:09	1
13C3 PFBS	98		50 - 200			03/24/23 06:25	03/26/23 03:09	1
13C3 PFHxS	102		50 - 200			03/24/23 06:25	03/26/23 03:09	1
13C8 PFOS	96		50 - 200			03/24/23 06:25	03/26/23 03:09	1
13C2-4:2-FTS	98		50 - 200			03/24/23 06:25	03/26/23 03:09	1
13C2-6:2-FTS	103		50 - 200			03/24/23 06:25	03/26/23 03:09	1
13C2-8:2-FTS	99		50 - 200			03/24/23 06:25	03/26/23 03:09	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:44	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:44	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:44	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:44	1
Perfluorodecanoic acid (PFDA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:44	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:44	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:44	1
Perfluorohexanesulfonic acid (PFHxS)	2.4		1.9	ng/L		03/10/23 07:49	03/11/23 08:44	1
Perfluorohexanoic acid (PFHxA)	1.9		1.9	ng/L		03/10/23 07:49	03/11/23 08:44	1
Perfluorononanoic acid (PFNA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:44	1
Perfluorooctanesulfonic acid (PFOS)	2.3		1.9	ng/L		03/10/23 07:49	03/11/23 08:44	1
Perfluorooctanoic acid (PFOA)	2.6		1.9	ng/L		03/10/23 07:49	03/11/23 08:44	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:44	1
Perfluorotetradecanoic acid (PFTA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:44	1
Perfluorotridecanoic acid (PFTTrDA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:44	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-39082-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-39082-3

Date Collected: 02/27/23 10:19

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:44	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C2 PFHxA	104		70 - 130			03/10/23 07:49	03/11/23 08:44	1
13C2 PFDA	108		70 - 130			03/10/23 07:49	03/11/23 08:44	1
d5-NEtFOSAA	101		70 - 130			03/10/23 07:49	03/11/23 08:44	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		03/02/23 00:00	03/29/23 04:36	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Acenaphthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Acenaphthylene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Anthracene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Biphenyl	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Chrysene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Dibenzothiophene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		03/02/23 00:00	03/29/23 04:36	1
Fluoranthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Fluorene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Naphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Perylene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Phenanthrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 04:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	80		27 - 133				03/02/23 00:00	03/29/23 04:36	1
(d10-Phenanthrene)	85		43 - 129				03/02/23 00:00	03/29/23 04:36	1
(d12-Chrysene)	97		52 - 144				03/02/23 00:00	03/29/23 04:36	1
(d12-Perylene)	79		36 - 161				03/02/23 00:00	03/29/23 04:36	1
(d8-Naphthalene)	70		25 - 125				03/02/23 00:00	03/29/23 04:36	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			03/03/23 20:14	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-39082-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-39082-3

Date Collected: 02/27/23 10:19

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	92		60 - 140		03/03/23 20:14	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.026		mg/L			03/13/23 18:36	1
JP5	ND	U	0.052		mg/L			03/13/23 18:36	1
JP8	ND	U	0.052		mg/L			03/13/23 18:36	1
MOTOR OIL	ND	U	0.052		mg/L			03/13/23 18:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	72		60 - 130		03/13/23 18:36	1
HEXACOSANE	110		60 - 130		03/13/23 18:36	1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-39082-4

Date Collected: 02/27/23 11:11

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
2,4'-DDE	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
2,4'-DDT	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
2,4-Dinitrotoluene	ND		0.50	ug/L		03/08/23 09:07	03/09/23 23:08	1
2,6-Dinitrotoluene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
4,4'-DDD	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
4,4'-DDE	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
4,4'-DDT	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Acenaphthene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Acenaphthylene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Acetochlor	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Alachlor	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
alpha-BHC	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
alpha-Chlordane	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Anthracene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Atrazine	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Benz(a)anthracene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Benzo[a]pyrene	ND		0.020	ug/L		03/08/23 09:07	03/09/23 23:08	1
Benzo[b]fluoranthene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Benzo[g,h,i]perylene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Benzo[k]fluoranthene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
beta-BHC	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Bis(2-ethylhexyl) phthalate	ND		0.60	ug/L		03/08/23 09:07	03/09/23 23:08	1
Bromacil	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Butachlor	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Butylbenzylphthalate	ND		1.0	ug/L		03/08/23 09:07	03/09/23 23:08	1
Chlorobenzilate	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Chloroneb	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Chlorothalonil (Draconil, Bravo)	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-39082-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-39082-4

Date Collected: 02/27/23 11:11

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorpyrifos	ND		0.050	ug/L		03/08/23 09:07	03/09/23 23:08	1
Chrysene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
delta-BHC	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Di(2-ethylhexyl)adipate	ND		0.60	ug/L		03/08/23 09:07	03/09/23 23:08	1
Dibenz(a,h)anthracene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Diclorvos (DDVP)	ND		0.050	ug/L		03/08/23 09:07	03/09/23 23:08	1
Dieldrin	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Diethylphthalate	ND		1.0	ug/L		03/08/23 09:07	03/09/23 23:08	1
Dimethylphthalate	ND		1.0	ug/L		03/08/23 09:07	03/09/23 23:08	1
Di-n-octyl phthalate	ND		2.0	ug/L		03/08/23 09:07	03/09/23 23:08	1
Di-n-butyl phthalate	ND		2.0	ug/L		03/08/23 09:07	03/09/23 23:08	1
Endosulfan I (Alpha)	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Endosulfan II (Beta)	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Endosulfan sulfate	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Endrin	ND		0.010	ug/L		03/08/23 09:07	03/09/23 23:08	1
Endrin aldehyde	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
EPTC	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Fluoranthene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Fluorene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
gamma-Chlordane	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Heptachlor	ND		0.040	ug/L		03/08/23 09:07	03/09/23 23:08	1
Heptachlor epoxide (isomer B)	ND		0.020	ug/L		03/08/23 09:07	03/09/23 23:08	1
Hexachlorocyclopentadiene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Hexachlorobenzene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Indeno[1,2,3-cd]pyrene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Isophorone	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
gamma-BHC (Lindane)	ND		0.020	ug/L		03/08/23 09:07	03/09/23 23:08	1
Malathion	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Methoxychlor	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Metolachlor	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Metribuzin	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Molinate	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Naphthalene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Parathion	ND		0.50	ug/L		03/08/23 09:07	03/09/23 23:08	1
Phenanthrene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Propachlor	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Pyrene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Simazine	ND		0.070	ug/L		03/08/23 09:07	03/09/23 23:08	1
Terbacil	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Thiobencarb	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		03/08/23 09:07	03/09/23 23:08	1
trans-Nonachlor	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Trifluralin	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Pendimethalin (Penoxaline)	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
Terbutylazine	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
1-Methylnaphthalene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
2-Methylnaphthalene	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1
cis-Permethrin	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-39082-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-39082-4

Date Collected: 02/27/23 11:11

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
trans-Permethrin	ND		0.10	ug/L		03/08/23 09:07	03/09/23 23:08	1	
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Undecane	1.8	T J N	ug/L		3.87	1120-21-4	03/08/23 09:07	03/09/23 23:08	1
Cyclohexasiloxane, dodecamethyl-	0.76	T J N	ug/L		4.97	540-97-6	03/08/23 09:07	03/09/23 23:08	1
9-Octadecenamide, (Z)-	0.68	T J N	ug/L		16.36	301-02-0	03/08/23 09:07	03/09/23 23:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	93		70 - 130				03/08/23 09:07	03/09/23 23:08	1
Triphenylphosphate	103		70 - 130				03/08/23 09:07	03/09/23 23:08	1
Perylene-d12	92		70 - 130				03/08/23 09:07	03/09/23 23:08	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Perfluorodecanoic acid (PFDA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Perfluorononanoic acid (PFNA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Perfluorooctanoic acid (PFOA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Perfluorobutanoic acid (PFBA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1
Perfluoropentanesulfonic acid (PFPeS)	ND		1.9	ng/L		03/24/23 06:25	03/26/23 03:23	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-39082-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-39082-4

Date Collected: 02/27/23 11:11

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	79		50 - 200	03/24/23 06:25	03/26/23 03:23	1
13C6 PFDA	80		50 - 200	03/24/23 06:25	03/26/23 03:23	1
13C5 PFHxA	85		50 - 200	03/24/23 06:25	03/26/23 03:23	1
13C4 PFHpA	85		50 - 200	03/24/23 06:25	03/26/23 03:23	1
13C8 PFOA	85		50 - 200	03/24/23 06:25	03/26/23 03:23	1
13C9 PFNA	83		50 - 200	03/24/23 06:25	03/26/23 03:23	1
13C7 PFUnA	79		50 - 200	03/24/23 06:25	03/26/23 03:23	1
13C2 PFDoA	78		50 - 200	03/24/23 06:25	03/26/23 03:23	1
13C4 PFBA	88		50 - 200	03/24/23 06:25	03/26/23 03:23	1
13C5 PFPeA	85		50 - 200	03/24/23 06:25	03/26/23 03:23	1
13C3 PFBS	100		50 - 200	03/24/23 06:25	03/26/23 03:23	1
13C3 PFHxS	100		50 - 200	03/24/23 06:25	03/26/23 03:23	1
13C8 PFOS	97		50 - 200	03/24/23 06:25	03/26/23 03:23	1
13C2-4:2-FTS	97		50 - 200	03/24/23 06:25	03/26/23 03:23	1
13C2-6:2-FTS	101		50 - 200	03/24/23 06:25	03/26/23 03:23	1
13C2-8:2-FTS	98		50 - 200	03/24/23 06:25	03/26/23 03:23	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:34	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:34	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:34	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:34	1
Perfluorodecanoic acid (PFDA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:34	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:34	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:34	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:34	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:34	1
Perfluorononanoic acid (PFNA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:34	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:34	1
Perfluorooctanoic acid (PFOA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:34	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:34	1
Perfluorotetradecanoic acid (PFTA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:34	1
Perfluorotridecanoic acid (PFTrDA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:34	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:34	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9	ng/L		03/10/23 07:49	03/11/23 08:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	104		70 - 130	03/10/23 07:49	03/11/23 08:34	1
13C2 PFDA	97		70 - 130	03/10/23 07:49	03/11/23 08:34	1
d5-NEtFOSAA	94		70 - 130	03/10/23 07:49	03/11/23 08:34	1

Client Sample Results

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

Job ID: 380-39082-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-39082-4

Date Collected: 02/27/23 11:11

Matrix: Drinking Water

Date Received: 03/01/23 09:45

PWSID Number: HI0000331

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		03/02/23 00:00	03/29/23 06:23	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Acenaphthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Acenaphthylene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Anthracene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Biphenyl	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Chrysene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Dibenzothiophene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		03/02/23 00:00	03/29/23 06:23	1
Fluoranthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Fluorene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Naphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Perylene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Phenanthrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1
Pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/29/23 06:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	86		27 - 133	03/02/23 00:00	03/29/23 06:23	1
(d10-Phenanthrene)	89		43 - 129	03/02/23 00:00	03/29/23 06:23	1
(d12-Chrysene)	102		52 - 144	03/02/23 00:00	03/29/23 06:23	1
(d12-Perylene)	84		36 - 161	03/02/23 00:00	03/29/23 06:23	1
(d8-Naphthalene)	76		25 - 125	03/02/23 00:00	03/29/23 06:23	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			03/03/23 20:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	89		60 - 140		03/03/23 20:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.028		mg/L			03/13/23 18:55	1
JP5	ND	U	0.056		mg/L			03/13/23 18:55	1
JP8	ND	U	0.056		mg/L			03/13/23 18:55	1
MOTOR OIL	ND	U	0.056		mg/L			03/13/23 18:55	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-39082-1

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-39082-4

Date Collected: 02/27/23 11:11
Date Received: 03/01/23 09:45

Matrix: Drinking Water
PWSID Number: HI0000331

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	78		60 - 130		03/13/23 18:55	1
HEXACOSANE	102		60 - 130		03/13/23 18:55	1

Client Sample ID: TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-39082-5

Date Collected: 02/27/23 10:45
Date Received: 03/01/23 09:45

Matrix: Water

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			03/03/23 21:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	87		60 - 140		03/03/23 21:29	1

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

Lab Sample ID: 380-39082-6

Date Collected: 02/27/23 09:48
Date Received: 03/01/23 09:45

Matrix: Water

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			03/03/23 22:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	88		60 - 140		03/03/23 22:06	1

Client Sample ID: TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)

Lab Sample ID: 380-39082-7

Date Collected: 02/27/23 10:19
Date Received: 03/01/23 09:45

Matrix: Water

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			03/03/23 22:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	83		60 - 140		03/03/23 22:43	1

Client Sample ID: TB:AIEA GULCH WELLS P2 (331-202-TP072)

Lab Sample ID: 380-39082-8

Date Collected: 02/27/23 11:11
Date Received: 03/01/23 09:45

Matrix: Water

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			03/03/23 23:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	87		60 - 140		03/03/23 23:20	1

Client Sample Results

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

Job ID: 380-39082-1

**Client Sample ID: FB: HALAWA WELLS UNITS 1&2
(331-206-TP065)**

Lab Sample ID: 380-39082-11

Date Collected: 02/27/23 10:19

Matrix: Water

Date Received: 03/01/23 09:45

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Perfluorodecanoic acid (PFDA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Perfluorononanoic acid (PFNA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Perfluorooctanoic acid (PFOA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Perfluorobutanoic acid (PFBA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1
Perfluoropentanesulfonic acid (PFPeS)	ND		1.9	ng/L		03/23/23 06:21	03/25/23 08:08	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	110		50 - 200	03/23/23 06:21	03/25/23 08:08	1
13C6 PFDA	103		50 - 200	03/23/23 06:21	03/25/23 08:08	1
13C5 PFHxA	108		50 - 200	03/23/23 06:21	03/25/23 08:08	1
13C4 PFHpA	108		50 - 200	03/23/23 06:21	03/25/23 08:08	1
13C8 PFOA	108		50 - 200	03/23/23 06:21	03/25/23 08:08	1
13C9 PFNA	108		50 - 200	03/23/23 06:21	03/25/23 08:08	1
13C7 PFUnA	98		50 - 200	03/23/23 06:21	03/25/23 08:08	1
13C2 PFDoA	92		50 - 200	03/23/23 06:21	03/25/23 08:08	1
13C4 PFBA	108		50 - 200	03/23/23 06:21	03/25/23 08:08	1
13C5 PFPeA	106		50 - 200	03/23/23 06:21	03/25/23 08:08	1
13C3 PFBS	107		50 - 200	03/23/23 06:21	03/25/23 08:08	1
13C3 PFHxS	109		50 - 200	03/23/23 06:21	03/25/23 08:08	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-39082-1

**Client Sample ID: FB: HALAWA WELLS UNITS 1&2
 (331-206-TP065)**

Lab Sample ID: 380-39082-11

Date Collected: 02/27/23 10:19

Matrix: Water

Date Received: 03/01/23 09:45

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 PFOS	104		50 - 200	03/23/23 06:21	03/25/23 08:08	1
13C2-4:2-FTS	105		50 - 200	03/23/23 06:21	03/25/23 08:08	1
13C2-6:2-FTS	104		50 - 200	03/23/23 06:21	03/25/23 08:08	1
13C2-8:2-FTS	105		50 - 200	03/23/23 06:21	03/25/23 08:08	1

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

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.9	ng/L		03/13/23 06:45	03/13/23 20:45	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9	ng/L		03/13/23 06:45	03/13/23 20:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9	ng/L		03/13/23 06:45	03/13/23 20:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9	ng/L		03/13/23 06:45	03/13/23 20:45	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	ng/L		03/13/23 06:45	03/13/23 20:45	1
Perfluorodecanoic acid (PFDA)	ND		1.9	ng/L		03/13/23 06:45	03/13/23 20:45	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	ng/L		03/13/23 06:45	03/13/23 20:45	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	ng/L		03/13/23 06:45	03/13/23 20:45	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	ng/L		03/13/23 06:45	03/13/23 20:45	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	ng/L		03/13/23 06:45	03/13/23 20:45	1
Perfluorononanoic acid (PFNA)	ND		1.9	ng/L		03/13/23 06:45	03/13/23 20:45	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	ng/L		03/13/23 06:45	03/13/23 20:45	1
Perfluorooctanoic acid (PFOA)	ND		1.9	ng/L		03/13/23 06:45	03/13/23 20:45	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	ng/L		03/13/23 06:45	03/13/23 20:45	1
Perfluorotetradecanoic acid (PFTA)	ND		1.9	ng/L		03/13/23 06:45	03/13/23 20:45	1
Perfluorotridecanoic acid (PFTrDA)	ND		1.9	ng/L		03/13/23 06:45	03/13/23 20:45	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		1.9	ng/L		03/13/23 06:45	03/13/23 20:45	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		1.9	ng/L		03/13/23 06:45	03/13/23 20:45	1

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFHxA	93		70 - 130	03/13/23 06:45	03/13/23 20:45	1
13C2 PFDA	102		70 - 130	03/13/23 06:45	03/13/23 20:45	1
d5-NEtFOSAA	95		70 - 130	03/13/23 06:45	03/13/23 20:45	1

Action Limit Summary

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

Job ID: 380-39082-1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)
PWSID Number: HI0000331

Lab Sample ID: 380-39082-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Alachlor	ND		ug/L	2	0.099	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

Client Sample ID: MOANALUA WELLS (331-223-TP202)
PWSID Number: HI0000331

Lab Sample ID: 380-39082-2

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Alachlor	ND		ug/L	2	0.099	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	0.60	525.2	Total/NA
Di(2-ethylhexyl)adipate	ND		ug/L	400	0.60	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	0.070	525.2	Total/NA

Action Limit Summary

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

Job ID: 380-39082-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-39082-3

(331-206-TP065)

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Alachlor	ND		ug/L	2	0.098	525.2	Total/NA
Atrazine	ND		ug/L	3	0.098	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	0.0098	525.2	Total/NA
Heptachlor	ND		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	ND		ug/L	0.2	0.020	525.2	Total/NA
Hexachlorocyclopentadiene	ND		ug/L	50	0.098	525.2	Total/NA
Hexachlorobenzene	ND		ug/L	1	0.098	525.2	Total/NA
gamma-BHC (Lindane)	ND		ug/L	0.2	0.020	525.2	Total/NA
Methoxychlor	ND		ug/L	40	0.098	525.2	Total/NA
Simazine	ND		ug/L	4	0.068	525.2	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-39082-4

(331-202-TP072)

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Alachlor	ND		ug/L	2	0.10	525.2	Total/NA
Atrazine	ND		ug/L	3	0.10	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	0.60	525.2	Total/NA
Di(2-ethylhexyl)adipate	ND		ug/L	400	0.60	525.2	Total/NA
Endrin	ND		ug/L	2	0.010	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	0.10	525.2	Total/NA
Hexachlorobenzene	ND		ug/L	1	0.10	525.2	Total/NA
gamma-BHC (Lindane)	ND		ug/L	0.2	0.020	525.2	Total/NA
Methoxychlor	ND		ug/L	40	0.10	525.2	Total/NA
Simazine	ND		ug/L	4	0.070	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-39082-1

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	TPP (70-130)	PRY (70-130)
380-39082-1	AIEA WELLS PUMPS 1&2 (260)	93	105	93
380-39082-2	MOANALUA WELLS (331-223-TP202)	94	108	90
380-39082-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	91	106	93
380-39082-4	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	93	103	92

Surrogate Legend

2NMX = 2-Nitro-m-xylene

TPP = Triphenylphosphate

PRY = Perylene-d12

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	TPP (70-130)	PRY (70-130)
810-54989-B-1-A DU	Duplicate	94	108	95
810-55293-F-1-A MS	Matrix Spike	98	108	97
LCS 810-50763/24-A	Lab Control Sample	97	102	100
LLCS 810-50763/25-A	Lab Control Sample	94	105	91
MB 810-50763/21-A	Method Blank	95	98	95

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		PFHxA (70-130)	PFDA (70-130)	d5NEFOS (70-130)
380-39082-1	AIEA WELLS PUMPS 1&2 (260)	98	101	102
380-39082-2	MOANALUA WELLS (331-223-TP202)	97	93	102
380-39082-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	104	108	101
380-39082-4	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	104	97	94

Surrogate Legend

PFHxA = 13C2 PFHxA

PFDA = 13C2 PFDA

d5NEFOS = d5-NEtFOSAA

Surrogate Summary

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

Job ID: 380-39082-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		PFHxA (70-130)	PFDA (70-130)	d5NEFOS (70-130)
380-39082-11	FB: HALAWA WELLS UNITS 1&2	93	102	95
810-54855-B-3-A DU	Duplicate	97	96	96
810-55248-B-1-A MS	Matrix Spike	100	101	90
810-55282-B-2-A MS	Matrix Spike	97	100	94
810-55343-B-3-A DU	Duplicate	103	98	91
LCS 810-51074/3-A	Lab Control Sample	95	100	94
LCS 810-51334/3-A	Lab Control Sample	95	95	88
LLCS 810-51074/2-A	Lab Control Sample	98	104	102
LLCS 810-51334/2-A	Lab Control Sample	103	101	95
MBL 810-51074/1-A	Method Blank	95	102	101
MBL 810-51334/1-A	Method Blank	96	93	95

Surrogate Legend

PFHxA = 13C2 PFHxA

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphthl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
104445-B1	Method Blank	84	90	100	77	85
104445-BS1	Lab Control Sample	71	88	93	48	88
104445-BS2	Lab Control Sample Dup	71	86	91	56	87

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)

(d10-Phenanthrene) = (d10-Phenanthrene)

CRY = (d12-Chrysene)

NPT = (d8-Naphthalene)

PRY = (d12-Perylene)

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphthl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
380-39082-1	AIEA WELLS PUMPS 1&2 (260)	80	87	98	73	82
380-39082-2	MOANALUA WELLS (331-223-TP202)	87	90	103	78	82
380-39082-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	80	85	97	70	79
380-39082-4	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	86	89	102	76	84

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)

(d10-Phenanthrene) = (d10-Phenanthrene)

CRY = (d12-Chrysene)

NPT = (d8-Naphthalene)

Surrogate Summary

Client: City & County of Honolulu
 Project/Site: RED-HILL
 PRY = (d12-Perylene)

Job ID: 380-39082-1

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
380-39082-1	AIEA WELLS PUMPS 1&2 (260)	94
380-39082-2	MOANALUA WELLS (331-223-TP202)	87
380-39082-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	92
380-39082-4	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	89

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB
23VGH7C02B	Method Blank	

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (70-130)
23VGH7C02C	LCD	103
23VGH7C02L	Lab Control Sample	102

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
380-39082-5	TB: AIEA WELLS PUMPS 1&2 (87
380-39082-6	TB: MOANALUA WELLS (331-223-TP202)	88
380-39082-7	TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	83
380-39082-8	TB: AIEA GULCH WELLS P2 (331-202-TP072)	87

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Surrogate Summary

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

Job ID: 380-39082-1

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BB (60-130)	XACOSAI (60-130)
380-39082-1	AIEA WELLS PUMPS 1&2 (260)	73	101
380-39082-2	MOANALUA WELLS (331-223-TP202)	82	113
380-39082-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	72	110
380-39082-4	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	78	102

Surrogate Legend

BB = BROMOBENZENE
 HEXACOSANE = HEXACOSANE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BB (60-130)	XACOSAI (60-130)
23DSC014WC	LCD	76	99
23DSC014WL	Lab Control Sample	75	102
23J5C014WC	LCD	85	104
23J5C014WL	Lab Control Sample	81	103
23J8C014WC	LCD	89	99
23J8C014WL	Lab Control Sample	89	95

Surrogate Legend

BB = BROMOBENZENE
 HEXACOSANE = HEXACOSANE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BB	XACOSAI
23DSC014WB	Method Blank		

Surrogate Legend

BB = BROMOBENZENE
 HEXACOSANE = HEXACOSANE

Isotope Dilution Summary

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

Job ID: 380-39082-1

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)	PFDaA (50-200)
380-39082-1	AIEA WELLS PUMPS 1&2 (260)	96	96	95	96	96	97	95	92
380-39082-2	MOANALUA WELLS (331-223-TP202)	96	91	95	97	96	94	86	81
380-39082-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	75	53	83	80	73	60	55	56
380-39082-4	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	79	80	85	85	85	83	79	78

		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)
380-39082-1	AIEA WELLS PUMPS 1&2 (260)	96	93	99	100	97	99	97	100
380-39082-2	MOANALUA WELLS (331-223-TP202)	100	95	109	111	107	109	112	112
380-39082-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	88	83	98	102	96	98	103	99
380-39082-4	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	88	85	100	100	97	97	101	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
- PFDaA = 13C2 PFDaA
- 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)	PFDaA (50-200)
380-39082-11	FB: HALAWA WELLS UNITS 1&2	110	103	108	108	108	108	98	92
810-54922-C-3-A DU	Duplicate	104	91	105	105	103	100	84	82
810-54963-C-1-A LMS	Matrix Spike	109	90	100	100	99	94	86	85
810-55524-C-1-A DU	Duplicate	81	79	88	86	86	83	76	77
810-55597-F-7-A LMS	Matrix Spike	59	62	66	66	64	62	64	69
LCS 810-52656/3-A	Lab Control Sample	101	86	92	91	91	90	83	82
LCS 810-52777/3-A	Lab Control Sample	98	94	95	97	99	96	91	92
LLCS 810-52656/2-A	Lab Control Sample	103	99	106	107	105	105	95	95
LLCS 810-52777/2-A	Lab Control Sample	91	94	96	97	99	96	94	93
MBL 810-52656/1-A	Method Blank	105	101	106	107	105	104	98	96

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Isotope Dilution Summary

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

Job ID: 380-39082-1

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

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)
MBL 810-52777/1-A	Method Blank	91	90	96	97	97	95	88	87

		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)
380-39082-11	FB: HALAWA WELLS UNITS 1&	108	106	107	109	104	105	104	105
810-54922-C-3-A DU	Duplicate	105	108	104	106	91	104	102	92
810-54963-C-1-A LMS	Matrix Spike	107	198	105	109	103	139	125	117
810-55524-C-1-A DU	Duplicate	92	89	99	101	91	98	99	94
810-55597-F-7-A LMS	Matrix Spike	69	68	104	104	98	99	105	104
LCS 810-52656/3-A	Lab Control Sample	92	91	93	92	90	98	99	92
LCS 810-52777/3-A	Lab Control Sample	98	96	101	100	98	101	104	99
LLCS 810-52656/2-A	Lab Control Sample	106	104	108	105	100	105	103	99
LLCS 810-52777/2-A	Lab Control Sample	99	99	101	101	97	98	100	99
MBL 810-52656/1-A	Method Blank	106	103	106	108	102	106	107	104
MBL 810-52777/1-A	Method Blank	97	95	101	100	93	98	99	93

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

QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: MB 810-50763/21-A
Matrix: Water
Analysis Batch: 50875

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 50763

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
2,4'-DDD	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
2,4'-DDE	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
2,4'-DDT	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
2,4-Dinitrotoluene	ND		0.49	ug/L		03/08/23 09:07	03/09/23 16:04	1
2,6-Dinitrotoluene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
4,4'-DDD	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
4,4'-DDE	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
4,4'-DDT	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Acenaphthene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Acenaphthylene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Acetochlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Alachlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
alpha-BHC	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
alpha-Chlordane	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Anthracene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Atrazine	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Benz(a)anthracene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Benzo[a]pyrene	ND		0.020	ug/L		03/08/23 09:07	03/09/23 16:04	1
Benzo[b]fluoranthene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Benzo[g,h,i]perylene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Benzo[k]fluoranthene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
beta-BHC	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Bis(2-ethylhexyl) phthalate	ND		0.59	ug/L		03/08/23 09:07	03/09/23 16:04	1
Bromacil	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Butachlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Butylbenzylphthalate	ND		0.99	ug/L		03/08/23 09:07	03/09/23 16:04	1
Chlorobenzilate	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Chloroneb	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Chlorothalonil (Draconil, Bravo)	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Chlorpyrifos	ND		0.049	ug/L		03/08/23 09:07	03/09/23 16:04	1
Chrysene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
delta-BHC	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Di(2-ethylhexyl)adipate	ND		0.59	ug/L		03/08/23 09:07	03/09/23 16:04	1
Dibenz(a,h)anthracene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Diclorvos (DDVP)	ND		0.049	ug/L		03/08/23 09:07	03/09/23 16:04	1
Dieldrin	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Diethylphthalate	ND		0.99	ug/L		03/08/23 09:07	03/09/23 16:04	1
Dimethylphthalate	ND		0.99	ug/L		03/08/23 09:07	03/09/23 16:04	1
Di-n-octyl phthalate	ND		2.0	ug/L		03/08/23 09:07	03/09/23 16:04	1
Di-n-butyl phthalate	ND		2.0	ug/L		03/08/23 09:07	03/09/23 16:04	1
Endosulfan I (Alpha)	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Endosulfan II (Beta)	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Endosulfan sulfate	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Endrin	ND		0.0099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Endrin aldehyde	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
EPTC	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Fluoranthene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Fluorene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1

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QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: MB 810-50763/21-A
Matrix: Water
Analysis Batch: 50875

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 50763

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
gamma-Chlordane	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Heptachlor	ND		0.039	ug/L		03/08/23 09:07	03/09/23 16:04	1
Heptachlor epoxide (isomer B)	ND		0.020	ug/L		03/08/23 09:07	03/09/23 16:04	1
Hexachlorocyclopentadiene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Hexachlorobenzene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Indeno[1,2,3-cd]pyrene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Isophorone	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
gamma-BHC (Lindane)	ND		0.020	ug/L		03/08/23 09:07	03/09/23 16:04	1
Malathion	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Methoxychlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Metolachlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Metribuzin	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Molinate	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Naphthalene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Parathion	ND		0.49	ug/L		03/08/23 09:07	03/09/23 16:04	1
Phenanthrene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Propachlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Pyrene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Simazine	ND		0.069	ug/L		03/08/23 09:07	03/09/23 16:04	1
Terbacil	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Thiobencarb	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		03/08/23 09:07	03/09/23 16:04	1
trans-Nonachlor	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Trifluralin	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Pendimethalin (Penoxaline)	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
Terbutylazine	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
1-Methylnaphthalene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
2-Methylnaphthalene	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
cis-Permethrin	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1
trans-Permethrin	ND		0.099	ug/L		03/08/23 09:07	03/09/23 16:04	1

<i>Tentatively Identified Compound</i>	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
<i>Tentatively Identified Compound</i>	None		ug/L			N/A	03/08/23 09:07	03/09/23 16:04	1

<i>Surrogate</i>	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>2-Nitro-m-xylene</i>	95		70 - 130	03/08/23 09:07	03/09/23 16:04	1
<i>Triphenylphosphate</i>	98		70 - 130	03/08/23 09:07	03/09/23 16:04	1
<i>Perylene-d12</i>	95		70 - 130	03/08/23 09:07	03/09/23 16:04	1

Lab Sample ID: LCS 810-50763/24-A
Matrix: Water
Analysis Batch: 50875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50763

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2,4'-DDD	1.98	1.98		ug/L		100	70 - 130
2,4'-DDE	1.98	2.01		ug/L		102	70 - 130
2,4'-DDT	1.98	2.02		ug/L		102	70 - 130
2,4-Dinitrotoluene	1.98	1.38		ug/L		70	70 - 130

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QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: LCS 810-50763/24-A
Matrix: Water
Analysis Batch: 50875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50763

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,6-Dinitrotoluene	1.98	1.38		ug/L		70	70 - 130
4,4'-DDD	1.98	2.04		ug/L		103	70 - 130
4,4'-DDE	1.98	2.07		ug/L		105	70 - 130
4,4'-DDT	1.98	1.93		ug/L		97	70 - 130
Acenaphthene	1.98	2.04		ug/L		103	70 - 130
Acenaphthylene	1.98	1.96		ug/L		99	70 - 130
Acetochlor	1.98	2.08		ug/L		105	70 - 130
Alachlor	1.98	2.06		ug/L		104	70 - 130
alpha-BHC	1.98	1.95		ug/L		98	70 - 130
alpha-Chlordane	1.98	1.98		ug/L		100	70 - 130
Anthracene	1.98	1.46		ug/L		74	70 - 130
Atrazine	1.98	2.01		ug/L		102	70 - 130
Benz(a)anthracene	1.98	1.88		ug/L		95	70 - 130
Benzo[a]pyrene	1.98	1.51		ug/L		76	70 - 130
Benzo[b]fluoranthene	1.98	1.80		ug/L		91	70 - 130
Benzo[g,h,i]perylene	1.98	1.83		ug/L		92	70 - 130
Benzo[k]fluoranthene	1.98	2.15		ug/L		108	70 - 130
beta-BHC	1.98	1.93		ug/L		97	70 - 130
Bis(2-ethylhexyl) phthalate	1.98	1.85		ug/L		94	70 - 130
Bromacil	1.98	2.25		ug/L		114	70 - 130
Butachlor	1.98	2.25		ug/L		114	70 - 130
Butylbenzylphthalate	1.98	2.13		ug/L		108	70 - 130
Chlorobenzilate	1.98	2.20		ug/L		111	70 - 130
Chloroneb	1.98	2.15		ug/L		108	70 - 130
Chlorothalonil (Draconil, Bravo)	1.98	2.08		ug/L		105	70 - 130
Chlorpyrifos	1.98	2.02		ug/L		102	70 - 130
Chrysene	1.98	2.07		ug/L		105	70 - 130
delta-BHC	1.98	1.99		ug/L		100	70 - 130
Di(2-ethylhexyl)adipate	1.98	1.94		ug/L		98	70 - 130
Dibenz(a,h)anthracene	1.98	1.82		ug/L		92	70 - 130
Diclorvos (DDVP)	1.98	1.70		ug/L		86	70 - 130
Dieldrin	1.98	1.99		ug/L		101	70 - 130
Diethylphthalate	1.98	2.11		ug/L		107	70 - 130
Dimethylphthalate	1.98	1.92		ug/L		97	70 - 130
Di-n-octyl phthalate	1.98	1.64	J	ug/L		83	60 - 122
Di-n-butyl phthalate	1.98	2.21		ug/L		112	70 - 130
Endosulfan I (Alpha)	1.98	2.02		ug/L		102	70 - 130
Endosulfan II (Beta)	1.98	1.95		ug/L		99	70 - 130
Endosulfan sulfate	1.98	1.88		ug/L		95	70 - 130
Endrin	1.98	2.01		ug/L		101	70 - 130
Endrin aldehyde	1.98	1.67		ug/L		84	64 - 125
EPTC	1.98	2.10		ug/L		106	70 - 130
Fluoranthene	1.98	2.13		ug/L		108	70 - 130
Fluorene	1.98	2.11		ug/L		106	70 - 130
gamma-Chlordane	1.98	1.95		ug/L		99	70 - 130
Heptachlor	1.98	1.80		ug/L		91	70 - 130
Heptachlor epoxide (isomer B)	1.98	1.95		ug/L		98	70 - 130
Hexachlorocyclopentadiene	1.98	1.75		ug/L		89	70 - 130
Hexachlorobenzene	1.98	1.86		ug/L		94	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: LCS 810-50763/24-A
Matrix: Water
Analysis Batch: 50875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50763

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Indeno[1,2,3-cd]pyrene	1.98	1.78		ug/L		90	70 - 130
Isophorone	1.98	1.84		ug/L		93	70 - 130
gamma-BHC (Lindane)	1.98	2.00		ug/L		101	70 - 130
Malathion	1.98	2.04		ug/L		103	80 - 134
Methoxychlor	1.98	1.98		ug/L		100	70 - 130
Metolachlor	1.98	2.17		ug/L		109	70 - 130
Metribuzin	1.98	1.57		ug/L		79	70 - 130
Molinate	1.98	2.13		ug/L		108	70 - 130
Naphthalene	1.98	2.04		ug/L		103	70 - 130
Parathion	1.98	2.07		ug/L		105	80 - 134
Phenanthrene	1.98	1.96		ug/L		99	70 - 130
Propachlor	1.98	2.10		ug/L		106	70 - 130
Pyrene	1.98	2.01		ug/L		101	70 - 130
Simazine	1.98	1.52		ug/L		77	70 - 130
Terbacil	1.98	1.59		ug/L		80	70 - 130
Thiobencarb	1.98	2.14		ug/L		108	70 - 130
trans-Nonachlor	1.98	1.91		ug/L		97	70 - 130
Trifluralin	1.98	2.04		ug/L		103	70 - 130
Pendimethalin (Penoxaline)	1.98	2.04		ug/L		103	65 - 122
Terbutylazine	1.98	2.02		ug/L		102	70 - 130
1-Methylnaphthalene	1.98	2.04		ug/L		103	70 - 130
2-Methylnaphthalene	1.98	1.93		ug/L		98	70 - 130
cis-Permethrin	1.98	1.77		ug/L		90	70 - 130
trans-Permethrin	1.98	1.80		ug/L		91	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	97		70 - 130
Triphenylphosphate	102		70 - 130
Perylene-d12	100		70 - 130

Lab Sample ID: LLCS 810-50763/25-A
Matrix: Water
Analysis Batch: 50875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50763

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Alachlor	0.0993	0.0766	J	ug/L		77	50 - 150
Atrazine	0.0993	0.0926	J	ug/L		93	50 - 150
Benzo[a]pyrene	0.0199	0.0197	J	ug/L		99	50 - 150
Bis(2-ethylhexyl) phthalate	0.596	0.570	J	ug/L		96	50 - 150
Butachlor	0.0993	0.0858	J	ug/L		86	50 - 150
Di(2-ethylhexyl)adipate	0.596	0.563	J	ug/L		95	50 - 150
Dieldrin	0.0199	ND		ug/L		91	50 - 150
Endrin	0.00993	0.0105		ug/L		106	50 - 150
Heptachlor	0.00993	0.00942	J	ug/L		95	50 - 150
Heptachlor epoxide (isomer B)	0.00993	0.0118	J	ug/L		119	50 - 150
Hexachlorocyclopentadiene	0.0993	0.0721	J	ug/L		73	50 - 150
Hexachlorobenzene	0.0993	0.0764	J	ug/L		77	50 - 150
gamma-BHC (Lindane)	0.0199	0.0167	J	ug/L		84	50 - 150

QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: LLCS 810-50763/25-A
Matrix: Water
Analysis Batch: 50875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50763

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Methoxychlor	0.0993	0.0610	J	ug/L		61	50 - 150
Metolachlor	0.0993	0.0824	J	ug/L		83	50 - 150
Metribuzin	0.0993	0.0602	J	ug/L		61	50 - 150
Propachlor	0.0993	0.0808	J	ug/L		81	50 - 150
Simazine	0.0695	0.0405	J	ug/L		58	50 - 150

Surrogate	LLCS %Recovery	LLCS Qualifier	Limits
2-Nitro-m-xylene	94		70 - 130
Triphenylphosphate	105		70 - 130
Perylene-d12	91		70 - 130

Lab Sample ID: 810-55293-F-1-A MS
Matrix: Water
Analysis Batch: 50875

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 50763

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	ND		1.94	2.00		ug/L		103	70 - 130
2,4'-DDE	ND		1.94	1.97		ug/L		102	70 - 130
2,4'-DDT	ND		1.94	2.17		ug/L		112	70 - 130
2,4-Dinitrotoluene	ND		1.94	1.47		ug/L		76	70 - 130
2,6-Dinitrotoluene	ND		1.94	1.50		ug/L		77	70 - 130
4,4'-DDD	ND		1.94	2.05		ug/L		106	70 - 130
4,4'-DDE	ND		1.94	2.07		ug/L		107	70 - 130
4,4'-DDT	ND		1.94	1.93		ug/L		99	70 - 130
Acenaphthene	ND		1.94	1.99		ug/L		103	70 - 130
Acenaphthylene	ND		1.94	1.89		ug/L		97	70 - 130
Acetochlor	ND		1.94	2.10		ug/L		108	70 - 130
Alachlor	ND		1.94	2.06		ug/L		106	70 - 130
alpha-BHC	ND		1.94	1.96		ug/L		101	70 - 130
alpha-Chlordane	ND		1.94	2.04		ug/L		105	70 - 130
Anthracene	ND		1.94	1.85		ug/L		95	70 - 130
Atrazine	ND		1.94	1.94		ug/L		100	70 - 130
Benz(a)anthracene	ND		1.94	2.02		ug/L		104	70 - 130
Benzo[a]pyrene	ND		1.94	1.78		ug/L		92	70 - 130
Benzo[b]fluoranthene	ND		1.94	1.78		ug/L		92	70 - 130
Benzo[g,h,i]perylene	ND		1.94	1.68		ug/L		87	70 - 130
Benzo[k]fluoranthene	ND		1.94	1.98		ug/L		102	70 - 130
beta-BHC	ND		1.94	1.97		ug/L		101	70 - 130
Bis(2-ethylhexyl) phthalate	ND		1.94	1.81		ug/L		94	70 - 130
Bromacil	ND		1.94	2.45		ug/L		126	70 - 130
Butachlor	ND		1.94	2.35		ug/L		121	70 - 130
Butylbenzylphthalate	ND		1.94	2.27		ug/L		117	70 - 130
Chlorobenzilate	ND		1.94	2.45		ug/L		126	70 - 130
Chloroneb	ND		1.94	2.24		ug/L		115	70 - 130
Chlorothalonil (Draconil, Bravo)	ND		1.94	1.99		ug/L		103	70 - 130
Chlorpyrifos	ND		1.94	1.99		ug/L		103	70 - 130
Chrysene	ND		1.94	2.11		ug/L		109	70 - 130
delta-BHC	ND		1.94	1.94		ug/L		100	70 - 130

QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: 810-55293-F-1-A MS
Matrix: Water
Analysis Batch: 50875

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 50763

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Di(2-ethylhexyl)adipate	ND		1.94	1.98		ug/L		102	70 - 130
Dibenz(a,h)anthracene	ND		1.94	1.65		ug/L		85	70 - 130
Diclorvos (DDVP)	ND		1.94	1.77		ug/L		91	70 - 130
Dieldrin	ND		1.94	2.05		ug/L		106	70 - 130
Diethylphthalate	ND		1.94	2.05		ug/L		106	70 - 130
Dimethylphthalate	ND		1.94	1.88		ug/L		97	70 - 130
Di-n-octyl phthalate	ND		1.94	ND		ug/L		83	60 - 122
Di-n-butyl phthalate	ND		1.94	2.12		ug/L		109	70 - 130
Endosulfan I (Alpha)	ND		1.94	2.12		ug/L		109	70 - 130
Endosulfan II (Beta)	ND		1.94	2.06		ug/L		106	70 - 130
Endosulfan sulfate	ND		1.94	2.13		ug/L		110	70 - 130
Endrin	ND		1.94	2.17		ug/L		112	70 - 130
Endrin aldehyde	ND		1.94	2.00		ug/L		103	64 - 125
EPTC	ND		1.94	2.08		ug/L		107	70 - 130
Fluoranthene	ND		1.94	2.03		ug/L		105	70 - 130
Fluorene	ND		1.94	2.00		ug/L		103	70 - 130
gamma-Chlordane	ND		1.94	1.99		ug/L		103	70 - 130
Heptachlor	ND		1.94	1.82		ug/L		94	70 - 130
Heptachlor epoxide (isomer B)	ND		1.94	2.01		ug/L		104	70 - 130
Hexachlorocyclopentadiene	ND		1.94	1.82		ug/L		93	70 - 130
Hexachlorobenzene	ND		1.94	1.79		ug/L		92	70 - 130
Indeno[1,2,3-cd]pyrene	ND		1.94	1.67		ug/L		86	70 - 130
Isophorone	ND		1.94	1.79		ug/L		92	70 - 130
gamma-BHC (Lindane)	ND		1.94	1.94		ug/L		100	70 - 130
Malathion	ND		1.94	2.02		ug/L		104	80 - 134
Methoxychlor	ND		1.94	2.06		ug/L		106	70 - 130
Metolachlor	ND		1.94	2.15		ug/L		111	70 - 130
Metribuzin	ND		1.94	1.67		ug/L		86	70 - 130
Molinate	ND		1.94	2.04		ug/L		105	70 - 130
Naphthalene	ND		1.94	2.01		ug/L		104	70 - 130
Parathion	ND		1.94	2.07		ug/L		107	80 - 134
Phenanthrene	ND		1.94	1.88		ug/L		97	70 - 130
Propachlor	ND		1.94	2.11		ug/L		108	70 - 130
Pyrene	ND		1.94	2.10		ug/L		108	70 - 130
Simazine	ND		1.94	1.54		ug/L		79	70 - 130
Terbacil	ND		1.94	1.74		ug/L		90	70 - 130
Thiobencarb	ND		1.94	2.11		ug/L		109	70 - 130
trans-Nonachlor	ND		1.94	1.96		ug/L		101	70 - 130
Trifluralin	ND		1.94	2.05		ug/L		106	70 - 130
Pendimethalin (Penoxaline)	ND		1.94	2.23		ug/L		115	65 - 122
Terbutylazine	ND		1.94	2.02		ug/L		104	70 - 130
1-Methylnaphthalene	ND		1.94	1.97		ug/L		101	70 - 130
2-Methylnaphthalene	ND		1.94	1.87		ug/L		96	70 - 130
cis-Permethrin	ND		1.94	1.85		ug/L		95	70 - 130
trans-Permethrin	ND		1.94	1.82		ug/L		94	70 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	98		70 - 130

QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: 810-55293-F-1-A MS
Matrix: Water
Analysis Batch: 50875

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 50763

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
Triphenylphosphate	108		70 - 130
Perylene-d12	97		70 - 130

Lab Sample ID: 810-54989-B-1-A DU
Matrix: Water
Analysis Batch: 50875

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 50763

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	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

QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: 810-54989-B-1-A DU
Matrix: Water
Analysis Batch: 50875

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 50763

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
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
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
Terbutylazine	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	94		70 - 130
Triphenylphosphate	108		70 - 130
Perylene-d12	95		70 - 130

QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: MBL 810-52656/1-A
Matrix: Water
Analysis Batch: 52808

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 52656

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Perfluorobutanoic acid (PFBA)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1
Perfluoropentanesulfonic acid (PFPeS)	ND		2.0	ng/L		03/23/23 06:21	03/25/23 02:59	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	105		50 - 200	03/23/23 06:21	03/25/23 02:59	1
13C6 PFDA	101		50 - 200	03/23/23 06:21	03/25/23 02:59	1
13C5 PFHxA	106		50 - 200	03/23/23 06:21	03/25/23 02:59	1
13C4 PFHpA	107		50 - 200	03/23/23 06:21	03/25/23 02:59	1
13C8 PFOA	105		50 - 200	03/23/23 06:21	03/25/23 02:59	1
13C9 PFNA	104		50 - 200	03/23/23 06:21	03/25/23 02:59	1
13C7 PFUnA	98		50 - 200	03/23/23 06:21	03/25/23 02:59	1
13C2 PFDoA	96		50 - 200	03/23/23 06:21	03/25/23 02:59	1
13C4 PFBA	106		50 - 200	03/23/23 06:21	03/25/23 02:59	1
13C5 PFPeA	103		50 - 200	03/23/23 06:21	03/25/23 02:59	1
13C3 PFBS	106		50 - 200	03/23/23 06:21	03/25/23 02:59	1
13C3 PFHxS	108		50 - 200	03/23/23 06:21	03/25/23 02:59	1

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QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: MBL 810-52656/1-A
Matrix: Water
Analysis Batch: 52808

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 52656

<i>Isotope Dilution</i>	<i>MBL %Recovery</i>	<i>MBL Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 PFOS	102		50 - 200	03/23/23 06:21	03/25/23 02:59	1
13C2-4:2-FTS	106		50 - 200	03/23/23 06:21	03/25/23 02:59	1
13C2-6:2-FTS	107		50 - 200	03/23/23 06:21	03/25/23 02:59	1
13C2-8:2-FTS	104		50 - 200	03/23/23 06:21	03/25/23 02:59	1

Lab Sample ID: LCS 810-52656/3-A
Matrix: Water
Analysis Batch: 52808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 52656

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	378	342		ng/L		90	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	374	348		ng/L		93	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	378	360		ng/L		95	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	400	385		ng/L		96	70 - 130
Perfluorobutanesulfonic acid (PFBS)	355	339		ng/L		95	70 - 130
Perfluorodecanoic acid (PFDA)	400	385		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	400	388		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	400	382		ng/L		96	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	365	346		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	400	382		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	400	382		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	371	355		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	400	380		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	400	387		ng/L		97	70 - 130
Perfluorobutanoic acid (PFBA)	400	382		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	384	368		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	375	358		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	381	362		ng/L		95	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	400	393		ng/L		98	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	357	342		ng/L		96	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	400	377		ng/L		94	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	400	379		ng/L		95	70 - 130
Perfluoropentanoic acid (PFPeA)	400	383		ng/L		96	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	382	370		ng/L		97	70 - 130

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QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: LCS 810-52656/3-A
Matrix: Water
Analysis Batch: 52808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 52656

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	376	362		ng/L		96	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	101		50 - 200				
13C6 PFDA	86		50 - 200				
13C5 PFHxA	92		50 - 200				
13C4 PFHpA	91		50 - 200				
13C8 PFOA	91		50 - 200				
13C9 PFNA	90		50 - 200				
13C7 PFUnA	83		50 - 200				
13C2 PFDoA	82		50 - 200				
13C4 PFBA	92		50 - 200				
13C5 PFPeA	91		50 - 200				
13C3 PFBS	93		50 - 200				
13C3 PFHxS	92		50 - 200				
13C8 PFOS	90		50 - 200				
13C2-4:2-FTS	98		50 - 200				
13C2-6:2-FTS	99		50 - 200				
13C2-8:2-FTS	92		50 - 200				

Lab Sample ID: LLCS 810-52656/2-A
Matrix: Water
Analysis Batch: 52808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 52656

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-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	1.72	J	ng/L		92	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	1.77	J	ng/L		94	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.00		ng/L		100	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.78	1.66	J	ng/L		93	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.94	J	ng/L		97	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.94	J	ng/L		97	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.91	J	ng/L		95	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	1.72	J	ng/L		94	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.96	J	ng/L		98	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.93	J	ng/L		96	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	1.77	J	ng/L		95	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.02		ng/L		101	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.95	J	ng/L		97	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.17		ng/L		109	50 - 150

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QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: LLCS 810-52656/2-A
Matrix: Water
Analysis Batch: 52808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 52656

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.92	2.03		ng/L		106	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.88	2.03		ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.90	2.04		ng/L		107	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.34		ng/L		117	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	1.78	1.65	J	ng/L		92	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.85	J	ng/L		92	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.87	J	ng/L		94	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.02		ng/L		101	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.91	1.89	J	ng/L		99	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.88	1.78	J	ng/L		94	50 - 150

Isotope Dilution	LLCS LLCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	103		50 - 200
13C6 PFDA	99		50 - 200
13C5 PFHxA	106		50 - 200
13C4 PFHpA	107		50 - 200
13C8 PFOA	105		50 - 200
13C9 PFNA	105		50 - 200
13C7 PFUnA	95		50 - 200
13C2 PFDoA	95		50 - 200
13C4 PFBA	106		50 - 200
13C5 PFPeA	104		50 - 200
13C3 PFBS	108		50 - 200
13C3 PFHxS	105		50 - 200
13C8 PFOS	100		50 - 200
13C2-4:2-FTS	105		50 - 200
13C2-6:2-FTS	103		50 - 200
13C2-8:2-FTS	99		50 - 200

Lab Sample ID: 810-54963-C-1-A LMS
Matrix: Water
Analysis Batch: 52808

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 52656

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	1.52	J	ng/L		85	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		1.77	1.58	J	ng/L		89	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.80	1.64	J	ng/L		91	50 - 150

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QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: 810-54963-C-1-A LMS
Matrix: Water
Analysis Batch: 52808

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 52656

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	ND		1.90	2.06		ng/L		108	50 - 150
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	12		1.69	13.0	4	ng/L		87	50 - 150
Perfluorodecanoic acid (PFDA)	ND		1.90	2.33		ng/L		93	50 - 150
Perfluorododecanoic acid (PFDoA)	ND		1.90	1.88	J	ng/L		99	50 - 150
Perfluoroheptanoic acid (PFHpA)	3.0		1.90	4.69		ng/L		90	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	3.7		1.73	5.31		ng/L		91	50 - 150
Perfluorohexanoic acid (PFHxA)	19		1.90	20.9	4	ng/L		102	50 - 150
Perfluorononanoic acid (PFNA)	ND		1.90	2.52		ng/L		92	50 - 150
Perfluorooctanesulfonic acid (PFOS)	5.8		1.76	7.65		ng/L		107	50 - 150
Perfluorooctanoic acid (PFOA)	7.2		1.90	8.94		ng/L		93	50 - 150
Perfluoroundecanoic acid (PFUnA)	ND		1.90	1.79	J	ng/L		94	50 - 150
Perfluorobutanoic acid (PFBA)	3.1		1.90	5.25		ng/L		115	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		1.82	2.05		ng/L		112	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		1.78	1.87	J	ng/L		105	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.1		1.81	3.93		ng/L		103	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		1.90	1.57	J	ng/L		83	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	ND		1.69	1.55	J	ng/L		92	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND	F1	1.90	3.07	F1	ng/L		161	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		1.90	1.69	J	ng/L		89	50 - 150
Perfluoropentanoic acid (PFPeA)	15		1.90	16.7	4	ng/L		92	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.81	1.88	J	ng/L		104	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	ND		1.79	2.12		ng/L		94	50 - 150

Isotope Dilution	LMS LMS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	109		50 - 200
13C6 PFDA	90		50 - 200
13C5 PFHxA	100		50 - 200
13C4 PFHpA	100		50 - 200
13C8 PFOA	99		50 - 200
13C9 PFNA	94		50 - 200
13C7 PFUnA	86		50 - 200
13C2 PFDoA	85		50 - 200
13C4 PFBA	107		50 - 200
13C5 PFPeA	198		50 - 200
13C3 PFBS	105		50 - 200
13C3 PFHxS	109		50 - 200
13C8 PFOS	103		50 - 200

QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: 810-54963-C-1-A LMS
Matrix: Water
Analysis Batch: 52808

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 52656

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	139		50 - 200
13C2-6:2-FTS	125		50 - 200
13C2-8:2-FTS	117		50 - 200

Lab Sample ID: 810-54922-C-3-A DU
Matrix: Water
Analysis Batch: 52808

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 52656

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
11-Chloroeicosfluoro-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)	1.9		1.93		ng/L		0.4	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
Perfluorobutanoic acid (PFBA)	280		275		ng/L		0.3	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)	6.7		6.76		ng/L		1	30
Perfluoroheptanesulfonic acid (PFHpS)	ND		ND		ng/L		NC	30
Perfluoropentanesulfonic acid (PFPeS)	ND		ND		ng/L		NC	30

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QC Sample Results

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

Job ID: 380-39082-1

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

Isotope Dilution	DU DU		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	104		50 - 200
13C6 PFDA	91		50 - 200
13C5 PFHxA	105		50 - 200
13C4 PFHpA	105		50 - 200
13C8 PFOA	103		50 - 200
13C9 PFNA	100		50 - 200
13C7 PFUnA	84		50 - 200
13C2 PFDoA	82		50 - 200
13C4 PFBA	105		50 - 200
13C5 PFPeA	108		50 - 200
13C3 PFBS	104		50 - 200
13C3 PFHxS	106		50 - 200
13C8 PFOS	91		50 - 200
13C2-4:2-FTS	104		50 - 200
13C2-6:2-FTS	102		50 - 200
13C2-8:2-FTS	92		50 - 200

Lab Sample ID: MBL 810-52777/1-A
Matrix: Water
Analysis Batch: 52920

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 52777

Analyte	MBL	MBL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
Perfluorobutanoic acid (PFBA)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1

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QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: MBL 810-52777/1-A
Matrix: Water
Analysis Batch: 52920

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 52777

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1
Perfluoropentanesulfonic acid (PFPeS)	ND		2.0	ng/L		03/24/23 06:25	03/26/23 01:08	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	91		50 - 200	03/24/23 06:25	03/26/23 01:08	1
13C6 PFDA	90		50 - 200	03/24/23 06:25	03/26/23 01:08	1
13C5 PFHxA	96		50 - 200	03/24/23 06:25	03/26/23 01:08	1
13C4 PFHpA	97		50 - 200	03/24/23 06:25	03/26/23 01:08	1
13C8 PFOA	97		50 - 200	03/24/23 06:25	03/26/23 01:08	1
13C9 PFNA	95		50 - 200	03/24/23 06:25	03/26/23 01:08	1
13C7 PFUnA	88		50 - 200	03/24/23 06:25	03/26/23 01:08	1
13C2 PFDoA	87		50 - 200	03/24/23 06:25	03/26/23 01:08	1
13C4 PFBA	97		50 - 200	03/24/23 06:25	03/26/23 01:08	1
13C5 PFPeA	95		50 - 200	03/24/23 06:25	03/26/23 01:08	1
13C3 PFBS	101		50 - 200	03/24/23 06:25	03/26/23 01:08	1
13C3 PFHxS	100		50 - 200	03/24/23 06:25	03/26/23 01:08	1
13C8 PFOS	93		50 - 200	03/24/23 06:25	03/26/23 01:08	1
13C2-4:2-FTS	98		50 - 200	03/24/23 06:25	03/26/23 01:08	1
13C2-6:2-FTS	99		50 - 200	03/24/23 06:25	03/26/23 01:08	1
13C2-8:2-FTS	93		50 - 200	03/24/23 06:25	03/26/23 01:08	1

Lab Sample ID: LCS 810-52777/3-A
Matrix: Water
Analysis Batch: 52920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 52777

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	189	167		ng/L		89	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	187	169		ng/L		90	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	189	174		ng/L		92	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	200	173		ng/L		86	70 - 130
Perfluorobutanesulfonic acid (PFBS)	178	165		ng/L		93	70 - 130
Perfluorodecanoic acid (PFDA)	200	185		ng/L		93	70 - 130
Perfluorododecanoic acid (PFDoA)	200	188		ng/L		94	70 - 130
Perfluoroheptanoic acid (PFHpA)	200	185		ng/L		92	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	183	170		ng/L		93	70 - 130
Perfluorohexanoic acid (PFHxA)	200	187		ng/L		94	70 - 130
Perfluorononanoic acid (PFNA)	200	185		ng/L		93	70 - 130
Perfluorooctanesulfonic acid (PFOS)	186	171		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	200	184		ng/L		92	70 - 130

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QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: LCS 810-52777/3-A
Matrix: Water
Analysis Batch: 52920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 52777

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	200	186		ng/L		93	70 - 130
Perfluorobutanoic acid (PFBA)	200	184		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	192	188		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	188	182		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	190	189		ng/L		99	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	200	176		ng/L		88	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	178	168		ng/L		94	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	200	180		ng/L		90	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	200	181		ng/L		90	70 - 130
Perfluoropentanoic acid (PFPeA)	200	184		ng/L		92	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	191	179		ng/L		94	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	188	175		ng/L		93	70 - 130

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	98		50 - 200
13C6 PFDA	94		50 - 200
13C5 PFHxA	95		50 - 200
13C4 PFHpA	97		50 - 200
13C8 PFOA	99		50 - 200
13C9 PFNA	96		50 - 200
13C7 PFUnA	91		50 - 200
13C2 PFDoA	92		50 - 200
13C4 PFBA	98		50 - 200
13C5 PFPeA	96		50 - 200
13C3 PFBS	101		50 - 200
13C3 PFHxS	100		50 - 200
13C8 PFOS	98		50 - 200
13C2-4:2-FTS	101		50 - 200
13C2-6:2-FTS	104		50 - 200
13C2-8:2-FTS	99		50 - 200

Lab Sample ID: LLCS 810-52777/2-A
Matrix: Water
Analysis Batch: 52920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 52777

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-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	1.74	J	ng/L		93	50 - 150

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QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: LLCS 810-52777/2-A
Matrix: Water
Analysis Batch: 52920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 52777

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	1.70	J	ng/L		90	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.62	J	ng/L		81	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.78	1.64	J	ng/L		92	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.84	J	ng/L		92	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.85	J	ng/L		92	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.79	J	ng/L		90	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	1.67	J	ng/L		91	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.82	J	ng/L		91	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.86	J	ng/L		93	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	1.73	J	ng/L		93	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	1.88	J	ng/L		94	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.82	J	ng/L		91	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.12		ng/L		106	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.92	1.95	J	ng/L		102	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.88	1.89	J	ng/L		101	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.90	2.00		ng/L		105	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.02		ng/L		101	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	1.78	1.58	J	ng/L		89	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.78	J	ng/L		89	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.71	J	ng/L		85	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	1.82	J	ng/L		91	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.91	1.71	J	ng/L		90	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.88	1.59	J	ng/L		84	50 - 150

Isotope Dilution	LLCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	91		50 - 200
13C6 PFDA	94		50 - 200
13C5 PFHxA	96		50 - 200
13C4 PFHpA	97		50 - 200
13C8 PFOA	99		50 - 200
13C9 PFNA	96		50 - 200
13C7 PFUnA	94		50 - 200
13C2 PFDoA	93		50 - 200
13C4 PFBA	99		50 - 200
13C5 PFPeA	99		50 - 200
13C3 PFBS	101		50 - 200
13C3 PFHxS	101		50 - 200

QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: LLCS 810-52777/2-A
Matrix: Water
Analysis Batch: 52920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 52777

Isotope Dilution	LLCS		Limits
	%Recovery	Qualifier	
13C8 PFOS	97		50 - 200
13C2-4:2-FTS	98		50 - 200
13C2-6:2-FTS	100		50 - 200
13C2-8:2-FTS	99		50 - 200

Lab Sample ID: 810-55597-F-7-A LMS
Matrix: Water
Analysis Batch: 52920

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 52777

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS	LMS	Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.78	1.48	J	ng/L		83	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		1.76	1.55	J	ng/L		88	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.79	1.51	J	ng/L		85	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.89	1.64	J	ng/L		87	50 - 150
Perfluorobutanesulfonic acid (PFBS)	ND		1.68	1.56	J	ng/L		93	50 - 150
Perfluorodecanoic acid (PFDA)	ND		1.89	1.72	J	ng/L		91	50 - 150
Perfluorododecanoic acid (PFDoA)	ND		1.89	1.77	J	ng/L		94	50 - 150
Perfluoroheptanoic acid (PFHpA)	ND		1.89	1.76	J	ng/L		93	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	ND		1.72	1.56	J	ng/L		90	50 - 150
Perfluorohexanoic acid (PFHxA)	ND		1.89	1.89	J	ng/L		100	50 - 150
Perfluorononanoic acid (PFNA)	ND		1.89	1.79	J	ng/L		95	50 - 150
Perfluorooctanesulfonic acid (PFOS)	ND		1.75	1.56	J	ng/L		89	50 - 150
Perfluorooctanoic acid (PFOA)	ND		1.89	1.94		ng/L		103	50 - 150
Perfluoroundecanoic acid (PFUnA)	ND		1.89	1.80	J	ng/L		95	50 - 150
Perfluorobutanoic acid (PFBA)	ND		1.89	2.26		ng/L		119	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		1.81	1.95		ng/L		107	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		1.77	1.92		ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		1.80	1.87	J	ng/L		104	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		1.89	2.42		ng/L		128	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND		1.68	1.55	J	ng/L		92	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		1.89	1.61	J	ng/L		85	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		1.89	1.64	J	ng/L		87	50 - 150
Perfluoropentanoic acid (PFPeA)	ND		1.89	1.76	J	ng/L		93	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.80	1.69	J	ng/L		94	50 - 150

QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: 810-55597-F-7-A LMS
Matrix: Water
Analysis Batch: 52920

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 52777

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	ND		1.78	1.55	J	ng/L		87	50 - 150
LMS LMS									
Isotope Dilution	%Recovery	Qualifier	Limits						
13C3 HFPO-DA	59		50 - 200						
13C6 PFDA	62		50 - 200						
13C5 PFHxA	66		50 - 200						
13C4 PFHpA	66		50 - 200						
13C8 PFOA	64		50 - 200						
13C9 PFNA	62		50 - 200						
13C7 PFUnA	64		50 - 200						
13C2 PFDoA	69		50 - 200						
13C4 PFBA	69		50 - 200						
13C5 PFPeA	68		50 - 200						
13C3 PFBS	104		50 - 200						
13C3 PFHxS	104		50 - 200						
13C8 PFOS	98		50 - 200						
13C2-4:2-FTS	99		50 - 200						
13C2-6:2-FTS	105		50 - 200						
13C2-8:2-FTS	104		50 - 200						

Lab Sample ID: 810-55524-C-1-A DU
Matrix: Water
Analysis Batch: 52920

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 52777

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
11-Chloroeicosfluoro-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)	4.0		3.82		ng/L		4	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

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QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: 810-55524-C-1-A DU
Matrix: Water
Analysis Batch: 52920

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 52777

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
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 (PFEEESA)	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	%Recovery	DU Qualifier	DU Limits
13C3 HFPO-DA	81		50 - 200
13C6 PFDA	79		50 - 200
13C5 PFHxA	88		50 - 200
13C4 PFHpA	86		50 - 200
13C8 PFOA	86		50 - 200
13C9 PFNA	83		50 - 200
13C7 PFUnA	76		50 - 200
13C2 PFDoA	77		50 - 200
13C4 PFBA	92		50 - 200
13C5 PFPeA	89		50 - 200
13C3 PFBS	99		50 - 200
13C3 PFHxS	101		50 - 200
13C8 PFOS	91		50 - 200
13C2-4:2-FTS	98		50 - 200
13C2-6:2-FTS	99		50 - 200
13C2-8:2-FTS	94		50 - 200

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

Lab Sample ID: MBL 810-51074/1-A
Matrix: Water
Analysis Batch: 51203

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 51074

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		03/10/23 07:49	03/11/23 05:23	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0	ng/L		03/10/23 07:49	03/11/23 05:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		03/10/23 07:49	03/11/23 05:23	1

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QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: MBL 810-51074/1-A
Matrix: Water
Analysis Batch: 51203

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 51074

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		03/10/23 07:49	03/11/23 05:23	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L		03/10/23 07:49	03/11/23 05:23	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		03/10/23 07:49	03/11/23 05:23	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		03/10/23 07:49	03/11/23 05:23	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		03/10/23 07:49	03/11/23 05:23	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		03/10/23 07:49	03/11/23 05:23	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L		03/10/23 07:49	03/11/23 05:23	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		03/10/23 07:49	03/11/23 05:23	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		03/10/23 07:49	03/11/23 05:23	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		03/10/23 07:49	03/11/23 05:23	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		03/10/23 07:49	03/11/23 05:23	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0	ng/L		03/10/23 07:49	03/11/23 05:23	1
Perfluorotridecanoic acid (PFTTrDA)	ND		2.0	ng/L		03/10/23 07:49	03/11/23 05:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	ng/L		03/10/23 07:49	03/11/23 05:23	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	ng/L		03/10/23 07:49	03/11/23 05:23	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	95		70 - 130	03/10/23 07:49	03/11/23 05:23	1
13C2 PFDA	102		70 - 130	03/10/23 07:49	03/11/23 05:23	1
d5-NEtFOSAA	101		70 - 130	03/10/23 07:49	03/11/23 05:23	1

Lab Sample ID: LCS 810-51074/3-A
Matrix: Water
Analysis Batch: 51203

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51074

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	100	86.8		ng/L		87	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	100	87.5		ng/L		88	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	100	97.2		ng/L		97	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	100	87.7		ng/L		88	70 - 130
Perfluorobutanesulfonic acid (PFBS)	100	80.0		ng/L		80	70 - 130
Perfluorodecanoic acid (PFDA)	100	96.5		ng/L		97	70 - 130
Perfluorododecanoic acid (PFDoA)	100	93.3		ng/L		93	70 - 130
Perfluoroheptanoic acid (PFHpA)	100	99.6		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	100	94.3		ng/L		94	70 - 130
Perfluorohexanoic acid (PFHxA)	100	93.9		ng/L		94	70 - 130
Perfluorononanoic acid (PFNA)	100	96.4		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	100	93.0		ng/L		93	70 - 130

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QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: LCS 810-51074/3-A
Matrix: Water
Analysis Batch: 51203

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51074

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorooctanoic acid (PFOA)	100	98.1		ng/L		98	70 - 130
Perfluoroundecanoic acid (PFUnA)	100	100		ng/L		100	70 - 130
Perfluorotetradecanoic acid (PFTA)	100	88.8		ng/L		89	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	100	90.7		ng/L		91	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	100	94.0		ng/L		94	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	100	90.5		ng/L		91	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
13C2 PFHxA	95		70 - 130
13C2 PFDA	100		70 - 130
d5-NEtFOSAA	94		70 - 130

Lab Sample ID: LLCS 810-51074/2-A
Matrix: Water
Analysis Batch: 51203

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51074

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.77	J	ng/L		89	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.93	J	ng/L		97	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.88	J	ng/L		94	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.92	J	ng/L		96	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.71	J	ng/L		86	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.05		ng/L		103	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.07		ng/L		103	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.14		ng/L		107	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.00		ng/L		100	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.03		ng/L		101	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.21		ng/L		111	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.10		ng/L		105	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.18		ng/L		109	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.16		ng/L		108	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	1.93	J	ng/L		97	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	2.00	2.04		ng/L		102	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.32		ng/L		116	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: LLCS 810-51074/2-A
Matrix: Water
Analysis Batch: 51203

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51074

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.03		ng/L		101	50 - 150
LLCS LLCS							
Surrogate	%Recovery	Qualifier	Limits				
13C2 PFHxA	98		70 - 130				
13C2 PFDA	104		70 - 130				
d5-NEFOSAA	102		70 - 130				

Lab Sample ID: 810-55282-B-2-A MS
Matrix: Water
Analysis Batch: 51203

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 51074

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		92.7	82.5		ng/L		89	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		92.7	87.9		ng/L		95	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		92.7	91.9		ng/L		99	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		92.7	87.5		ng/L		94	70 - 130
Perfluorobutanesulfonic acid (PFBS)	2.9		92.7	88.0		ng/L		92	70 - 130
Perfluorodecanoic acid (PFDA)	ND		92.7	93.8		ng/L		101	70 - 130
Perfluorododecanoic acid (PFDoA)	ND		92.7	88.6		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	ND		92.7	95.6		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	ND		92.7	93.5		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	2.4		92.7	93.3		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	ND		92.7	94.1		ng/L		101	70 - 130
Perfluorooctanesulfonic acid (PFOS)	5.1		92.7	92.8		ng/L		95	70 - 130
Perfluorooctanoic acid (PFOA)	5.6		92.7	98.6		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	ND		92.7	92.2		ng/L		99	70 - 130
Perfluorotetradecanoic acid (PFTA)	ND		92.7	84.6		ng/L		91	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	ND		92.7	85.7		ng/L		92	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEFOSAA)	ND		92.7	87.3		ng/L		94	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		92.7	87.4		ng/L		94	70 - 130
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
13C2 PFHxA	97		70 - 130						
13C2 PFDA	100		70 - 130						
d5-NEFOSAA	94		70 - 130						

QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: 810-54855-B-3-A DU
Matrix: Water
Analysis Batch: 51203

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 51074

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
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)	4.7		4.21		ng/L		11	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)	2.5		2.51		ng/L		1	30
Perfluorohexanoic acid (PFHxA)	ND		ND		ng/L		NC	30
Perfluorononanoic acid (PFNA)	ND		ND		ng/L		NC	30
Perfluorooctanesulfonic acid (PFOS)	3.5		3.57		ng/L		0.5	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 (PFTTrDA)	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	DU	Limits
	%Recovery	Qualifier	
13C2 PFHxA	97		70 - 130
13C2 PFDA	96		70 - 130
d5-NEtFOSAA	96		70 - 130

Lab Sample ID: MBL 810-51334/1-A
Matrix: Water
Analysis Batch: 51406

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 51334

Analyte	MBL	MBL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		03/13/23 06:45	03/13/23 16:32	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0	ng/L		03/13/23 06:45	03/13/23 16:32	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		03/13/23 06:45	03/13/23 16:32	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		03/13/23 06:45	03/13/23 16:32	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L		03/13/23 06:45	03/13/23 16:32	1

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QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: MBL 810-51334/1-A
Matrix: Water
Analysis Batch: 51406

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 51334

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		03/13/23 06:45	03/13/23 16:32	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		03/13/23 06:45	03/13/23 16:32	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		03/13/23 06:45	03/13/23 16:32	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		03/13/23 06:45	03/13/23 16:32	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L		03/13/23 06:45	03/13/23 16:32	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		03/13/23 06:45	03/13/23 16:32	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		03/13/23 06:45	03/13/23 16:32	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		03/13/23 06:45	03/13/23 16:32	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		03/13/23 06:45	03/13/23 16:32	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0	ng/L		03/13/23 06:45	03/13/23 16:32	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0	ng/L		03/13/23 06:45	03/13/23 16:32	1
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	ND		2.0	ng/L		03/13/23 06:45	03/13/23 16:32	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	ng/L		03/13/23 06:45	03/13/23 16:32	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	96		70 - 130	03/13/23 06:45	03/13/23 16:32	1
13C2 PFDA	93		70 - 130	03/13/23 06:45	03/13/23 16:32	1
d5-NETFOSAA	95		70 - 130	03/13/23 06:45	03/13/23 16:32	1

Lab Sample ID: LCS 810-51334/3-A
Matrix: Water
Analysis Batch: 51406

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51334

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	200	175		ng/L		87	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	200	173		ng/L		86	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	200	188		ng/L		94	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	200	171		ng/L		85	70 - 130
Perfluorobutanesulfonic acid (PFBS)	200	167		ng/L		83	70 - 130
Perfluorodecanoic acid (PFDA)	200	181		ng/L		91	70 - 130
Perfluorododecanoic acid (PFDoA)	200	176		ng/L		88	70 - 130
Perfluoroheptanoic acid (PFHpA)	200	186		ng/L		93	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	200	188		ng/L		94	70 - 130
Perfluorohexanoic acid (PFHxA)	200	183		ng/L		92	70 - 130
Perfluorononanoic acid (PFNA)	200	184		ng/L		92	70 - 130
Perfluorooctanesulfonic acid (PFOS)	200	185		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	200	179		ng/L		90	70 - 130
Perfluoroundecanoic acid (PFUnA)	200	181		ng/L		91	70 - 130

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QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: LCS 810-51334/3-A
Matrix: Water
Analysis Batch: 51406

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51334

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotetradecanoic acid (PFTA)	200	171		ng/L		85	70 - 130
Perfluorotridecanoic acid (PFTrDA)	200	174		ng/L		87	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	200	172		ng/L		86	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	200	171		ng/L		86	70 - 130
Surrogate		LCS %Recovery	LCS Qualifier				Limits
13C2 PFHxA		95					70 - 130
13C2 PFDA		95					70 - 130
d5-NEtFOSAA		88					70 - 130

Lab Sample ID: LLCS 810-51334/2-A
Matrix: Water
Analysis Batch: 51406

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51334

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.88	J	ng/L		94	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	2.00	2.01		ng/L		101	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.17		ng/L		108	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.91	J	ng/L		96	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.02		ng/L		101	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.05		ng/L		102	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.01		ng/L		100	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.31		ng/L		116	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.05		ng/L		103	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.17		ng/L		108	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.24		ng/L		112	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.25		ng/L		112	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.09		ng/L		104	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.14		ng/L		107	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.00		ng/L		100	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.03		ng/L		101	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.20		ng/L		110	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.91	J	ng/L		95	50 - 150

QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: LLCS 810-51334/2-A
Matrix: Water
Analysis Batch: 51406

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51334

<i>Surrogate</i>	<i>LLCS LLCS</i>		<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
13C2 PFHxA	103		70 - 130
13C2 PFDA	101		70 - 130
d5-NEtFOSAA	95		70 - 130

Lab Sample ID: 810-55248-B-1-A MS
Matrix: Water
Analysis Batch: 51406

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 51334

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS MS</i>		<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
				<i>Result</i>	<i>Qualifier</i>				
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		96.1	86.6		ng/L		90	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		96.1	87.9		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		96.1	89.8		ng/L		93	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		96.1	86.7		ng/L		90	70 - 130
Perfluorobutanesulfonic acid (PFBS)	ND		96.1	90.6		ng/L		93	70 - 130
Perfluorodecanoic acid (PFDA)	ND		96.1	93.6		ng/L		97	70 - 130
Perfluorododecanoic acid (PFDoA)	ND		96.1	90.2		ng/L		94	70 - 130
Perfluoroheptanoic acid (PFHpA)	2.2		96.1	94.7		ng/L		96	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	ND		96.1	93.6		ng/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	2.7		96.1	96.3		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	ND		96.1	93.8		ng/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	6.5		96.1	98.5		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	11		96.1	99.7		ng/L		92	70 - 130
Perfluoroundecanoic acid (PFUnA)	ND		96.1	92.3		ng/L		96	70 - 130
Perfluorotetradecanoic acid (PFTA)	ND		96.1	79.4		ng/L		83	70 - 130
Perfluorotridecanoic acid (PFTrDA)	ND		96.1	83.1		ng/L		86	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		96.1	80.7		ng/L		84	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		96.1	78.1		ng/L		81	70 - 130

<i>Surrogate</i>	<i>MS MS</i>		<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
13C2 PFHxA	100		70 - 130
13C2 PFDA	101		70 - 130
d5-NEtFOSAA	90		70 - 130

QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: 810-55343-B-3-A DU
Matrix: Water
Analysis Batch: 51406

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 51334

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	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 (PFTTrDA)	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	%Recovery	DU Qualifier	DU Limits
13C2 PFHxA	103		70 - 130
13C2 PFDA	98		70 - 130
d5-NEtFOSAA	91		70 - 130

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

Lab Sample ID: 104445-B1
Matrix: BlankMatrix
Analysis Batch: O-40146

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-40146_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Acenaphthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: 104445-B1
Matrix: BlankMatrix
Analysis Batch: O-40146

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-40146_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthylene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Anthracene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Biphenyl	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Chrysene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Dibenzothiophene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		03/02/23 00:00	03/28/23 19:43	1
Fluoranthene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Fluorene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Naphthalene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Perylene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Phenanthrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Pyrene	ND		0.005	0.001	µg/L		03/02/23 00:00	03/28/23 19:43	1
Surrogate	Blank %Recovery	Blank Qualifier	Limits				Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	84		27 - 133				03/02/23 00:00	03/28/23 19:43	1
(d10-Phenanthrene)	90		43 - 129				03/02/23 00:00	03/28/23 19:43	1
(d12-Chrysene)	100		52 - 144				03/02/23 00:00	03/28/23 19:43	1
(d12-Perylene)	85		36 - 161				03/02/23 00:00	03/28/23 19:43	1
(d8-Naphthalene)	77		25 - 125				03/02/23 00:00	03/28/23 19:43	1

Lab Sample ID: 104445-BS1
Matrix: BlankMatrix
Analysis Batch: O-40146

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40146_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.283		µg/L		57	31 - 128
1-Methylphenanthrene	0.5	0.406		µg/L		81	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.366		µg/L		73	55 - 122
2,6-Dimethylnaphthalene	0.5	0.319		µg/L		64	48 - 120
2-Methylnaphthalene	1.5	0.844		µg/L		56	47 - 130
Acenaphthene	1.5	1.07		µg/L		71	53 - 131
Acenaphthylene	1.5	1.04		µg/L		69	43 - 140
Anthracene	1.5	1.26		µg/L		84	58 - 135
Benz[a]anthracene	1.5	1.35		µg/L		90	55 - 145
Benzo[a]pyrene	1.5	1.26		µg/L		84	51 - 143
Benzo[b]fluoranthene	1.5	1.31		µg/L		87	46 - 165
Benzo[e]pyrene	0.5	0.41		µg/L		82	42 - 152
Benzo[g,h,i]perylene	1.5	1.28		µg/L		85	63 - 133
Benzo[k]fluoranthene	1.5	1.31		µg/L		87	56 - 145

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: 104445-BS1
Matrix: BlankMatrix
Analysis Batch: O-40146

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40146_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biphenyl	0.5	0.317		µg/L		63	56 - 119
Chrysene	1.5	1.41		µg/L		94	56 - 141
Dibenz[a,h]anthracene	1.5	1.29		µg/L		86	55 - 150
Dibenzo[a,l]pyrene	0.5	0.41		µg/L		82	50 - 150
Dibenzothiophene	0.5	0.415		µg/L		83	46 - 126
Disalicylideneprapanediamine	50	46.5		µg/L		93	50 - 150
Fluoranthene	1.5	1.38		µg/L		92	60 - 146
Fluorene	1.5	1.17		µg/L		78	58 - 131
Indeno[1,2,3-cd]pyrene	1.5	1.29		µg/L		86	50 - 151
Naphthalene	1.5	0.728		µg/L		49	41 - 126
Perylene	0.5	0.421		µg/L		84	48 - 141
Phenanthrene	1.5	1.25		µg/L		83	67 - 127
Pyrene	1.5	1.35		µg/L		90	54 - 156

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
(d10-Acenaphthene)	71		27 - 133
(d10-Phenanthrene)	88		43 - 129
(d12-Chrysene)	93		52 - 144
(d12-Perylene)	88		36 - 161
(d8-Naphthalene)	48		25 - 125

Lab Sample ID: 104445-BS2
Matrix: BlankMatrix
Analysis Batch: O-40146

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40146_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	0.5	0.303		µg/L		61	31 - 128	7	30
1-Methylphenanthrene	0.5	0.405		µg/L		81	66 - 127	0	30
2,3,5-Trimethylnaphthalene	0.5	0.368		µg/L		74	55 - 122	1	30
2,6-Dimethylnaphthalene	0.5	0.327		µg/L		65	48 - 120	2	30
2-Methylnaphthalene	1.5	0.915		µg/L		61	47 - 130	9	30
Acenaphthene	1.5	1.08		µg/L		72	53 - 131	1	30
Acenaphthylene	1.5	1.05		µg/L		70	43 - 140	1	30
Anthracene	1.5	1.25		µg/L		83	58 - 135	1	30
Benz[a]anthracene	1.5	1.34		µg/L		89	55 - 145	1	30
Benzo[a]pyrene	1.5	1.25		µg/L		83	51 - 143	1	30
Benzo[b]fluoranthene	1.5	1.32		µg/L		88	46 - 165	1	30
Benzo[e]pyrene	0.5	0.411		µg/L		82	42 - 152	0	30
Benzo[g,h,i]perylene	1.5	1.28		µg/L		85	63 - 133	0	30
Benzo[k]fluoranthene	1.5	1.3		µg/L		87	56 - 145	0	30
Biphenyl	0.5	0.33		µg/L		66	56 - 119	5	30
Chrysene	1.5	1.42		µg/L		95	56 - 141	1	30
Dibenz[a,h]anthracene	1.5	1.28		µg/L		85	55 - 150	1	30
Dibenzo[a,l]pyrene	0.5	0.408		µg/L		82	50 - 150	0	30
Dibenzothiophene	0.5	0.422		µg/L		84	46 - 126	1	30
Disalicylideneprapanediamine	50	47.8		µg/L		96	50 - 150	3	30
Fluoranthene	1.5	1.34		µg/L		89	60 - 146	3	30
Fluorene	1.5	1.17		µg/L		78	58 - 131	0	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: 104445-BS2
Matrix: BlankMatrix
Analysis Batch: O-40146

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40146_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Indeno[1,2,3-cd]pyrene	1.5	1.29		µg/L		86	50 - 151	0	30
Naphthalene	1.5	0.849		µg/L		57	41 - 126	15	30
Perylene	0.5	0.415		µg/L		83	48 - 141	1	30
Phenanthrene	1.5	1.25		µg/L		83	67 - 127	0	30
Pyrene	1.5	1.33		µg/L		89	54 - 156	1	30

Surrogate	LCS DUP %Recovery	LCS DUP Qualifier	Limits
(d10-Acenaphthene)	71		27 - 133
(d10-Phenanthrene)	86		43 - 129
(d12-Chrysene)	91		52 - 144
(d12-Perylene)	87		36 - 161
(d8-Naphthalene)	56		25 - 125

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

Lab Sample ID: 23VGH7C02B
Matrix: WATER
Analysis Batch: 23VGH7C02

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			03/03/23 12:09	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE					03/03/23 12:09	1

Lab Sample ID: 23VGH7C02L
Matrix: WATER
Analysis Batch: 23VGH7C02

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	0.405		mg/L		81	60 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOFLUOROBENZENE	102		70 - 130

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

Lab Sample ID: 23DSC014WB
Matrix: WATER
Analysis Batch: 23DSC014W

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			03/13/23 14:15	1
JP5	ND	U	0.050		mg/L			03/13/23 14:15	1
JP8	ND	U	0.050		mg/L			03/13/23 14:15	1
MOTOR OIL	ND	U	0.050		mg/L			03/13/23 14:15	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-39082-1

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

Lab Sample ID: 23DSC014WB
Matrix: WATER
Analysis Batch: 23DSC014W

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

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
BROMOBENZENE					03/13/23 14:15	1
HEXACOSANE					03/13/23 14:15	1

Lab Sample ID: 23DSC014WL
Matrix: WATER
Analysis Batch: 23DSC014W

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
BROMOBENZENE	75		60 - 130
HEXACOSANE	102		60 - 130

Lab Sample ID: 23J5C014WL
Matrix: WATER
Analysis Batch: 23DSC014W

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
BROMOBENZENE	81		60 - 130
HEXACOSANE	103		60 - 130

Lab Sample ID: 23J8C014WL
Matrix: WATER
Analysis Batch: 23DSC014W

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
BROMOBENZENE	89		60 - 130
HEXACOSANE	95		60 - 130

QC Association Summary

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

Job ID: 380-39082-1

GC/MS Semi VOA

Prep Batch: 50763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-39082-1	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	525.2	
380-39082-2	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	525.2	
380-39082-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	525.2	
380-39082-4	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	
MB 810-50763/21-A	Method Blank	Total/NA	Water	525.2	
LCS 810-50763/24-A	Lab Control Sample	Total/NA	Water	525.2	
LLCS 810-50763/25-A	Lab Control Sample	Total/NA	Water	525.2	
810-55293-F-1-A MS	Matrix Spike	Total/NA	Water	525.2	
810-54989-B-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 50875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-39082-1	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	525.2	50763
380-39082-2	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	525.2	50763
380-39082-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	525.2	50763
380-39082-4	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	50763
MB 810-50763/21-A	Method Blank	Total/NA	Water	525.2	50763
LCS 810-50763/24-A	Lab Control Sample	Total/NA	Water	525.2	50763
LLCS 810-50763/25-A	Lab Control Sample	Total/NA	Water	525.2	50763
810-55293-F-1-A MS	Matrix Spike	Total/NA	Water	525.2	50763
810-54989-B-1-A DU	Duplicate	Total/NA	Water	525.2	50763

LCMS

Prep Batch: 51074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-39082-1	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	537.1 DW	
380-39082-2	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1 DW	
380-39082-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1 DW	
380-39082-4	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1 DW	
MBL 810-51074/1-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 810-51074/3-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LLCS 810-51074/2-A	Lab Control Sample	Total/NA	Water	537.1 DW	
810-55282-B-2-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
810-54855-B-3-A DU	Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 51203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-39082-1	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	537.1	51074
380-39082-2	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1	51074
380-39082-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1	51074
380-39082-4	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1	51074
MBL 810-51074/1-A	Method Blank	Total/NA	Water	537.1	51074
LCS 810-51074/3-A	Lab Control Sample	Total/NA	Water	537.1	51074
LLCS 810-51074/2-A	Lab Control Sample	Total/NA	Water	537.1	51074
810-55282-B-2-A MS	Matrix Spike	Total/NA	Water	537.1	51074
810-54855-B-3-A DU	Duplicate	Total/NA	Water	537.1	51074

Prep Batch: 51334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-39082-11	FB: HALAWA WELLS UNITS 1&2 (331-206-TP06	Total/NA	Water	537.1 DW	

QC Association Summary

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

Job ID: 380-39082-1

LCMS (Continued)

Prep Batch: 51334 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MBL 810-51334/1-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 810-51334/3-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LLCS 810-51334/2-A	Lab Control Sample	Total/NA	Water	537.1 DW	
810-55248-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
810-55343-B-3-A DU	Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 51406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-39082-11	FB: HALAWA WELLS UNITS 1&2 (331-206-TP06	Total/NA	Water	537.1	51334
MBL 810-51334/1-A	Method Blank	Total/NA	Water	537.1	51334
LCS 810-51334/3-A	Lab Control Sample	Total/NA	Water	537.1	51334
LLCS 810-51334/2-A	Lab Control Sample	Total/NA	Water	537.1	51334
810-55248-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	51334
810-55343-B-3-A DU	Duplicate	Total/NA	Water	537.1	51334

Prep Batch: 52656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-39082-1	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	533	
380-39082-11	FB: HALAWA WELLS UNITS 1&2 (331-206-TP06	Total/NA	Water	533	
MBL 810-52656/1-A	Method Blank	Total/NA	Water	533	
LCS 810-52656/3-A	Lab Control Sample	Total/NA	Water	533	
LLCS 810-52656/2-A	Lab Control Sample	Total/NA	Water	533	
810-54963-C-1-A LMS	Matrix Spike	Total/NA	Water	533	
810-54922-C-3-A DU	Duplicate	Total/NA	Water	533	

Prep Batch: 52777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-39082-2	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	533	
380-39082-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	533	
380-39082-4	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	533	
MBL 810-52777/1-A	Method Blank	Total/NA	Water	533	
LCS 810-52777/3-A	Lab Control Sample	Total/NA	Water	533	
LLCS 810-52777/2-A	Lab Control Sample	Total/NA	Water	533	
810-55597-F-7-A LMS	Matrix Spike	Total/NA	Water	533	
810-55524-C-1-A DU	Duplicate	Total/NA	Water	533	

Analysis Batch: 52808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-39082-1	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	533	52656
380-39082-11	FB: HALAWA WELLS UNITS 1&2 (331-206-TP06	Total/NA	Water	533	52656
MBL 810-52656/1-A	Method Blank	Total/NA	Water	533	52656
LCS 810-52656/3-A	Lab Control Sample	Total/NA	Water	533	52656
LLCS 810-52656/2-A	Lab Control Sample	Total/NA	Water	533	52656
810-54963-C-1-A LMS	Matrix Spike	Total/NA	Water	533	52656
810-54922-C-3-A DU	Duplicate	Total/NA	Water	533	52656

Analysis Batch: 52920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-39082-2	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	533	52777
380-39082-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	533	52777
380-39082-4	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	533	52777

Eurofins Eaton Analytical Pomona

QC Association Summary

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

Job ID: 380-39082-1

LCMS (Continued)

Analysis Batch: 52920 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MBL 810-52777/1-A	Method Blank	Total/NA	Water	533	52777
LCS 810-52777/3-A	Lab Control Sample	Total/NA	Water	533	52777
LLCS 810-52777/2-A	Lab Control Sample	Total/NA	Water	533	52777
810-55597-F-7-A LMS	Matrix Spike	Total/NA	Water	533	52777
810-55524-C-1-A DU	Duplicate	Total/NA	Water	533	52777

Subcontract

Analysis Batch: O-40146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-39082-1	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-40146_P
380-39082-2	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-40146_P
380-39082-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-40146_P
380-39082-4	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-40146_P
104445-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40146_P
104445-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40146_P
104445-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40146_P

Analysis Batch: 23DSC014W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-39082-1	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C)	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
380-39082-2	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
380-39082-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
380-39082-4	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
23DSC014WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23DSC014WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J5C014WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J8C014WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	

Analysis Batch: 23VGH7C02

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-39082-1	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	

Euromins Eaton Analytical Pomona

QC Association Summary

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

Job ID: 380-39082-1

Subcontract (Continued)

Analysis Batch: 23VGH7C02 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-39082-2	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-39082-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-39082-4	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-39082-5	TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF)	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
380-39082-6	TB:MOANALUA WELLS (331-223-TP202)	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
380-39082-7	TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
380-39082-8	TB:AIEA GULCH WELLS P2 (331-202-TP072)	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
23VGH7C02B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23VGH7C02L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Prep Batch: O-40146_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-39082-1	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Total/NA	Drinking Water	EPA_625	
380-39082-2	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	EPA_625	
380-39082-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	EPA_625	
380-39082-4	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	EPA_625	
104445-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
104445-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
104445-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

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

Job ID: 380-39082-1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)

Lab Sample ID: 380-39082-1

Date Collected: 02/27/23 10:45

Matrix: Drinking Water

Date Received: 03/01/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			50763	CK	EA SB	03/08/23 09:07
Total/NA	Analysis	525.2		1	50875	JB	EA SB	03/09/23 21:48
Total/NA	Prep	533			52656	NR	EA SB	03/23/23 06:21
Total/NA	Analysis	533		1	52808	CM	EA SB	03/25/23 05:13
Total/NA	Prep	537.1 DW			51074	AD	EA SB	03/10/23 07:49
Total/NA	Analysis	537.1		1	51203	MH	EA SB	03/11/23 08:23
Total/NA	Prep	EPA_625		1	O-40146_P			03/02/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-40146	YC		03/29/23 01:03
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VGH7C02	SCerva		03/03/23 19:00
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSC014W	SDees		03/13/23 17:59

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

Lab Sample ID: 380-39082-2

Date Collected: 02/27/23 09:48

Matrix: Drinking Water

Date Received: 03/01/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			50763	CK	EA SB	03/08/23 09:07
Total/NA	Analysis	525.2		1	50875	JB	EA SB	03/09/23 22:15
Total/NA	Prep	533			52777	NR	EA SB	03/24/23 06:25
Total/NA	Analysis	533		1	52920	CM	EA SB	03/26/23 02:56
Total/NA	Prep	537.1 DW			51074	AD	EA SB	03/10/23 07:49
Total/NA	Analysis	537.1		1	51203	MH	EA SB	03/11/23 08:02
Total/NA	Prep	EPA_625		1	O-40146_P			03/02/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-40146	YC		03/29/23 02:50
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VGH7C02	SCerva		03/03/23 19:37
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSC014W	SDees		03/13/23 18:18

Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)

Lab Sample ID: 380-39082-3

Date Collected: 02/27/23 10:19

Matrix: Drinking Water

Date Received: 03/01/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			50763	CK	EA SB	03/08/23 09:07
Total/NA	Analysis	525.2		1	50875	JB	EA SB	03/09/23 22:41
Total/NA	Prep	533			52777	NR	EA SB	03/24/23 06:25
Total/NA	Analysis	533		1	52920	CM	EA SB	03/26/23 03:09
Total/NA	Prep	537.1 DW			51074	AD	EA SB	03/10/23 07:49
Total/NA	Analysis	537.1		1	51203	MH	EA SB	03/11/23 08:44

Lab Chronicle

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

Job ID: 380-39082-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-39082-3

Date Collected: 02/27/23 10:19

Matrix: Drinking Water

Date Received: 03/01/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	EPA_625		1	O-40146_P			03/02/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-40146	YC		03/29/23 04:36
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VGH7C02	SCerva		03/03/23 20:14
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSC014W	SDees		03/13/23 18:36

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-39082-4

Date Collected: 02/27/23 11:11

Matrix: Drinking Water

Date Received: 03/01/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			50763	CK	EA SB	03/08/23 09:07
Total/NA	Analysis	525.2		1	50875	JB	EA SB	03/09/23 23:08
Total/NA	Prep	533			52777	NR	EA SB	03/24/23 06:25
Total/NA	Analysis	533		1	52920	CM	EA SB	03/26/23 03:23
Total/NA	Prep	537.1 DW			51074	AD	EA SB	03/10/23 07:49
Total/NA	Analysis	537.1		1	51203	MH	EA SB	03/11/23 08:34
Total/NA	Prep	EPA_625		1	O-40146_P			03/02/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-40146	YC		03/29/23 06:23
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VGH7C02	SCerva		03/03/23 20:52
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSC014W	SDees		03/13/23 18:55

**Client Sample ID: TB: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-39082-5

Date Collected: 02/27/23 10:45

Matrix: Water

Date Received: 03/01/23 09:45

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	23VGH7C02	SCerva		03/03/23 21:29

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

Lab Sample ID: 380-39082-6

Date Collected: 02/27/23 09:48

Matrix: Water

Date Received: 03/01/23 09:45

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	23VGH7C02	SCerva		03/03/23 22:06

Lab Chronicle

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

Job ID: 380-39082-1

**Client Sample ID: TB: HALAWA WELLS UNITS 1&2
(331-206-TP065)**

Lab Sample ID: 380-39082-7

Date Collected: 02/27/23 10:19

Matrix: Water

Date Received: 03/01/23 09:45

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	23VGH7C02	SCerva		03/03/23 22:43

Client Sample ID: TB:AIEA GULCH WELLS P2 (331-202-TP072)

Lab Sample ID: 380-39082-8

Date Collected: 02/27/23 11:11

Matrix: Water

Date Received: 03/01/23 09:45

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	23VGH7C02	SCerva		03/03/23 23:20

**Client Sample ID: FB: HALAWA WELLS UNITS 1&2
(331-206-TP065)**

Lab Sample ID: 380-39082-11

Date Collected: 02/27/23 10:19

Matrix: Water

Date Received: 03/01/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			52656	NR	EA SB	03/23/23 06:21
Total/NA	Analysis	533		1	52808	CM	EA SB	03/25/23 08:08
Total/NA	Prep	537.1 DW			51334	AD	EA SB	03/13/23 06:45
Total/NA	Analysis	537.1		1	51406	MH	EA SB	03/13/23 20:45

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: 380-39082-1

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.

Eurofins Eaton Analytical Pomona

Accreditation/Certification Summary

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

Job ID: 380-39082-1

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: 380-39082-1

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: 380-39082-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-39082-1	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Drinking Water	02/27/23 10:45	03/01/23 09:45	HI0000331
380-39082-2	MOANALUA WELLS (331-223-TP202)	Drinking Water	02/27/23 09:48	03/01/23 09:45	HI0000331
380-39082-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Drinking Water	02/27/23 10:19	03/01/23 09:45	HI0000331
380-39082-4	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Drinking Water	02/27/23 11:11	03/01/23 09:45	HI0000331
380-39082-5	TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Water	02/27/23 10:45	03/01/23 09:45	
380-39082-6	TB:MOANALUA WELLS (331-223-TP202)	Water	02/27/23 09:48	03/01/23 09:45	
380-39082-7	TB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	Water	02/27/23 10:19	03/01/23 09:45	
380-39082-8	TB:AIEA GULCH WELLS P2 (331-202-TP072)	Water	02/27/23 11:11	03/01/23 09:45	
380-39082-11	FB: HALAWA WELLS UNITS 1&2 (331-206-TP065)	Water	02/27/23 10:19	03/01/23 09:45	

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

Date: 03-20-2023
EMAX Batch No.: 23C040

Attn: Jackie Contreras

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

Subject: Laboratory Report
Project: 380-39082

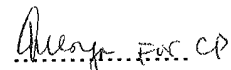
Enclosed is the Laboratory report for samples received on 03/02/23.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-39082-1	C040-01	02/27/23	WATER	TPH GASOLINE TPH
380-39082-2	C040-02	02/27/23	WATER	TPH GASOLINE TPH
380-39082-3	C040-03	02/27/23	WATER	TPH GASOLINE TPH
380-39082-4	C040-04	02/27/23	WATER	TPH GASOLINE TPH
380-39082-5	C040-05	02/27/23	WATER	TPH GASOLINE
380-39082-6	C040-06	02/27/23	WATER	TPH GASOLINE
380-39082-7	C040-07	02/27/23	WATER	TPH GASOLINE
380-39082-8	C040-08	02/27/23	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

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

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

30-30
00-00

Chain of Custody Record



Client Information (Sub Contract Lab)
 Client Contact: Rachelle Arada
 Shipping/Receiving: Rachelle Arada
 Company: EMAX Laboratories Inc
 Address: 3051 Fujita Street, Torrance, CA 90505
 Phone: PO #
 Email: W/O #
 Project #: 38001111
 SSOV#:
 Site: Honolulu BWS Sites

Sampler: Arada, Rachelle
Lab P/N:
E-Mail: Rachelle.Arada@et.eurofins.com
Carrier Tracking Note(s):
State of Origin: Hawaii
Analysis Requested:
Accreditations Required (See note): State - Hawaii
COG No.: 380-40830-1
Page: Page 1 of 1
Job #: 380-39082-1

Sample ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Sewage, Stormwater, etc.)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers	Special Instructions/Note:
1 AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-39082-1)	2/27/23	10:45	Hawaiian	Water	X	SUB (8015 Gas (Purgeable) LL (EAL))/ 8015 Gas (Purgeable) LL (EAL)	6	See Attached Instructions
2 MOANALUA WELLS (331-223-TP202) (380-39082-2)	2/27/23	09:48	Hawaiian	Water	X	SUB (8015 LL DRO/MRO/JP5/JP8)/ 8015 LL DRO/MRO/JP5/JP8	6	See Attached Instructions
3 HALAWA WELLS UNITS 1 & 2 (331-206-TP065) (380-39082-3)	2/27/23	10:19	Hawaiian	Water	X	SUB (8015 LL DRO/MRO)/ 8015 LL DRO/MRO	5	See Attached Instructions
4 AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-39082-4)	2/27/23	11:11	Hawaiian	Water	X		6	See Attached Instructions
5 TB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-39082-5)	2/27/23	10:45	Hawaiian	Water	X		2	See Attached Instructions
6 TB: MOANALUA WELLS (331-223-TP202) (380-39082-6)	2/27/23	09:48	Hawaiian	Water	X		2	See Attached Instructions
7 TB: HALAWA WELLS UNITS 1&2 (331-206-TP065) (380-39082-7)	2/27/23	10:19	Hawaiian	Water	X		2	See Attached Instructions
8 TB: AIEA GULCH WELLS P2 (331-202-TP072) (380-39082-8)	2/27/23	11:11	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 subcontracted 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/parameter 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
 Unclassified
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2
 Special Instructions/QC Requirements:
 Empty Kit Relinquished by:
 Relinquished by: G. PETERER
 Date/Time: 03/10/2023 13:54
 Company: EAT
 Received by: JAHN
 Date/Time: 3/2/23 1:55
 Company: EMAX
 Relinquished by: JAHN
 Date/Time: 3/2/23 16:45
 Company: EMAX
 Received by: JAHN
 Date/Time: 03/10/23 16:45
 Company: EMAX
 Custody Seals Intact: Yes No
 Custody Seal No.:
 Cooler Temperature(s) °C and Other Remarks:
 Temp - 0 50/45 @ 5.0/4.8 (CF=-0.2)



REFERENCE: EMAX-SM02 Rev. 12
SAMPLE RECEIPT FORM 1

Type of Delivery <input type="checkbox"/> Fedex <input type="checkbox"/> UPS <input type="checkbox"/> GSO <input type="checkbox"/> Others <input checked="" type="checkbox"/> EMAX Courier <input checked="" type="checkbox"/> Client Delivery	Airbill / Tracking Number	ECN <u>23C040</u> Recipient <u>Jocelyne Solis-Ramos</u> Date <u>03/02/23</u> Time <u>16:45</u>
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COC INSPECTION

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

Note: _____

PACKAGING INSPECTION

Container	<input checked="" type="checkbox"/> Cooler	<input type="checkbox"/> Box	<input type="checkbox"/> Other
Condition <u>correction</u>	<input type="checkbox"/> Custody Seal	<input type="checkbox"/> Intact	<input type="checkbox"/> Damaged
Packaging <u>factor: -0.2</u>	<input checked="" type="checkbox"/> Bubble Pack	<input type="checkbox"/> Styrofoam	<input type="checkbox"/> Popcorn
Temperatures (Cool, ≤6 °C but not frozen)	<input checked="" type="checkbox"/> Cooler 1 <u>5.0/4.8</u> °C	<input checked="" type="checkbox"/> Cooler 2 <u>5.0/4.8</u> °C	<input type="checkbox"/> Cooler 3 _____ °C
Thermometer: <u>A - S/N 221052768</u>	<input type="checkbox"/> Cooler 6 _____ °C	<input type="checkbox"/> Cooler 7 _____ °C	<input type="checkbox"/> Cooler 4 _____ °C
	<input type="checkbox"/> Cooler 8 _____ °C	<input type="checkbox"/> Cooler 9 _____ °C	<input type="checkbox"/> Cooler 5 _____ °C
		<input type="checkbox"/> Cooler 10 _____ °C	<input type="checkbox"/> Cooler 6 _____ °C

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

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1-4	5,6,11,12,17,18,23,24	D2	JPS/JPB not indicated on label	R8, R1
3		D11	received 6 containers	R8
5-7	25-30	D14		R4
5,6	25-28	D7	two dates on label - 0/22/22 & 2/27/23	R1
7	29,30	D7	two dates on label - 0/5/22 & 2/27/23	↓
8	31,32	D7	two dates on label - 12/29/22 & 2/27/23	

pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time. 105 3/3/23

NOTES/OBSERVATIONS: out of HT it collected 0/22/22 / 0/5/22 / 12/27/22 / 12/29/22.

SAMPLE MATRIX IS DRINKING WATER? YES NO

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

REVIEWS:

Sample Labeling <u>Jocelyne Solis-Ramos</u>	SRF <u>[Signature]</u>	PM <u>NS</u>
Date <u>03/02/23</u>	Date <u>3/3/23</u>	Date <u>3/3/23</u>

REPORTING CONVENTIONS

DATA QUALIFIERS:

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

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

ACRONYMS AND ABBREVIATIONS:

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

DATES

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-39082

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

SDG#: 23C040

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CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-39082

SDG : 23C040

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

A total of eight(8) water samples were received on 03/02/23 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. VGH7C02B - 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. VGH7C02L/VGH7C02C 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 C039-01M/C039-01S. 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.

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SAMPLE RESULTS

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

```

Client      : EUROFINS EATON ANALYTICAL   Date Collected: 02/27/23 10:45
Project    : 380-39082                   Date Received: 03/02/23
Batch No.  : 23C040                       Date Extracted: 03/03/23 19:00
Sample ID  : 380-39082-1                 Date Analyzed: 03/03/23 19:00
Lab Samp ID: C040-01                     Dilution Factor: 1
Lab File ID: AC03016A                     Matrix: WATER
Ext Btch ID: 23VGH7C02                   % Moisture: NA
Calib. Ref.: AC03013A                   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	0.0375	0.0400	94	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: 02/27/23 09:48
Project : 380-39082	Date Received: 03/02/23
Batch No. : 23C040	Date Extracted: 03/03/23 19:37
Sample ID : 380-39082-2	Date Analyzed: 03/03/23 19:37
Lab Samp ID: C040-02	Dilution Factor: 1
Lab File ID: AC03017A	Matrix: WATER
Ext Btch ID: 23VGH7C02	% Moisture: NA
Calib. Ref.: AC03013A	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	0.0348	0.0400	87	60-140

Notes:

Parameter H-C Range
Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

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

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

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/27/23 10:19
Project	: 380-39082	Date Received:	03/02/23
Batch No.	: 23C040	Date Extracted:	03/03/23 20:14
Sample ID	: 380-39082-3	Date Analyzed:	03/03/23 20:14
Lab Samp ID:	C040-03	Dilution Factor:	1
Lab File ID:	AC03018A	Matrix:	WATER
Ext Btch ID:	23VGH7C02	% Moisture:	NA
Calib. Ref.:	AC03013A	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	0.0369	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: 02/27/23 11:11
Project : 380-39082	Date Received: 03/02/23
Batch No. : 23C040	Date Extracted: 03/03/23 20:52
Sample ID : 380-39082-4	Date Analyzed: 03/03/23 20:52
Lab Samp ID: C040-04	Dilution Factor: 1
Lab File ID: AC03019A	Matrix: WATER
Ext Btch ID: 23VGH7C02	% Moisture: NA
Calib. Ref.: AC03013A	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	0.0357	0.0400	89	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:	02/27/23 09:48
Project	: 380-39082	Date Received:	03/02/23
Batch No.	: 23C040	Date Extracted:	03/03/23 22:06
Sample ID	: 380-39082-6	Date Analyzed:	03/03/23 22:06
Lab Samp ID:	C040-06	Dilution Factor:	1
Lab File ID:	AC03021A	Matrix:	WATER
Ext Btch ID:	23VGH7C02	% Moisture:	NA
Calib. Ref.:	AC03013A	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	0.0353	0.0400	88	60-140

Notes:

Parameter H-C Range
Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

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

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

Client : EUROFINS EATON ANALYTICAL	Date Collected: 02/27/23 10:19
Project : 380-39082	Date Received: 03/02/23
Batch No. : 23C040	Date Extracted: 03/03/23 22:43
Sample ID : 380-39082-7	Date Analyzed: 03/03/23 22:43
Lab Samp ID: C040-07	Dilution Factor: 1
Lab File ID: AC03022A	Matrix: WATER
Ext Btch ID: 23VGH7C02	% Moisture: NA
Calib. Ref.: AC03013A	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	0.0332	0.0400	83	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:	02/27/23 11:11
Project	: 380-39082	Date Received:	03/02/23
Batch No.	: 23C040	Date Extracted:	03/03/23 23:20
Sample ID	: 380-39082-8	Date Analyzed:	03/03/23 23:20
Lab Samp ID:	C040-08	Dilution Factor:	1
Lab File ID:	AC03023A	Matrix:	WATER
Ext Btch ID:	23VGH7C02	% Moisture:	NA
Calib. Ref.:	AC03013A	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	0.0348	0.0400	87	60-140

Notes:

Parameter H-C Range
Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

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

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QC SUMMARIES

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

Client : EUROFINS EATON ANALYTICAL	Date Collected: 03/03/23 12:09
Project : 380-39082	Date Received: 03/03/23
Batch No. : 23C040	Date Extracted: 03/03/23 12:09
Sample ID : MBLK1W	Date Analyzed: 03/03/23 12:09
Lab Samp ID: VGH7C02B	Dilution Factor: 1
Lab File ID: AC03005A	Matrix: WATER
Ext Btch ID: 23VGH7C02	% Moisture: NA
Calib. Ref.: AC03003A	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	0.0322	0.0400	81	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 : 380-39082
BATCH NO. : 23C040
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: VGH7C02B	VGH7C02L	VGH7C02C
LAB FILE ID	: AC03005A	AC03006A	AC03007A
DATE PREPARED	: 03/03/23 12:09	03/03/23 12:46	03/03/23 13:24
DATE ANALYZED	: 03/03/23 12:09	03/03/23 12:46	03/03/23 13:24
PREP BATCH	: 23VGH7C02	23VGH7C02	23VGH7C02
CALIBRATION REF:	AC03003A	AC03003A	AC03003A

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	0.405	81	0.500	0.411	82	1	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0406	102	0.0400	0.0411	103	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 : 380-39031
BATCH NO. : 23C039
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-39031-1	380-39031-1MS	380-39031-1MSD
LAB SAMPLE ID	: C039-01	C039-01M	C039-01S
LAB FILE ID	: AC03008A	AC03009A	AC03010A
DATE PREPARED	: 03/03/23 14:01	03/03/23 14:38	03/03/23 15:16
DATE ANALYZED	: 03/03/23 14:01	03/03/23 14:38	03/03/23 15:16
PREP BATCH	: 23VGH7C02	23VGH7C02	23VGH7C02
CALIBRATION REF:	AC03003A	AC03003A	AC03003A

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	0.445	89	0.500	0.410	82	8	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0445	111	0.0400	0.0416	104	60-140

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-39082

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 23C040



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-39082

SDG : 23C040

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

A total of four(4) water samples were received on 03/02/23 to be analyzed for Total Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

Samples were analyzed within the prescribed holding time.

Calibration

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

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSC014WB - 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. DSC014WL/DSC014WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Diesel was within MS QC limits in 23C039-01M/23C039-01S. Refer to Matrix QC summary form for details.

Surrogate

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

Sample Analysis

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

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-39082

SDG : 23C040

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

A total of four(4) water samples were received on 03/02/23 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

Samples were analyzed within the prescribed holding time.

Calibration

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

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSC014WB - 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. J5C014WL/J5C014WC 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. JP5 was within MS QC limits in 23C039-01M/23C039-01S. Refer to Matrix QC summary form for details.

Surrogate

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

Sample Analysis

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

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-39082

SDG : 23C040

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

A total of four(4) water samples were received on 03/02/23 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

Samples were analyzed within the prescribed holding time.

Calibration

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

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSC014WB - 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. J8C014WL/J8C014WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

No matrix QC sample was provided on this SDG.

Surrogate

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

Sample Analysis

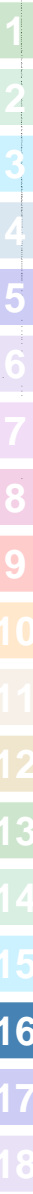
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
 Project : 380-39082
 Laboratory Sample ID : DSC014MB
 SDG NO. : 23C040
 Instrument ID : D5

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
				WATER					
MBLK1W	DSC014MB	1	NA	03/13/2314:15	03/09/2312:30	LC13010A	LC13005A	23DSC014W	Method Blank
LCS1W	J5C014WL	1	NA	03/13/2315:11	03/09/2312:30	LC13013A	LC13005A	23DSC014W	Lab Control Sample (LCS)
LCD1W	J5C014WC	1	NA	03/13/2315:30	03/09/2312:30	LC13014A	LC13005A	23DSC014W	LCS Duplicate
380-39082-1	C040-01	1	NA	03/13/2317:59	03/09/2312:30	LC13022A	LC13005A	23DSC014W	Field Sample
380-39082-2	C040-02	1	NA	03/13/2318:18	03/09/2312:30	LC13023A	LC13005A	23DSC014W	Field Sample
380-39082-3	C040-03	1	NA	03/13/2318:36	03/09/2312:30	LC13024A	LC13005A	23DSC014W	Field Sample
380-39082-4	C040-04	1	NA	03/13/2318:55	03/09/2312:30	LC13025A	LC13005A	23DSC014W	Field Sample

FN - Filename
 % Moist - Percent Moisture



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SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/27/23 10:45
Project	: 380-39082	Date Received:	03/02/23
Batch No.	: 23C040	Date Extracted:	03/09/23 12:30
Sample ID	: 380-39082-1	Date Analyzed:	03/13/23 17:59
Lab Samp ID:	23C040-01	Dilution Factor:	1
Lab File ID:	LC13022A	Matrix:	WATER
Ext Btch ID:	23DSC014W	% Moisture:	NA
Calib. Ref.:	LC13004A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.026	0.013
Motor Oil	ND	0.052	0.026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.386	0.525	73	60-130
Hexacosane	0.132	0.131	101	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 : 950ml Final Volume : 5ml
Prepared by : RGalan Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/27/23 10:45
Project	: 380-39082	Date Received:	03/02/23
Batch No.	: 23C040	Date Extracted:	03/09/23 12:30
Sample ID	: 380-39082-1	Date Analyzed:	03/13/23 17:59
Lab Samp ID:	23C040-01	Dilution Factor:	1
Lab File ID:	LC13022A	Matrix:	WATER
Ext Btch ID:	23DSC014W	% Moisture:	NA
Calib. Ref.:	LC13005A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.052	0.026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.386	0.525	73	60-130
Hexacosane	0.132	0.131	101	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP5 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 950ml

Final Volume : 5ml

Prepared by : RGalan

Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/27/23 10:45
Project	: 380-39082	Date Received:	03/02/23
Batch No.	: 23C040	Date Extracted:	03/09/23 12:30
Sample ID	: 380-39082-1	Date Analyzed:	03/13/23 17:59
Lab Samp ID:	23C040-01	Dilution Factor:	1
Lab File ID:	LC13022A	Matrix:	WATER
Ext Btch ID:	23DSC014W	% Moisture:	NA
Calib. Ref.:	LC13006A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.052	0.026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.386	0.525	73	60-130
Hexacosane	0.132	0.131	101	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP8 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 950ml

Final Volume : 5ml

Prepared by : RGalan

Analyzed by : SDeeso

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/27/23 09:48
Project	: 380-39082	Date Received:	03/02/23
Batch No.	: 23C040	Date Extracted:	03/09/23 12:30
Sample ID	: 380-39082-2	Date Analyzed:	03/13/23 18:18
Lab Samp ID:	23C040-02	Dilution Factor:	1
Lab File ID:	LC13023A	Matrix:	WATER
Ext Btch ID:	23DSC014W	% Moisture:	NA
Calib. Ref.:	LC13004A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.029	0.015
Motor Oil	ND	0.058	0.029

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.476	0.580	82	60-130
Hexacosane	0.164	0.145	113	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 : 860ml Final Volume : 5ml
Prepared by : RGalan Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/27/23 09:48
Project	: 380-39082	Date Received:	03/02/23
Batch No.	: 23C040	Date Extracted:	03/09/23 12:30
Sample ID	: 380-39082-2	Date Analyzed:	03/13/23 18:18
Lab Samp ID:	23C040-02	Dilution Factor:	1
Lab File ID:	LC13023A	Matrix:	WATER
Ext Btch ID:	23DSC014W	% Moisture:	NA
Calib. Ref.:	LC13005A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.058	0.029

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.476	0.580	82	60-130
Hexacosane	0.164	0.145	113	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP5 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 860ml

Final Volume : 5ml

Prepared by : RGalan

Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/27/23 09:48
Project	: 380-39082	Date Received:	03/02/23
Batch No.	: 23C040	Date Extracted:	03/09/23 12:30
Sample ID	: 380-39082-2	Date Analyzed:	03/13/23 18:18
Lab Samp ID:	23C040-02	Dilution Factor:	1
Lab File ID:	LC13023A	Matrix:	WATER
Ext Btch ID:	23DSC014W	% Moisture:	NA
Calib. Ref.:	LC13006A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.058	0.029

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.476	0.580	82	60-130
Hexacosane	0.164	0.145	113	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP8 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 860ml

Final Volume : 5ml

Prepared by : RGalan

Analyzed by : SDeeso

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 02/27/23 10:19
Project : 380-39082	Date Received: 03/02/23
Batch No. : 23C040	Date Extracted: 03/09/23 12:30
Sample ID : 380-39082-3	Date Analyzed: 03/13/23 18:36
Lab Samp ID: 23C040-03	Dilution Factor: 1
Lab File ID: LC13024A	Matrix: WATER
Ext Btch ID: 23DSC014W	% Moisture: NA
Calib. Ref.: LC13004A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.026	0.013
Motor Oil	ND	0.052	0.026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.376	0.520	72	60-130
Hexacosane	0.142	0.130	110	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 : 960ml	Final Volume : 5ml
Prepared by : RGalan	Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/27/23 10:19
Project	: 380-39082	Date Received:	03/02/23
Batch No.	: 23C040	Date Extracted:	03/09/23 12:30
Sample ID	: 380-39082-3	Date Analyzed:	03/13/23 18:36
Lab Samp ID:	23C040-03	Dilution Factor:	1
Lab File ID:	LC13024A	Matrix:	WATER
Ext Btch ID:	23DSC014W	% Moisture:	NA
Calib. Ref.:	LC13005A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.052	0.026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.376	0.520	72	60-130
Hexacosane	0.142	0.130	110	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP5 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 960ml

Final Volume : 5ml

Prepared by : RGalan

Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/27/23 10:19
Project	: 380-39082	Date Received:	03/02/23
Batch No.	: 23C040	Date Extracted:	03/09/23 12:30
Sample ID	: 380-39082-3	Date Analyzed:	03/13/23 18:36
Lab Samp ID:	23C040-03	Dilution Factor:	1
Lab File ID:	LC13024A	Matrix:	WATER
Ext Btch ID:	23DSC014W	% Moisture:	NA
Calib. Ref.:	LC13006A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.052	0.026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.376	0.520	72	60-130
Hexacosane	0.142	0.130	110	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP8 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 960ml

Final Volume : 5ml

Prepared by : RGalán

Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/27/23 11:11
Project	: 380-39082	Date Received:	03/02/23
Batch No.	: 23C040	Date Extracted:	03/09/23 12:30
Sample ID	: 380-39082-4	Date Analyzed:	03/13/23 18:55
Lab Samp ID:	23C040-04	Dilution Factor:	1
Lab File ID:	LC13025A	Matrix:	WATER
Ext Btch ID:	23DSC014W	% Moisture:	NA
Calib. Ref.:	LC13005A	Instrument ID:	D5

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

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.438	0.560	78	60-130
Hexacosane	0.143	0.140	102	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP5 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 890ml

Final Volume : 5ml

Prepared by : RGalan

Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/27/23 11:11
Project	: 380-39082	Date Received:	03/02/23
Batch No.	: 23C040	Date Extracted:	03/09/23 12:30
Sample ID	: 380-39082-4	Date Analyzed:	03/13/23 18:55
Lab Samp ID:	23C040-04	Dilution Factor:	1
Lab File ID:	LC13025A	Matrix:	WATER
Ext Btch ID:	23DSC014W	% Moisture:	NA
Calib. Ref.:	LC13006A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.056	0.028

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.438	0.560	78	60-130
Hexacosane	0.143	0.140	102	60-130

Notes:

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

Detection limits are reported relative to sample result significant figures.
 Sample Amount : 890ml Final Volume : 5ml
 Prepared by : RGalan Analyzed by : SDeeso

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QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	03/09/23 12:30
Project	: 380-39082	Date Received:	03/09/23
Batch No.	: 23C040	Date Extracted:	03/09/23 12:30
Sample ID	: MBLK1W	Date Analyzed:	03/13/23 14:15
Lab Samp ID:	DSC014WB	Dilution Factor:	1
Lab File ID:	LC13010A	Matrix:	WATER
Ext Btch ID:	23DSC014W	% Moisture:	NA
Calib. Ref.:	LC13004A	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	0.373	0.500	75	60-130
Hexacosane	0.118	0.125	94	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 : RGalan Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-39082
BATCH NO. : 23C040
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSC014WB	DSC014WL	DSC014WC
LAB FILE ID	: LC13010A	LC13011A	LC13012A
DATE PREPARED	: 03/09/23 12:30	03/09/23 12:30	03/09/23 12:30
DATE ANALYZED	: 03/13/23 14:15	03/13/23 14:34	03/13/23 14:53
PREP BATCH	: 23DSC014W	23DSC014W	23DSC014W
CALIBRATION REF:	LC13004A	LC13004A	LC13004A

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	2.31	92	2.50	2.26	90	2	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.375	75	0.500	0.378	76	60-130
Hexacosane	0.125	0.127	102	0.125	0.124	99	60-130

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

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	03/09/23 12:30
Project	: 380-39082	Date Received:	03/09/23
Batch No.	: 23C040	Date Extracted:	03/09/23 12:30
Sample ID	: MBLK1W	Date Analyzed:	03/13/23 14:15
Lab Samp ID:	DSC014WB	Dilution Factor:	1
Lab File ID:	LC13010A	Matrix:	WATER
Ext Btch ID:	23DSC014W	% Moisture:	NA
Calib. Ref.:	LC13005A	Instrument ID:	D5

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

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.373	0.500	75	60-130
Hexacosane	0.118	0.125	94	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP5 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1000ml

Final Volume : 5ml

Prepared by : RGalan

Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-39082
BATCH NO. : 23C040
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSC014WB	J5C014WL	J5C014WC
LAB FILE ID	: LC13010A	LC13013A	LC13014A
DATE PREPARED	: 03/09/23 12:30	03/09/23 12:30	03/09/23 12:30
DATE ANALYZED	: 03/13/23 14:15	03/13/23 15:11	03/13/23 15:30
PREP BATCH	: 23DSC014W	23DSC014W	23DSC014W
CALIBRATION REF:	LC13005A	LC13005A	LC13005A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP5	ND	2.50	1.80	72	2.50	2.17	87	19	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.405	81	0.500	0.424	85	60-130
Hexacosane	0.125	0.129	103	0.125	0.130	104	60-130

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

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	03/09/23 12:30
Project	: 380-39082	Date Received:	03/09/23
Batch No.	: 23C040	Date Extracted:	03/09/23 12:30
Sample ID	: MBLK1W	Date Analyzed:	03/13/23 14:15
Lab Samp ID:	DSC014WB	Dilution Factor:	1
Lab File ID:	LC13010A	Matrix:	WATER
Ext Btch ID:	23DSC014W	% Moisture:	NA
Calib. Ref.:	LC13006A	Instrument ID:	D5

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

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.373	0.500	75	60-130
Hexacosane	0.118	0.125	94	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP8 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1000ml

Final Volume : 5ml

Prepared by : RGalan

Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-39082
BATCH NO. : 23C040
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSC014WB	J8C014WL	J8C014WC
LAB FILE ID	: LC13010A	LC13015A	LC13016A
DATE PREPARED	: 03/09/23 12:30	03/09/23 12:30	03/09/23 12:30
DATE ANALYZED	: 03/13/23 14:15	03/13/23 15:49	03/13/23 16:07
PREP BATCH	: 23DSC014W	23DSC014W	23DSC014W
CALIBRATION REF:	LC13006A	LC13006A	LC13006A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP8	ND	2.50	2.42	97	2.50	2.08	83	15	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.445	89	0.500	0.443	89	60-130
Hexacosane	0.125	0.119	95	0.125	0.124	99	60-130

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

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-39031
BATCH NO. : 23C039
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-39031-1	380-39031-1MS	380-39031-1MSD
LAB SAMPLE ID	: 23C039-01	23C039-01M	23C039-01S
LAB FILE ID	: LC13017A	LC13018A	LC13019A
DATE PREPARED	: 03/09/23 12:30	03/09/23 12:30	03/09/23 12:30
DATE ANALYZED	: 03/13/23 16:26	03/13/23 16:44	03/13/23 17:03
PREP BATCH	: 23DSC014W	23DSC014W	23DSC014W
CALIBRATION REF:	LC13004A	LC13004A	LC13004A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.80	2.61	93	2.78	2.76	99	6	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.560	0.422	75	0.555	0.432	78	60-130
Hexacosane	0.140	0.143	102	0.139	0.153	110	60-130

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

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-39031
BATCH NO. : 23C039
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-39031-1	380-39031-1MS	380-39031-1MSD
LAB SAMPLE ID	: 23C039-01	23C039-01M	23C039-01S
LAB FILE ID	: LC13017A	LC13020A	LC13021A
DATE PREPARED	: 03/09/23 12:30	03/09/23 12:30	03/09/23 12:30
DATE ANALYZED	: 03/13/23 16:26	03/13/23 17:22	03/13/23 17:40
PREP BATCH	: 23DSC014W	23DSC014W	23DSC014W
CALIBRATION REF:	LC13005A	LC13005A	LC13005A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP5	ND	2.72	1.94	71	2.70	1.72	64	12	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.545	0.437	80	0.540	0.387	72	60-130
Hexacosane	0.136	0.143	105	0.135	0.126	93	60-130

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

March 29, 2023

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

Project Name: RED-HILL Project # 38001111 Job # 380-39082-1
 Physis Project ID: 1407003-381

Dear Rachelle,

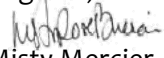
Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 3/2/2023. A total of 4 samples were received for analysis in accordance with the attached chain of custody (COC). Per the COC, the samples were analyzed for:

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

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

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

Regards,


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

PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-381

RED-HILL Project # 38001111 Job # 380-39082-1

Total Samples: 4

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
104446	AIEA WELLS PUMPS 1&2 (2603)	31-203-TP400 (380-39082-1)	2/27/2023	10:45	Samplewater	Not Specified
104447	MOANALUA WELLS	331-223-TP202 (380-39082-2)	2/27/2023	9:48	Samplewater	Not Specified
104448	HALAWA WELLS UNITS 1&2	331-206-TP065 (380-39082-3)	2/27/2023	10:19	Samplewater	Not Specified
104449	AIEA GULCH WELLS PUMP	331-202-TP072 (380-39082-4)	2/27/2023	11:11	Samplewater	Not Specified

ABBREVIATIONS and ACRONYMS

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

QUALITY ASSURANCE SUMMARY

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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PHYSIS QUALIFIER CODES

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

CASE NARRATIVE

QUALIFIER NOTES

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

ND

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

ANALYTICAL REPORT

TERRA AURA ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

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Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 104446-R1 AIEA WELLS PUMPS 1&2 (260) 331- Matrix: Samplewater											
Disalicylideneprapanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40146	02-Mar-23	29-Mar-23
Sample ID: 104447-R1 MOANALUA WELLS 331-223-TP202 Matrix: Samplewater											
Disalicylideneprapanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40146	02-Mar-23	29-Mar-23
Sample ID: 104448-R1 HALAWA WELLS UNITS 1&2 331-20 Matrix: Samplewater											
Disalicylideneprapanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40146	02-Mar-23	29-Mar-23
Sample ID: 104449-R1 AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater											
Disalicylideneprapanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40146	02-Mar-23	29-Mar-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed	
Sample ID: 104446-R1	AIEA WELLS PUMPS 1&2 (260) 331- Matrix: Samplewater						Sampled: 27-Feb-23 10:45	Received: 02-Mar-23				
(d10-Acenaphthene)	EPA 625.1	% Recovery	80	1			Total		O-40146	02-Mar-23	29-Mar-23	
(d10-Phenanthrene)	EPA 625.1	% Recovery	87	1			Total		O-40146	02-Mar-23	29-Mar-23	
(d12-Chrysene)	EPA 625.1	% Recovery	98	1			Total		O-40146	02-Mar-23	29-Mar-23	
(d12-Perylene)	EPA 625.1	% Recovery	82	1			Total		O-40146	02-Mar-23	29-Mar-23	
(d8-Naphthalene)	EPA 625.1	% Recovery	73	1			Total		O-40146	02-Mar-23	29-Mar-23	
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 104447-R1 MOANALUA WELLS 331-223-TP202 Matrix: Samplewater							Sampled: 27-Feb-23 9:48		Received: 02-Mar-23		
(d10-Acenaphthene)	EPA 625.1	% Recovery	87	1			Total		O-40146	02-Mar-23	29-Mar-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	90	1			Total		O-40146	02-Mar-23	29-Mar-23
(d12-Chrysene)	EPA 625.1	% Recovery	103	1			Total		O-40146	02-Mar-23	29-Mar-23
(d12-Perylene)	EPA 625.1	% Recovery	82	1			Total		O-40146	02-Mar-23	29-Mar-23
(d8-Naphthalene)	EPA 625.1	% Recovery	78	1			Total		O-40146	02-Mar-23	29-Mar-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 104448-R1	HALAWA WELLS UNITS 1&2 331-20 Matrix: Samplewater						Sampled: 27-Feb-23 10:19		Received: 02-Mar-23		
(d10-Acenaphthene)	EPA 625.1	% Recovery	80	1			Total		O-40146	02-Mar-23	29-Mar-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	85	1			Total		O-40146	02-Mar-23	29-Mar-23
(d12-Chrysene)	EPA 625.1	% Recovery	97	1			Total		O-40146	02-Mar-23	29-Mar-23
(d12-Perylene)	EPA 625.1	% Recovery	79	1			Total		O-40146	02-Mar-23	29-Mar-23
(d8-Naphthalene)	EPA 625.1	% Recovery	70	1			Total		O-40146	02-Mar-23	29-Mar-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed	
Sample ID: 104449-R1	AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater						Sampled:	27-Feb-23	11:11	Received:	02-Mar-23	
(d10-Acenaphthene)	EPA 625.1	% Recovery	86	1			Total		O-40146	02-Mar-23	29-Mar-23	
(d10-Phenanthrene)	EPA 625.1	% Recovery	89	1			Total		O-40146	02-Mar-23	29-Mar-23	
(d12-Chrysene)	EPA 625.1	% Recovery	102	1			Total		O-40146	02-Mar-23	29-Mar-23	
(d12-Perylene)	EPA 625.1	% Recovery	84	1			Total		O-40146	02-Mar-23	29-Mar-23	
(d8-Naphthalene)	EPA 625.1	% Recovery	76	1			Total		O-40146	02-Mar-23	29-Mar-23	
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23	

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40146	02-Mar-23	29-Mar-23



QUALITY CONTROL REPORT

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

Innovative Solutions for Nature

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Base/Neutral Extractable Compounds

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE		SOURCE		ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS			
Sample ID: 104445-B1		QAQC Procedural Blank				Matrix: BlankMatrix		Sampled:		Received:					
		Method: EPA 625.1				Batch ID: O-40146		Prepared: 02-Mar-23		Analyzed: 28-Mar-23					
Disalicylidenepropanediamin	Total	ND	1	0.05	0.1	µg/L									
Sample ID: 104445-BS1		QAQC Procedural Blank				Matrix: BlankMatrix		Sampled:		Received:					
		Method: EPA 625.1				Batch ID: O-40146		Prepared: 02-Mar-23		Analyzed: 28-Mar-23					
Disalicylidenepropanediamin	Total	46.5	1	0.05	0.1	µg/L	50	0	93	50 - 150%	PASS				
Sample ID: 104445-BS2		QAQC Procedural Blank				Matrix: BlankMatrix		Sampled:		Received:					
		Method: EPA 625.1				Batch ID: O-40146		Prepared: 02-Mar-23		Analyzed: 28-Mar-23					
Disalicylidenepropanediamin	Total	47.8	1	0.05	0.1	µg/L	50	0	96	50 - 150%	PASS	3	30	PASS	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODE
							LEVEL	RESULT	% LIMITS	% LIMITS	
Sample ID: 104445-B1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:		
		Method: EPA 625.1			Batch ID: O-40146		Prepared: 02-Mar-23		Analyzed: 28-Mar-23		
(d10-Acenaphthene)	Total	84	1			% Recovery	100	84	27 - 133%	PASS	
(d10-Phenanthrene)	Total	90	1			% Recovery	100	90	43 - 129%	PASS	
(d12-Chrysene)	Total	100	1			% Recovery	100	100	52 - 144%	PASS	
(d12-Perylene)	Total	85	1			% Recovery	100	85	36 - 161%	PASS	
(d8-Naphthalene)	Total	77	1			% Recovery	100	77	25 - 125%	PASS	
1-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
1-Methylphenanthrene	Total	ND	1	0.001	0.005	µg/L					
2,3,5-Trimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
2,6-Dimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
2-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
Acenaphthene	Total	ND	1	0.001	0.005	µg/L					
Acenaphthylene	Total	ND	1	0.001	0.005	µg/L					
Anthracene	Total	ND	1	0.001	0.005	µg/L					
Benz[a]anthracene	Total	ND	1	0.001	0.005	µg/L					
Benzo[a]pyrene	Total	ND	1	0.001	0.005	µg/L					
Benzo[b]fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Benzo[e]pyrene	Total	ND	1	0.001	0.005	µg/L					
Benzo[g,h,i]perylene	Total	ND	1	0.001	0.005	µg/L					
Benzo[k]fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Biphenyl	Total	ND	1	0.001	0.005	µg/L					
Chrysene	Total	ND	1	0.001	0.005	µg/L					
Dibenz[a,h]anthracene	Total	ND	1	0.001	0.005	µg/L					
Dibenzo[a,l]pyrene	Total	ND	1	0.001	0.005	µg/L					
Dibenzothiophene	Total	ND	1	0.001	0.005	µg/L					

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

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



Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODEc	
							LEVEL	RESULT	%	LIMITS	%	LIMITS
Sample ID: 104445-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-40146			Prepared: 02-Mar-23		Analyzed: 28-Mar-23					
(d10-Acenaphthene)	Total	71	1			% Recovery	100	0	71	27 - 133%	PASS	
(d10-Phenanthrene)	Total	88	1			% Recovery	100	0	88	43 - 129%	PASS	
(d12-Chrysene)	Total	93	1			% Recovery	100	0	93	52 - 144%	PASS	
(d12-Perylene)	Total	88	1			% Recovery	100	0	88	36 - 161%	PASS	
(d8-Naphthalene)	Total	48	1			% Recovery	100	0	48	25 - 125%	PASS	
1-Methylnaphthalene	Total	0.283	1	0.001	0.005	µg/L	0.5	0	57	31 - 128%	PASS	
1-Methylphenanthrene	Total	0.406	1	0.001	0.005	µg/L	0.5	0	81	66 - 127%	PASS	
2,3,5-Trimethylnaphthalene	Total	0.366	1	0.001	0.005	µg/L	0.5	0	73	55 - 122%	PASS	
2,6-Dimethylnaphthalene	Total	0.319	1	0.001	0.005	µg/L	0.5	0	64	48 - 120%	PASS	
2-Methylnaphthalene	Total	0.844	1	0.001	0.005	µg/L	1.5	0	56	47 - 130%	PASS	
Acenaphthene	Total	1.07	1	0.001	0.005	µg/L	1.5	0	71	53 - 131%	PASS	
Acenaphthylene	Total	1.04	1	0.001	0.005	µg/L	1.5	0	69	43 - 140%	PASS	
Anthracene	Total	1.26	1	0.001	0.005	µg/L	1.5	0	84	58 - 135%	PASS	
Benz[a]anthracene	Total	1.35	1	0.001	0.005	µg/L	1.5	0	90	55 - 145%	PASS	
Benzo[a]pyrene	Total	1.26	1	0.001	0.005	µg/L	1.5	0	84	51 - 143%	PASS	
Benzo[b]fluoranthene	Total	1.31	1	0.001	0.005	µg/L	1.5	0	87	46 - 165%	PASS	
Benzo[e]pyrene	Total	0.41	1	0.001	0.005	µg/L	0.5	0	82	42 - 152%	PASS	
Benzo[g,h,i]perylene	Total	1.28	1	0.001	0.005	µg/L	1.5	0	85	63 - 133%	PASS	
Benzo[k]fluoranthene	Total	1.31	1	0.001	0.005	µg/L	1.5	0	87	56 - 145%	PASS	
Biphenyl	Total	0.317	1	0.001	0.005	µg/L	0.5	0	63	56 - 119%	PASS	
Chrysene	Total	1.41	1	0.001	0.005	µg/L	1.5	0	94	56 - 141%	PASS	
Dibenz[a,h]anthracene	Total	1.29	1	0.001	0.005	µg/L	1.5	0	86	55 - 150%	PASS	
Dibenzo[a,l]pyrene	Total	0.41	1	0.001	0.005	µg/L	0.5	0	82	50 - 150%	PASS	
Dibenzothiophene	Total	0.415	1	0.001	0.005	µg/L	0.5	0	83	46 - 126%	PASS	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE _c
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Fluoranthene	Total	1.38	1	0.001	0.005	µg/L	1.5	0	92	60 - 146%	PASS		
Fluorene	Total	1.17	1	0.001	0.005	µg/L	1.5	0	78	58 - 131%	PASS		
Indeno[1,2,3-cd]pyrene	Total	1.29	1	0.001	0.005	µg/L	1.5	0	86	50 - 151%	PASS		
Naphthalene	Total	0.728	1	0.001	0.005	µg/L	1.5	0	49	41 - 126%	PASS		
Perylene	Total	0.421	1	0.001	0.005	µg/L	0.5	0	84	48 - 141%	PASS		
Phenanthrene	Total	1.25	1	0.001	0.005	µg/L	1.5	0	83	67 - 127%	PASS		
Pyrene	Total	1.35	1	0.001	0.005	µg/L	1.5	0	90	54 - 156%	PASS		



Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE		
							LEVEL	RESULT	%	LIMITS	%	LIMITS			
Sample ID: 104445-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:			Received:				
		Method: EPA 625.1			Batch ID: O-40146			Prepared: 02-Mar-23			Analyzed: 28-Mar-23				
(d10-Acenaphthene)	Total	71	1				% Recovery	100	0	71	27 - 133%	PASS	0	30	PASS
(d10-Phenanthrene)	Total	86	1				% Recovery	100	0	86	43 - 129%	PASS	2	30	PASS
(d12-Chrysene)	Total	91	1				% Recovery	100	0	91	52 - 144%	PASS	2	30	PASS
(d12-Perylene)	Total	87	1				% Recovery	100	0	87	36 - 161%	PASS	1	30	PASS
(d8-Naphthalene)	Total	56	1				% Recovery	100	0	56	25 - 125%	PASS	15	30	PASS
1-Methylnaphthalene	Total	0.303	1	0.001	0.005	µg/L		0.5	0	61	31 - 128%	PASS	7	30	PASS
1-Methylphenanthrene	Total	0.405	1	0.001	0.005	µg/L		0.5	0	81	66 - 127%	PASS	0	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.368	1	0.001	0.005	µg/L		0.5	0	74	55 - 122%	PASS	1	30	PASS
2,6-Dimethylnaphthalene	Total	0.327	1	0.001	0.005	µg/L		0.5	0	65	48 - 120%	PASS	2	30	PASS
2-Methylnaphthalene	Total	0.915	1	0.001	0.005	µg/L		1.5	0	61	47 - 130%	PASS	9	30	PASS
Acenaphthene	Total	1.08	1	0.001	0.005	µg/L		1.5	0	72	53 - 131%	PASS	1	30	PASS
Acenaphthylene	Total	1.05	1	0.001	0.005	µg/L		1.5	0	70	43 - 140%	PASS	1	30	PASS
Anthracene	Total	1.25	1	0.001	0.005	µg/L		1.5	0	83	58 - 135%	PASS	1	30	PASS
Benz[a]anthracene	Total	1.34	1	0.001	0.005	µg/L		1.5	0	89	55 - 145%	PASS	1	30	PASS
Benzo[a]pyrene	Total	1.25	1	0.001	0.005	µg/L		1.5	0	83	51 - 143%	PASS	1	30	PASS
Benzo[b]fluoranthene	Total	1.32	1	0.001	0.005	µg/L		1.5	0	88	46 - 165%	PASS	1	30	PASS
Benzo[e]pyrene	Total	0.411	1	0.001	0.005	µg/L		0.5	0	82	42 - 152%	PASS	0	30	PASS
Benzo[g,h,i]perylene	Total	1.28	1	0.001	0.005	µg/L		1.5	0	85	63 - 133%	PASS	0	30	PASS
Benzo[k]fluoranthene	Total	1.3	1	0.001	0.005	µg/L		1.5	0	87	56 - 145%	PASS	0	30	PASS
Biphenyl	Total	0.33	1	0.001	0.005	µg/L		0.5	0	66	56 - 119%	PASS	5	30	PASS
Chrysene	Total	1.42	1	0.001	0.005	µg/L		1.5	0	95	56 - 141%	PASS	1	30	PASS
Dibenz[a,h]anthracene	Total	1.28	1	0.001	0.005	µg/L		1.5	0	85	55 - 150%	PASS	1	30	PASS
Dibenzo[a,l]pyrene	Total	0.408	1	0.001	0.005	µg/L		0.5	0	82	50 - 150%	PASS	0	30	PASS
Dibenzothiophene	Total	0.422	1	0.001	0.005	µg/L		0.5	0	84	46 - 126%	PASS	1	30	PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE _c	
							LEVEL	RESULT	%	LIMITS	%	LIMITS		
Fluoranthene	Total	1.34	1	0.001	0.005	µg/L	1.5	0	89	60 - 146%	PASS	3	30	PASS
Fluorene	Total	1.17	1	0.001	0.005	µg/L	1.5	0	78	58 - 131%	PASS	0	30	PASS
Indeno[1,2,3-cd]pyrene	Total	1.29	1	0.001	0.005	µg/L	1.5	0	86	50 - 151%	PASS	0	30	PASS
Naphthalene	Total	0.849	1	0.001	0.005	µg/L	1.5	0	57	41 - 126%	PASS	15	30	PASS
Perylene	Total	0.415	1	0.001	0.005	µg/L	0.5	0	83	48 - 141%	PASS	1	30	PASS
Phenanthrene	Total	1.25	1	0.001	0.005	µg/L	1.5	0	83	67 - 127%	PASS	0	30	PASS
Pyrene	Total	1.33	1	0.001	0.005	µg/L	1.5	0	89	54 - 156%	PASS	1	30	PASS

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

Sample ID: 104446

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
36.3208	5.0681	1111	Anthracene-D10-	1719-06-8	95
10.9714	2.3086	506	Oxalic acid, cyclohexyl propyl ester	1000309-30-3	93
10.7423	1.0976	241	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	92
10.2851	0.9399	206	Cyclopentane, 1,2,3,4,5-pentamethyl-	1000152-79-7	87
10.7430	0.7909	173	Ethanone, 1-(1-methylcyclohexyl)-	2890-62-2	82
10.3192	0.7175	157	Cyclopentene, 1,2,3,4,5-pentamethyl-	1000154-28-6	87
68.9940	0.5579	122	13-Docosamide, (Z)-	112-84-5	86

Concentration estimated using the response for Anthracene-d10

Sample ID: 104447

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
36.3167	3.9606	1111	Anthracene-D10-	1517-22-2	93
10.9707	1.6253	456	Cyclopropane, 2-bromo-1,1,3-trimethyl-	36617-00-2	90
28.2398	0.8501	238	Diethyl Phthalate	84-66-2	98
10.7416	0.8014	225	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	92
10.2848	0.7229	203	Cyclopentane, 1,2,3,4,5-pentamethyl-	1000152-79-7	90
10.3188	0.5372	151	Cyclopentene, 1,2,3,4,5-pentamethyl-	1000154-28-6	87
14.3320	0.4494	126	Benzoic acid	65-85-0	96
32.9088	0.4376	123	Benzoic acid, 2-ethylhexyl ester	5444-75-7	98
68.9918	0.3867	108	13-Docosenamide, (Z)-	112-84-5	84
10.7427	0.3766	106	2-Pyrazoline, 1-isobutyl-3-methyl-	26964-53-4	82

Concentration estimated using the response for Anthracene-d10

Sample ID: 104448

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
36.3117	6.6214	1111	Anthracene-D10-	1517-22-2	93
10.9694	2.2568	379	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	92
28.2322	2.1324	358	Diethyl Phthalate	84-66-2	99
10.7411	1.1193	188	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	91
10.2847	1.0734	180	Cyclopentane, 1,2,3,4,5-pentamethyl-	1000152-79-7	90
44.4836	1.0279	172	Acenaphthylene	208-96-8	82
10.3188	0.8170	137	Cyclopentene, 1,2,3,4,5-pentamethyl-	1000154-28-6	90
68.9795	0.6175	104	13-Docosamide, (Z)-	112-84-5	85

Concentration estimated using the response for Anthracene-d10

Sample ID: 104449

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
36.3114	4.5143	1111	Anthracene-D10-	1719-06-8	95
10.9691	2.0075	494	Oxalic acid, cyclohexyl ethyl ester	1000309-30-2	92
28.2346	1.2613	310	Diethyl Phthalate	84-66-2	98
10.7408	1.0245	252	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	92
10.2843	0.9133	225	Cyclopentane, 1,2,3,4,5-pentamethyl-	1000152-79-7	90
32.9045	0.8093	199	Benzoic acid, 2-ethylhexyl ester	5444-75-7	98
10.3183	0.7937	195	Cyclopentene, 1,2,3,4,5-pentamethyl-	1000154-28-6	94
14.3259	0.4469	110	Benzoic acid	65-85-0	96
68.9862	0.4320	106	13-Docosamide, (Z)-	112-84-5	85
14.9509	0.4209	104	Ethanol, 2-(2-butoxyethoxy)-	112-34-5	94

Concentration estimated using the response for Anthracene-d10

Sample ID: B1_40146

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
36.3257	5.0782	1111	Anthracene-D10-	1719-06-8	96
10.9740	2.4091	527	Oxalic acid, cyclohexyl propyl ester	1000309-30-3	92
29.7276	0.6654	146	Benzene, 1,2,3,5-tetrachloro-4,6-dimethyl-	877-09-8	98

Concentration estimated using the response for Anthracene-d10

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PERFORMANCE CHAIN OF CUSTODY

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

Innovative Solutions for Nature

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Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)		Sampler:	Arada, Rachelle	Lab P#: _____
Shipping/Receiving		Phone:	Rachelle.Arada@eurofins.com	Carrier Tracking No(s): _____
Company: Physis Environmental Laboratories		Accreditations Required (See note): State - Hawaii		
Address: 1904 Wright Circle,		Date Requested:	3/15/2023	
City: Anaheim		TAT Requested (days):		
State, Zip: CA, 92806		PO #:		
Phone:		MO #:		
Email:		Project #:	38001111	
Project Name: REDHILL		SSOW#:		
Site: Honolulu BWS Sites				

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix (Water, Seawater, Overstabil, BT-Tissue, ACh)	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:
AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-39082-1)	2/27/23	10:45		Water	X	X		2	See Attached Instructions
MOANALUA WELLS (331-223-TP202) (380-39082-2)	2/27/23	09:48		Water	X	X		2	See Attached Instructions
HALAWA WELLS UNITS 1 & 2 (331-206-TP065) (380-39082-3)	2/27/23	10:19		Water	X	X		2	See Attached Instructions
AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-39082-4)	2/27/23	11:11		Water	X	X		2	See Attached Instructions

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

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

Relinquished by:	Date/Time:	Company:	Relinquished by:	Date/Time:	Company:
[Signature]	03/02/2023	EEA	[Signature]	3/12/23	PHYSIS
[Signature]	3/12/23	DKS	[Signature]	3/12/23	PHYSIS

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

Project Iteration ID: 1407003-381
 Client Name: Eurofins Eaton Analytical
 Project Name: RED-HILL Project # 38001111 Job # 380-39082-1
 COC Page Number: 2 of 2
 Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: MN
2. Date Received: 3/02/23
3. Time Received: 15 36
4. Client Name: Eurofins
5. Courier Information: (Please circle)
 - Client
 - UPS
 - Area Fast
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAMS
 - PHYSYS Driver:
 - i. Start Time: _____
 - ii. End Time: _____
 - iii. Total Mileage: _____
 - iv. Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - Cooler
 - Styrofoam Cooler
 - Boxes
 - None
 - Carboy(s)
 - Carboy Trash Can(s)
 - Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): 3.9
 Used I/R Thermometer # 1-2

Inspection Info

1. Initials Inspected By: R6H

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:





SDG Login Review Sheet

Date: 3/6/2023

Client Code: EEA1201_
Client: Eurofins Eaton Analytical
Project: 380-39082

Send Report To: Attn: Jackie Contreras
Company: Eurofins Eaton Analytical
Address: 750 Royal Oaks Dr., Suite 100
Monrovia, CA 91016-3629

EMAX PM: Richard

Task Order #: NA

SDG: 23C040		DATE/ TIME RECEIVED: 3/2/2023 16:45				DUE DATE: 3/16/2023	
Lwks ID	Control #	Sample ID	Matrix	Coll Date	Time	Lwks Method	Analysis
EU85401	C040-01	380-39082-1 ✓	WATER	2/27/2023 ✓	10:45 ✓	TPHW	TPH ✓
	C040-01	380-39082-1	WATER	2/27/2023	10:45	TPHGW	TPH Gasoline ✓
EU85402	C040-02	380-39082-2 ✓	WATER	2/27/2023	9:48 ✓	TPHW	TPH ✓
	C040-02	380-39082-2	WATER	2/27/2023	9:48	TPHGW	TPH Gasoline ✓
EU85403	C040-03	380-39082-3 ✓	WATER	2/27/2023	10:19 ✓	TPHW	TPH ✓
	C040-03	380-39082-3	WATER	2/27/2023	10:19	TPHGW	TPH Gasoline ✓
EU85404	C040-04	380-39082-4 ✓	WATER	2/27/2023	11:11 ✓	TPHW	TPH ✓
	C040-04	380-39082-4	WATER	2/27/2023	11:11	TPHGW	TPH Gasoline ✓
EU85405	C040-05	380-39082-5 ✓	WATER	2/27/2023	10:45 ✓	TPHGW	TPH Gasoline ✓
EU85406	C040-06	380-39082-6 ✓	WATER	2/27/2023	9:48 ✓	TPHGW	TPH Gasoline ✓
EU85408	C040-07	380-39082-7 ✓	WATER	2/27/2023	10:19 ✓	TPHGW	TPH Gasoline ✓
EU85411	C040-08	380-39082-8 ✓	WATER	2/27/2023 ✓	11:11 ✓	TPHGW	TPH Gasoline ✓





Type of Delivery	Airbill / Tracking Number	ECN 731040
<input type="checkbox"/> Fedex <input type="checkbox"/> UPS <input type="checkbox"/> GSO <input type="checkbox"/> Others		Recipient Jocelyne Solis-Ramos
<input checked="" type="checkbox"/> EMAX Courier <input checked="" type="checkbox"/> Client Delivery		Date 03/02/23 Time 16:45

COC INSPECTION

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

Note: _____

PACKAGING INSPECTION

Container	<input checked="" type="checkbox"/> Cooler	<input type="checkbox"/> Box	<input type="checkbox"/> Other
Condition <i>correction</i>	<input type="checkbox"/> Custody Seal	<input type="checkbox"/> Intact	<input type="checkbox"/> Damaged
Packaging <i>factor: -0.2</i>	<input checked="" type="checkbox"/> Bubble Pack	<input type="checkbox"/> Styrofoam	<input type="checkbox"/> Popcorn
Temperatures	<input checked="" type="checkbox"/> Cooler 1 <i>5.0/4.6 °C</i>	<input checked="" type="checkbox"/> Cooler 2 <i>5.0/4.8 °C</i>	<input type="checkbox"/> Cooler 3 _____ °C
(Cool, ≤6 °C but not frozen)	<input type="checkbox"/> Cooler 6 _____ °C	<input type="checkbox"/> Cooler 7 _____ °C	<input type="checkbox"/> Cooler 8 _____ °C
Thermometer:	A - S/N <i>221052760</i>	(B) S/N <i>210760237</i>	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
1-4	5,6,11,12,17,18,23,24	D7	JP5/JP6 not indicated on label	R8, R1
3		D11	received 6 containers	R8
5-7	25-30	D14		R4
5,6	25-28	D7	two dates on label - 0/22/22 & 2/27/23	R1
7	29,30	D7	two dates on label - 0/5/22 & 2/27/23	↓
8	31,32	D7	two dates on label - 12/29/22 & 2/27/23	

pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time. *NS 3/3/23*

NOTES/OBSERVATIONS: ** out of HT if collected 0/22/22 / 0/5/22 / 12/29/22 / 12/29/22.*

SAMPLE MATRIX IS DRINKING WATER? YES NO

LEGEND:

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

Sample Labeling *Jocelyne Solis-Ramos* / *Reyes* SRF *Reyes*

Date *03/02/23* / *3/3/23* Date *3/3/23*

PM *NS*

Date *3/3/23*



SAMPLES RECEIVED FOR ECN: 23040

LAB SAMPLE ID (*)	LAB SAMPLE CONTAINER ID	COOLER#	CONTAINER TYPE								pH paper Lot #: <u>N/A</u> CHEMICAL PRESERVATIVE											Filtered					
			Lar	Amber	HDPE	Encore	Vial	Tube	Bag	Other	NONE	HCl (pH<2)	HNO ₃ (pH<2)	H ₂ SO ₄ (pH<2)	ZnAc+NaOH (pH>9)	ZnAc+NaOH (pH>12)	NaOH (pH>10)	NaOH (pH>12)	Na ₂ S ₂ O ₃	Methanol	NaHSO ₄	Other	Yes	No			
1	* 1	1					/					/						/									
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Monrovia, CA (Suite 100)

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

Chain of Custody Record



Environmental Testing



380-39082 COC

Client Information		Sampler: BAILEY	Lab PM: Arada, Rachele	Carrier Tracking No(s):	COC No: 380-9774-2757.1																											
Client Contact: Dr. Ron Fenstemacher		Phone: 808-748-5840	E-Mail: Rachele.Arada@et.eurofinsus.com	State of Origin:	Page: Page 1 of 3																											
Company: City & County of Honolulu		PWSID:	Analysis Requested																													
Address: 630 South Beretania Street Chemistry Lab		Due Date Requested:	<table border="1"> <tr> <td>Field Filtered Sample (Yes or No)</td> <td>PERFORM MS/MSD (Yes or No)</td> <td>SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs</td> <td>SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)</td> <td>SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil</td> <td>525.2_PREC - (MOD) 525plus Plus TICs</td> <td>SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)</td> <td>537.1_DW_PREC - 537.1 Full List</td> <td>533 - All Analytes</td> </tr> </table>			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																		
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																					
City: Honolulu		TAT Requested (days):																														
State, Zip: HI, 96843		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No																														
Phone: 808-748-5091(Tel)		PO #: C20525101 exp 05312023																														
Email: RFENSTEMACHER@hbws.org		WO #:	<table border="1"> <tr> <td rowspan="4">Total Number of containers</td> <td>A - HCL</td> <td>M - Hexane</td> </tr> <tr> <td>B - NaOH</td> <td>N - None</td> </tr> <tr> <td>C - Zn Acetate</td> <td>O - AsNaO2</td> </tr> <tr> <td>D - Nitric Acid</td> <td>P - Na2O4S</td> </tr> <tr> <td>E - NaHSO4</td> <td>Q - Na2SO3</td> </tr> <tr> <td>F - MeOH</td> <td>R - Na2S2O3</td> </tr> <tr> <td>G - Amchlor</td> <td>S - H2SO4</td> </tr> <tr> <td>H - Ascorbic Acid</td> <td>T - TSP Dodecahydrate</td> </tr> <tr> <td>I - Ice</td> <td>U - Acetone</td> </tr> <tr> <td>J - DI Water</td> <td>V - MCAA</td> </tr> <tr> <td>K - EDTA</td> <td>W - pH 4-5</td> </tr> <tr> <td>L - EDA</td> <td>Y - Trizma</td> </tr> <tr> <td>Z - other (specify)</td> <td></td> </tr> </table>			Total Number of containers	A - HCL	M - Hexane	B - NaOH	N - None	C - Zn Acetate	O - AsNaO2	D - Nitric Acid	P - Na2O4S	E - NaHSO4	Q - Na2SO3	F - MeOH	R - Na2S2O3	G - Amchlor	S - H2SO4	H - Ascorbic Acid	T - TSP Dodecahydrate	I - Ice	U - Acetone	J - DI Water	V - MCAA	K - EDTA	W - pH 4-5	L - EDA	Y - Trizma	Z - other (specify)	
Total Number of containers	A - HCL	M - Hexane																														
	B - NaOH	N - None																														
	C - Zn Acetate	O - AsNaO2																														
	D - Nitric Acid	P - Na2O4S																														
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F - MeOH	R - Na2S2O3																															
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Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill		Project #: 38001111	<table border="1"> <tr> <td>Other:</td> <td></td> </tr> </table>			Other:																										
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Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No				Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks: (750A) 1.1/1.0 gel-frozen																								

Monrovia, CA (Suite 100)

750 Royal Oaks Drive Suite 100

Monrovia, CA 91016

Phone: 626-386-1100

Chain of Custody Record



Environment Testing

Client Information		Sampler: BAILEY	Lab PM: Arada, Rachele	Carrier Tracking No(s):	COC No: 380-9772-2757.3																										
Client Contact: Dr. Ron Fenstemacher		Phone: 808-748-5840	E-Mail: Rachele.Arada@et.eurofinsus.com	State of Origin:	Page: Page 3 of 3																										
Company: City & County of Honolulu		PWSID:	Analysis Requested																												
Address: 630 South Beretania Street Chemistry Lab		Due Date Requested:	<table border="1"> <tr> <td>Field Filtered Sample (Yes or No)</td> <td>Retention/MS/MSD (Yes or No)</td> <td>SUBCONTRACT - 625 PAH Physals LL (EAL) + TICs</td> <td>SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)</td> <td>SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil</td> <td>525.2_PREC - (MOD) 525plus Plus TICs</td> <td>SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)</td> <td>537.1_DW_PREC - 537.1 Full List</td> <td>533 - All Analytes</td> </tr> </table>			Field Filtered Sample (Yes or No)	Retention/MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physals 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																	
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City: Honolulu		TAT Requested (days):																													
State, Zip: HI, 96843		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> 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	Preservation Codes:																												
Site: Hawaii		SSOW#:	<table border="0"> <tr> <td>A - HCL</td> <td>M - Hexane</td> </tr> <tr> <td>B - NaOH</td> <td>N - None</td> </tr> <tr> <td>C - Zn Acetate</td> <td>O - AsNaO2</td> </tr> <tr> <td>D - Nitric Acid</td> <td>P - Na2O4S</td> </tr> <tr> <td>E - NaHSO4</td> <td>Q - Na2SO3</td> </tr> <tr> <td>F - MeOH</td> <td>R - Na2SO4</td> </tr> <tr> <td>G - Amchlor</td> <td>S - H2SO4</td> </tr> <tr> <td>H - Ascorbic Acid</td> <td>T - TSP Dodecahydrate</td> </tr> <tr> <td>I - Ice</td> <td>U - Acetone</td> </tr> <tr> <td>J - DI Water</td> <td>V - MCAA</td> </tr> <tr> <td>K - EDTA</td> <td>W - pH 4-5</td> </tr> <tr> <td>L - EDA</td> <td>Y - Trizma</td> </tr> <tr> <td></td> <td>Z - other (specify)</td> </tr> </table>			A - HCL	M - Hexane	B - NaOH	N - None	C - Zn Acetate	O - AsNaO2	D - Nitric Acid	P - Na2O4S	E - NaHSO4	Q - Na2SO3	F - MeOH	R - Na2SO4	G - Amchlor	S - H2SO4	H - Ascorbic Acid	T - TSP Dodecahydrate	I - Ice	U - Acetone	J - DI Water	V - MCAA	K - EDTA	W - pH 4-5	L - EDA	Y - Trizma		Z - other (specify)
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Empty Kit Relinquished by:		Date: 2/8/23	Time:	Method of Shipment: FedEx: 77432920873																											
Relinquished by: BAILEY	Date/Time: 2/23/2023 10:48:00	Company: HBWS	Received by: Mark Urrutia	Date/Time: 3/1/23 945	Company: EEA																										
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Shipping Order Form - Bottle Order



Environment Testing



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

Shipping Order ID: 9774

Ship Via: FedEx
When To Ship: 1/30/2023

Due On: 1/30/2023 11:59:00PM
Due After: 1/30/2023 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 bottle 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)**

- | | |
|--|---|
| <input checked="" type="checkbox"/> Ready to Fill | <input type="checkbox"/> Return Shipment Labels |
| <input checked="" type="checkbox"/> Preprinted COC | <input type="checkbox"/> Prepaid Return |
| <input type="checkbox"/> <input type="text" value="1"/> Number of COC Copies | Monrovia, CA (Suite 100) |
| <input type="checkbox"/> Seals on Bottle | <input type="checkbox"/> Short Hold Times |
| <input type="checkbox"/> Seals on Coolers | <input checked="" type="checkbox"/> Temperature Control |
| <input type="checkbox"/> Priority | <input type="checkbox"/> 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: 1/30/2023 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 Acid	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 Acid	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.

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-39082-1

Login Number: 39082
List Number: 1
Creator: Ngo, Theodore

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: 380-39082-1

Login Number: 39082
List Number: 2
Creator: Pehling-Wright, Penny

List Source: Eurofins Eaton Analytical South Bend
List Creation: 03/03/23 11:16 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

