

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-61062-1

Eurofins Eaton Analytical Pomona

Job Notes

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

Compliance Statement

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

Authorization



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Definitions/Glossary

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

Job ID: 380-61062-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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
B	Analyte was found in the associated method blank.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Case Narrative

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

Job ID: 380-61062-1

Job ID: 380-61062-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative 380-61062-1

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

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

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

Receipt

The samples were received on 8/30/2023 10:10 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.0°C and 2.2°C

Receipt Exceptions

One or more containers for the following sample was received broken or leaking: AIEA GULCH WELLS PUMP 2 (380-61062-2). One of two amber glass 1L for 525.2 was received broken. There is sufficient volume for analysis.

GC/MS Semi VOA

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

PFAS

Method 533: The method blank associated with preparation batch 380-55419 and analytical batch 380-55871 contained Perfluorobutanoic acid (PFBA) greater than the reporting limit (MRL). This has also caused the MRL check to fail biased high. The sample AIEA WELLS PUMPS 1&2 (260) P2 (380-61062-1) was not re-extracted because it was used for MS/MSD and no additional volume is available for re-extraction. 533 data excluded due to this QC failure, 537.1 was reported as there were no noted QC issues.

Method 533: The method blank for preparation batch 380-56110 and analytical batch 380-56425 contained Perfluorobutanoic acid (PFBA) above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank possibly due to lab contamination. Affected sample AIEA GULCH WELLS PUMP 2 (380-61062-2) do not have additional volume available for re-extraction. Results acceptable per method.

Method 533: The method blank associated with preparation batch 380-55419 and analytical batch 380-55871 contained Perfluorobutanoic acid (PFBA) greater than the reporting limit (MRL). This has also caused the MRL check to fail biased high. Field reagent blanks FB: AIEA WELLS PUMPS 1&2 (260) (380-61062-5) and FB: AIEA GULCH WELLS PUMP 2 (380-61062-6) was not re-extracted because additional volume is not available for re-extraction. FB: AIEA WELLS PUMPS 1&2 (260) (380-61062-5) and FB: AIEA GULCH WELLS PUMP 2 (380-61062-6) is not acceptable per method and any detection in the associated native samples are not acceptable per method. 533 data excluded due to this QC failure, 537.1 was reported as there were no noted QC issues.

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

Detection Summary

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

Job ID: 380-61062-1

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

Lab Sample ID: 380-61062-1

No Detections.

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

Lab Sample ID: 380-61062-2

No Detections.

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

Lab Sample ID: 380-61062-5

No Detections.

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-61062-6

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: 380-61062-1

Date Collected: 08/28/23 10:53

Matrix: Drinking Water

Date Received: 08/30/23 10:10

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
2,4'-DDD	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
2,4'-DDE	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
2,4'-DDT	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
2,4-Dinitrotoluene	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
2,6-Dinitrotoluene	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
2-Methylnaphthalene	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
4,4'-DDD	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
4,4'-DDE	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
4,4'-DDT	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Acenaphthene	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Acenaphthylene	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Acetochlor	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Alachlor	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
alpha-BHC	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
alpha-Chlordane	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
Anthracene	<0.019		0.019	ug/L		09/01/23 15:16	09/05/23 12:02	1
Atrazine	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
Benz(a)anthracene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
Benzo[a]pyrene	<0.019		0.019	ug/L		09/01/23 15:16	09/05/23 12:02	1
Benzo[b]fluoranthene	<0.019		0.019	ug/L		09/01/23 15:16	09/05/23 12:02	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
Benzo[k]fluoranthene	<0.019		0.019	ug/L		09/01/23 15:16	09/05/23 12:02	1
beta-BHC	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58	ug/L		09/01/23 15:16	09/05/23 12:02	1
Bromacil	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Butachlor	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
Butylbenzylphthalate	<0.49		0.49	ug/L		09/01/23 15:16	09/05/23 12:02	1
Chlorobenzilate	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Chloroneb	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Chlorpyrifos	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
Chrysene	<0.019		0.019	ug/L		09/01/23 15:16	09/05/23 12:02	1
delta-BHC	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Di(2-ethylhexyl)adipate	<0.58		0.58	ug/L		09/01/23 15:16	09/05/23 12:02	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
Diclorvos (DDVP)	<0.049	^3+ *+	0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
Dieldrin	<0.19		0.19	ug/L		09/01/23 15:16	09/05/23 12:02	1
Diethylphthalate	<0.49		0.49	ug/L		09/01/23 15:16	09/05/23 12:02	1
Dimethylphthalate	<0.49		0.49	ug/L		09/01/23 15:16	09/05/23 12:02	1
Di-n-butyl phthalate	<0.97		0.97	ug/L		09/01/23 15:16	09/05/23 12:02	1
Di-n-octyl phthalate	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Endosulfan I (Alpha)	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Endosulfan II (Beta)	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Endosulfan sulfate	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Endrin	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Endrin aldehyde	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
EPTC	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Fluoranthene	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1

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Client Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: 380-61062-1

Date Collected: 08/28/23 10:53

Matrix: Drinking Water

Date Received: 08/30/23 10:10

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
gamma-Chlordane	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
Heptachlor	<0.039		0.039	ug/L		09/01/23 15:16	09/05/23 12:02	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
Hexachlorobenzene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
Isophorone	<0.49		0.49	ug/L		09/01/23 15:16	09/05/23 12:02	1
Lindane	<0.039		0.039	ug/L		09/01/23 15:16	09/05/23 12:02	1
Malathion	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Methoxychlor	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Metolachlor	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
Molinate	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Naphthalene	<0.29		0.29	ug/L		09/01/23 15:16	09/05/23 12:02	1
Parathion	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Pendimethalin (Penoxaline)	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Phenanthrene	<0.039		0.039	ug/L		09/01/23 15:16	09/05/23 12:02	1
Propachlor	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
Pyrene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
Simazine	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
Terbacil	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Terbutylazine	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1
Thiobencarb	<0.19		0.19	ug/L		09/01/23 15:16	09/05/23 12:02	1
Total Permethrin (mixed isomers)	<0.19		0.19	ug/L		09/01/23 15:16	09/05/23 12:02	1
trans-Nonachlor	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:02	1
Trifluralin	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:02	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Hexathiane	2.3	T J N	ug/L		4.60	13798-23-7	09/01/23 15:16	09/05/23 12:02	1
Unknown	130	T J	ug/L		6.53	N/A	09/01/23 15:16	09/05/23 12:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	98		70 - 130	09/01/23 15:16	09/05/23 12:02	1
Perylene-d12	93		70 - 130	09/01/23 15:16	09/05/23 12:02	1
Triphenylphosphate	110		70 - 130	09/01/23 15:16	09/05/23 12:02	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:45	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:45	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:45	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:45	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:45	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:45	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:45	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:45	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:45	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:45	1

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Client Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: 380-61062-1

Date Collected: 08/28/23 10:53

Matrix: Drinking Water

Date Received: 08/30/23 10:10

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:45	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:45	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:45	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:45	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:45	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:45	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:45	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEFOSAA	117		70 - 130			09/06/23 11:35	09/07/23 20:45	1
13C2 PFHxA	120		70 - 130			09/06/23 11:35	09/07/23 20:45	1
13C2 PFDA	122		70 - 130			09/06/23 11:35	09/07/23 20:45	1
13C3-GenX	115		70 - 130			09/06/23 11:35	09/07/23 20:45	1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-61062-2

Date Collected: 08/28/23 10:19

Matrix: Drinking Water

Date Received: 08/30/23 10:10

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
2,4'-DDD	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
2,4'-DDE	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
2,4'-DDT	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
2,4-Dinitrotoluene	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
2,6-Dinitrotoluene	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
2-Methylnaphthalene	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
4,4'-DDD	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
4,4'-DDE	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
4,4'-DDT	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Acenaphthene	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Acenaphthylene	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Acetochlor	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Alachlor	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
alpha-BHC	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
alpha-Chlordane	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
Anthracene	<0.019		0.019	ug/L		09/01/23 15:16	09/05/23 12:22	1
Atrazine	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
Benz(a)anthracene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
Benzo[a]pyrene	<0.019		0.019	ug/L		09/01/23 15:16	09/05/23 12:22	1
Benzo[b]fluoranthene	<0.019		0.019	ug/L		09/01/23 15:16	09/05/23 12:22	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
Benzo[k]fluoranthene	<0.019		0.019	ug/L		09/01/23 15:16	09/05/23 12:22	1
beta-BHC	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58	ug/L		09/01/23 15:16	09/05/23 12:22	1
Bromacil	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Butachlor	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-61062-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-61062-2

Date Collected: 08/28/23 10:19

Matrix: Drinking Water

Date Received: 08/30/23 10:10

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Butylbenzylphthalate	<0.49		0.49	ug/L		09/01/23 15:16	09/05/23 12:22	1
Chlorobenzilate	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Chloroneb	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Chlorpyrifos	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
Chrysene	<0.019		0.019	ug/L		09/01/23 15:16	09/05/23 12:22	1
delta-BHC	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Di(2-ethylhexyl)adipate	<0.58		0.58	ug/L		09/01/23 15:16	09/05/23 12:22	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
Diclorvos (DDVP)	<0.049	^3+ *+	0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
Dieldrin	<0.19		0.19	ug/L		09/01/23 15:16	09/05/23 12:22	1
Diethylphthalate	<0.49		0.49	ug/L		09/01/23 15:16	09/05/23 12:22	1
Dimethylphthalate	<0.49		0.49	ug/L		09/01/23 15:16	09/05/23 12:22	1
Di-n-butyl phthalate	<0.97		0.97	ug/L		09/01/23 15:16	09/05/23 12:22	1
Di-n-octyl phthalate	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Endosulfan I (Alpha)	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Endosulfan II (Beta)	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Endosulfan sulfate	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Endrin	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Endrin aldehyde	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
EPTC	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Fluoranthene	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Fluorene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
gamma-Chlordane	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
Heptachlor	<0.039		0.039	ug/L		09/01/23 15:16	09/05/23 12:22	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
Hexachlorobenzene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
Isophorone	<0.49		0.49	ug/L		09/01/23 15:16	09/05/23 12:22	1
Lindane	<0.039		0.039	ug/L		09/01/23 15:16	09/05/23 12:22	1
Malathion	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Methoxychlor	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Metolachlor	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
Molinate	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Naphthalene	<0.29		0.29	ug/L		09/01/23 15:16	09/05/23 12:22	1
Parathion	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Pendimethalin (Penoxaline)	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Phenanthrene	<0.039		0.039	ug/L		09/01/23 15:16	09/05/23 12:22	1
Propachlor	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
Pyrene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
Simazine	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
Terbacil	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Terbutylazine	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1
Thiobencarb	<0.19		0.19	ug/L		09/01/23 15:16	09/05/23 12:22	1
Total Permethrin (mixed isomers)	<0.19		0.19	ug/L		09/01/23 15:16	09/05/23 12:22	1
trans-Nonachlor	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 12:22	1
Trifluralin	<0.097		0.097	ug/L		09/01/23 15:16	09/05/23 12:22	1

Client Sample Results

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

Job ID: 380-61062-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-61062-2

Date Collected: 08/28/23 10:19

Matrix: Drinking Water

Date Received: 08/30/23 10:10

PWSID Number: HI0000331

<i>Tentatively Identified Compound</i>	<i>Est. Result</i>	<i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>RT</i>	<i>CAS No.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Hexathiane	1.7	T J N	ug/L		4.60	13798-23-7	09/01/23 15:16	09/05/23 12:22	1
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
2-Nitro-m-xylene	99		70 - 130				09/01/23 15:16	09/05/23 12:22	1
Perylene-d12	99		70 - 130				09/01/23 15:16	09/05/23 12:22	1
Triphenylphosphate	110		70 - 130				09/01/23 15:16	09/05/23 12:22	1

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

<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-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Perfluorobutanoic acid (PFBA)	<2.0	B	2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/19/23 12:00	09/21/23 10:17	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	73		50 - 200			09/19/23 12:00	09/21/23 10:17	1
13C6 PFDA	80		50 - 200			09/19/23 12:00	09/21/23 10:17	1
13C5 PFHxA	84		50 - 200			09/19/23 12:00	09/21/23 10:17	1
13C4 PFHpA	86		50 - 200			09/19/23 12:00	09/21/23 10:17	1
13C8 PFOA	86		50 - 200			09/19/23 12:00	09/21/23 10:17	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-61062-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-61062-2

Date Collected: 08/28/23 10:19

Matrix: Drinking Water

Date Received: 08/30/23 10:10

PWSID Number: HI0000331

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C9 PFNA	85		50 - 200	09/19/23 12:00	09/21/23 10:17	1
13C7 PFUnA	81		50 - 200	09/19/23 12:00	09/21/23 10:17	1
13C2 PFDoA	87		50 - 200	09/19/23 12:00	09/21/23 10:17	1
13C4 PFBA	77		50 - 200	09/19/23 12:00	09/21/23 10:17	1
13C5 PFPeA	82		50 - 200	09/19/23 12:00	09/21/23 10:17	1
13C3 PFBS	95		50 - 200	09/19/23 12:00	09/21/23 10:17	1
13C3 PFHxS	95		50 - 200	09/19/23 12:00	09/21/23 10:17	1
13C8 PFOS	92		50 - 200	09/19/23 12:00	09/21/23 10:17	1
13C2-4:2-FTS	122		50 - 200	09/19/23 12:00	09/21/23 10:17	1
13C2-6:2-FTS	102		50 - 200	09/19/23 12:00	09/21/23 10:17	1
13C2-8:2-FTS	95		50 - 200	09/19/23 12:00	09/21/23 10:17	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:55	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:55	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:55	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:55	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:55	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:55	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:55	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:55	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:55	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:55	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:55	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:55	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:55	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:55	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:55	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 20:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	108		70 - 130	09/06/23 11:35	09/07/23 20:55	1
13C2 PFHxA	112		70 - 130	09/06/23 11:35	09/07/23 20:55	1
13C2 PFDA	114		70 - 130	09/06/23 11:35	09/07/23 20:55	1
13C3-GenX	109		70 - 130	09/06/23 11:35	09/07/23 20:55	1

Client Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: 380-61062-5

Date Collected: 08/28/23 10:53

Matrix: Water

Date Received: 08/30/23 10:10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:04	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:04	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:04	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:04	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:04	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:04	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:04	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:04	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:04	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:04	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:04	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:04	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:04	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:04	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:04	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:04	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:04	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	104		70 - 130			09/06/23 11:35	09/07/23 21:04	1
13C2 PFHxA	119		70 - 130			09/06/23 11:35	09/07/23 21:04	1
13C2 PFDA	121		70 - 130			09/06/23 11:35	09/07/23 21:04	1
13C3-GenX	117		70 - 130			09/06/23 11:35	09/07/23 21:04	1

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-61062-6

Date Collected: 08/28/23 10:19

Matrix: Water

Date Received: 08/30/23 10:10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:14	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:14	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:14	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:14	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:14	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:14	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:14	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:14	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:14	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:14	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:14	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:14	1

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Client Sample Results

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

Job ID: 380-61062-1

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-61062-6

Date Collected: 08/28/23 10:19

Matrix: Water

Date Received: 08/30/23 10:10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:14	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:14	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:14	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:14	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/06/23 11:35	09/07/23 21:14	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	109		70 - 130			09/06/23 11:35	09/07/23 21:14	1
13C2 PFHxA	111		70 - 130			09/06/23 11:35	09/07/23 21:14	1
13C2 PFDA	110		70 - 130			09/06/23 11:35	09/07/23 21:14	1
13C3-GenX	108		70 - 130			09/06/23 11:35	09/07/23 21:14	1

Action Limit Summary

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

Job ID: 380-61062-1

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

Lab Sample ID: 380-61062-1

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	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	<0.019		ug/L	0.2	0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58		ug/L	400	0.58	525.2	Total/NA
Endrin	<0.097		ug/L	2	0.097	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.097		ug/L	40	0.097	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA

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

Lab Sample ID: 380-61062-2

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	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	<0.019		ug/L	0.2	0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58		ug/L	400	0.58	525.2	Total/NA
Endrin	<0.097		ug/L	2	0.097	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.097		ug/L	40	0.097	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-61062-1

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)	PRY (70-130)	TPP (70-130)
380-61062-1	AIEA WELLS PUMPS 1&2 (260)	98	93	110
380-61062-2	AIEA GULCH WELLS PUMP 2	99	99	110

Surrogate Legend

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

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)	PRY (70-130)	TPP (70-130)
380-61295-S-1-A MS	Matrix Spike	100	96	113
380-61306-S-1-A DU	Duplicate	101	106	112
LCS 380-54190/23-A	Lab Control Sample	101	88	112
LCS 380-54190/24-A	Lab Control Sample Dup	98	90	107
MB 380-54190/21-A	Method Blank	101	87	112
MRL 380-54190/22-A	Lab Control Sample	99	90	111

Surrogate Legend

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

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)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-61062-1	AIEA WELLS PUMPS 1&2 (260)	117	120	122	115
380-61062-2	AIEA GULCH WELLS PUMP 2	108	112	114	109

Surrogate Legend

d5NEFOS = d5-NEtFOSAA
PFHxA = 13C2 PFHxA
PFDA = 13C2 PFDA
GenX = 13C3-GenX

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)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-61035-B-1-A MS	Matrix Spike	91	105	104	96
380-61035-C-1-A MSD	Matrix Spike Duplicate	105	122	114	115
380-61062-5	FB: AIEA WELLS PUMPS 1&2 (260)	104	119	121	117
380-61062-6	FB: AIEA GULCH WELLS PUMF 2	109	111	110	108

Surrogate Summary

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

Job ID: 380-61062-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
LCS 380-54601/24-A	Lab Control Sample	102	119	110	114
LCSD 380-54601/25-A	Lab Control Sample Dup	103	110	110	107
MBL 380-54601/22-A	Method Blank	116	121	125	110
MRL 380-54601/23-A	Lab Control Sample	107	102	104	93

Surrogate Legend

d5NEFOS = d5-NEtFOSAA

PFHxA = 13C2 PFHxA

PFDA = 13C2 PFDA

GenX = 13C3-GenX

Isotope Dilution Summary

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

Job ID: 380-61062-1

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)
380-61062-2	AIEA GULCH WELLS PUMP 2	73	80	84	86	86	85	81	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)
380-61062-2	AIEA GULCH WELLS PUMP 2	77	82	95	95	92	122	102	95

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)
380-60201-AM-1-A MS	Matrix Spike	104	95	97	98	100	100	96	99
380-60205-AM-1-A DU	Duplicate	100	99	106	105	104	103	95	99
LCS 380-56110/25-A	Lab Control Sample	97	98	103	100	102	100	100	100
LCS 380-56110/26-A	Lab Control Sample Dup	87	88	91	90	92	90	84	90
MBL 380-56110/23-A	Method Blank	91	96	102	97	100	100	96	96
MRL 380-56110/24-A	Lab Control Sample	92	90	101	97	99	93	90	92

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)
380-60201-AM-1-A MS	Matrix Spike	100	111	99	103	98	123	106	101
380-60205-AM-1-A DU	Duplicate	105	117	107	107	101	137	118	100
LCS 380-56110/25-A	Lab Control Sample	102	106	100	101	98	131	107	105
LCS 380-56110/26-A	Lab Control Sample Dup	92	96	97	94	93	115	103	86
MBL 380-56110/23-A	Method Blank	99	101	100	98	98	130	104	98
MRL 380-56110/24-A	Lab Control Sample	101	105	98	103	99	132	110	96

Surrogate Legend

- HFPODA = 13C3 HFPO-DA
- C6PFDA = 13C6 PFDA
- 13C5PHA = 13C5 PFHxA

Isotope Dilution Summary

Job ID: 380-61062-1

Client: City & County of Honolulu

Project/Site: RED-HILL

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

- 1
- 2
- 3
- 4
- 5
- 6
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- 8
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- 12
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- 14
- 15
- 16
- 17

QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: MB 380-54190/21-A
Matrix: Water
Analysis Batch: 54365

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 54190

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
1-Methylnaphthalene	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
2,4'-DDD	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
2,4'-DDE	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
2,4'-DDT	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
2,4-Dinitrotoluene	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
2,6-Dinitrotoluene	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
2-Methylnaphthalene	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
4,4'-DDD	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
4,4'-DDE	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
4,4'-DDT	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Acenaphthene	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Acenaphthylene	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Acetochlor	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Alachlor	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
alpha-BHC	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
alpha-Chlordane	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
Anthracene	<0.020		0.020	ug/L		09/01/23 15:16	09/05/23 09:42	1
Atrazine	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
Benz(a)anthracene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
Benzo[a]pyrene	<0.020		0.020	ug/L		09/01/23 15:16	09/05/23 09:42	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		09/01/23 15:16	09/05/23 09:42	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		09/01/23 15:16	09/05/23 09:42	1
beta-BHC	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		09/01/23 15:16	09/05/23 09:42	1
Bromacil	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Butachlor	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
Butylbenzylphthalate	<0.49		0.49	ug/L		09/01/23 15:16	09/05/23 09:42	1
Chlorobenzilate	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Chloroneb	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Chlorpyrifos	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
Chrysene	<0.020		0.020	ug/L		09/01/23 15:16	09/05/23 09:42	1
delta-BHC	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		09/01/23 15:16	09/05/23 09:42	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
Dieldrin	<0.20		0.20	ug/L		09/01/23 15:16	09/05/23 09:42	1
Diethylphthalate	<0.49		0.49	ug/L		09/01/23 15:16	09/05/23 09:42	1
Dimethylphthalate	<0.49		0.49	ug/L		09/01/23 15:16	09/05/23 09:42	1
Di-n-butyl phthalate	<0.98		0.98	ug/L		09/01/23 15:16	09/05/23 09:42	1
Di-n-octyl phthalate	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Endosulfan I (Alpha)	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Endosulfan II (Beta)	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Endosulfan sulfate	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Endrin	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Endrin aldehyde	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
EPTC	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1

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QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: MB 380-54190/21-A
Matrix: Water
Analysis Batch: 54365

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 54190

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Fluorene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
gamma-Chlordane	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
Heptachlor	<0.039		0.039	ug/L		09/01/23 15:16	09/05/23 09:42	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
Hexachlorobenzene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
Isophorone	<0.49		0.49	ug/L		09/01/23 15:16	09/05/23 09:42	1
Lindane	<0.039		0.039	ug/L		09/01/23 15:16	09/05/23 09:42	1
Malathion	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Methoxychlor	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Metolachlor	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
Molinate	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Naphthalene	<0.30		0.30	ug/L		09/01/23 15:16	09/05/23 09:42	1
Parathion	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Pendimethalin (Penoxaline)	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Phenanthrene	<0.039		0.039	ug/L		09/01/23 15:16	09/05/23 09:42	1
Propachlor	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
Pyrene	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
Simazine	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
Terbacil	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Terbutylazine	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1
Thiobencarb	<0.20		0.20	ug/L		09/01/23 15:16	09/05/23 09:42	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		09/01/23 15:16	09/05/23 09:42	1
trans-Nonachlor	<0.049		0.049	ug/L		09/01/23 15:16	09/05/23 09:42	1
Trifluralin	<0.098		0.098	ug/L		09/01/23 15:16	09/05/23 09:42	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	0.830	T J	ug/L		2.59	N/A	09/01/23 15:16	09/05/23 09:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	101		70 - 130	09/01/23 15:16	09/05/23 09:42	1
Perylene-d12	87		70 - 130	09/01/23 15:16	09/05/23 09:42	1
Triphenylphosphate	112		70 - 130	09/01/23 15:16	09/05/23 09:42	1

Lab Sample ID: LCS 380-54190/23-A
Matrix: Water
Analysis Batch: 54365

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54190

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.97	1.96		ug/L		100	70 - 130
2,4'-DDD	1.97	2.14		ug/L		109	70 - 130
2,4'-DDE	1.97	2.02		ug/L		102	70 - 130
2,4'-DDT	1.97	2.22		ug/L		113	70 - 130
2,4-Dinitrotoluene	1.97	2.20		ug/L		112	70 - 130
2,6-Dinitrotoluene	1.97	2.26		ug/L		115	70 - 130
2-Methylnaphthalene	1.97	2.01		ug/L		102	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: LCS 380-54190/23-A
Matrix: Water
Analysis Batch: 54365

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54190

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,4'-DDD	1.97	2.10		ug/L		106	70 - 130
4,4'-DDE	1.97	2.05		ug/L		104	70 - 130
4,4'-DDT	1.97	2.26		ug/L		115	70 - 130
Acenaphthene	1.97	1.85		ug/L		94	70 - 130
Acenaphthylene	1.97	1.92		ug/L		98	70 - 130
Acetochlor	1.97	2.54		ug/L		129	70 - 130
Alachlor	1.97	2.25		ug/L		114	70 - 130
alpha-BHC	1.97	1.99		ug/L		101	70 - 130
alpha-Chlordane	1.97	2.19		ug/L		111	70 - 130
Anthracene	1.97	1.93		ug/L		98	70 - 130
Atrazine	1.97	2.18		ug/L		111	70 - 130
Benz(a)anthracene	1.97	2.12		ug/L		108	70 - 130
Benzo[a]pyrene	1.97	2.01		ug/L		102	70 - 130
Benzo[b]fluoranthene	1.97	2.15		ug/L		109	70 - 130
Benzo[g,h,i]perylene	1.97	2.22		ug/L		113	70 - 130
Benzo[k]fluoranthene	1.97	2.09		ug/L		106	70 - 130
beta-BHC	1.97	2.08		ug/L		106	70 - 130
Bis(2-ethylhexyl) phthalate	1.97	1.66		ug/L		84	70 - 130
Bromacil	1.97	2.17		ug/L		110	70 - 130
Butachlor	1.97	2.45		ug/L		124	70 - 130
Butylbenzylphthalate	1.97	2.10		ug/L		107	70 - 130
Chlorobenzilate	1.97	2.25		ug/L		114	70 - 130
Chloroneb	1.97	1.95		ug/L		99	70 - 130
Chlorothalonil (Draconil, Bravo)	1.97	2.07		ug/L		105	70 - 130
Chlorpyrifos	1.97	2.30		ug/L		117	70 - 130
Chrysene	1.97	1.99		ug/L		101	70 - 130
delta-BHC	1.97	1.96		ug/L		99	70 - 130
Di(2-ethylhexyl)adipate	1.97	1.95		ug/L		99	70 - 130
Dibenz(a,h)anthracene	1.97	2.28		ug/L		116	70 - 130
Diclorvos (DDVP)	1.97	2.70	*+	ug/L		137	70 - 130
Dieldrin	1.97	2.03		ug/L		103	70 - 130
Diethylphthalate	1.97	2.19		ug/L		111	70 - 130
Dimethylphthalate	1.97	2.21		ug/L		112	70 - 130
Di-n-butyl phthalate	3.94	4.49		ug/L		114	70 - 130
Di-n-octyl phthalate	1.97	1.62		ug/L		82	70 - 130
Endosulfan I (Alpha)	1.97	1.95		ug/L		99	70 - 130
Endosulfan II (Beta)	1.97	2.24		ug/L		114	70 - 130
Endosulfan sulfate	1.97	2.30		ug/L		117	70 - 130
Endrin	1.97	2.53		ug/L		128	70 - 130
Endrin aldehyde	1.97	2.07		ug/L		105	70 - 130
EPTC	1.97	2.10		ug/L		107	70 - 130
Fluoranthene	1.97	2.25		ug/L		114	70 - 130
Fluorene	1.97	2.09		ug/L		106	70 - 130
gamma-Chlordane	1.97	2.21		ug/L		112	70 - 130
Heptachlor	1.97	2.24		ug/L		114	70 - 130
Heptachlor epoxide (isomer B)	1.97	2.29		ug/L		116	70 - 130
Hexachlorobenzene	1.97	2.06		ug/L		105	70 - 130
Hexachlorocyclopentadiene	1.97	2.15		ug/L		109	70 - 130
Indeno[1,2,3-cd]pyrene	1.97	2.19		ug/L		111	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: LCS 380-54190/23-A
Matrix: Water
Analysis Batch: 54365

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54190

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Isophorone	1.97	2.11		ug/L		107	70 - 130
Lindane	1.97	2.00		ug/L		101	70 - 130
Malathion	1.97	2.31		ug/L		117	70 - 130
Methoxychlor	1.97	2.18		ug/L		110	70 - 130
Metolachlor	1.97	2.33		ug/L		118	70 - 130
Molinate	1.97	2.22		ug/L		113	70 - 130
Naphthalene	1.97	1.84		ug/L		94	70 - 130
Parathion	1.97	2.50		ug/L		127	70 - 130
Pendimethalin (Penoxaline)	1.97	2.23		ug/L		113	70 - 130
Phenanthrene	1.97	1.89		ug/L		96	70 - 130
Propachlor	1.97	2.23		ug/L		113	70 - 130
Pyrene	1.97	2.21		ug/L		112	70 - 130
Simazine	1.97	2.18		ug/L		111	70 - 130
Terbacil	1.97	2.33		ug/L		118	70 - 130
Terbutylazine	1.97	2.25		ug/L		114	70 - 130
Thiobencarb	1.97	2.18		ug/L		111	70 - 130
trans-Nonachlor	1.97	2.08		ug/L		105	70 - 130
Trifluralin	1.97	2.27		ug/L		115	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	101		70 - 130
Perylene-d12	88		70 - 130
Triphenylphosphate	112		70 - 130

Lab Sample ID: LCSD 380-54190/24-A
Matrix: Water
Analysis Batch: 54365

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 54190

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	1.97	1.96		ug/L		99	70 - 130	0	20
2,4'-DDD	1.97	2.09		ug/L		106	70 - 130	2	20
2,4'-DDE	1.97	1.97		ug/L		100	70 - 130	3	20
2,4'-DDT	1.97	2.05		ug/L		104	70 - 130	8	20
2,4-Dinitrotoluene	1.97	1.88		ug/L		95	70 - 130	16	20
2,6-Dinitrotoluene	1.97	1.85		ug/L		94	70 - 130	20	20
2-Methylnaphthalene	1.97	1.98		ug/L		100	70 - 130	1	20
4,4'-DDD	1.97	2.00		ug/L		102	70 - 130	5	20
4,4'-DDE	1.97	2.03		ug/L		103	70 - 130	1	20
4,4'-DDT	1.97	2.13		ug/L		108	70 - 130	6	20
Acenaphthene	1.97	1.86		ug/L		94	70 - 130	0	20
Acenaphthylene	1.97	1.95		ug/L		99	70 - 130	2	20
Acetochlor	1.97	2.53		ug/L		128	70 - 130	0	20
Alachlor	1.97	2.28		ug/L		116	70 - 130	2	20
alpha-BHC	1.97	1.95		ug/L		99	70 - 130	2	20
alpha-Chlordane	1.97	2.16		ug/L		110	70 - 130	1	20
Anthracene	1.97	1.92		ug/L		98	70 - 130	0	20
Atrazine	1.97	2.13		ug/L		108	70 - 130	3	20
Benz(a)anthracene	1.97	2.04		ug/L		104	70 - 130	4	20

QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: LCSD 380-54190/24-A

Matrix: Water

Analysis Batch: 54365

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 54190

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
Benzo[a]pyrene	1.97	2.00		ug/L		102	70 - 130	0	20	
Benzo[b]fluoranthene	1.97	1.99		ug/L		101	70 - 130	7	20	
Benzo[g,h,i]perylene	1.97	2.26		ug/L		115	70 - 130	2	20	
Benzo[k]fluoranthene	1.97	2.12		ug/L		108	70 - 130	1	20	
beta-BHC	1.97	2.05		ug/L		104	70 - 130	2	20	
Bis(2-ethylhexyl) phthalate	1.97	1.65		ug/L		84	70 - 130	1	20	
Bromacil	1.97	2.01		ug/L		102	70 - 130	8	20	
Butachlor	1.97	2.42		ug/L		123	70 - 130	1	20	
Butylbenzylphthalate	1.97	1.95		ug/L		99	70 - 130	8	20	
Chlorobenzilate	1.97	2.19		ug/L		111	70 - 130	3	20	
Chloroneb	1.97	1.94		ug/L		98	70 - 130	1	20	
Chlorothalonil (Draconil, Bravo)	1.97	1.86		ug/L		95	70 - 130	11	20	
Chlorpyrifos	1.97	2.29		ug/L		116	70 - 130	0	20	
Chrysene	1.97	1.92		ug/L		98	70 - 130	4	20	
delta-BHC	1.97	2.02		ug/L		102	70 - 130	3	20	
Di(2-ethylhexyl)adipate	1.97	1.94		ug/L		98	70 - 130	1	20	
Dibenz(a,h)anthracene	1.97	2.27		ug/L		115	70 - 130	0	20	
Diclorvos (DDVP)	1.97	2.51		ug/L		127	70 - 130	7	20	
Dieldrin	1.97	2.02		ug/L		103	70 - 130	0	20	
Diethylphthalate	1.97	2.21		ug/L		112	70 - 130	1	20	
Dimethylphthalate	1.97	2.09		ug/L		106	70 - 130	5	20	
Di-n-butyl phthalate	3.94	4.47		ug/L		113	70 - 130	1	20	
Di-n-octyl phthalate	1.97	1.55		ug/L		79	70 - 130	4	20	
Endosulfan I (Alpha)	1.97	1.95		ug/L		99	70 - 130	0	20	
Endosulfan II (Beta)	1.97	2.01		ug/L		102	70 - 130	11	20	
Endosulfan sulfate	1.97	2.22		ug/L		113	70 - 130	4	20	
Endrin	1.97	2.50		ug/L		127	70 - 130	1	20	
Endrin aldehyde	1.97	1.86		ug/L		94	70 - 130	11	20	
EPTC	1.97	2.10		ug/L		107	70 - 130	0	20	
Fluoranthene	1.97	2.19		ug/L		111	70 - 130	3	20	
Fluorene	1.97	2.11		ug/L		107	70 - 130	1	20	
gamma-Chlordane	1.97	2.21		ug/L		112	70 - 130	0	20	
Heptachlor	1.97	2.23		ug/L		113	70 - 130	0	20	
Heptachlor epoxide (isomer B)	1.97	2.26		ug/L		115	70 - 130	1	20	
Hexachlorobenzene	1.97	2.14		ug/L		109	70 - 130	4	20	
Hexachlorocyclopentadiene	1.97	2.18		ug/L		111	70 - 130	2	20	
Indeno[1,2,3-cd]pyrene	1.97	2.26		ug/L		115	70 - 130	3	20	
Isophorone	1.97	2.04		ug/L		103	70 - 130	3	20	
Lindane	1.97	2.03		ug/L		103	70 - 130	2	20	
Malathion	1.97	2.29		ug/L		116	70 - 130	1	20	
Methoxychlor	1.97	2.07		ug/L		105	70 - 130	5	20	
Metolachlor	1.97	2.45		ug/L		124	70 - 130	5	20	
Molinate	1.97	2.18		ug/L		110	70 - 130	2	20	
Naphthalene	1.97	1.81		ug/L		92	70 - 130	2	20	
Parathion	1.97	2.43		ug/L		123	70 - 130	3	20	
Pendimethalin (Penoxaline)	1.97	2.19		ug/L		111	70 - 130	2	20	
Phenanthrene	1.97	1.91		ug/L		97	70 - 130	1	20	
Propachlor	1.97	2.24		ug/L		114	70 - 130	0	20	
Pyrene	1.97	2.12		ug/L		108	70 - 130	4	20	

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: LCSD 380-54190/24-A
Matrix: Water
Analysis Batch: 54365

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 54190

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Simazine	1.97	1.99		ug/L		101	70 - 130	9	20
Terbacil	1.97	1.97		ug/L		100	70 - 130	17	20
Terbuthylazine	1.97	2.25		ug/L		114	70 - 130	0	20
Thiobencarb	1.97	2.09		ug/L		106	70 - 130	4	20
trans-Nonachlor	1.97	2.08		ug/L		106	70 - 130	0	20
Trifluralin	1.97	2.29		ug/L		116	70 - 130	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2-Nitro-m-xylene	98		70 - 130
Perylene-d12	90		70 - 130
Triphenylphosphate	107		70 - 130

Lab Sample ID: MRL 380-54190/22-A
Matrix: Water
Analysis Batch: 54365

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54190

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0982	0.113		ug/L		115	50 - 150
2,4'-DDD	0.0982	0.126		ug/L		128	50 - 150
2,4'-DDE	0.0982	0.0989		ug/L		101	50 - 150
2,4'-DDT	0.0982	0.112		ug/L		114	50 - 150
2,4-Dinitrotoluene	0.0982	0.121		ug/L		123	50 - 150
2,6-Dinitrotoluene	0.0982	0.119		ug/L		121	50 - 150
2-Methylnaphthalene	0.0982	0.109		ug/L		111	50 - 150
4,4'-DDD	0.0982	0.101		ug/L		103	50 - 150
4,4'-DDE	0.0982	0.115		ug/L		117	50 - 150
4,4'-DDT	0.0982	0.126		ug/L		128	50 - 150
Acenaphthene	0.0982	0.0978	J	ug/L		100	50 - 150
Acenaphthylene	0.0982	0.0883	J	ug/L		90	50 - 150
Acetochlor	0.0491	0.0533	J	ug/L		109	50 - 150
Alachlor	0.0491	0.0547		ug/L		111	50 - 150
alpha-BHC	0.0982	0.105		ug/L		107	50 - 150
alpha-Chlordane	0.0245	<0.028		ug/L		95	50 - 150
Anthracene	0.0196	0.0206		ug/L		105	50 - 150
Atrazine	0.0491	0.0573		ug/L		117	50 - 150
Benz(a)anthracene	0.0491	0.0455	J	ug/L		93	50 - 150
Benzo[a]pyrene	0.0196	0.0159	J	ug/L		81	50 - 150
Benzo[b]fluoranthene	0.0196	0.0185	J	ug/L		94	50 - 150
Benzo[g,h,i]perylene	0.0491	0.0458	J	ug/L		93	50 - 150
Benzo[k]fluoranthene	0.0196	0.0189	J	ug/L		96	50 - 150
beta-BHC	0.0982	0.0992		ug/L		101	50 - 150
Bis(2-ethylhexyl) phthalate	0.589	0.607		ug/L		103	50 - 150
Bromacil	0.0982	0.138		ug/L		141	50 - 150
Butachlor	0.0491	0.0579		ug/L		118	50 - 150
Butylbenzylphthalate	0.147	0.202	J	ug/L		137	50 - 150
Chlorobenzilate	0.0982	0.139		ug/L		141	50 - 150
Chloroneb	0.0982	0.0912	J	ug/L		93	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0982	0.130		ug/L		132	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: MRL 380-54190/22-A
Matrix: Water
Analysis Batch: 54365

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54190

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chlorpyrifos	0.0491	0.0570		ug/L		116	50 - 150
Chrysene	0.0196	0.0193	J	ug/L		98	50 - 150
delta-BHC	0.0982	0.104		ug/L		106	50 - 150
Di(2-ethylhexyl)adipate	0.295	0.404	J	ug/L		137	50 - 150
Dibenz(a,h)anthracene	0.0491	0.0464	J	ug/L		95	50 - 150
Diclorvos (DDVP)	0.0491	0.0943	^3+	ug/L		192	50 - 150
Dieldrin	0.0982	0.109	J	ug/L		111	50 - 150
Diethylphthalate	0.147	0.183	J	ug/L		125	50 - 150
Dimethylphthalate	0.295	0.322	J	ug/L		109	50 - 150
Di-n-butyl phthalate	0.295	0.332	J	ug/L		113	49 - 243
Di-n-octyl phthalate	0.0982	0.105		ug/L		107	50 - 150
Endosulfan I (Alpha)	0.0982	0.0891	J	ug/L		91	50 - 150
Endosulfan II (Beta)	0.0982	0.121		ug/L		123	50 - 150
Endosulfan sulfate	0.0982	0.122		ug/L		124	50 - 150
Endrin	0.0982	0.133		ug/L		135	50 - 150
Endrin aldehyde	0.0982	0.145		ug/L		148	50 - 150
EPTC	0.0982	0.109		ug/L		111	50 - 150
Fluoranthene	0.0491	0.0541	J	ug/L		110	50 - 150
Fluorene	0.0491	0.0522		ug/L		106	50 - 150
gamma-Chlordane	0.0245	0.0261	J	ug/L		106	50 - 150
Heptachlor	0.0393	0.0473		ug/L		120	50 - 150
Heptachlor epoxide (isomer B)	0.0491	0.0538		ug/L		110	50 - 150
Hexachlorobenzene	0.0491	0.0509		ug/L		104	50 - 150
Hexachlorocyclopentadiene	0.0491	0.0479	J	ug/L		97	50 - 150
Indeno[1,2,3-cd]pyrene	0.0491	0.0436	J	ug/L		89	50 - 150
Isophorone	0.0982	0.119	J	ug/L		121	50 - 150
Lindane	0.0393	0.0373	J	ug/L		95	50 - 150
Malathion	0.0982	0.129		ug/L		131	50 - 150
Methoxychlor	0.0982	0.128		ug/L		131	50 - 150
Metolachlor	0.0491	0.0617		ug/L		126	50 - 150
Molinate	0.0982	0.113		ug/L		115	50 - 150
Naphthalene	0.0982	0.108	J	ug/L		110	50 - 150
Parathion	0.0982	0.140		ug/L		142	50 - 150
Pendimethalin (Penoxaline)	0.0982	0.115		ug/L		117	50 - 150
Phenanthrene	0.0196	0.0237	J	ug/L		121	50 - 150
Propachlor	0.0491	0.0533		ug/L		108	50 - 150
Pyrene	0.0491	0.0515		ug/L		105	50 - 150
Simazine	0.0491	0.0627		ug/L		128	50 - 150
Terbacil	0.0982	0.128		ug/L		130	50 - 150
Terbutylazine	0.0982	0.102		ug/L		104	50 - 150
Thiobencarb	0.0982	0.119	J	ug/L		121	50 - 150
trans-Nonachlor	0.0245	<0.026		ug/L		101	50 - 150
Trifluralin	0.0982	0.110		ug/L		112	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	99		70 - 130
Perylene-d12	90		70 - 130
Triphenylphosphate	111		70 - 130

QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: 380-61295-S-1-A MS
Matrix: Water
Analysis Batch: 54365

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 54190

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.097		1.94	1.92		ug/L		99	70 - 130
2,4'-DDD	<0.097		1.94	2.10		ug/L		108	70 - 130
2,4'-DDE	<0.097		1.94	1.93		ug/L		100	70 - 130
2,4'-DDT	<0.097		1.94	2.15		ug/L		111	70 - 130
2,4-Dinitrotoluene	<0.097		1.94	2.13		ug/L		110	70 - 130
2,6-Dinitrotoluene	<0.097		1.94	2.16		ug/L		111	70 - 130
2-Methylnaphthalene	<0.097		1.94	1.94		ug/L		100	70 - 130
4,4'-DDD	<0.097		1.94	2.02		ug/L		104	70 - 130
4,4'-DDE	<0.097		1.94	1.98		ug/L		102	70 - 130
4,4'-DDT	<0.097		1.94	2.15		ug/L		111	70 - 130
Acenaphthene	<0.097		1.94	1.83		ug/L		95	70 - 130
Acenaphthylene	<0.097		1.94	1.93		ug/L		99	70 - 130
Acetochlor	<0.097		1.94	2.44		ug/L		126	70 - 130
Alachlor	<0.049		1.94	2.26		ug/L		117	70 - 130
alpha-BHC	<0.097		1.94	1.99		ug/L		103	70 - 130
alpha-Chlordane	<0.049		1.94	2.16		ug/L		111	70 - 130
Anthracene	<0.019		1.94	1.85		ug/L		96	70 - 130
Atrazine	<0.049		1.94	2.14		ug/L		110	70 - 130
Benz(a)anthracene	<0.049		1.94	2.09		ug/L		108	70 - 130
Benzo[a]pyrene	<0.019		1.94	2.00		ug/L		103	70 - 130
Benzo[b]fluoranthene	<0.019		1.94	2.14		ug/L		110	70 - 130
Benzo[g,h,i]perylene	<0.049		1.94	2.11		ug/L		109	70 - 130
Benzo[k]fluoranthene	<0.019		1.94	2.05		ug/L		106	70 - 130
beta-BHC	<0.097		1.94	1.90		ug/L		98	70 - 130
Bis(2-ethylhexyl) phthalate	<0.58		1.94	1.65		ug/L		85	70 - 130
Bromacil	<0.097		1.94	2.14		ug/L		110	70 - 130
Butachlor	<0.049		1.94	2.45		ug/L		126	70 - 130
Butylbenzylphthalate	<0.49		1.94	2.09		ug/L		107	70 - 130
Chlorobenzilate	<0.097		1.94	2.30		ug/L		118	70 - 130
Chloroneb	<0.097		1.94	2.04		ug/L		105	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.097		1.94	2.08		ug/L		107	70 - 130
Chlorpyrifos	<0.049		1.94	2.30		ug/L		119	70 - 130
Chrysene	<0.019		1.94	1.89		ug/L		98	70 - 130
delta-BHC	<0.097		1.94	1.90		ug/L		98	70 - 130
Di(2-ethylhexyl)adipate	<0.58		1.94	1.84		ug/L		90	70 - 130
Dibenz(a,h)anthracene	<0.049		1.94	2.21		ug/L		114	70 - 130
Diclorvos (DDVP)	<0.049	F1 ^3+ **	1.94	2.63	F1	ug/L		135	70 - 130
Dieldrin	<0.19		1.94	2.04		ug/L		105	70 - 130
Diethylphthalate	<0.49		1.94	2.16		ug/L		111	70 - 130
Dimethylphthalate	<0.49		1.94	2.18		ug/L		112	70 - 130
Di-n-butyl phthalate	<0.97		3.88	4.48		ug/L		116	70 - 130
Di-n-octyl phthalate	<0.097		1.94	1.57		ug/L		81	70 - 130
Endosulfan I (Alpha)	<0.097		1.94	1.95		ug/L		101	70 - 130
Endosulfan II (Beta)	<0.097		1.94	2.18		ug/L		113	70 - 130
Endosulfan sulfate	<0.097		1.94	2.29		ug/L		118	70 - 130
Endrin	<0.097		1.94	2.39		ug/L		123	70 - 130
Endrin aldehyde	<0.097		1.94	2.05		ug/L		106	70 - 130
EPTC	<0.097		1.94	2.11		ug/L		109	70 - 130

QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: 380-61295-S-1-A MS
Matrix: Water
Analysis Batch: 54365

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 54190

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoranthene	<0.097		1.94	2.23		ug/L		115	70 - 130
Fluorene	<0.049		1.94	2.04		ug/L		105	70 - 130
gamma-Chlordane	<0.049		1.94	2.21		ug/L		114	70 - 130
Heptachlor	<0.039		1.94	2.20		ug/L		114	70 - 130
Heptachlor epoxide (isomer B)	<0.049		1.94	2.28		ug/L		118	70 - 130
Hexachlorobenzene	<0.049		1.94	2.06		ug/L		106	70 - 130
Hexachlorocyclopentadiene	<0.049		1.94	2.16		ug/L		111	70 - 130
Indeno[1,2,3-cd]pyrene	<0.049		1.94	2.12		ug/L		110	70 - 130
Isophorone	<0.49		1.94	2.08		ug/L		107	70 - 130
Lindane	<0.039		1.94	1.88		ug/L		97	70 - 130
Malathion	<0.097		1.94	2.25		ug/L		116	70 - 130
Methoxychlor	<0.097		1.94	2.10		ug/L		108	70 - 130
Metolachlor	<0.049		1.94	2.39		ug/L		123	70 - 130
Molinate	<0.097		1.94	2.17		ug/L		112	70 - 130
Naphthalene	<0.29		1.94	1.80		ug/L		93	70 - 130
Parathion	<0.097	F1	1.94	2.55	F1	ug/L		131	70 - 130
Pendimethalin (Penoxaline)	<0.097		1.94	2.24		ug/L		115	70 - 130
Phenanthrene	<0.039		1.94	1.86		ug/L		96	70 - 130
Propachlor	<0.049		1.94	2.23		ug/L		115	70 - 130
Pyrene	<0.049		1.94	2.19		ug/L		113	70 - 130
Simazine	<0.049		1.94	2.12		ug/L		109	70 - 130
Terbacil	<0.097		1.94	2.26		ug/L		116	70 - 130
Terbutylazine	<0.097		1.94	2.23		ug/L		115	70 - 130
Thiobencarb	<0.19		1.94	2.12		ug/L		110	70 - 130
trans-Nonachlor	<0.049		1.94	2.05		ug/L		105	70 - 130
Trifluralin	<0.097		1.94	2.28		ug/L		118	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
2-Nitro-m-xylene	100		70 - 130
Perylene-d12	96		70 - 130
Triphenylphosphate	113		70 - 130

Lab Sample ID: 380-61306-S-1-A DU
Matrix: Water
Analysis Batch: 54365

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 54190

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
1-Methylnaphthalene	<0.098		<0.098		ug/L		NC	20
2,4'-DDD	<0.098		<0.098		ug/L		NC	20
2,4'-DDE	<0.098		<0.098		ug/L		NC	20
2,4'-DDT	<0.098		<0.098		ug/L		NC	20
2,4-Dinitrotoluene	<0.098		<0.098		ug/L		NC	20
2,6-Dinitrotoluene	<0.098		<0.098		ug/L		NC	20
2-Methylnaphthalene	<0.098		<0.098		ug/L		NC	20
4,4'-DDD	<0.098		<0.098		ug/L		NC	20
4,4'-DDE	<0.098		<0.098		ug/L		NC	20
4,4'-DDT	<0.098		<0.098		ug/L		NC	20
Acenaphthene	<0.098		<0.098		ug/L		NC	20

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QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: 380-61306-S-1-A DU
Matrix: Water
Analysis Batch: 54365

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 54190

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Acenaphthylene	<0.098		<0.098		ug/L		NC	20
Acetochlor	<0.098		<0.098		ug/L		NC	20
Alachlor	<0.049		<0.049		ug/L		NC	20
alpha-BHC	<0.098		<0.098		ug/L		NC	20
alpha-Chlordane	<0.049		<0.049		ug/L		NC	20
Anthracene	<0.020		<0.020		ug/L		NC	20
Atrazine	<0.049		<0.049		ug/L		NC	20
Benz(a)anthracene	<0.049		<0.049		ug/L		NC	20
Benzo[a]pyrene	<0.020		<0.020		ug/L		NC	20
Benzo[b]fluoranthene	<0.020		<0.020		ug/L		NC	20
Benzo[g,h,i]perylene	<0.049		<0.049		ug/L		NC	20
Benzo[k]fluoranthene	<0.020		<0.020		ug/L		NC	20
beta-BHC	<0.098		<0.098		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.59		<0.59		ug/L		NC	20
Bromacil	<0.098		<0.098		ug/L		NC	20
Butachlor	<0.049		<0.049		ug/L		NC	20
Butylbenzylphthalate	<0.49		<0.49		ug/L		NC	20
Chlorobenzilate	<0.098		<0.098		ug/L		NC	20
Chloroneb	<0.098		<0.098		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	<0.098		<0.098		ug/L		NC	20
Chlorpyrifos	<0.049		<0.049		ug/L		NC	20
Chrysene	<0.020		<0.020		ug/L		NC	20
delta-BHC	<0.098		<0.098		ug/L		NC	20
Di(2-ethylhexyl)adipate	<0.59		<0.59		ug/L		NC	20
Dibenz(a,h)anthracene	<0.049		<0.049		ug/L		NC	20
Diclorvos (DDVP)	<0.049	^3+ **	<0.049	*+	ug/L		NC	20
Dieldrin	<0.20		<0.20		ug/L		NC	20
Diethylphthalate	<0.49		<0.49		ug/L		NC	20
Dimethylphthalate	<0.49		<0.49		ug/L		NC	20
Di-n-butyl phthalate	<0.98		<0.98		ug/L		NC	20
Di-n-octyl phthalate	<0.098		<0.098		ug/L		NC	20
Endosulfan I (Alpha)	<0.098		<0.098		ug/L		NC	20
Endosulfan II (Beta)	<0.098		<0.098		ug/L		NC	20
Endosulfan sulfate	<0.098		<0.098		ug/L		NC	20
Endrin	<0.098		<0.098		ug/L		NC	20
Endrin aldehyde	<0.098		<0.098		ug/L		NC	20
EPTC	<0.098		<0.098		ug/L		NC	20
Fluoranthene	<0.098		<0.098		ug/L		NC	20
Fluorene	<0.049		<0.049		ug/L		NC	20
gamma-Chlordane	<0.049		<0.049		ug/L		NC	20
Heptachlor	<0.039		<0.039		ug/L		NC	20
Heptachlor epoxide (isomer B)	<0.049		<0.049		ug/L		NC	20
Hexachlorobenzene	<0.049		<0.049		ug/L		NC	20
Hexachlorocyclopentadiene	<0.049		<0.049		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	<0.049		<0.049		ug/L		NC	20
Isophorone	<0.49		<0.49		ug/L		NC	20
Lindane	<0.039		<0.039		ug/L		NC	20
Malathion	<0.098		<0.098		ug/L		NC	20
Methoxychlor	<0.098		<0.098		ug/L		NC	20

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QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: 380-61306-S-1-A DU
Matrix: Water
Analysis Batch: 54365

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 54190

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Metolachlor	<0.049		<0.049		ug/L		NC	20
Molinate	<0.098		<0.098		ug/L		NC	20
Naphthalene	<0.29		<0.29		ug/L		NC	20
Parathion	<0.098		<0.098		ug/L		NC	20
Pendimethalin (Penoxaline)	<0.098		<0.098		ug/L		NC	20
Phenanthrene	<0.039		<0.039		ug/L		NC	20
Propachlor	<0.049		<0.049		ug/L		NC	20
Pyrene	<0.049		<0.049		ug/L		NC	20
Simazine	<0.049		<0.049		ug/L		NC	20
Terbacil	<0.098		<0.098		ug/L		NC	20
Terbutylazine	<0.098		<0.098		ug/L		NC	20
Thiobencarb	<0.20		<0.20		ug/L		NC	20
Total Permethrin (mixed isomers)	<0.20		<0.20		ug/L		NC	20
trans-Nonachlor	<0.049		<0.049		ug/L		NC	20
Trifluralin	<0.098		<0.098		ug/L		NC	20

Surrogate	DU	DU	Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	101		70 - 130
Perylene-d12	106		70 - 130
Triphenylphosphate	112		70 - 130

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

Lab Sample ID: MBL 380-56110/23-A
Matrix: Water
Analysis Batch: 56425

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 56110

Analyte	MBL	MBL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Perfluorobutanoic acid (PFBA)	0.774	J B	2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1

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QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: MBL 380-56110/23-A
Matrix: Water
Analysis Batch: 56425

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 56110

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		09/19/23 12:00	09/21/23 09:00	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	91		50 - 200	09/19/23 12:00	09/21/23 09:00	1
13C6 PFDA	96		50 - 200	09/19/23 12:00	09/21/23 09:00	1
13C5 PFHxA	102		50 - 200	09/19/23 12:00	09/21/23 09:00	1
13C4 PFHpA	97		50 - 200	09/19/23 12:00	09/21/23 09:00	1
13C8 PFOA	100		50 - 200	09/19/23 12:00	09/21/23 09:00	1
13C9 PFNA	100		50 - 200	09/19/23 12:00	09/21/23 09:00	1
13C7 PFUnA	96		50 - 200	09/19/23 12:00	09/21/23 09:00	1
13C2 PFDoA	96		50 - 200	09/19/23 12:00	09/21/23 09:00	1
13C4 PFBA	99		50 - 200	09/19/23 12:00	09/21/23 09:00	1
13C5 PFPeA	101		50 - 200	09/19/23 12:00	09/21/23 09:00	1
13C3 PFBS	100		50 - 200	09/19/23 12:00	09/21/23 09:00	1
13C3 PFHxS	98		50 - 200	09/19/23 12:00	09/21/23 09:00	1
13C8 PFOS	98		50 - 200	09/19/23 12:00	09/21/23 09:00	1
13C2-4:2-FTS	130		50 - 200	09/19/23 12:00	09/21/23 09:00	1
13C2-6:2-FTS	104		50 - 200	09/19/23 12:00	09/21/23 09:00	1
13C2-8:2-FTS	98		50 - 200	09/19/23 12:00	09/21/23 09:00	1

Lab Sample ID: LCS 380-56110/25-A
Matrix: Water
Analysis Batch: 56425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56110

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.0	56.0		ng/L		93	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.0	59.5		ng/L		99	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.0	58.2		ng/L		97	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.0	54.8		ng/L		91	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: LCS 380-56110/25-A
Matrix: Water
Analysis Batch: 56425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56110

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanesulfonic acid (PFBS)	60.0	54.8		ng/L		91	70 - 130
Perfluorodecanoic acid (PFDA)	60.0	57.3		ng/L		95	70 - 130
Perfluorododecanoic acid (PFDoA)	60.0	56.8		ng/L		95	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.0	55.0		ng/L		92	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.0	53.3		ng/L		89	70 - 130
Perfluorohexanoic acid (PFHxA)	60.0	54.7		ng/L		91	70 - 130
Perfluorononanoic acid (PFNA)	60.0	55.1		ng/L		92	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.0	54.9		ng/L		91	70 - 130
Perfluorooctanoic acid (PFOA)	60.0	55.3		ng/L		92	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.0	57.5		ng/L		96	70 - 130
Perfluorobutanoic acid (PFBA)	60.0	56.5		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.0	55.5		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.0	53.4		ng/L		89	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.0	58.9		ng/L		98	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.0	50.7		ng/L		85	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	60.0	53.6		ng/L		89	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.0	56.3		ng/L		94	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.0	53.9		ng/L		90	70 - 130
Perfluoropentanoic acid (PFPeA)	60.0	55.9		ng/L		93	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.0	56.5		ng/L		94	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.0	55.9		ng/L		93	70 - 130

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C3 HFPO-DA	97		50 - 200
13C6 PFDA	98		50 - 200
13C5 PFHxA	103		50 - 200
13C4 PFHpA	100		50 - 200
13C8 PFOA	102		50 - 200
13C9 PFNA	100		50 - 200
13C7 PFUnA	100		50 - 200
13C2 PFDoA	100		50 - 200
13C4 PFBA	102		50 - 200
13C5 PFPeA	106		50 - 200
13C3 PFBS	100		50 - 200
13C3 PFHxS	101		50 - 200
13C8 PFOS	98		50 - 200
13C2-4:2-FTS	131		50 - 200
13C2-6:2-FTS	107		50 - 200

QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: LCS 380-56110/25-A
Matrix: Water
Analysis Batch: 56425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56110

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
13C2-8:2-FTS	105		50 - 200

Lab Sample ID: LCSD 380-56110/26-A
Matrix: Water
Analysis Batch: 56425

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 56110

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.1	61.1		ng/L		102	70 - 130	9	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.1	64.4		ng/L		107	70 - 130	8	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.1	61.7		ng/L		103	70 - 130	6	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.1	62.5		ng/L		104	70 - 130	13	30
Perfluorobutanesulfonic acid (PFBS)	60.1	59.3		ng/L		99	70 - 130	8	30
Perfluorodecanoic acid (PFDA)	60.1	62.9		ng/L		105	70 - 130	9	30
Perfluorododecanoic acid (PFDoA)	60.1	62.1		ng/L		103	70 - 130	9	30
Perfluoroheptanoic acid (PFHpA)	60.1	60.0		ng/L		100	70 - 130	9	30
Perfluorohexanesulfonic acid (PFHxS)	60.1	59.0		ng/L		98	70 - 130	10	30
Perfluorohexanoic acid (PFHxA)	60.1	58.6		ng/L		97	70 - 130	7	30
Perfluorononanoic acid (PFNA)	60.1	60.2		ng/L		100	70 - 130	9	30
Perfluorooctanesulfonic acid (PFOS)	60.1	62.4		ng/L		104	70 - 130	13	30
Perfluorooctanoic acid (PFOA)	60.1	58.9		ng/L		98	70 - 130	6	30
Perfluoroundecanoic acid (PFUnA)	60.1	66.2		ng/L		110	70 - 130	14	30
Perfluorobutanoic acid (PFBA)	60.1	61.4		ng/L		102	70 - 130	8	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.1	67.2		ng/L		112	70 - 130	19	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.1	64.4		ng/L		107	70 - 130	19	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.1	60.9		ng/L		101	70 - 130	3	30
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	60.1	61.9		ng/L		103	70 - 130	20	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	60.1	57.7		ng/L		96	70 - 130	7	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.1	59.7		ng/L		99	70 - 130	6	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.1	57.2		ng/L		95	70 - 130	6	30
Perfluoropentanoic acid (PFPeA)	60.1	61.3		ng/L		102	70 - 130	9	30
Perfluoroheptanesulfonic acid (PFHpS)	60.1	62.7		ng/L		104	70 - 130	10	30
Perfluoropentanesulfonic acid (PFPeS)	60.1	63.4		ng/L		105	70 - 130	13	30

QC Sample Results

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

Job ID: 380-61062-1

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

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	87		50 - 200
13C6 PFDA	88		50 - 200
13C5 PFHxA	91		50 - 200
13C4 PFHpA	90		50 - 200
13C8 PFOA	92		50 - 200
13C9 PFNA	90		50 - 200
13C7 PFUnA	84		50 - 200
13C2 PFDoA	90		50 - 200
13C4 PFBA	92		50 - 200
13C5 PFPeA	96		50 - 200
13C3 PFBS	97		50 - 200
13C3 PFHxS	94		50 - 200
13C8 PFOS	93		50 - 200
13C2-4:2-FTS	115		50 - 200
13C2-6:2-FTS	103		50 - 200
13C2-8:2-FTS	86		50 - 200

Lab Sample ID: MRL 380-56110/24-A
Matrix: Water
Analysis Batch: 56425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56110

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.76	J	ng/L		88	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.93	J	ng/L		96	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.86	J	ng/L		93	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.89	J	ng/L		94	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.85	J	ng/L		92	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.93	J	ng/L		96	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.94	J	ng/L		97	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.94	J	ng/L		97	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.79	J	ng/L		89	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.86	J	ng/L		93	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.93	J	ng/L		97	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	1.83	J	ng/L		92	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.00	J	ng/L		100	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.97	J	ng/L		98	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.68	J	ng/L		134	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.07	J	ng/L		103	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	1.98	J	ng/L		99	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.17	J	ng/L		108	50 - 150

QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: MRL 380-56110/24-A
Matrix: Water
Analysis Batch: 56425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56110

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	1.87	J	ng/L		94	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	1.90	J	ng/L		95	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.82	J	ng/L		91	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.88	J	ng/L		94	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	1.99	J	ng/L		99	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	1.88	J	ng/L		94	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.87	J	ng/L		93	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	92		50 - 200
13C6 PFDA	90		50 - 200
13C5 PFHxA	101		50 - 200
13C4 PFHpA	97		50 - 200
13C8 PFOA	99		50 - 200
13C9 PFNA	93		50 - 200
13C7 PFUnA	90		50 - 200
13C2 PFDoA	92		50 - 200
13C4 PFBA	101		50 - 200
13C5 PFPeA	105		50 - 200
13C3 PFBS	98		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	99		50 - 200
13C2-4:2-FTS	132		50 - 200
13C2-6:2-FTS	110		50 - 200
13C2-8:2-FTS	96		50 - 200

Lab Sample ID: 380-60201-AM-1-A MS
Matrix: Water
Analysis Batch: 56425

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 56110

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)	<2.0		60.4	49.2		ng/L		81	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	54.4		ng/L		90	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	53.4		ng/L		89	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.4	49.8		ng/L		82	70 - 130
Perfluorobutanesulfonic acid (PFBS)	6.2		60.4	58.0		ng/L		86	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.4	53.6		ng/L		89	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	53.8		ng/L		89	70 - 130

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QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: 380-60201-AM-1-A MS
Matrix: Water
Analysis Batch: 56425

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 56110

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	50.8		ng/L		84	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	6.6		60.4	54.5		ng/L		79	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.4	52.6		ng/L		87	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.4	51.1		ng/L		85	70 - 130
Perfluorooctanesulfonic acid (PFOS)	5.9		60.4	56.1		ng/L		83	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.4	53.4		ng/L		87	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	53.8		ng/L		89	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0	B	60.4	51.6		ng/L		83	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	54.5		ng/L		90	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	55.6		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	53.9		ng/L		89	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.4	46.9		ng/L		78	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.4	52.2		ng/L		86	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	53.4		ng/L		88	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	52.8		ng/L		88	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.4	51.6		ng/L		85	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	54.1		ng/L		90	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	55.4		ng/L		90	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	MS Limits
13C3 HFPO-DA	104		50 - 200
13C6 PFDA	95		50 - 200
13C5 PFHxA	97		50 - 200
13C4 PFHpA	98		50 - 200
13C8 PFOA	100		50 - 200
13C9 PFNA	100		50 - 200
13C7 PFUnA	96		50 - 200
13C2 PFDoA	99		50 - 200
13C4 PFBA	100		50 - 200
13C5 PFPeA	111		50 - 200
13C3 PFBS	99		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	98		50 - 200
13C2-4:2-FTS	123		50 - 200
13C2-6:2-FTS	106		50 - 200
13C2-8:2-FTS	101		50 - 200

QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: 380-60205-AM-1-A DU
Matrix: Water
Analysis Batch: 56425

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 56110

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		<2.0		ng/L		NC	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		<2.0		ng/L		NC	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		<2.0		ng/L		NC	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		<2.0		ng/L		NC	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		<2.0		ng/L		NC	30
Perfluorodecanoic acid (PFDA)	<2.0		<2.0		ng/L		NC	30
Perfluorododecanoic acid (PFDoA)	<2.0		<2.0		ng/L		NC	30
Perfluoroheptanoic acid (PFHpA)	<2.0		<2.0		ng/L		NC	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		<2.0		ng/L		NC	30
Perfluorohexanoic acid (PFHxA)	<2.0		<2.0		ng/L		NC	30
Perfluorononanoic acid (PFNA)	<2.0		<2.0		ng/L		NC	30
Perfluorooctanesulfonic acid (PFOS)	2.7		2.38		ng/L		14	30
Perfluorooctanoic acid (PFOA)	<2.0		<2.0		ng/L		NC	30
Perfluoroundecanoic acid (PFUnA)	<2.0		<2.0		ng/L		NC	30
Perfluorobutanoic acid (PFBA)	<2.0	B	<2.0	B	ng/L		NC	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		<2.0		ng/L		NC	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		<2.0		ng/L		NC	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		<2.0		ng/L		NC	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		<2.0		ng/L		NC	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		<2.0		ng/L		NC	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		<2.0		ng/L		NC	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		<2.0		ng/L		NC	30
Perfluoropentanoic acid (PFPeA)	<2.0		<2.0		ng/L		NC	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		<2.0		ng/L		NC	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		<2.0		ng/L		NC	30
		DU	DU					
Isotope Dilution	%Recovery	Qualifier	Limits					
13C3 HFPO-DA	100		50 - 200					
13C6 PFDA	99		50 - 200					
13C5 PFHxA	106		50 - 200					
13C4 PFHpA	105		50 - 200					
13C8 PFOA	104		50 - 200					
13C9 PFNA	103		50 - 200					

QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: 380-60205-AM-1-A DU
Matrix: Water
Analysis Batch: 56425

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 56110

Isotope Dilution	DU DU		Limits
	%Recovery	Qualifier	
13C7 PFUnA	95		50 - 200
13C2 PFDoA	99		50 - 200
13C4 PFBA	105		50 - 200
13C5 PFPeA	117		50 - 200
13C3 PFBS	107		50 - 200
13C3 PFHxS	107		50 - 200
13C8 PFOS	101		50 - 200
13C2-4:2-FTS	137		50 - 200
13C2-6:2-FTS	118		50 - 200
13C2-8:2-FTS	100		50 - 200

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

Lab Sample ID: MBL 380-54601/22-A
Matrix: Water
Analysis Batch: 54835

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 54601

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		09/06/23 11:35	09/07/23 17:39	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/06/23 11:35	09/07/23 17:39	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/06/23 11:35	09/07/23 17:39	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		09/06/23 11:35	09/07/23 17:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		09/06/23 11:35	09/07/23 17:39	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/06/23 11:35	09/07/23 17:39	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/06/23 11:35	09/07/23 17:39	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/06/23 11:35	09/07/23 17:39	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/06/23 11:35	09/07/23 17:39	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/06/23 11:35	09/07/23 17:39	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/06/23 11:35	09/07/23 17:39	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/06/23 11:35	09/07/23 17:39	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/06/23 11:35	09/07/23 17:39	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		09/06/23 11:35	09/07/23 17:39	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		09/06/23 11:35	09/07/23 17:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/06/23 11:35	09/07/23 17:39	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		09/06/23 11:35	09/07/23 17:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/06/23 11:35	09/07/23 17:39	1
Surrogate	MBL MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	116		70 - 130			09/06/23 11:35	09/07/23 17:39	1
13C2 PFHxA	121		70 - 130			09/06/23 11:35	09/07/23 17:39	1
13C2 PFDA	125		70 - 130			09/06/23 11:35	09/07/23 17:39	1
13C3-GenX	110		70 - 130			09/06/23 11:35	09/07/23 17:39	1

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QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: LCS 380-54601/24-A
Matrix: Water
Analysis Batch: 54835

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54601

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.2	56.1		ng/L		112	70 - 130
Perfluorooctanesulfonic acid (PFOS)	46.5	54.3		ng/L		117	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.2	57.5		ng/L		115	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.2	53.1		ng/L		106	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.2	52.1		ng/L		104	70 - 130
Perfluorohexanoic acid (PFHxA)	50.2	58.5		ng/L		117	70 - 130
Perfluorododecanoic acid (PFDoA)	50.2	54.8		ng/L		109	70 - 130
Perfluorooctanoic acid (PFOA)	50.2	59.0		ng/L		118	70 - 130
Perfluorodecanoic acid (PFDA)	50.2	59.4		ng/L		118	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	45.8	54.3		ng/L		118	70 - 130
Perfluorobutanesulfonic acid (PFBS)	44.4	50.9		ng/L		115	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.2	58.3		ng/L		116	70 - 130
Perfluorononanoic acid (PFNA)	50.2	57.6		ng/L		115	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.2	58.9		ng/L		117	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.2	62.0		ng/L		124	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	46.9	53.4		ng/L		114	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	47.4	52.7		ng/L		111	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.4	54.4		ng/L		115	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	102		70 - 130
13C2 PFHxA	119		70 - 130
13C2 PFDA	110		70 - 130
13C3-GenX	114		70 - 130

Lab Sample ID: LCSD 380-54601/25-A
Matrix: Water
Analysis Batch: 54835

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 54601

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	53.9		ng/L		108	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	46.4	53.1		ng/L		114	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	50.1	53.9		ng/L		108	70 - 130	6	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	56.4		ng/L		113	70 - 130	6	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: LCSD 380-54601/25-A
Matrix: Water
Analysis Batch: 54835

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 54601

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	50.1	55.7		ng/L		111	70 - 130	7	30
Perfluorohexanoic acid (PFHxA)	50.1	57.3		ng/L		114	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	50.1	53.6		ng/L		107	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	50.1	57.0		ng/L		114	70 - 130	3	30
Perfluorodecanoic acid (PFDA)	50.1	56.6		ng/L		113	70 - 130	5	30
Perfluorohexanesulfonic acid (PFHxS)	45.7	52.1		ng/L		114	70 - 130	4	30
Perfluorobutanesulfonic acid (PFBS)	44.3	49.5		ng/L		112	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	50.1	58.4		ng/L		117	70 - 130	0	30
Perfluorononanoic acid (PFNA)	50.1	59.2		ng/L		118	70 - 130	3	30
Perfluorotetradecanoic acid (PFTA)	50.1	53.2		ng/L		106	70 - 130	10	30
Perfluorotridecanoic acid (PFTrDA)	50.1	54.7		ng/L		109	70 - 130	13	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	46.8	52.4		ng/L		112	70 - 130	2	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	47.3	50.1		ng/L		106	70 - 130	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.3	54.7		ng/L		116	70 - 130	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
d5-NEtFOSAA	103		70 - 130
13C2 PFHxA	110		70 - 130
13C2 PFDA	110		70 - 130
13C3-GenX	107		70 - 130

Lab Sample ID: MRL 380-54601/23-A
Matrix: Water
Analysis Batch: 54835

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54601

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.83	J	ng/L		91	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	2.15	J	ng/L		115	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.01	J	ng/L		100	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	2.12	J	ng/L		105	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	2.01	2.13	J	ng/L		106	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.20	J	ng/L		109	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.00	J	ng/L		99	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.30	J	ng/L		114	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.09	J	ng/L		104	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: MRL 380-54601/23-A
Matrix: Water
Analysis Batch: 54835

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54601

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	1.83	2.27	J	ng/L		124	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.78	1.95	J	ng/L		110	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.19	J	ng/L		109	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.22	J	ng/L		111	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	2.10	J	ng/L		104	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	2.01	2.04	J	ng/L		102	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.88	2.01	J	ng/L		107	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.90	2.08	J	ng/L		109	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.90	2.09	J	ng/L		110	50 - 150
Surrogate	%Recovery	MRL	MRL Qualifier	Limits			
d5-NEtFOSAA	107			70 - 130			
13C2 PFHxA	102			70 - 130			
13C2 PFDA	104			70 - 130			
13C3-GenX	93			70 - 130			

Lab Sample ID: 380-61035-B-1-A MS
Matrix: Water
Analysis Batch: 54835

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 54601

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	45.0		ng/L		90	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		46.5	54.5		ng/L		117	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	55.3		ng/L		110	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	52.6		ng/L		105	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	48.8		ng/L		97	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	56.7		ng/L		112	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	55.6		ng/L		111	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		50.2	55.6		ng/L		111	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		50.2	55.4		ng/L		110	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		45.8	53.3		ng/L		115	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		44.4	54.2		ng/L		121	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	52.7		ng/L		105	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		50.2	56.4		ng/L		112	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	53.9		ng/L		107	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: 380-61035-B-1-A MS
Matrix: Water
Analysis Batch: 54835

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 54601

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	57.7		ng/L		115	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		46.9	53.5		ng/L		114	70 - 130
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		47.4	55.3		ng/L		117	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		47.4	49.3		ng/L		104	70 - 130
Surrogate		MS %Recovery	MS Qualifier		Limits				
d5-NEtFOSAA		91			70 - 130				
13C2 PFHxA		105			70 - 130				
13C2 PFDA		104			70 - 130				
13C3-GenX		96			70 - 130				

Lab Sample ID: 380-61035-C-1-A MSD
Matrix: Water
Analysis Batch: 54835

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 54601

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.1	57.4		ng/L		115	70 - 130	24	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		46.4	54.7		ng/L		118	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.1	54.4		ng/L		109	70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.1	52.6		ng/L		105	70 - 130	0	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.1	53.0		ng/L		106	70 - 130	8	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.1	59.8		ng/L		118	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.1	59.2		ng/L		118	70 - 130	6	30
Perfluorooctanoic acid (PFOA)	<2.0		50.1	58.0		ng/L		116	70 - 130	4	30
Perfluorodecanoic acid (PFDA)	<2.0		50.1	56.0		ng/L		112	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		45.7	54.2		ng/L		118	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		44.3	50.6		ng/L		113	70 - 130	7	30
Perfluoroheptanoic acid (PFHpA)	<2.0		50.1	56.9		ng/L		114	70 - 130	8	30
Perfluorononanoic acid (PFNA)	<2.0		50.1	57.4		ng/L		114	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	<2.0		50.1	52.9		ng/L		106	70 - 130	2	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.1	57.9		ng/L		116	70 - 130	0	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		46.8	55.1		ng/L		118	70 - 130	3	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		47.3	55.0		ng/L		116	70 - 130	1	30

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QC Sample Results

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

Job ID: 380-61062-1

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

Lab Sample ID: 380-61035-C-1-A MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 54835

Prep Batch: 54601

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		47.3	54.7		ng/L		116	70 - 130	10	30
Surrogate	%Recovery	MSD Qualifier	MSD Limits								
d5-NEtFOSAA	105		70 - 130								
13C2 PFHxA	122		70 - 130								
13C2 PFDA	114		70 - 130								
13C3-GenX	115		70 - 130								

QC Association Summary

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

Job ID: 380-61062-1

GC/MS Semi VOA

Prep Batch: 54190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61062-1	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	525.2	
380-61062-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	
MB 380-54190/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-54190/23-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-54190/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-54190/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-61295-S-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-61306-S-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 54365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61062-1	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	525.2	54190
380-61062-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	54190
MB 380-54190/21-A	Method Blank	Total/NA	Water	525.2	54190
LCS 380-54190/23-A	Lab Control Sample	Total/NA	Water	525.2	54190
LCSD 380-54190/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	54190
MRL 380-54190/22-A	Lab Control Sample	Total/NA	Water	525.2	54190
380-61295-S-1-A MS	Matrix Spike	Total/NA	Water	525.2	54190
380-61306-S-1-A DU	Duplicate	Total/NA	Water	525.2	54190

LCMS

Prep Batch: 54601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61062-1	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	537.1 DW	
380-61062-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	537.1 DW	
380-61062-5	FB: AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	537.1 DW	
380-61062-6	FB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
MBL 380-54601/22-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-54601/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LCSD 380-54601/25-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	
MRL 380-54601/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-61035-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-61035-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 54835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61062-1	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	537.1	54601
380-61062-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	537.1	54601
380-61062-5	FB: AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	537.1	54601
380-61062-6	FB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	54601
MBL 380-54601/22-A	Method Blank	Total/NA	Water	537.1	54601
LCS 380-54601/24-A	Lab Control Sample	Total/NA	Water	537.1	54601
LCSD 380-54601/25-A	Lab Control Sample Dup	Total/NA	Water	537.1	54601
MRL 380-54601/23-A	Lab Control Sample	Total/NA	Water	537.1	54601
380-61035-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	54601
380-61035-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	54601

Prep Batch: 56110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61062-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	533	

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QC Association Summary

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

Job ID: 380-61062-1

LCMS (Continued)

Prep Batch: 56110 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MBL 380-56110/23-A	Method Blank	Total/NA	Water	533	
LCS 380-56110/25-A	Lab Control Sample	Total/NA	Water	533	
LCSD 380-56110/26-A	Lab Control Sample Dup	Total/NA	Water	533	
MRL 380-56110/24-A	Lab Control Sample	Total/NA	Water	533	
380-60201-AM-1-A MS	Matrix Spike	Total/NA	Water	533	
380-60205-AM-1-A DU	Duplicate	Total/NA	Water	533	

Analysis Batch: 56425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61062-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	533	56110
MBL 380-56110/23-A	Method Blank	Total/NA	Water	533	56110
LCS 380-56110/25-A	Lab Control Sample	Total/NA	Water	533	56110
LCSD 380-56110/26-A	Lab Control Sample Dup	Total/NA	Water	533	56110
MRL 380-56110/24-A	Lab Control Sample	Total/NA	Water	533	56110
380-60201-AM-1-A MS	Matrix Spike	Total/NA	Water	533	56110
380-60205-AM-1-A DU	Duplicate	Total/NA	Water	533	56110

Lab Chronicle

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

Job ID: 380-61062-1

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

Lab Sample ID: 380-61062-1

Date Collected: 08/28/23 10:53

Matrix: Drinking Water

Date Received: 08/30/23 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			54190	N8NE	EA POM	09/01/23 15:16
Total/NA	Analysis	525.2		1	54365	Q8LA	EA POM	09/05/23 12:02
Total/NA	Prep	537.1 DW			54601	US1B	EA POM	09/06/23 11:35
Total/NA	Analysis	537.1		1	54835	UKYM	EA POM	09/07/23 20:45

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-61062-2

Date Collected: 08/28/23 10:19

Matrix: Drinking Water

Date Received: 08/30/23 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			54190	N8NE	EA POM	09/01/23 15:16
Total/NA	Analysis	525.2		1	54365	Q8LA	EA POM	09/05/23 12:22
Total/NA	Prep	533			56110	AUY6	EA POM	09/19/23 12:00
Total/NA	Analysis	533		1	56425	SZ9R	EA POM	09/21/23 10:17
Total/NA	Prep	537.1 DW			54601	US1B	EA POM	09/06/23 11:35
Total/NA	Analysis	537.1		1	54835	UKYM	EA POM	09/07/23 20:55

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

Lab Sample ID: 380-61062-5

Date Collected: 08/28/23 10:53

Matrix: Water

Date Received: 08/30/23 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			54601	US1B	EA POM	09/06/23 11:35
Total/NA	Analysis	537.1		1	54835	UKYM	EA POM	09/07/23 21:04

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-61062-6

Date Collected: 08/28/23 10:19

Matrix: Water

Date Received: 08/30/23 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			54601	US1B	EA POM	09/06/23 11:35
Total/NA	Analysis	537.1		1	54835	UKYM	EA POM	09/07/23 21:14

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 380-61062-1

Laboratory: Eurofins Eaton Analytical Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-24

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

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

Accreditation/Certification Summary

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

Job ID: 380-61062-1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

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

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Drinking Water	Malathion
525.2	525.2	Drinking Water	Molinate
525.2	525.2	Drinking Water	Naphthalene
525.2	525.2	Drinking Water	Parathion
525.2	525.2	Drinking Water	Pendimethalin (Penoxaline)
525.2	525.2	Drinking Water	Phenanthrene
525.2	525.2	Drinking Water	Pyrene
525.2	525.2	Drinking Water	Terbacil
525.2	525.2	Drinking Water	Terbutylazine
525.2	525.2	Drinking Water	Thiobencarb
525.2	525.2	Drinking Water	Total Permethrin (mixed isomers)
525.2	525.2	Drinking Water	trans-Nonachlor
525.2	525.2	Drinking Water	Trifluralin
533	533	Drinking Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
533	533	Drinking Water	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)
533	533	Drinking Water	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)
533	533	Drinking Water	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)
533	533	Drinking Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
533	533	Drinking Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
533	533	Drinking Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
533	533	Drinking Water	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
533	533	Drinking Water	Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)
533	533	Drinking Water	Perfluoro-3-methoxypropanoic acid (PFMPA)
533	533	Drinking Water	Perfluoro-4-methoxybutanoic acid (PFMBA)
533	533	Drinking Water	Perfluorobutanoic acid (PFBA)
533	533	Drinking Water	Perfluoroheptanesulfonic acid (PFHpS)
533	533	Drinking Water	Perfluoropentanesulfonic acid (PFPeS)
533	533	Drinking Water	Perfluoropentanoic acid (PFPeA)
537.1	537.1 DW	Drinking Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Drinking Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Drinking Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Drinking Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
537.1	537.1 DW	Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)

Accreditation/Certification Summary

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

Job ID: 380-61062-1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

<u>Authority</u>	<u>Program</u>	<u>Identification Number</u>	<u>Expiration Date</u>
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The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

<u>Analysis Method</u>	<u>Prep Method</u>	<u>Matrix</u>	<u>Analyte</u>
537.1	537.1 DW	Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)

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Method Summary

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

Job ID: 380-61062-1

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA POM
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA POM
525.2	Extraction of Semivolatile Compounds	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA POM
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA POM

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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



Sample Summary

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

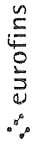
Job ID: 380-61062-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-61062-1	AIEA WELLS PUMPS 1&2 (260) P2	Drinking Water	08/28/23 10:53	08/30/23 10:10	HI0000331
380-61062-2	AIEA GULCH WELLS PUMP 2	Drinking Water	08/28/23 10:19	08/30/23 10:10	HI0000331
380-61062-5	FB: AIEA WELLS PUMPS 1&2 (260)	Water	08/28/23 10:53	08/30/23 10:10	
380-61062-6	FB: AIEA GULCH WELLS PUMP 2	Water	08/28/23 10:19	08/30/23 10:10	

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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



5711717171
 APTL Co

Client Information Client Contact: Dr. Ron Fenstermacher City & County of Honolulu		Lab PM: Arada, Rachelle E-Mail: Rachelle.Arada@et.eurofins.com		Carrier Tracking No(s): 380-27941-2757 2 State of Origin:		COC No: 380-27941-2757 2 Page: Page 1 of 2 Job #:	
Address: 630 South Beretania Street, Chemistry Lab City: Honolulu State Zip: HI, 96843 Phone: 808-748-5091 (tel) Email: rfenstermacher@hbws.org		PWSID Due Date Requested TAT Requested (days) Compliance Project: Δ No PO #: C20525101 exp 05312023 WO #:		Analysis Requested SUBCONTRACT - 825 PAH Physis LL (EAL) + TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil SUBCONTRACT - (MOD) 525plus PLUS TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 537 1_DW_PREC - 537 1 Full List 533 - All Analytes N		Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecylhydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma L - EDA Other:	
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill Site:		Project #: 38001111 SOW#:		Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Total Number of Containers:		Special Instructions/Note:	
Sample Identification AIEA WELLS PUMPS 1&2 (260) P2 AIEA GULCH WELLS PUMP2		Sample Date: 28-Aug-2023 Sample Time: 1003 28-Aug-2023 1019		Sample Type (C=Comp, G=grab) Preservation Code: G Water G Water		Matrix (W=water, S=solid, O=wastewat, BT=TISSUE, A=AIR)	
TB AIEA WELLS PUMPS 1&2 (260) TB AIEA GULCH WELLS PUMP2		Sample Date: 28-Aug-2023 Sample Time: 1003 28-Aug-2023 1019		Sample Type (C=Comp, G=grab) Preservation Code: G Water G Water		Matrix (W=water, S=solid, O=wastewat, BT=TISSUE, A=AIR)	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Deliverable Requested I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Special Instructions/QC Requirements	
Empty Kit Relinquished by: BAILEY		Date: 28/08/2023 1400		Method of Shipment: FED EX		Date/Time: 08/30/2023 10:10 Company: EEPAP	
Relinquished by: BAILEY		Date/Time:		Relinquished by: G. RETNER		Date/Time:	
Relinquished by:		Date/Time:		Relinquished by:		Date/Time:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No:		Cooler Temperature(s) °C and Other Remarks: (75H) 12°-10.2°-1.0° / 2.1°-0.2° 2.2° GEL-FROZEN		Ver: 01/16/2019	



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



Chain of Custody Record

Eurofins
 11111
 11111

Client Information		Lab PM Arada Rachelle		Carrier Tracking No(s) 380-27941-2757 2											
Client Contact: Dr Ron Fenstermacher		E-Mail Rachelle.Arada@et.eurofins.com		Page Page 2 of 2											
Company City & County of Honolulu		PWSID		Job #											
Address 630 South Beretania Street, Chemistry Lab		Due Date Requested		Analysis Requested											
City Honolulu		TAT Requested (days)		Total Number of containers											
State, Zip HI, 96843		Compliance Project: <input type="checkbox"/> No		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other											
Phone: 808-748-5091 (tel)		PO #: C20525101 exp 05312023		M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Y - Inzma Z - other (specify)											
Email: rfenstermacher@hbws.org		WO #		Other											
Project Name RED-HILL/HBWS sites Event Desc. RUSH Weekly Red Hill		Project # 38001111		Special Instructions/Note:											
Site		SSOW#													
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 825 PAH Physis LL (EAL) + TICS	SUBCONTRACT - 8015 Gas (Purgable) LL (EAL)	SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil	525 2.PREC - (MOD) 525plus PLUS TICS	SUBCONTRACT - 8015 Gas (Purgable) LL (EAL)	537 1.DW_PREC - 537 1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
AIEA WELLS PUMPS 1&2 (260) PZ	28-Aug-2023	1053	G	Water	X	X									
AIEA GULCH WELLS PUMP2	28-Aug-2023	1019	G	Water											
FB AIEA WELLS PUMPS 1&2 (260)	28-Aug-2023	1053		Water											
FB AIEA GULCH WELLS PUMP2	28-Aug-2023	1019		Water											
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological															
Deliverable Requested 1, II, III, IV, Other (specify)															
Empty Kit Relinquished by															
Relinquished by BAILEY Date/Time: 29 AUG 2023 1400 Company: HBWS															
Relinquished by Date/Time: Company:															
Relinquished by Date/Time: Company:															
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No															
Custody Seal No															
Method of Shipment: FED EX Date/Time: 05/30/2023 10:10 Company: CEAT															
Special Instructions/QC Requirements Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)															
Cooler Temperature(s) °C and Other Remarks: GEL FROZEN (75H) 0.2' 0.2' 1.0' / 2.7' 0.2' 2.2' (2)															

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Bottle Order Information

Bottle Order: RUSH RED-HILL WEEKLY
 Bottle Order #: 2757
 Request From Client: 3/2/2023
 Date Order Posted: 7/20/2022 11:12:54AM
 Order Status: Ready To Process
 Prepared By: Davis Haley
 Deliver By Date: 8/23/2023 11:59:00PM
 Lab Project Number: 38001111
 PWSID:

Order Completion Information

Creator: Michelle Do
 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		
5	3	15	Plastic 250ml - Trizma	Trizma	537.1_DW_PREC - 537.1 Full List	Water	Normal		
5	3	15	Plastic 250ml - Ammonium Acetate	Ammonium Acetate	533 - All Analytes	Water	Normal		
5	1	5	Plastic 250ml - Reagent Water	None		Water	Field Blank		
5	1	5	Plastic 250ml - Ammonium Acetate	Ammonium Acetate		Water	Field Blank		
5	1	5	Plastic 250ml - Reagent Water	None		Water	Field Blank		
5	1	5	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.



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-61062-1

Login Number: 61062
List Number: 1
Creator: Segura, Ryan

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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	

