eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
525.2, 533 and 537.1

JOB NUMBER

380-75800-1

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

See page two for job notes and contact information.

Eurofins Eaton Analytical Pomona

Job Notes

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

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

Compliance Statement

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

Authorization

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Definitions/Glossary

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

Job ID: 380-75800-1
SDG: 525.2, 533 and 537.1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) 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
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.

Glossary

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

Job ID: 380-75800-1 — Eurofins Eaton Analytical Pomona

Job Narrative
380-75800-1

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 12/20/2023 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.3°C, 2.4°C, 3.0°C and 3.4°C

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

PFAS
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: 380-75800-1
SDG: 525.2, 533 and 537.1

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-75800-1

No Detections.

Client Sample ID: AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-75800-2

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-75800-3

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1&2 P1 — Lab Sample ID: 380-75800-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.7		2.0		ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.1		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.2		2.0		ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.6		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.1		2.0		ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.1		2.0		ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.5		2.0		ng/L	1		537.1	Total/NA

Client Sample ID: FB MOANALUA WELLS — Lab Sample ID: 380-75800-9

No Detections.

Client Sample ID: FB AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-75800-10

No Detections.

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-75800-11

No Detections.

Client Sample ID: FB HALAWA WELLS UNITS 1&2 P1 — Lab Sample ID: 380-75800-12

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-75800-1
SDG: 525.2, 533 and 537.1

Client Sample ID: MOANALUA WELLS
Date Collected: 12/18/23 10:05
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-1
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
2,4'-DDD	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
2,4'-DDE	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
2,4'-DDT	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
2,4-Dinitrotoluene	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
2,6-Dinitrotoluene	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
2-Methylnaphthalene	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
4,4'-DDD	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
4,4'-DDE	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
4,4'-DDT	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Acenaphthene	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Acenaphthylene	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Acetochlor	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Alachlor	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
alpha-BHC	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
alpha-Chlordane	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
Anthracene	<0.020		0.020		ug/L		12/22/23 09:10	12/22/23 23:33	1
Atrazine	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
Benz(a)anthracene	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
Benzo[a]pyrene	<0.020		0.020		ug/L		12/22/23 09:10	12/22/23 23:33	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		12/22/23 09:10	12/22/23 23:33	1
Benzo[g,h,i]perylene	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		12/22/23 09:10	12/22/23 23:33	1
beta-BHC	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60		ug/L		12/22/23 09:10	12/22/23 23:33	1
Bromacil	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Butachlor	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
Butylbenzylphthalate	<0.50		0.50		ug/L		12/22/23 09:10	12/22/23 23:33	1
Chlorobenzilate	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Chloroneb	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Chlorothalonil (Draconil, Bravo)	<0.099	^3+	0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Chlorpyrifos	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
Chrysene	<0.020		0.020		ug/L		12/22/23 09:10	12/22/23 23:33	1
delta-BHC	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Di(2-ethylhexyl)adipate	<0.60		0.60		ug/L		12/22/23 09:10	12/22/23 23:33	1
Dibenz(a,h)anthracene	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
Diclorvos (DDVP)	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
Dieldrin	<0.20		0.20		ug/L		12/22/23 09:10	12/22/23 23:33	1
Diethylphthalate	<0.50		0.50		ug/L		12/22/23 09:10	12/22/23 23:33	1
Dimethylphthalate	<0.50		0.50		ug/L		12/22/23 09:10	12/22/23 23:33	1
Di-n-butyl phthalate	<0.99		0.99		ug/L		12/22/23 09:10	12/22/23 23:33	1
Di-n-octyl phthalate	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Endosulfan I (Alpha)	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Endosulfan II (Beta)	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Endosulfan sulfate	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Endrin	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Endrin aldehyde	<0.099	^3+	0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
EPTC	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Fluoranthene	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1

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

Job ID: 380-75800-1
SDG: 525.2, 533 and 537.1

Client Sample ID: MOANALUA WELLS
Date Collected: 12/18/23 10:05
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-1
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
gamma-Chlordane	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
Heptachlor	<0.040		0.040		ug/L		12/22/23 09:10	12/22/23 23:33	1
Heptachlor epoxide (isomer B)	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
Hexachlorobenzene	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
Hexachlorocyclopentadiene	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
Isophorone	<0.50		0.50		ug/L		12/22/23 09:10	12/22/23 23:33	1
Lindane	<0.040		0.040		ug/L		12/22/23 09:10	12/22/23 23:33	1
Malathion	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Methoxychlor	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Metolachlor	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
Molinate	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Naphthalene	<0.30		0.30		ug/L		12/22/23 09:10	12/22/23 23:33	1
Parathion	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Pendimethalin (Penoxaline)	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Phenanthrene	<0.040		0.040		ug/L		12/22/23 09:10	12/22/23 23:33	1
Propachlor	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
Pyrene	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
Simazine	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
Terbacil	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Terbuthylazine	<0.099		0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1
Thiobencarb	<0.20		0.20		ug/L		12/22/23 09:10	12/22/23 23:33	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		12/22/23 09:10	12/22/23 23:33	1
trans-Nonachlor	<0.050		0.050		ug/L		12/22/23 09:10	12/22/23 23:33	1
Trifluralin	<0.099	^+	0.099		ug/L		12/22/23 09:10	12/22/23 23:33	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*12/22/23 09:10*	*12/22/23 23:33*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*95*		*70 - 130*	*12/22/23 09:10*	*12/22/23 23:33*	*1*
Perylene-d12	*101*		*70 - 130*	*12/22/23 09:10*	*12/22/23 23:33*	*1*
Triphenylphosphate	*110*		*70 - 130*	*12/22/23 09:10*	*12/22/23 23:33*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1

Client Sample ID: MOANALUA WELLS

Date Collected: 12/18/23 10:05
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-1

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:46	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*82*		*50 - 200*	*12/29/23 15:15*	*01/02/24 17:46*	*1*
13C6 PFDA	*97*		*50 - 200*	*12/29/23 15:15*	*01/02/24 17:46*	*1*
13C5 PFHxA	*96*		*50 - 200*	*12/29/23 15:15*	*01/02/24 17:46*	*1*
13C4 PFHpA	*97*		*50 - 200*	*12/29/23 15:15*	*01/02/24 17:46*	*1*
13C8 PFOA	*96*		*50 - 200*	*12/29/23 15:15*	*01/02/24 17:46*	*1*
13C9 PFNA	*100*		*50 - 200*	*12/29/23 15:15*	*01/02/24 17:46*	*1*
13C7 PFUnA	*103*		*50 - 200*	*12/29/23 15:15*	*01/02/24 17:46*	*1*
13C2 PFDoA	*100*		*50 - 200*	*12/29/23 15:15*	*01/02/24 17:46*	*1*
13C4 PFBA	*101*		*50 - 200*	*12/29/23 15:15*	*01/02/24 17:46*	*1*
13C5 PFPeA	*110*		*50 - 200*	*12/29/23 15:15*	*01/02/24 17:46*	*1*
13C3 PFBS	*100*		*50 - 200*	*12/29/23 15:15*	*01/02/24 17:46*	*1*
13C3 PFHxS	*97*		*50 - 200*	*12/29/23 15:15*	*01/02/24 17:46*	*1*
13C8 PFOS	*96*		*50 - 200*	*12/29/23 15:15*	*01/02/24 17:46*	*1*
13C2-4:2-FTS	*125*		*50 - 200*	*12/29/23 15:15*	*01/02/24 17:46*	*1*
13C2-6:2-FTS	*104*		*50 - 200*	*12/29/23 15:15*	*01/02/24 17:46*	*1*
13C2-8:2-FTS	*105*		*50 - 200*	*12/29/23 15:15*	*01/02/24 17:46*	*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		12/22/23 16:01	12/27/23 16:56	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 16:56	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 16:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 16:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 16:56	1

Client Sample ID: MOANALUA WELLS

Date Collected: 12/18/23 10:05
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-1

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 16:56	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 16:56	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 16:56	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 16:56	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 16:56	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 16:56	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 16:56	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 16:56	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 16:56	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 16:56	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 16:56	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 16:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 16:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*101*		*70 - 130*	*12/22/23 16:01*	*12/27/23 16:56*	*1*
13C2 PFHxA	*103*		*70 - 130*	*12/22/23 16:01*	*12/27/23 16:56*	*1*
13C2 PFDA	*100*		*70 - 130*	*12/22/23 16:01*	*12/27/23 16:56*	*1*
13C3-GenX	*99*		*70 - 130*	*12/22/23 16:01*	*12/27/23 16:56*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP 2

Date Collected: 12/18/23 11:12
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-2

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
2,4'-DDD	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
2,4'-DDE	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
2,4'-DDT	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
2,4-Dinitrotoluene	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
2,6-Dinitrotoluene	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
2-Methylnaphthalene	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
4,4'-DDD	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
4,4'-DDE	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
4,4'-DDT	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Acenaphthene	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Acenaphthylene	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Acetochlor	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Alachlor	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
alpha-BHC	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
alpha-Chlordane	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
Anthracene	<0.020	F1	0.020		ug/L		12/22/23 09:10	12/22/23 17:36	1
Atrazine	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
Benz(a)anthracene	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
Benzo[a]pyrene	<0.020		0.020		ug/L		12/22/23 09:10	12/22/23 17:36	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		12/22/23 09:10	12/22/23 17:36	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1

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

Job ID: 380-75800-1
SDG: 525.2, 533 and 537.1

Client Sample ID: AIEA GULCH WELLS PUMP 2
Date Collected: 12/18/23 11:12
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-2
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	<0.020		0.020		ug/L		12/22/23 09:10	12/22/23 17:36	1
beta-BHC	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		12/22/23 09:10	12/22/23 17:36	1
Bromacil	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Butachlor	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
Butylbenzylphthalate	<0.49		0.49		ug/L		12/22/23 09:10	12/22/23 17:36	1
Chlorobenzilate	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Chloroneb	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Chlorothalonil (Draconil, Bravo)	<0.098	^3+	0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Chlorpyrifos	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
Chrysene	<0.020		0.020		ug/L		12/22/23 09:10	12/22/23 17:36	1
delta-BHC	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		12/22/23 09:10	12/22/23 17:36	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
Dieldrin	<0.20		0.20		ug/L		12/22/23 09:10	12/22/23 17:36	1
Diethylphthalate	<0.49		0.49		ug/L		12/22/23 09:10	12/22/23 17:36	1
Dimethylphthalate	<0.49		0.49		ug/L		12/22/23 09:10	12/22/23 17:36	1
Di-n-butyl phthalate	<0.98		0.98		ug/L		12/22/23 09:10	12/22/23 17:36	1
Di-n-octyl phthalate	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Endosulfan I (Alpha)	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Endosulfan II (Beta)	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Endosulfan sulfate	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Endrin	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Endrin aldehyde	<0.098	^3+	0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
EPTC	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Fluoranthene	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Fluorene	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
gamma-Chlordane	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
Heptachlor	<0.039		0.039		ug/L		12/22/23 09:10	12/22/23 17:36	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
Hexachlorobenzene	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
Isophorone	<0.49		0.49		ug/L		12/22/23 09:10	12/22/23 17:36	1
Lindane	<0.039		0.039		ug/L		12/22/23 09:10	12/22/23 17:36	1
Malathion	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Methoxychlor	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Metolachlor	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
Molinate	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Naphthalene	<0.29		0.29		ug/L		12/22/23 09:10	12/22/23 17:36	1
Parathion	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Pendimethalin (Penoxaline)	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Phenanthrene	<0.039		0.039		ug/L		12/22/23 09:10	12/22/23 17:36	1
Propachlor	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
Pyrene	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
Simazine	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
Terbacil	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1
Terbuthylazine	<0.098		0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1

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

Job ID: 380-75800-1
SDG: 525.2, 533 and 537.1

Client Sample ID: AIEA GULCH WELLS PUMP 2
Date Collected: 12/18/23 11:12
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-2
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thiobencarb	<0.20		0.20		ug/L		12/22/23 09:10	12/22/23 17:36	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		12/22/23 09:10	12/22/23 17:36	1
trans-Nonachlor	<0.049		0.049		ug/L		12/22/23 09:10	12/22/23 17:36	1
Trifluralin	<0.098	F1 ^+	0.098		ug/L		12/22/23 09:10	12/22/23 17:36	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*12/22/23 09:10*	*12/22/23 17:36*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*98*		*70 - 130*	*12/22/23 09:10*	*12/22/23 17:36*	*1*
Perylene-d12	*99*		*70 - 130*	*12/22/23 09:10*	*12/22/23 17:36*	*1*
Triphenylphosphate	*116*		*70 - 130*	*12/22/23 09:10*	*12/22/23 17:36*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		12/29/23 15:15	01/02/24 17:56	1

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

Job ID: 380-75800-1
SDG: 525.2, 533 and 537.1

Client Sample ID: AIEA GULCH WELLS PUMP 2
Date Collected: 12/18/23 11:12
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-2
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	85		50 - 200	12/29/23 15:15	01/02/24 17:56	1
13C6 PFDA	101		50 - 200	12/29/23 15:15	01/02/24 17:56	1
13C5 PFHxA	102		50 - 200	12/29/23 15:15	01/02/24 17:56	1
13C4 PFHpA	100		50 - 200	12/29/23 15:15	01/02/24 17:56	1
13C8 PFOA	101		50 - 200	12/29/23 15:15	01/02/24 17:56	1
13C9 PFNA	106		50 - 200	12/29/23 15:15	01/02/24 17:56	1
13C7 PFUnA	109		50 - 200	12/29/23 15:15	01/02/24 17:56	1
13C2 PFDoA	104		50 - 200	12/29/23 15:15	01/02/24 17:56	1
13C4 PFBA	102		50 - 200	12/29/23 15:15	01/02/24 17:56	1
13C5 PFPeA	101		50 - 200	12/29/23 15:15	01/02/24 17:56	1
13C3 PFBS	93		50 - 200	12/29/23 15:15	01/02/24 17:56	1
13C3 PFHxS	97		50 - 200	12/29/23 15:15	01/02/24 17:56	1
13C8 PFOS	98		50 - 200	12/29/23 15:15	01/02/24 17:56	1
13C2-4:2-FTS	116		50 - 200	12/29/23 15:15	01/02/24 17:56	1
13C2-6:2-FTS	104		50 - 200	12/29/23 15:15	01/02/24 17:56	1
13C2-8:2-FTS	110		50 - 200	12/29/23 15:15	01/02/24 17:56	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		12/22/23 16:01	12/27/23 17:44	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:44	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:44	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:44	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:44	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:44	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:44	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:44	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:44	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:44	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:44	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:44	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:44	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:44	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	105		70 - 130	12/22/23 16:01	12/27/23 17:44	1
13C2 PFHxA	108		70 - 130	12/22/23 16:01	12/27/23 17:44	1
13C2 PFDA	104		70 - 130	12/22/23 16:01	12/27/23 17:44	1
13C3-GenX	102		70 - 130	12/22/23 16:01	12/27/23 17:44	1

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

Date Collected: 12/18/23 11:37
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-3

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
2,4'-DDD	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
2,4'-DDE	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
2,4'-DDT	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
2,4-Dinitrotoluene	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
2,6-Dinitrotoluene	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
2-Methylnaphthalene	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
4,4'-DDD	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
4,4'-DDE	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
4,4'-DDT	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Acenaphthene	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Acenaphthylene	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Acetochlor	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Alachlor	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
alpha-BHC	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
alpha-Chlordane	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
Anthracene	<0.019		0.019		ug/L		12/22/23 09:10	12/22/23 17:56	1
Atrazine	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
Benz(a)anthracene	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
Benzo[a]pyrene	<0.019		0.019		ug/L		12/22/23 09:10	12/22/23 17:56	1
Benzo[b]fluoranthene	<0.019		0.019		ug/L		12/22/23 09:10	12/22/23 17:56	1
Benzo[g,h,i]perylene	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
Benzo[k]fluoranthene	<0.019		0.019		ug/L		12/22/23 09:10	12/22/23 17:56	1
beta-BHC	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58		ug/L		12/22/23 09:10	12/22/23 17:56	1
Bromacil	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Butachlor	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
Butylbenzylphthalate	<0.48		0.48		ug/L		12/22/23 09:10	12/22/23 17:56	1
Chlorobenzilate	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Chloroneb	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Chlorothalonil (Draconil, Bravo)	<0.096	^3+	0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Chlorpyrifos	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
Chrysene	<0.019		0.019		ug/L		12/22/23 09:10	12/22/23 17:56	1
delta-BHC	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Di(2-ethylhexyl)adipate	<0.58		0.58		ug/L		12/22/23 09:10	12/22/23 17:56	1
Dibenz(a,h)anthracene	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
Diclorvos (DDVP)	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
Dieldrin	<0.19		0.19		ug/L		12/22/23 09:10	12/22/23 17:56	1
Diethylphthalate	<0.48		0.48		ug/L		12/22/23 09:10	12/22/23 17:56	1
Dimethylphthalate	<0.48		0.48		ug/L		12/22/23 09:10	12/22/23 17:56	1
Di-n-butyl phthalate	<0.96		0.96		ug/L		12/22/23 09:10	12/22/23 17:56	1
Di-n-octyl phthalate	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Endosulfan I (Alpha)	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Endosulfan II (Beta)	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Endosulfan sulfate	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Endrin	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Endrin aldehyde	<0.096	^3+	0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
EPTC	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Fluoranthene	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1

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

Job ID: 380-75800-1
SDG: 525.2, 533 and 537.1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 12/18/23 11:37
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-3
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
gamma-Chlordane	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
Heptachlor	<0.039		0.039		ug/L		12/22/23 09:10	12/22/23 17:56	1
Heptachlor epoxide (isomer B)	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
Hexachlorobenzene	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
Hexachlorocyclopentadiene	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
Indeno[1,2,3-cd]pyrene	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
Isophorone	<0.48		0.48		ug/L		12/22/23 09:10	12/22/23 17:56	1
Lindane	<0.039		0.039		ug/L		12/22/23 09:10	12/22/23 17:56	1
Malathion	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Methoxychlor	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Metolachlor	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
Molinate	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Naphthalene	<0.29		0.29		ug/L		12/22/23 09:10	12/22/23 17:56	1
Parathion	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Pendimethalin (Penoxaline)	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Phenanthrene	<0.039		0.039		ug/L		12/22/23 09:10	12/22/23 17:56	1
Propachlor	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
Pyrene	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
Simazine	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
Terbacil	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Terbuthylazine	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1
Thiobencarb	<0.19		0.19		ug/L		12/22/23 09:10	12/22/23 17:56	1
Total Permethrin (mixed isomers)	<0.19		0.19		ug/L		12/22/23 09:10	12/22/23 17:56	1
trans-Nonachlor	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 17:56	1
Trifluralin	<0.096	^+	0.096		ug/L		12/22/23 09:10	12/22/23 17:56	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*12/22/23 09:10*	*12/22/23 17:56*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*97*		*70 - 130*	*12/22/23 09:10*	*12/22/23 17:56*	*1*
Perylene-d12	*100*		*70 - 130*	*12/22/23 09:10*	*12/22/23 17:56*	*1*
Triphenylphosphate	*116*		*70 - 130*	*12/22/23 09:10*	*12/22/23 17:56*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1

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

Date Collected: 12/18/23 11:37
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-3

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:45	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*52*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:45*	*1*
13C6 PFDA	*75*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:45*	*1*
13C5 PFHxA	*62*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:45*	*1*
13C4 PFHpA	*66*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:45*	*1*
13C8 PFOA	*69*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:45*	*1*
13C9 PFNA	*73*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:45*	*1*
13C7 PFUnA	*77*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:45*	*1*
13C2 PFDoA	*80*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:45*	*1*
13C4 PFBA	*66*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:45*	*1*
13C5 PFPeA	*66*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:45*	*1*
13C3 PFBS	*98*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:45*	*1*
13C3 PFHxS	*93*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:45*	*1*
13C8 PFOS	*97*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:45*	*1*
13C2-4:2-FTS	*125*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:45*	*1*
13C2-6:2-FTS	*116*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:45*	*1*
13C2-8:2-FTS	*120*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:45*	*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		12/22/23 16:01	12/27/23 17:54	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:54	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:54	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:54	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:54	1

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

Lab Sample ID: 380-75800-3

Date Collected: 12/18/23 11:37
Matrix: Water
Date Received: 12/20/23 10:30

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:54	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:54	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:54	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:54	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:54	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:54	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:54	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:54	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:54	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:54	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:54	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 17:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*101*		*70 - 130*	*12/22/23 16:01*	*12/27/23 17:54*	*1*
13C2 PFHxA	*102*		*70 - 130*	*12/22/23 16:01*	*12/27/23 17:54*	*1*
13C2 PFDA	*100*		*70 - 130*	*12/22/23 16:01*	*12/27/23 17:54*	*1*
13C3-GenX	*98*		*70 - 130*	*12/22/23 16:01*	*12/27/23 17:54*	*1*

Client Sample ID: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-75800-4

Date Collected: 12/18/23 10:39
Matrix: Water
Date Received: 12/20/23 10:30

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
2,4'-DDD	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
2,4'-DDE	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
2,4'-DDT	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
2,4-Dinitrotoluene	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
2,6-Dinitrotoluene	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
2-Methylnaphthalene	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
4,4'-DDD	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
4,4'-DDE	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
4,4'-DDT	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Acenaphthene	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Acenaphthylene	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Acetochlor	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Alachlor	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
alpha-BHC	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
alpha-Chlordane	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
Anthracene	<0.019		0.019		ug/L		12/22/23 09:10	12/22/23 23:53	1
Atrazine	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
Benz(a)anthracene	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
Benzo[a]pyrene	<0.019		0.019		ug/L		12/22/23 09:10	12/22/23 23:53	1
Benzo[b]fluoranthene	<0.019		0.019		ug/L		12/22/23 09:10	12/22/23 23:53	1
Benzo[g,h,i]perylene	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1

Client Sample ID: HALAWA WELLS UNITS 1&2 P1

Date Collected: 12/18/23 10:39
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-4

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	<0.019		0.019		ug/L		12/22/23 09:10	12/22/23 23:53	1
beta-BHC	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58		ug/L		12/22/23 09:10	12/22/23 23:53	1
Bromacil	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Butachlor	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
Butylbenzylphthalate	<0.48		0.48		ug/L		12/22/23 09:10	12/22/23 23:53	1
Chlorobenzilate	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Chloroneb	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Chlorothalonil (Draconil, Bravo)	<0.096	^3+	0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Chlorpyrifos	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
Chrysene	<0.019		0.019		ug/L		12/22/23 09:10	12/22/23 23:53	1
delta-BHC	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Di(2-ethylhexyl)adipate	<0.58		0.58		ug/L		12/22/23 09:10	12/22/23 23:53	1
Dibenz(a,h)anthracene	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
Diclorvos (DDVP)	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
Dieldrin	<0.19		0.19		ug/L		12/22/23 09:10	12/22/23 23:53	1
Diethylphthalate	<0.48		0.48		ug/L		12/22/23 09:10	12/22/23 23:53	1
Dimethylphthalate	<0.48		0.48		ug/L		12/22/23 09:10	12/22/23 23:53	1
Di-n-butyl phthalate	<0.96		0.96		ug/L		12/22/23 09:10	12/22/23 23:53	1
Di-n-octyl phthalate	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Endosulfan I (Alpha)	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Endosulfan II (Beta)	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Endosulfan sulfate	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Endrin	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Endrin aldehyde	<0.096	^3+	0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
EPTC	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Fluoranthene	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Fluorene	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
gamma-Chlordane	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
Heptachlor	<0.039		0.039		ug/L		12/22/23 09:10	12/22/23 23:53	1
Heptachlor epoxide (isomer B)	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
Hexachlorobenzene	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
Hexachlorocyclopentadiene	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
Indeno[1,2,3-cd]pyrene	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
Isophorone	<0.48		0.48		ug/L		12/22/23 09:10	12/22/23 23:53	1
Lindane	<0.039		0.039		ug/L		12/22/23 09:10	12/22/23 23:53	1
Malathion	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Methoxychlor	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Metolachlor	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
Molinate	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Naphthalene	<0.29		0.29		ug/L		12/22/23 09:10	12/22/23 23:53	1
Parathion	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Pendimethalin (Penoxaline)	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Phenanthrene	<0.039		0.039		ug/L		12/22/23 09:10	12/22/23 23:53	1
Propachlor	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
Pyrene	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
Simazine	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
Terbacil	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1
Terbuthylazine	<0.096		0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1

Client Sample ID: HALAWA WELLS UNITS 1&2 P1

Date Collected: 12/18/23 10:39
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-4

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thiobencarb	<0.19		0.19		ug/L		12/22/23 09:10	12/22/23 23:53	1
Total Permethrin (mixed isomers)	<0.19		0.19		ug/L		12/22/23 09:10	12/22/23 23:53	1
trans-Nonachlor	<0.048		0.048		ug/L		12/22/23 09:10	12/22/23 23:53	1
Trifluralin	<0.096	^+	0.096		ug/L		12/22/23 09:10	12/22/23 23:53	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*12/22/23 09:10*	*12/22/23 23:53*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*97*		*70 - 130*	*12/22/23 09:10*	*12/22/23 23:53*	*1*
Perylene-d12	*105*		*70 - 130*	*12/22/23 09:10*	*12/22/23 23:53*	*1*
Triphenylphosphate	*123*		*70 - 130*	*12/22/23 09:10*	*12/22/23 23:53*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
Perfluorohexanesulfonic acid (PFHxS)	**2.7**		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
Perfluorohexanoic acid (PFHxA)	**2.1**		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
Perfluorooctanesulfonic acid (PFOS)	**2.2**		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
Perfluoropentanoic acid (PFPeA)	**2.6**		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1

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

Job ID: 380-75800-1
SDG: 525.2, 533 and 537.1

Client Sample ID: HALAWA WELLS UNITS 1&2 P1
Date Collected: 12/18/23 10:39
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-4
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 01:55	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*55*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:55*	*1*
13C6 PFDA	*83*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:55*	*1*
13C5 PFHxA	*64*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:55*	*1*
13C4 PFHpA	*69*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:55*	*1*
13C8 PFOA	*70*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:55*	*1*
13C9 PFNA	*77*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:55*	*1*
13C7 PFUnA	*81*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:55*	*1*
13C2 PFDoA	*84*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:55*	*1*
13C4 PFBA	*70*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:55*	*1*
13C5 PFPeA	*71*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:55*	*1*
13C3 PFBS	*98*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:55*	*1*
13C3 PFHxS	*91*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:55*	*1*
13C8 PFOS	*94*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:55*	*1*
13C2-4:2-FTS	*123*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:55*	*1*
13C2-6:2-FTS	*117*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:55*	*1*
13C2-8:2-FTS	*117*		*50 - 200*	*12/22/23 17:00*	*12/28/23 01:55*	*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		12/22/23 16:01	12/27/23 18:03	1
Perfluorooctanesulfonic acid (PFOS)	**2.1**		2.0		ng/L		12/22/23 16:01	12/27/23 18:03	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:03	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:03	1
Perfluorohexanoic acid (PFHxA)	**2.1**		2.0		ng/L		12/22/23 16:01	12/27/23 18:03	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:03	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:03	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:03	1
Perfluorohexanesulfonic acid (PFHxS)	**2.5**		2.0		ng/L		12/22/23 16:01	12/27/23 18:03	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:03	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:03	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:03	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:03	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:03	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:03	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:03	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*97*		*70 - 130*	*12/22/23 16:01*	*12/27/23 18:03*	*1*
13C2 PFHxA	*103*		*70 - 130*	*12/22/23 16:01*	*12/27/23 18:03*	*1*

Client Sample ID: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-75800-4
Matrix: Water
Date Collected: 12/18/23 10:39
Date Received: 12/20/23 10:30

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFDA	*97*		*70 - 130*	*12/22/23 16:01*	*12/27/23 18:03*	*1*
13C3-GenX	*95*		*70 - 130*	*12/22/23 16:01*	*12/27/23 18:03*	*1*

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-75800-9
Matrix: Water
Date Collected: 12/18/23 10:05
Date Received: 12/20/23 10:30

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:04	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*80*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:04*	*1*
13C6 PFDA	*94*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:04*	*1*
13C5 PFHxA	*92*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:04*	*1*
13C4 PFHpA	*96*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:04*	*1*

Client Sample ID: FB MOANALUA WELLS

Date Collected: 12/18/23 10:05
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-9

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	91		50 - 200	12/22/23 17:00	12/28/23 02:04	1
13C9 PFNA	97		50 - 200	12/22/23 17:00	12/28/23 02:04	1
13C7 PFUnA	94		50 - 200	12/22/23 17:00	12/28/23 02:04	1
13C2 PFDoA	89		50 - 200	12/22/23 17:00	12/28/23 02:04	1
13C4 PFBA	91		50 - 200	12/22/23 17:00	12/28/23 02:04	1
13C5 PFPeA	98		50 - 200	12/22/23 17:00	12/28/23 02:04	1
13C3 PFBS	99		50 - 200	12/22/23 17:00	12/28/23 02:04	1
13C3 PFHxS	91		50 - 200	12/22/23 17:00	12/28/23 02:04	1
13C8 PFOS	90		50 - 200	12/22/23 17:00	12/28/23 02:04	1
13C2-4:2-FTS	125		50 - 200	12/22/23 17:00	12/28/23 02:04	1
13C2-6:2-FTS	113		50 - 200	12/22/23 17:00	12/28/23 02:04	1
13C2-8:2-FTS	104		50 - 200	12/22/23 17:00	12/28/23 02:04	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		12/22/23 16:01	12/27/23 18:13	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:13	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:13	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:13	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:13	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:13	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:13	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:13	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:13	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:13	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:13	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:13	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:13	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:13	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	98		70 - 130	12/22/23 16:01	12/27/23 18:13	1
13C2 PFHxA	102		70 - 130	12/22/23 16:01	12/27/23 18:13	1
13C2 PFDA	99		70 - 130	12/22/23 16:01	12/27/23 18:13	1
13C3-GenX	93		70 - 130	12/22/23 16:01	12/27/23 18:13	1

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

Job ID: 380-75800-1
SDG: 525.2, 533 and 537.1

Client Sample ID: FB AIEA GULCH WELLS PUMP 2
Date Collected: 12/18/23 11:12
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-10
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:14	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*72*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:14*	*1*
13C6 PFDA	*90*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:14*	*1*
13C5 PFHxA	*87*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:14*	*1*
13C4 PFHpA	*92*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:14*	*1*
13C8 PFOA	*92*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:14*	*1*
13C9 PFNA	*98*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:14*	*1*
13C7 PFUnA	*95*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:14*	*1*
13C2 PFDoA	*91*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:14*	*1*
13C4 PFBA	*91*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:14*	*1*
13C5 PFPeA	*97*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:14*	*1*
13C3 PFBS	*98*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:14*	*1*
13C3 PFHxS	*95*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:14*	*1*
13C8 PFOS	*96*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:14*	*1*

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-75800-10
Date Collected: 12/18/23 11:12
Matrix: Water
Date Received: 12/20/23 10:30

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

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2-4:2-FTS	*124*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:14*	*1*
13C2-6:2-FTS	*120*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:14*	*1*
13C2-8:2-FTS	*107*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:14*	*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		12/22/23 16:01	12/27/23 18:23	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:23	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:23	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:23	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:23	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:23	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:23	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:23	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:23	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:23	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:23	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:23	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:23	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:23	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:23	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*105*		*70 - 130*	*12/22/23 16:01*	*12/27/23 18:23*	*1*
13C2 PFHxA	*104*		*70 - 130*	*12/22/23 16:01*	*12/27/23 18:23*	*1*
13C2 PFDA	*103*		*70 - 130*	*12/22/23 16:01*	*12/27/23 18:23*	*1*
13C3-GenX	*94*		*70 - 130*	*12/22/23 16:01*	*12/27/23 18:23*	*1*

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

Lab Sample ID: 380-75800-11
Date Collected: 12/18/23 11:37
Matrix: Water
Date Received: 12/20/23 10:30

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 12/18/23 11:37
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-11
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:23	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*75*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:23*	*1*
13C6 PFDA	*92*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:23*	*1*
13C5 PFHxA	*88*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:23*	*1*
13C4 PFHpA	*92*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:23*	*1*
13C8 PFOA	*93*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:23*	*1*
13C9 PFNA	*93*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:23*	*1*
13C7 PFUnA	*91*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:23*	*1*
13C2 PFDoA	*89*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:23*	*1*
13C4 PFBA	*90*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:23*	*1*
13C5 PFPeA	*98*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:23*	*1*
13C3 PFBS	*96*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:23*	*1*
13C3 PFHxS	*91*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:23*	*1*
13C8 PFOS	*96*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:23*	*1*
13C2-4:2-FTS	*123*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:23*	*1*
13C2-6:2-FTS	*112*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:23*	*1*
13C2-8:2-FTS	*108*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:23*	*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		12/22/23 16:01	12/27/23 18:32	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:32	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:32	1

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

Lab Sample ID: 380-75800-11

Date Collected: 12/18/23 11:37
Matrix: Water
Date Received: 12/20/23 10:30

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:32	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:32	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:32	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:32	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:32	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:32	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:32	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:32	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:32	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:32	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:32	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:32	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:32	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:32	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*103*		*70 - 130*	*12/22/23 16:01*	*12/27/23 18:32*	*1*
13C2 PFHxA	*106*		*70 - 130*	*12/22/23 16:01*	*12/27/23 18:32*	*1*
13C2 PFDA	*102*		*70 - 130*	*12/22/23 16:01*	*12/27/23 18:32*	*1*
13C3-GenX	*96*		*70 - 130*	*12/22/23 16:01*	*12/27/23 18:32*	*1*

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

Lab Sample ID: 380-75800-12

Date Collected: 12/18/23 10:39
Matrix: Water
Date Received: 12/20/23 10:30

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1

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

Date Collected: 12/18/23 10:39
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-12

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		12/22/23 17:00	12/28/23 02:33	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*69*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:33*	*1*
13C6 PFDA	*88*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:33*	*1*
13C5 PFHxA	*82*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:33*	*1*
13C4 PFHpA	*87*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:33*	*1*
13C8 PFOA	*86*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:33*	*1*
13C9 PFNA	*92*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:33*	*1*
13C7 PFUnA	*90*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:33*	*1*
13C2 PFDoA	*86*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:33*	*1*
13C4 PFBA	*85*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:33*	*1*
13C5 PFPeA	*91*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:33*	*1*
13C3 PFBS	*94*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:33*	*1*
13C3 PFHxS	*95*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:33*	*1*
13C8 PFOS	*92*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:33*	*1*
13C2-4:2-FTS	*123*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:33*	*1*
13C2-6:2-FTS	*118*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:33*	*1*
13C2-8:2-FTS	*113*		*50 - 200*	*12/22/23 17:00*	*12/28/23 02:33*	*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		12/22/23 16:01	12/27/23 18:42	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:42	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:42	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:42	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:42	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:42	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:42	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:42	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:42	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:42	1

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

Job ID: 380-75800-1
SDG: 525.2, 533 and 537.1

Client Sample ID: FB HALAWA WELLS UNITS 1&2 P1
Date Collected: 12/18/23 10:39
Date Received: 12/20/23 10:30

Lab Sample ID: 380-75800-12
Matrix: Water

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		12/22/23 16:01	12/27/23 18:42	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:42	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:42	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:42	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:42	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:42	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/22/23 16:01	12/27/23 18:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*103*		*70 - 130*	*12/22/23 16:01*	*12/27/23 18:42*	*1*
13C2 PFHxA	*101*		*70 - 130*	*12/22/23 16:01*	*12/27/23 18:42*	*1*
13C2 PFDA	*98*		*70 - 130*	*12/22/23 16:01*	*12/27/23 18:42*	*1*
13C3-GenX	*87*		*70 - 130*	*12/22/23 16:01*	*12/27/23 18:42*	*1*

Action Limit Summary

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

Job ID: 380-75800-1
SDG: 525.2, 533 and 537.1

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-75800-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.050		ug/L	2	0.050	525.2	Total/NA
Atrazine	<0.050		ug/L	3	0.050	525.2	Total/NA
Benzo[a]pyrene	<0.020		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.60		ug/L	6	0.60	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.60		ug/L	400	0.60	525.2	Total/NA
Endrin	<0.099		ug/L	2	0.099	525.2	Total/NA
Heptachlor	<0.040		ug/L	0.4	0.040	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.050		ug/L	0.2	0.050	525.2	Total/NA
Hexachlorobenzene	<0.050		ug/L	1	0.050	525.2	Total/NA
Hexachlorocyclopentadiene	<0.050		ug/L	50	0.050	525.2	Total/NA
Lindane	<0.040		ug/L	0.2	0.040	525.2	Total/NA
Methoxychlor	<0.099		ug/L	40	0.099	525.2	Total/NA
Simazine	<0.050		ug/L	4	0.050	525.2	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-75800-2

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 Limit	RL	Method	Prep Type
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	<0.020		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		ug/L	6	0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.59		ug/L	400	0.59	525.2	Total/NA
Endrin	<0.098		ug/L	2	0.098	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	<0.098		ug/L	40	0.098	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-75800-3

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.048		ug/L	2	0.048	525.2	Total/NA
Atrazine	<0.048		ug/L	3	0.048	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

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

Lab Sample ID: 380-75800-3

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Endrin	<0.096		ug/L	2	0.096	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.048		ug/L	0.2	0.048	525.2	Total/NA
Hexachlorobenzene	<0.048		ug/L	1	0.048	525.2	Total/NA
Hexachlorocyclopentadiene	<0.048		ug/L	50	0.048	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.096		ug/L	40	0.096	525.2	Total/NA
Simazine	<0.048		ug/L	4	0.048	525.2	Total/NA

Client Sample ID: HALAWA WELLS UNITS 1&2 P1

Lab Sample ID: 380-75800-4

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.048		ug/L	2	0.048	525.2	Total/NA
Atrazine	<0.048		ug/L	3	0.048	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	<0.096		ug/L	2	0.096	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.048		ug/L	0.2	0.048	525.2	Total/NA
Hexachlorobenzene	<0.048		ug/L	1	0.048	525.2	Total/NA
Hexachlorocyclopentadiene	<0.048		ug/L	50	0.048	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.096		ug/L	40	0.096	525.2	Total/NA
Simazine	<0.048		ug/L	4	0.048	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-75800-1
SDG: 525.2, 533 and 537.1

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

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

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	2NMX (70-130)	PRY (70-130)	TPP (70-130)
380-75800-1	MOANALUA WELLS	95	101	110
380-75800-2	AIEA GULCH WELLS PUMP 2	98	99	116
380-75800-2 MS	AIEA GULCH WELLS PUMP 2	98	105	118
380-75800-3	AIEA WELLS PUMPS 1&2 (260) P2	97	100	116
380-75800-3 DU	AIEA WELLS PUMPS 1&2 (260) P2	98	103	119
380-75800-4	HALAWA WELLS UNITS 1&2 P1	97	105	123
LCS 380-69138/24-A	Lab Control Sample	95	106	117
MB 380-69138/21-A	Method Blank	98	105	117
MRL 380-69138/22-A	Lab Control Sample	100	103	119

Surrogate Legend

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

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

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)
380-75800-1	MOANALUA WELLS	101	103	100	99
380-75800-1 MS	MOANALUA WELLS	103	112	103	102
380-75800-1 MSD	MOANALUA WELLS	101	109	100	102
380-75800-2	AIEA GULCH WELLS PUMP 2	105	108	104	102
380-75800-3	AIEA WELLS PUMPS 1&2 (260) P2	101	102	100	98
380-75800-4	HALAWA WELLS UNITS 1&2 P1	97	103	97	95
380-75800-9	FB MOANALUA WELLS	98	102	99	93
380-75800-10	FB AIEA GULCH WELLS PUMP 2	105	104	103	94
380-75800-11	FB AIEA WELLS PUMPS 1&2 (260) P2	103	106	102	96
380-75800-12	FB HALAWA WELLS UNITS 1&2 P1	103	101	98	87
LCS 380-69291/23-A	Lab Control Sample	100	102	100	96
MBL 380-69291/21-A	Method Blank	108	103	112	97
MRL 380-69291/22-A	Lab Control Sample	100	100	102	94

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: 380-75800-1
SDG: 525.2, 533 and 537.1

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

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-74117-C-4-A MS	Matrix Spike	90	95	83	89	91	96	102	94
380-74487-B-1-A DU	Duplicate	60	105	77	88	96	105	112	109
380-75800-1	MOANALUA WELLS	82	97	96	97	96	100	103	100
380-75800-2	AIEA GULCH WELLS PUMP 2	85	101	102	100	101	106	109	104
380-75800-3	AIEA WELLS PUMPS 1&2 (260) P2	52	75	62	66	69	73	77	80
380-75800-4	HALAWA WELLS UNITS 1&2 P1	55	83	64	69	70	77	81	84
380-75800-9	FB MOANALUA WELLS	80	94	92	96	91	97	94	89
380-75800-10	FB AIEA GULCH WELLS PUMP 2	72	90	87	92	92	98	95	91
380-75800-11	FB AIEA WELLS PUMPS 1&2 (260) P2	75	92	88	92	93	93	91	89
380-75800-12	FB HALAWA WELLS UNITS 1&2 P1	69	88	82	87	86	92	90	86
380-75855-B-1-B MS	Matrix Spike	77	86	78	81	82	87	85	82
380-75855-C-1-B MSD	Matrix Spike Duplicate	75	79	76	74	74	77	82	83
LCS 380-69136/20-A	Lab Control Sample	82	98	89	92	94	100	98	96
LCS 380-69771/21-A	Lab Control Sample	91	94	93	92	96	99	103	100
MBL 380-69136/18-A	Method Blank	86	109	102	105	106	110	105	100
MBL 380-69771/19-A	Method Blank	76	92	91	93	93	94	98	94
MRL 380-69136/19-A	Lab Control Sample	77	96	94	96	93	98	93	93
MRL 380-69771/20-A	Lab Control Sample	76	92	93	94	93	98	100	95

		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)
380-74117-C-4-A MS	Matrix Spike	92	152	90	93	95	174	130	119
380-74487-B-1-A DU	Duplicate	95	103	79	81	96	149	137	120
380-75800-1	MOANALUA WELLS	101	110	100	97	96	125	104	105
380-75800-2	AIEA GULCH WELLS PUMP 2	102	101	93	97	98	116	104	110
380-75800-3	AIEA WELLS PUMPS 1&2 (260) P2	66	66	98	93	97	125	116	120
380-75800-4	HALAWA WELLS UNITS 1&2 P1	70	71	98	91	94	123	117	117
380-75800-9	FB MOANALUA WELLS	91	98	99	91	90	125	113	104
380-75800-10	FB AIEA GULCH WELLS PUMP 2	91	97	98	95	96	124	120	107
380-75800-11	FB AIEA WELLS PUMPS 1&2 (260) P2	90	98	96	91	96	123	112	108
380-75800-12	FB HALAWA WELLS UNITS 1&2 P1	85	91	94	95	92	123	118	113
380-75855-B-1-B MS	Matrix Spike	84	96	95	90	92	131	112	120
380-75855-C-1-B MSD	Matrix Spike Duplicate	79	87	97	93	95	133	118	126
LCS 380-69136/20-A	Lab Control Sample	91	93	100	95	99	125	119	118
LCS 380-69771/21-A	Lab Control Sample	95	99	96	92	93	114	103	107
MBL 380-69136/18-A	Method Blank	97	106	104	101	105	135	130	119
MBL 380-69771/19-A	Method Blank	91	89	93	91	90	111	99	94
MRL 380-69136/19-A	Lab Control Sample	98	97	99	92	97	124	116	114
MRL 380-69771/20-A	Lab Control Sample	93	91	94	91	93	121	100	100

Surrogate Legend

HFPODA = 13C3 HFPO-DA

Isotope Dilution Summary

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

Job ID: 380-75800-1
SDG: 525.2, 533 and 537.1

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

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

Lab Sample ID: MB 380-69138/21-A
Matrix: Water
Analysis Batch: 69231

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 69138

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
2,4'-DDD	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
2,4'-DDE	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
2,4'-DDT	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
2,4-Dinitrotoluene	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
2,6-Dinitrotoluene	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
2-Methylnaphthalene	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
4,4'-DDD	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
4,4'-DDE	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
4,4'-DDT	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Acenaphthene	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Acenaphthylene	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Acetochlor	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Alachlor	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
alpha-BHC	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
alpha-Chlordane	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
Anthracene	<0.020		0.020		ug/L		12/22/23 06:50	12/22/23 17:16	1
Atrazine	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
Benz(a)anthracene	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
Benzo[a]pyrene	<0.020		0.020		ug/L		12/22/23 06:50	12/22/23 17:16	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		12/22/23 06:50	12/22/23 17:16	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		12/22/23 06:50	12/22/23 17:16	1
beta-BHC	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		12/22/23 06:50	12/22/23 17:16	1
Bromacil	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Butachlor	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
Butylbenzylphthalate	<0.49		0.49		ug/L		12/22/23 06:50	12/22/23 17:16	1
Chlorobenzilate	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Chloroneb	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Chlorpyrifos	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
Chrysene	<0.020		0.020		ug/L		12/22/23 06:50	12/22/23 17:16	1
delta-BHC	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		12/22/23 06:50	12/22/23 17:16	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
Dieldrin	<0.20		0.20		ug/L		12/22/23 06:50	12/22/23 17:16	1
Diethylphthalate	<0.49		0.49		ug/L		12/22/23 06:50	12/22/23 17:16	1
Dimethylphthalate	<0.49		0.49		ug/L		12/22/23 06:50	12/22/23 17:16	1
Di-n-butyl phthalate	<0.99		0.99		ug/L		12/22/23 06:50	12/22/23 17:16	1
Di-n-octyl phthalate	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Endosulfan I (Alpha)	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Endosulfan II (Beta)	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Endosulfan sulfate	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Endrin	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Endrin aldehyde	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
EPTC	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1

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

Lab Sample ID: MB 380-69138/21-A
Matrix: Water
Analysis Batch: 69231

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 69138

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Fluorene	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
gamma-Chlordane	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
Heptachlor	<0.040		0.040		ug/L		12/22/23 06:50	12/22/23 17:16	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
Hexachlorobenzene	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
Isophorone	<0.49		0.49		ug/L		12/22/23 06:50	12/22/23 17:16	1
Lindane	<0.040		0.040		ug/L		12/22/23 06:50	12/22/23 17:16	1
Malathion	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Methoxychlor	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Metolachlor	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
Molinate	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Naphthalene	<0.30		0.30		ug/L		12/22/23 06:50	12/22/23 17:16	1
Parathion	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Pendimethalin (Penoxaline)	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Phenanthrene	<0.040		0.040		ug/L		12/22/23 06:50	12/22/23 17:16	1
Propachlor	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
Pyrene	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
Simazine	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
Terbacil	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Terbuthylazine	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1
Thiobencarb	<0.20		0.20		ug/L		12/22/23 06:50	12/22/23 17:16	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		12/22/23 06:50	12/22/23 17:16	1
trans-Nonachlor	<0.049		0.049		ug/L		12/22/23 06:50	12/22/23 17:16	1
Trifluralin	<0.099		0.099		ug/L		12/22/23 06:50	12/22/23 17:16	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Decane	*2.89*	*T J N*	*ug/L*		*2.37*	*124-18-5*	*12/22/23 06:50*	*12/22/23 17:16*	*1*
Undecane	*0.521*	*T J N*	*ug/L*		*2.68*	*1120-21-4*	*12/22/23 06:50*	*12/22/23 17:16*	*1*
Unknown	*0.767*	*T J*	*ug/L*		*6.42*	*N/A*	*12/22/23 06:50*	*12/22/23 17:16*	*1*
9-Octadecenamide, (Z)-	*2.61*	*T J N*	*ug/L*		*7.48*	*301-02-0*	*12/22/23 06:50*	*12/22/23 17:16*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*98*		*70 - 130*	*12/22/23 06:50*	*12/22/23 17:16*	*1*
Perylene-d12	*105*		*70 - 130*	*12/22/23 06:50*	*12/22/23 17:16*	*1*
Triphenylphosphate	*117*		*70 - 130*	*12/22/23 06:50*	*12/22/23 17:16*	*1*

Lab Sample ID: LCS 380-69138/24-A
Matrix: Water
Analysis Batch: 69231

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69138

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.98	1.96		ug/L		99	70 - 130
2,4'-DDD	1.98	2.07		ug/L		105	70 - 130
2,4'-DDE	1.98	2.17		ug/L		110	70 - 130
2,4'-DDT	1.98	2.18		ug/L		110	70 - 130

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

Lab Sample ID: LCS 380-69138/24-A
Matrix: Water
Analysis Batch: 69231

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69138

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dinitrotoluene	1.98	2.16		ug/L		109	70 - 130
2,6-Dinitrotoluene	1.98	2.03		ug/L		103	70 - 130
2-Methylnaphthalene	1.98	2.06		ug/L		104	70 - 130
4,4'-DDD	1.98	2.11		ug/L		107	70 - 130
4,4'-DDE	1.98	1.99		ug/L		100	70 - 130
4,4'-DDT	1.98	2.11		ug/L		107	70 - 130
Acenaphthene	1.98	1.81		ug/L		92	70 - 130
Acenaphthylene	1.98	1.85		ug/L		93	70 - 130
Acetochlor	1.98	1.82		ug/L		92	70 - 130
Alachlor	1.98	2.22		ug/L		112	70 - 130
alpha-BHC	1.98	1.88		ug/L		95	70 - 130
alpha-Chlordane	1.98	2.28		ug/L		115	70 - 130
Anthracene	1.98	1.95		ug/L		99	70 - 130
Atrazine	1.98	2.33		ug/L		118	70 - 130
Benz(a)anthracene	1.98	2.11		ug/L		107	70 - 130
Benzo[a]pyrene	1.98	2.24		ug/L		113	70 - 130
Benzo[b]fluoranthene	1.98	2.23		ug/L		112	70 - 130
Benzo[g,h,i]perylene	1.98	2.00		ug/L		101	70 - 130
Benzo[k]fluoranthene	1.98	2.17		ug/L		110	70 - 130
beta-BHC	1.98	2.01		ug/L		102	70 - 130
Bis(2-ethylhexyl) phthalate	1.98	2.00		ug/L		101	70 - 130
Bromacil	1.98	2.54		ug/L		128	70 - 130
Butachlor	1.98	2.34		ug/L		118	70 - 130
Butylbenzylphthalate	1.98	2.32		ug/L		117	70 - 130
Chlorobenzilate	1.98	2.08		ug/L		105	70 - 130
Chloroneb	1.98	2.15		ug/L		108	70 - 130
Chlorothalonil (Draconil, Bravo)	1.98	2.22		ug/L		112	70 - 130
Chlorpyrifos	1.98	2.17		ug/L		110	70 - 130
Chrysene	1.98	2.00		ug/L		101	70 - 130
delta-BHC	1.98	1.86		ug/L		94	70 - 130
Di(2-ethylhexyl)adipate	1.98	2.31		ug/L		117	70 - 130
Dibenz(a,h)anthracene	1.98	2.00		ug/L		101	70 - 130
Diclorvos (DDVP)	1.98	1.73		ug/L		88	70 - 130
Dieldrin	1.98	2.03		ug/L		103	70 - 130
Diethylphthalate	1.98	2.01		ug/L		101	70 - 130
Dimethylphthalate	1.98	2.03		ug/L		102	70 - 130
Di-n-butyl phthalate	3.96	4.51		ug/L		114	70 - 130
Di-n-octyl phthalate	1.98	1.73		ug/L		87	70 - 130
Endosulfan I (Alpha)	1.98	1.91		ug/L		97	70 - 130
Endosulfan II (Beta)	1.98	2.17		ug/L		110	70 - 130
Endosulfan sulfate	1.98	2.46		ug/L		124	70 - 130
Endrin	1.98	2.23		ug/L		113	70 - 130
Endrin aldehyde	1.98	1.99		ug/L		100	70 - 130
EPTC	1.98	2.21		ug/L		112	70 - 130
Fluoranthene	1.98	2.10		ug/L		106	70 - 130
Fluorene	1.98	2.03		ug/L		103	70 - 130
gamma-Chlordane	1.98	2.36		ug/L		119	70 - 130
Heptachlor	1.98	1.88		ug/L		95	70 - 130
Heptachlor epoxide (isomer B)	1.98	2.23		ug/L		113	70 - 130

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

Lab Sample ID: LCS 380-69138/24-A
Matrix: Water
Analysis Batch: 69231

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69138

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorobenzene	1.98	2.12		ug/L		107	70 - 130
Hexachlorocyclopentadiene	1.98	2.20		ug/L		111	70 - 130
Indeno[1,2,3-cd]pyrene	1.98	2.08		ug/L		105	70 - 130
Isophorone	1.98	1.68		ug/L		85	70 - 130
Lindane	1.98	2.00		ug/L		101	70 - 130
Malathion	1.98	2.38		ug/L		120	70 - 130
Methoxychlor	1.98	2.00		ug/L		101	70 - 130
Metolachlor	1.98	2.21		ug/L		112	70 - 130
Molinate	1.98	2.01		ug/L		102	70 - 130
Naphthalene	1.98	1.87		ug/L		94	70 - 130
Parathion	1.98	2.00		ug/L		101	70 - 130
Pendimethalin (Penoxaline)	1.98	2.20		ug/L		111	70 - 130
Phenanthrene	1.98	1.91		ug/L		97	70 - 130
Propachlor	1.98	2.03		ug/L		103	70 - 130
Pyrene	1.98	2.10		ug/L		106	70 - 130
Simazine	1.98	2.39		ug/L		121	70 - 130
Terbacil	1.98	2.25		ug/L		114	70 - 130
Terbuthylazine	1.98	2.27		ug/L		115	70 - 130
Thiobencarb	1.98	1.98		ug/L		100	70 - 130
trans-Nonachlor	1.98	2.16		ug/L		109	70 - 130
Trifluralin	1.98	2.50		ug/L		126	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Nitro-m-xylene	*95*		*70 - 130*
Perylene-d12	*106*		*70 - 130*
Triphenylphosphate	*117*		*70 - 130*

Lab Sample ID: MRL 380-69138/22-A
Matrix: Water
Analysis Batch: 69231

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69138

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0993	0.117		ug/L		118	50 - 150
2,4'-DDD	0.0993	0.134		ug/L		135	50 - 150
2,4'-DDE	0.0993	0.103		ug/L		104	50 - 150
2,4'-DDT	0.0993	0.0958	J	ug/L		96	50 - 150
2,4-Dinitrotoluene	0.0993	0.0892	J	ug/L		90	50 - 150
2,6-Dinitrotoluene	0.0993	0.0922	J	ug/L		93	50 - 150
2-Methylnaphthalene	0.0993	0.113		ug/L		114	50 - 150
4,4'-DDD	0.0993	0.102		ug/L		102	50 - 150
4,4'-DDE	0.0993	0.144		ug/L		145	50 - 150
4,4'-DDT	0.0993	0.128		ug/L		129	50 - 150
Acenaphthene	0.0993	0.0946	J	ug/L		95	50 - 150
Acenaphthylene	0.0993	0.0908	J	ug/L		92	50 - 150
Acetochlor	0.0496	0.0422	J	ug/L		85	50 - 150
Alachlor	0.0496	0.0518		ug/L		104	50 - 150
alpha-BHC	0.0993	0.102		ug/L		103	50 - 150
alpha-Chlordane	0.0248	<0.029		ug/L		109	50 - 150

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

Lab Sample ID: MRL 380-69138/22-A
Matrix: Water
Analysis Batch: 69231

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69138

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Anthracene	0.0199	0.0198	J	ug/L		100	50 - 150
Atrazine	0.0496	0.0529		ug/L		107	50 - 150
Benz(a)anthracene	0.0496	0.0513		ug/L		103	50 - 150
Benzo[a]pyrene	0.0199	0.0175	J	ug/L		88	50 - 150
Benzo[b]fluoranthene	0.0199	0.0197	J	ug/L		99	50 - 150
Benzo[g,h,i]perylene	0.0496	0.0452	J	ug/L		91	50 - 150
Benzo[k]fluoranthene	0.0199	0.0180	J	ug/L		91	50 - 150
beta-BHC	0.0993	0.0977	J	ug/L		98	50 - 150
Bis(2-ethylhexyl) phthalate	0.596	0.589	J	ug/L		99	50 - 150
Bromacil	0.0993	0.119		ug/L		119	50 - 150
Butachlor	0.0496	0.0570		ug/L		115	50 - 150
Butylbenzylphthalate	0.149	0.179	J	ug/L		120	50 - 150
Chlorobenzilate	0.0993	0.0656	J	ug/L		66	50 - 150
Chloroneb	0.0993	0.123		ug/L		124	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0993	0.161	^3+	ug/L		162	50 - 150
Chlorpyrifos	0.0496	0.0535		ug/L		108	50 - 150
Chrysene	0.0199	0.0190	J	ug/L		96	50 - 150
delta-BHC	0.0993	0.107		ug/L		108	50 - 150
Di(2-ethylhexyl)adipate	0.298	0.400	J	ug/L		134	50 - 150
Dibenz(a,h)anthracene	0.0496	0.0437	J	ug/L		88	50 - 150
Diclorvos (DDVP)	0.0496	0.0514		ug/L		104	50 - 150
Dieldrin	0.0993	0.113	J	ug/L		114	50 - 150
Diethylphthalate	0.149	0.163	J	ug/L		110	50 - 150
Dimethylphthalate	0.298	0.297	J	ug/L		100	50 - 150
Di-n-butyl phthalate	0.298	0.399	J	ug/L		134	49 - 243
Di-n-octyl phthalate	0.0993	0.122		ug/L		123	50 - 150
Endosulfan I (Alpha)	0.0993	0.0930	J	ug/L		94	50 - 150
Endosulfan II (Beta)	0.0993	0.113		ug/L		114	50 - 150
Endosulfan sulfate	0.0993	0.128		ug/L		129	50 - 150
Endrin	0.0993	0.112		ug/L		113	50 - 150
Endrin aldehyde	0.0993	0.157	^3+	ug/L		158	50 - 150
EPTC	0.0993	0.115		ug/L		116	50 - 150
Fluoranthene	0.0496	0.0520	J	ug/L		105	50 - 150
Fluorene	0.0496	<0.050		ug/L		98	50 - 150
gamma-Chlordane	0.0248	0.0316	J	ug/L		128	50 - 150
Heptachlor	0.0397	0.0469		ug/L		118	50 - 150
Heptachlor epoxide (isomer B)	0.0496	0.0625		ug/L		126	50 - 150
Hexachlorobenzene	0.0496	0.0553		ug/L		111	50 - 150
Hexachlorocyclopentadiene	0.0496	0.0492	J	ug/L		99	50 - 150
Indeno[1,2,3-cd]pyrene	0.0496	0.0456	J	ug/L		92	50 - 150
Isophorone	0.0993	0.0976	J	ug/L		98	50 - 150
Lindane	0.0397	0.0434		ug/L		109	50 - 150
Malathion	0.0993	0.105		ug/L		106	50 - 150
Methoxychlor	0.0993	0.102		ug/L		103	50 - 150
Metolachlor	0.0496	0.0565		ug/L		114	50 - 150
Molinate	0.0993	0.106		ug/L		107	50 - 150
Naphthalene	0.0993	0.117	J	ug/L		118	50 - 150
Parathion	0.0993	0.128		ug/L		129	50 - 150
Pendimethalin (Penoxaline)	0.0993	0.104		ug/L		105	50 - 150

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

Lab Sample ID: MRL 380-69138/22-A
Matrix: Water
Analysis Batch: 69231

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69138

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Phenanthrene	0.0199	0.0218	J	ug/L		110	50 - 150
Propachlor	0.0496	0.0516		ug/L		104	50 - 150
Pyrene	0.0496	0.0515		ug/L		104	50 - 150
Simazine	0.0496	0.0541		ug/L		109	50 - 150
Terbacil	0.0993	0.120		ug/L		121	50 - 150
Terbuthylazine	0.0993	0.105		ug/L		105	50 - 150
Thiobencarb	0.0993	0.103	J	ug/L		104	50 - 150
trans-Nonachlor	0.0248	0.0264	J	ug/L		107	50 - 150
Trifluralin	0.0993	0.101		ug/L		102	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
2-Nitro-m-xylene	*100*		*70 - 130*
Perylene-d12	*103*		*70 - 130*
Triphenylphosphate	*119*		*70 - 130*

Lab Sample ID: 380-75800-2 MS
Matrix: Water
Analysis Batch: 69231

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 69138

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.098		1.96	1.98		ug/L		101	70 - 130
2,4'-DDD	<0.098		1.96	2.09		ug/L		107	70 - 130
2,4'-DDE	<0.098		1.96	2.12		ug/L		108	70 - 130
2,4'-DDT	<0.098		1.96	2.13		ug/L		109	70 - 130
2,4-Dinitrotoluene	<0.098		1.96	2.10		ug/L		107	70 - 130
2,6-Dinitrotoluene	<0.098		1.96	2.04		ug/L		104	70 - 130
2-Methylnaphthalene	<0.098		1.96	2.06		ug/L		105	70 - 130
4,4'-DDD	<0.098		1.96	2.11		ug/L		107	70 - 130
4,4'-DDE	<0.098		1.96	1.92		ug/L		98	70 - 130
4,4'-DDT	<0.098		1.96	2.01		ug/L		102	70 - 130
Acenaphthene	<0.098		1.96	1.83		ug/L		93	70 - 130
Acenaphthylene	<0.098		1.96	1.88		ug/L		96	70 - 130
Acetochlor	<0.098		1.96	1.80		ug/L		92	70 - 130
Alachlor	<0.049		1.96	2.22		ug/L		113	70 - 130
alpha-BHC	<0.098		1.96	1.88		ug/L		96	70 - 130
alpha-Chlordane	<0.049		1.96	2.32		ug/L		118	70 - 130
Anthracene	<0.020	F1	1.96	1.28	F1	ug/L		65	70 - 130
Atrazine	<0.049		1.96	2.27		ug/L		116	70 - 130
Benz(a)anthracene	<0.049		1.96	1.95		ug/L		100	70 - 130
Benzo[a]pyrene	<0.020		1.96	1.73		ug/L		88	70 - 130
Benzo[b]fluoranthene	<0.020		1.96	2.09		ug/L		106	70 - 130
Benzo[g,h,i]perylene	<0.049		1.96	1.96		ug/L		100	70 - 130
Benzo[k]fluoranthene	<0.020		1.96	2.10		ug/L		107	70 - 130
beta-BHC	<0.098		1.96	1.95		ug/L		99	70 - 130
Bis(2-ethylhexyl) phthalate	<0.59		1.96	1.72		ug/L		88	70 - 130
Bromacil	<0.098		1.96	2.43		ug/L		124	70 - 130
Butachlor	<0.049		1.96	2.38		ug/L		121	70 - 130
Butylbenzylphthalate	<0.49		1.96	2.31		ug/L		118	70 - 130

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

Lab Sample ID: 380-75800-2 MS
Matrix: Water
Analysis Batch: 69231

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 69138

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorobenzilate	<0.098		1.96	2.10		ug/L		107	70 - 130
Chloroneb	<0.098		1.96	2.03		ug/L		103	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.098	^3+	1.96	2.20		ug/L		112	70 - 130
Chlorpyrifos	<0.049		1.96	2.22		ug/L		113	70 - 130
Chrysene	<0.020		1.96	1.90		ug/L		97	70 - 130
delta-BHC	<0.098		1.96	1.84		ug/L		94	70 - 130
Di(2-ethylhexyl)adipate	<0.59		1.96	2.08		ug/L		106	70 - 130
Dibenz(a,h)anthracene	<0.049		1.96	2.06		ug/L		105	70 - 130
Diclorvos (DDVP)	<0.049		1.96	1.74		ug/L		88	70 - 130
Dieldrin	<0.20		1.96	2.08		ug/L		106	70 - 130
Diethylphthalate	<0.49		1.96	1.99		ug/L		102	70 - 130
Dimethylphthalate	<0.49		1.96	2.00		ug/L		102	70 - 130
Di-n-butyl phthalate	<0.98		3.92	4.35		ug/L		111	70 - 130
Di-n-octyl phthalate	<0.098		1.96	1.40		ug/L		71	70 - 130
Endosulfan I (Alpha)	<0.098		1.96	1.94		ug/L		99	70 - 130
Endosulfan II (Beta)	<0.098		1.96	2.12		ug/L		108	70 - 130
Endosulfan sulfate	<0.098		1.96	2.48		ug/L		127	70 - 130
Endrin	<0.098		1.96	2.29		ug/L		117	70 - 130
Endrin aldehyde	<0.098	^3+	1.96	1.94		ug/L		99	70 - 130
EPTC	<0.098		1.96	2.26		ug/L		115	70 - 130
Fluoranthene	<0.098		1.96	2.09		ug/L		106	70 - 130
Fluorene	<0.049		1.96	2.01		ug/L		103	70 - 130
gamma-Chlordane	<0.049		1.96	2.43		ug/L		124	70 - 130
Heptachlor	<0.039		1.96	1.88		ug/L		96	70 - 130
Heptachlor epoxide (isomer B)	<0.049		1.96	2.32		ug/L		118	70 - 130
Hexachlorobenzene	<0.049		1.96	2.15		ug/L		110	70 - 130
Hexachlorocyclopentadiene	<0.049		1.96	2.32		ug/L		118	70 - 130
Indeno[1,2,3-cd]pyrene	<0.049		1.96	1.99		ug/L		102	70 - 130
Isophorone	<0.49		1.96	1.69		ug/L		86	70 - 130
Lindane	<0.039		1.96	1.99		ug/L		102	70 - 130
Malathion	<0.098		1.96	2.40		ug/L		122	70 - 130
Methoxychlor	<0.098		1.96	1.92		ug/L		98	70 - 130
Metolachlor	<0.049		1.96	2.17		ug/L		111	70 - 130
Molinate	<0.098		1.96	2.02		ug/L		103	70 - 130
Naphthalene	<0.29		1.96	1.86		ug/L		95	70 - 130
Parathion	<0.098		1.96	1.97		ug/L		100	70 - 130
Pendimethalin (Penoxaline)	<0.098		1.96	2.29		ug/L		117	70 - 130
Phenanthrene	<0.039		1.96	1.96		ug/L		100	70 - 130
Propachlor	<0.049		1.96	2.00		ug/L		102	70 - 130
Pyrene	<0.049		1.96	2.09		ug/L		106	70 - 130
Simazine	<0.049		1.96	2.32		ug/L		118	70 - 130
Terbacil	<0.098		1.96	2.20		ug/L		112	70 - 130
Terbuthylazine	<0.098		1.96	2.22		ug/L		113	70 - 130
Thiobencarb	<0.20		1.96	1.95		ug/L		99	70 - 130
trans-Nonachlor	<0.049		1.96	2.26		ug/L		115	70 - 130
Trifluralin	<0.098	F1 ^+	1.96	2.62	F1	ug/L		134	70 - 130

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

Lab Sample ID: 380-75800-2 MS
Matrix: Water
Analysis Batch: 69231

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 69138

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Nitro-m-xylene	98		70 - 130
Perylene-d12	105		70 - 130
Triphenylphosphate	118		70 - 130

Lab Sample ID: 380-75800-3 DU
Matrix: Water
Analysis Batch: 69231

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Prep Type: Total/NA
Prep Batch: 69138

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
1-Methylnaphthalene	<0.096		<0.097		ug/L		NC	20
2,4'-DDD	<0.096		<0.097		ug/L		NC	20
2,4'-DDE	<0.096		<0.097		ug/L		NC	20
2,4'-DDT	<0.096		<0.097		ug/L		NC	20
2,4-Dinitrotoluene	<0.096		<0.097		ug/L		NC	20
2,6-Dinitrotoluene	<0.096		<0.097		ug/L		NC	20
2-Methylnaphthalene	<0.096		<0.097		ug/L		NC	20
4,4'-DDD	<0.096		<0.097		ug/L		NC	20
4,4'-DDE	<0.096		<0.097		ug/L		NC	20
4,4'-DDT	<0.096		<0.097		ug/L		NC	20
Acenaphthene	<0.096		<0.097		ug/L		NC	20
Acenaphthylene	<0.096		<0.097		ug/L		NC	20
Acetochlor	<0.096		<0.097		ug/L		NC	20
Alachlor	<0.048		<0.048		ug/L		NC	20
alpha-BHC	<0.096		<0.097		ug/L		NC	20
alpha-Chlordane	<0.048		<0.048		ug/L		NC	20
Anthracene	<0.019		<0.019		ug/L		NC	20
Atrazine	<0.048		<0.048		ug/L		NC	20
Benz(a)anthracene	<0.048		<0.048		ug/L		NC	20
Benzo[a]pyrene	<0.019		<0.019		ug/L		NC	20
Benzo[b]fluoranthene	<0.019		<0.019		ug/L		NC	20
Benzo[g,h,i]perylene	<0.048		<0.048		ug/L		NC	20
Benzo[k]fluoranthene	<0.019		<0.019		ug/L		NC	20
beta-BHC	<0.096		<0.097		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.58		<0.58		ug/L		NC	20
Bromacil	<0.096		<0.097		ug/L		NC	20
Butachlor	<0.048		<0.048		ug/L		NC	20
Butylbenzylphthalate	<0.48		<0.48		ug/L		NC	20
Chlorobenzilate	<0.096		<0.097		ug/L		NC	20
Chloroneb	<0.096		<0.097		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	<0.096	^3+	<0.097		ug/L		NC	20
Chlorpyrifos	<0.048		<0.048		ug/L		NC	20
Chrysene	<0.019		<0.019		ug/L		NC	20
delta-BHC	<0.096		<0.097		ug/L		NC	20
Di(2-ethylhexyl)adipate	<0.58		<0.58		ug/L		NC	20
Dibenz(a,h)anthracene	<0.048		<0.048		ug/L		NC	20
Diclorvos (DDVP)	<0.048		<0.048		ug/L		NC	20
Dieldrin	<0.19		<0.19		ug/L		NC	20
Diethylphthalate	<0.48		<0.48		ug/L		NC	20

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

Lab Sample ID: 380-75800-3 DU
Matrix: Water
Analysis Batch: 69231

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Prep Type: Total/NA
Prep Batch: 69138

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Dimethylphthalate	<0.48			<0.48		ug/L				NC	20
Di-n-butyl phthalate	<0.96			<0.97		ug/L				NC	20
Di-n-octyl phthalate	<0.096			<0.097		ug/L				NC	20
Endosulfan I (Alpha)	<0.096			<0.097		ug/L				NC	20
Endosulfan II (Beta)	<0.096			<0.097		ug/L				NC	20
Endosulfan sulfate	<0.096			<0.097		ug/L				NC	20
Endrin	<0.096			<0.097		ug/L				NC	20
Endrin aldehyde	<0.096	^3+		<0.097		ug/L				NC	20
EPTC	<0.096			<0.097		ug/L				NC	20
Fluoranthene	<0.096			<0.097		ug/L				NC	20
Fluorene	<0.048			<0.048		ug/L				NC	20
gamma-Chlordane	<0.048			<0.048		ug/L				NC	20
Heptachlor	<0.039			<0.039		ug/L				NC	20
Heptachlor epoxide (isomer B)	<0.048			<0.048		ug/L				NC	20
Hexachlorobenzene	<0.048			<0.048		ug/L				NC	20
Hexachlorocyclopentadiene	<0.048			<0.048		ug/L				NC	20
Indeno[1,2,3-cd]pyrene	<0.048			<0.048		ug/L				NC	20
Isophorone	<0.48			<0.48		ug/L				NC	20
Lindane	<0.039			<0.039		ug/L				NC	20
Malathion	<0.096			<0.097		ug/L				NC	20
Methoxychlor	<0.096			<0.097		ug/L				NC	20
Metolachlor	<0.048			<0.048		ug/L				NC	20
Molinate	<0.096			<0.097		ug/L				NC	20
Naphthalene	<0.29			<0.29		ug/L				NC	20
Parathion	<0.096			<0.097		ug/L				NC	20
Pendimethalin (Penoxaline)	<0.096			<0.097		ug/L				NC	20
Phenanthrene	<0.039			<0.039		ug/L				NC	20
Propachlor	<0.048			<0.048		ug/L				NC	20
Pyrene	<0.048			<0.048		ug/L				NC	20
Simazine	<0.048			<0.048		ug/L				NC	20
Terbacil	<0.096			<0.097		ug/L				NC	20
Terbuthylazine	<0.096			<0.097		ug/L				NC	20
Thiobencarb	<0.19			<0.19		ug/L				NC	20
Total Permethrin (mixed isomers)	<0.19			<0.19		ug/L				NC	20
trans-Nonachlor	<0.048			<0.048		ug/L				NC	20
Trifluralin	<0.096	^+		<0.097		ug/L				NC	20

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
2-Nitro-m-xylene	*98*		*70 - 130*
Perylene-d12	*103*		*70 - 130*
Triphenylphosphate	*119*		*70 - 130*

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

Lab Sample ID: MBL 380-69136/18-A
Matrix: Water
Analysis Batch: 69530

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 69136

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		12/22/23 17:00	12/28/23 00:19	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*86*		*50 - 200*	*12/22/23 17:00*	*12/28/23 00:19*	*1*
13C6 PFDA	*109*		*50 - 200*	*12/22/23 17:00*	*12/28/23 00:19*	*1*
13C5 PFHxA	*102*		*50 - 200*	*12/22/23 17:00*	*12/28/23 00:19*	*1*
13C4 PFHpA	*105*		*50 - 200*	*12/22/23 17:00*	*12/28/23 00:19*	*1*
13C8 PFOA	*106*		*50 - 200*	*12/22/23 17:00*	*12/28/23 00:19*	*1*
13C9 PFNA	*110*		*50 - 200*	*12/22/23 17:00*	*12/28/23 00:19*	*1*
13C7 PFUnA	*105*		*50 - 200*	*12/22/23 17:00*	*12/28/23 00:19*	*1*
13C2 PFDoA	*100*		*50 - 200*	*12/22/23 17:00*	*12/28/23 00:19*	*1*
13C4 PFBA	*97*		*50 - 200*	*12/22/23 17:00*	*12/28/23 00:19*	*1*
13C5 PFPeA	*106*		*50 - 200*	*12/22/23 17:00*	*12/28/23 00:19*	*1*
13C3 PFBS	*104*		*50 - 200*	*12/22/23 17:00*	*12/28/23 00:19*	*1*
13C3 PFHxS	*101*		*50 - 200*	*12/22/23 17:00*	*12/28/23 00:19*	*1*

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

Lab Sample ID: MBL 380-69136/18-A
Matrix: Water
Analysis Batch: 69530

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 69136

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	105		50 - 200	12/22/23 17:00	12/28/23 00:19	1
13C2-4:2-FTS	135		50 - 200	12/22/23 17:00	12/28/23 00:19	1
13C2-6:2-FTS	130		50 - 200	12/22/23 17:00	12/28/23 00:19	1
13C2-8:2-FTS	119		50 - 200	12/22/23 17:00	12/28/23 00:19	1

Lab Sample ID: LCS 380-69136/20-A
Matrix: Water
Analysis Batch: 69530

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69136

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.2	55.2		ng/L		92	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.2	51.7		ng/L		86	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.2	63.4		ng/L		105	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.2	60.3		ng/L		100	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.2	59.9		ng/L		99	70 - 130
Perfluorodecanoic acid (PFDA)	60.2	63.6		ng/L		106	70 - 130
Perfluorododecanoic acid (PFDoA)	60.2	60.8		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.2	64.0		ng/L		106	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.2	63.0		ng/L		105	70 - 130
Perfluorohexanoic acid (PFHxA)	60.2	65.3		ng/L		108	70 - 130
Perfluorononanoic acid (PFNA)	60.2	61.2		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.2	60.7		ng/L		101	70 - 130
Perfluorooctanoic acid (PFOA)	60.2	59.5		ng/L		99	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.2	60.2		ng/L		100	70 - 130
Perfluorobutanoic acid (PFBA)	60.2	65.2		ng/L		108	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.2	64.4		ng/L		107	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.2	62.1		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.2	63.2		ng/L		105	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.2	60.3		ng/L		100	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.2	52.6		ng/L		87	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.2	67.0		ng/L		111	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.2	68.7		ng/L		114	70 - 130
Perfluoropentanoic acid (PFPeA)	60.2	68.1		ng/L		113	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.2	61.1		ng/L		101	70 - 130

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

Lab Sample ID: LCS 380-69136/20-A
Matrix: Water
Analysis Batch: 69530

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69136

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perfluoropentanesulfonic acid (PFPeS)			60.2	59.9		ng/L		99	70 - 130		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*82*		*50 - 200*
13C6 PFDA	*98*		*50 - 200*
13C5 PFHxA	*89*		*50 - 200*
13C4 PFHpA	*92*		*50 - 200*
13C8 PFOA	*94*		*50 - 200*
13C9 PFNA	*100*		*50 - 200*
13C7 PFUnA	*98*		*50 - 200*
13C2 PFDoA	*96*		*50 - 200*
13C4 PFBA	*91*		*50 - 200*
13C5 PFPeA	*93*		*50 - 200*
13C3 PFBS	*100*		*50 - 200*
13C3 PFHxS	*95*		*50 - 200*
13C8 PFOS	*99*		*50 - 200*
13C2-4:2-FTS	*125*		*50 - 200*
13C2-6:2-FTS	*119*		*50 - 200*
13C2-8:2-FTS	*118*		*50 - 200*

Lab Sample ID: MRL 380-69136/19-A
Matrix: Water
Analysis Batch: 69530

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69136

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			2.01	2.07	J	ng/L		103	50 - 150		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			2.01	1.87	J	ng/L		93	50 - 150		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			2.01	2.25	J	ng/L		112	50 - 150		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			2.01	2.41	J	ng/L		120	50 - 150		
Perfluorobutanesulfonic acid (PFBS)			2.01	2.24	J	ng/L		112	50 - 150		
Perfluorodecanoic acid (PFDA)			2.01	2.31	J	ng/L		115	50 - 150		
Perfluorododecanoic acid (PFDoA)			2.01	2.37	J	ng/L		118	50 - 150		
Perfluoroheptanoic acid (PFHpA)			2.01	2.33	J	ng/L		116	50 - 150		
Perfluorohexanesulfonic acid (PFHxS)			2.01	2.44	J	ng/L		121	50 - 150		
Perfluorohexanoic acid (PFHxA)			2.01	2.29	J	ng/L		114	50 - 150		
Perfluorononanoic acid (PFNA)			2.01	2.22	J	ng/L		111	50 - 150		
Perfluorooctanesulfonic acid (PFOS)			2.01	2.33	J	ng/L		116	50 - 150		
Perfluorooctanoic acid (PFOA)			2.01	2.46	J	ng/L		122	50 - 150		
Perfluoroundecanoic acid (PFUnA)			2.01	2.27	J	ng/L		113	50 - 150		
Perfluorobutanoic acid (PFBA)			2.01	2.49	J	ng/L		124	50 - 150		

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

Lab Sample ID: MRL 380-69136/19-A
Matrix: Water
Analysis Batch: 69530

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69136

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.50	J	ng/L		124	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.43	J	ng/L		121	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.55	J	ng/L		127	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.05	J	ng/L		102	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.01	1.93	J	ng/L		96	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	2.39	J	ng/L		119	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	2.46	J	ng/L		122	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.58	J	ng/L		129	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	2.06	J	ng/L		103	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	2.21	J	ng/L		110	50 - 150

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*77*		*50 - 200*
13C6 PFDA	*96*		*50 - 200*
13C5 PFHxA	*94*		*50 - 200*
13C4 PFHpA	*96*		*50 - 200*
13C8 PFOA	*93*		*50 - 200*
13C9 PFNA	*98*		*50 - 200*
13C7 PFUnA	*93*		*50 - 200*
13C2 PFDoA	*93*		*50 - 200*
13C4 PFBA	*98*		*50 - 200*
13C5 PFPeA	*97*		*50 - 200*
13C3 PFBS	*99*		*50 - 200*
13C3 PFHxS	*92*		*50 - 200*
13C8 PFOS	*97*		*50 - 200*
13C2-4:2-FTS	*124*		*50 - 200*
13C2-6:2-FTS	*116*		*50 - 200*
13C2-8:2-FTS	*114*		*50 - 200*

Lab Sample ID: 380-75855-B-1-B MS
Matrix: Water
Analysis Batch: 69530

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 69136

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.1	56.5		ng/L		94	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.1	54.8		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.1	62.1		ng/L		103	70 - 130

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

Lab Sample ID: 380-75855-B-1-B MS
Matrix: Water
Analysis Batch: 69530

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 69136

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		60.1	62.6		ng/L		104	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.1	59.8		ng/L		99	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.1	64.6		ng/L		107	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.1	64.6		ng/L		107	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.1	65.4		ng/L		109	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.1	66.0		ng/L		110	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.1	64.7		ng/L		108	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.1	62.8		ng/L		104	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.1	62.7		ng/L		104	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.1	61.6		ng/L		103	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.1	61.0		ng/L		101	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.1	63.4		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.1	63.0		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.1	64.4		ng/L		107	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.1	66.3		ng/L		110	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.1	56.3		ng/L		94	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.1	53.7		ng/L		89	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.1	68.0		ng/L		113	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.1	69.6		ng/L		116	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.1	64.0		ng/L		107	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.1	61.7		ng/L		103	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.1	62.7		ng/L		104	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*77*		*50 - 200*
13C6 PFDA	*86*		*50 - 200*
13C5 PFHxA	*78*		*50 - 200*
13C4 PFHpA	*81*		*50 - 200*
13C8 PFOA	*82*		*50 - 200*
13C9 PFNA	*87*		*50 - 200*
13C7 PFUnA	*85*		*50 - 200*
13C2 PFDoA	*82*		*50 - 200*
13C4 PFBA	*84*		*50 - 200*
13C5 PFPeA	*96*		*50 - 200*
13C3 PFBS	*95*		*50 - 200*
13C3 PFHxS	*90*		*50 - 200*
13C8 PFOS	*92*		*50 - 200*

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

Lab Sample ID: 380-75855-B-1-B MS
Matrix: Water
Analysis Batch: 69530

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 69136

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	131		50 - 200
13C2-6:2-FTS	112		50 - 200
13C2-8:2-FTS	120		50 - 200

Lab Sample ID: 380-75855-C-1-B MSD
Matrix: Water
Analysis Batch: 69530

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 69136

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.1	57.2		ng/L		95	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.1	54.4		ng/L		90	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.1	59.6		ng/L		99	70 - 130	4	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.1	53.5		ng/L		89	70 - 130	16	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.1	61.2		ng/L		102	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		60.1	66.9		ng/L		111	70 - 130	4	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.1	64.7		ng/L		108	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.1	63.3		ng/L		105	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.1	63.3		ng/L		105	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.1	60.4		ng/L		101	70 - 130	7	30
Perfluorononanoic acid (PFNA)	<2.0		60.1	61.1		ng/L		102	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.1	62.3		ng/L		104	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		60.1	61.4		ng/L		102	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.1	59.9		ng/L		100	70 - 130	2	30
Perfluorobutanoic acid (PFBA)	<2.0		60.1	63.2		ng/L		105	70 - 130	0	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.1	66.1		ng/L		110	70 - 130	5	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.1	64.0		ng/L		106	70 - 130	1	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.1	61.6		ng/L		103	70 - 130	7	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.1	50.3		ng/L		84	70 - 130	11	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.1	55.2		ng/L		92	70 - 130	3	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.1	66.8		ng/L		111	70 - 130	2	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.1	68.1		ng/L		113	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.1	67.2		ng/L		112	70 - 130	5	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.1	60.8		ng/L		101	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.1	63.3		ng/L		105	70 - 130	1	30

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

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	75		50 - 200
13C6 PFDA	79		50 - 200
13C5 PFHxA	76		50 - 200
13C4 PFHpA	74		50 - 200
13C8 PFOA	74		50 - 200
13C9 PFNA	77		50 - 200
13C7 PFUnA	82		50 - 200
13C2 PFDoA	83		50 - 200
13C4 PFBA	79		50 - 200
13C5 PFPeA	87		50 - 200
13C3 PFBS	97		50 - 200
13C3 PFHxS	93		50 - 200
13C8 PFOS	95		50 - 200
13C2-4:2-FTS	133		50 - 200
13C2-6:2-FTS	118		50 - 200
13C2-8:2-FTS	126		50 - 200

Lab Sample ID: MBL 380-69771/19-A
Matrix: Water
Analysis Batch: 69968

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 69771

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1

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

Lab Sample ID: MBL 380-69771/19-A
Matrix: Water
Analysis Batch: 69968

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 69771

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		12/29/23 15:15	01/02/24 14:44	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*76*		*50 - 200*	*12/29/23 15:15*	*01/02/24 14:44*	*1*
13C6 PFDA	*92*		*50 - 200*	*12/29/23 15:15*	*01/02/24 14:44*	*1*
13C5 PFHxA	*91*		*50 - 200*	*12/29/23 15:15*	*01/02/24 14:44*	*1*
13C4 PFHpA	*93*		*50 - 200*	*12/29/23 15:15*	*01/02/24 14:44*	*1*
13C8 PFOA	*93*		*50 - 200*	*12/29/23 15:15*	*01/02/24 14:44*	*1*
13C9 PFNA	*94*		*50 - 200*	*12/29/23 15:15*	*01/02/24 14:44*	*1*
13C7 PFUnA	*98*		*50 - 200*	*12/29/23 15:15*	*01/02/24 14:44*	*1*
13C2 PFDoA	*94*		*50 - 200*	*12/29/23 15:15*	*01/02/24 14:44*	*1*
13C4 PFBA	*91*		*50 - 200*	*12/29/23 15:15*	*01/02/24 14:44*	*1*
13C5 PFPeA	*89*		*50 - 200*	*12/29/23 15:15*	*01/02/24 14:44*	*1*
13C3 PFBS	*93*		*50 - 200*	*12/29/23 15:15*	*01/02/24 14:44*	*1*
13C3 PFHxS	*91*		*50 - 200*	*12/29/23 15:15*	*01/02/24 14:44*	*1*
13C8 PFOS	*90*		*50 - 200*	*12/29/23 15:15*	*01/02/24 14:44*	*1*
13C2-4:2-FTS	*111*		*50 - 200*	*12/29/23 15:15*	*01/02/24 14:44*	*1*
13C2-6:2-FTS	*99*		*50 - 200*	*12/29/23 15:15*	*01/02/24 14:44*	*1*
13C2-8:2-FTS	*94*		*50 - 200*	*12/29/23 15:15*	*01/02/24 14:44*	*1*

Lab Sample ID: LCS 380-69771/21-A
Matrix: Water
Analysis Batch: 69968

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69771

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	114		ng/L		94	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	123		ng/L		102	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	122		ng/L		101	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	126		ng/L		104	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	122		ng/L		102	70 - 130
Perfluorodecanoic acid (PFDA)	120	126		ng/L		105	70 - 130
Perfluorododecanoic acid (PFDoA)	120	116		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	123		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	120		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	120	122		ng/L		102	70 - 130
Perfluorononanoic acid (PFNA)	120	124		ng/L		103	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	118		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	120	119		ng/L		99	70 - 130

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

Lab Sample ID: LCS 380-69771/21-A
Matrix: Water
Analysis Batch: 69968

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69771

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	120	117		ng/L		97	70 - 130
Perfluorobutanoic acid (PFBA)	120	125		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	124		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	120		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	126		ng/L		105	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	123		ng/L		102	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	113		ng/L		93	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	130		ng/L		108	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	123		ng/L		102	70 - 130
Perfluoropentanoic acid (PFPeA)	120	127		ng/L		105	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	122		ng/L		101	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	120	129		ng/L		107	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*91*		*50 - 200*
13C6 PFDA	*94*		*50 - 200*
13C5 PFHxA	*93*		*50 - 200*
13C4 PFHpA	*92*		*50 - 200*
13C8 PFOA	*96*		*50 - 200*
13C9 PFNA	*99*		*50 - 200*
13C7 PFUnA	*103*		*50 - 200*
13C2 PFDoA	*100*		*50 - 200*
13C4 PFBA	*95*		*50 - 200*
13C5 PFPeA	*99*		*50 - 200*
13C3 PFBS	*96*		*50 - 200*
13C3 PFHxS	*92*		*50 - 200*
13C8 PFOS	*93*		*50 - 200*
13C2-4:2-FTS	*114*		*50 - 200*
13C2-6:2-FTS	*103*		*50 - 200*
13C2-8:2-FTS	*107*		*50 - 200*

Lab Sample ID: MRL 380-69771/20-A
Matrix: Water
Analysis Batch: 69968

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69771

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.97	J	ng/L		98	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.93	J	ng/L		96	50 - 150

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

Lab Sample ID: MRL 380-69771/20-A
Matrix: Water
Analysis Batch: 69968

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69771

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.02	J	ng/L		101	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.42	J	ng/L		121	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.21	J	ng/L		110	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.34	J	ng/L		117	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.95	J	ng/L		97	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.32	J	ng/L		116	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.15	J	ng/L		107	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.17	J	ng/L		108	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.31	J	ng/L		115	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.90	J	ng/L		95	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	1.90	J	ng/L		95	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.17	J	ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.22	J	ng/L		111	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.46	J	ng/L		123	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	1.97	J	ng/L		99	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.00	2.21	J	ng/L		110	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.07	J	ng/L		103	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.28	J	ng/L		114	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.57	J	ng/L		128	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.23	J	ng/L		111	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.38	J	ng/L		119	50 - 150

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*76*		*50 - 200*
13C6 PFDA	*92*		*50 - 200*
13C5 PFHxA	*93*		*50 - 200*
13C4 PFHpA	*94*		*50 - 200*
13C8 PFOA	*93*		*50 - 200*
13C9 PFNA	*98*		*50 - 200*
13C7 PFUnA	*100*		*50 - 200*
13C2 PFDoA	*95*		*50 - 200*
13C4 PFBA	*93*		*50 - 200*
13C5 PFPeA	*91*		*50 - 200*
13C3 PFBS	*94*		*50 - 200*
13C3 PFHxS	*91*		*50 - 200*

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

Lab Sample ID: MRL 380-69771/20-A
Matrix: Water
Analysis Batch: 69968

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69771

Isotope Dilution	MRL %Recovery	MRL Qualifier	Limits
13C8 PFOS	93		50 - 200
13C2-4:2-FTS	121		50 - 200
13C2-6:2-FTS	100		50 - 200
13C2-8:2-FTS	100		50 - 200

Lab Sample ID: 380-74117-C-4-A MS
Matrix: Water
Analysis Batch: 69968

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 69771

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	108		ng/L		90	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	114		ng/L		95	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	121		ng/L		101	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	122		ng/L		101	70 - 130
Perfluorobutanesulfonic acid (PFBS)	2.2		120	124		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		120	123		ng/L		103	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	121		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	121		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	2.2		120	125		ng/L		102	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		120	127		ng/L		105	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		120	124		ng/L		103	70 - 130
Perfluorooctanesulfonic acid (PFOS)	3.6		120	124		ng/L		100	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		120	123		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		120	117		ng/L		97	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		120	139		ng/L		114	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	132		ng/L		110	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	114		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	126		ng/L		105	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	106		ng/L		88	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		120	113		ng/L		94	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0	F1	120	162	F1	ng/L		135	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	145		ng/L		120	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		120	118		ng/L		98	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	120		ng/L		100	70 - 130

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

Lab Sample ID: 380-74117-C-4-A MS
Matrix: Water
Analysis Batch: 69968

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 69771

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	129		ng/L		107	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*90*		*50 - 200*
13C6 PFDA	*95*		*50 - 200*
13C5 PFHxA	*83*		*50 - 200*
13C4 PFHpA	*89*		*50 - 200*
13C8 PFOA	*91*		*50 - 200*
13C9 PFNA	*96*		*50 - 200*
13C7 PFUnA	*102*		*50 - 200*
13C2 PFDoA	*94*		*50 - 200*
13C4 PFBA	*92*		*50 - 200*
13C5 PFPeA	*152*		*50 - 200*
13C3 PFBS	*90*		*50 - 200*
13C3 PFHxS	*93*		*50 - 200*
13C8 PFOS	*95*		*50 - 200*
13C2-4:2-FTS	*174*		*50 - 200*
13C2-6:2-FTS	*130*		*50 - 200*
13C2-8:2-FTS	*119*		*50 - 200*

Lab Sample ID: 380-74487-B-1-A DU
Matrix: Water
Analysis Batch: 69968

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 69771

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
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)	<2.0		<2.0		ng/L		NC	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		<2.0		ng/L		NC	30

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

Lab Sample ID: 380-74487-B-1-A DU
Matrix: Water
Analysis Batch: 69968

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 69771

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
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 (PFEESA)	<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

Isotope Dilution	*DU %Recovery*	*DU Qualifier*	*Limits*
13C3 HFPO-DA	*60*		*50 - 200*
13C6 PFDA	*105*		*50 - 200*
13C5 PFHxA	*77*		*50 - 200*
13C4 PFHpA	*88*		*50 - 200*
13C8 PFOA	*96*		*50 - 200*
13C9 PFNA	*105*		*50 - 200*
13C7 PFUnA	*112*		*50 - 200*
13C2 PFDoA	*109*		*50 - 200*
13C4 PFBA	*95*		*50 - 200*
13C5 PFPeA	*103*		*50 - 200*
13C3 PFBS	*79*		*50 - 200*
13C3 PFHxS	*81*		*50 - 200*
13C8 PFOS	*96*		*50 - 200*
13C2-4:2-FTS	*149*		*50 - 200*
13C2-6:2-FTS	*137*		*50 - 200*
13C2-8:2-FTS	*120*		*50 - 200*

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

Lab Sample ID: MBL 380-69291/21-A
Matrix: Water
Analysis Batch: 69531

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 69291

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		12/22/23 16:01	12/27/23 16:25	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		12/22/23 16:01	12/27/23 16:25	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		12/22/23 16:01	12/27/23 16:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0		ng/L		12/22/23 16:01	12/27/23 16:25	1

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

Lab Sample ID: MBL 380-69291/21-A
Matrix: Water
Analysis Batch: 69531

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 69291

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0		ng/L		12/22/23 16:01	12/27/23 16:25	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		12/22/23 16:01	12/27/23 16:25	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		12/22/23 16:01	12/27/23 16:25	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		12/22/23 16:01	12/27/23 16:25	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		12/22/23 16:01	12/27/23 16:25	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		12/22/23 16:01	12/27/23 16:25	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		12/22/23 16:01	12/27/23 16:25	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		12/22/23 16:01	12/27/23 16:25	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		12/22/23 16:01	12/27/23 16:25	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0		ng/L		12/22/23 16:01	12/27/23 16:25	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0		ng/L		12/22/23 16:01	12/27/23 16:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		12/22/23 16:01	12/27/23 16:25	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		12/22/23 16:01	12/27/23 16:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		12/22/23 16:01	12/27/23 16:25	1

Surrogate	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*108*		*70 - 130*	*12/22/23 16:01*	*12/27/23 16:25*	*1*
13C2 PFHxA	*103*		*70 - 130*	*12/22/23 16:01*	*12/27/23 16:25*	*1*
13C2 PFDA	*112*		*70 - 130*	*12/22/23 16:01*	*12/27/23 16:25*	*1*
13C3-GenX	*97*		*70 - 130*	*12/22/23 16:01*	*12/27/23 16:25*	*1*

Lab Sample ID: LCS 380-69291/23-A
Matrix: Water
Analysis Batch: 69531

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69291

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			25.1	25.4		ng/L		101	70 - 130		
Perfluorooctanesulfonic acid (PFOS)			25.1	27.3		ng/L		109	70 - 130		
Perfluoroundecanoic acid (PFUnA)			25.1	26.4		ng/L		105	70 - 130		
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			25.1	27.3		ng/L		109	70 - 130		
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			25.1	26.6		ng/L		106	70 - 130		
Perfluorohexanoic acid (PFHxA)			25.1	27.2		ng/L		109	70 - 130		
Perfluorododecanoic acid (PFDoA)			25.1	26.1		ng/L		104	70 - 130		
Perfluorooctanoic acid (PFOA)			25.1	27.8		ng/L		111	70 - 130		
Perfluorodecanoic acid (PFDA)			25.1	27.2		ng/L		109	70 - 130		
Perfluorohexanesulfonic acid (PFHxS)			25.1	27.3		ng/L		109	70 - 130		
Perfluorobutanesulfonic acid (PFBS)			25.1	22.3		ng/L		89	70 - 130		
Perfluoroheptanoic acid (PFHpA)			25.1	28.1		ng/L		112	70 - 130		
Perfluorononanoic acid (PFNA)			25.1	28.1		ng/L		112	70 - 130		

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

Lab Sample ID: LCS 380-69291/23-A
Matrix: Water
Analysis Batch: 69531

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69291

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotetradecanoic acid (PFTA)	25.1	26.3		ng/L		105	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.1	25.9		ng/L		103	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.1	26.9		ng/L		107	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	26.7		ng/L		106	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	27.9		ng/L		111	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
d5-NEtFOSAA	*100*		*70 - 130*
13C2 PFHxA	*102*		*70 - 130*
13C2 PFDA	*100*		*70 - 130*
13C3-GenX	*96*		*70 - 130*

Lab Sample ID: MRL 380-69291/22-A
Matrix: Water
Analysis Batch: 69531

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69291

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.38	J	ng/L		119	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	2.39	J	ng/L		129	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.44	J	ng/L		122	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.45	J	ng/L		122	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.23	J	ng/L		111	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.60	J	ng/L		130	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.47	J	ng/L		123	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.58	J	ng/L		129	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.63	J	ng/L		131	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	2.28	J	ng/L		125	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	1.91	J	ng/L		108	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.68	J	ng/L		134	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.59	J	ng/L		129	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.03	J	ng/L		101	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.25	J	ng/L		113	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	2.26	J	ng/L		120	50 - 150

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

Lab Sample ID: MRL 380-69291/22-A
Matrix: Water
Analysis Batch: 69531

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69291

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	2.31	J	ng/L		122	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.35	J	ng/L		124	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
d5-NEtFOSAA	*100*		*70 - 130*
13C2 PFHxA	*100*		*70 - 130*
13C2 PFDA	*102*		*70 - 130*
13C3-GenX	*94*		*70 - 130*

Lab Sample ID: 380-75800-1 MS
Matrix: Water
Analysis Batch: 69531

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 69291

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		25.2	26.4		ng/L		105	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.2	28.2		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.2	26.8		ng/L		107	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.2	26.8		ng/L		107	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.2	27.3		ng/L		109	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.2	30.4		ng/L		117	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.2	26.4		ng/L		105	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.2	29.0		ng/L		112	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.2	28.1		ng/L		112	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.2	27.9		ng/L		107	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.2	27.8		ng/L		109	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.2	28.9		ng/L		113	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.2	28.6		ng/L		114	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.2	26.6		ng/L		106	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.2	26.1		ng/L		104	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.2	26.5		ng/L		105	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.2	26.4		ng/L		105	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.2	28.2		ng/L		112	70 - 130

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

Lab Sample ID: 380-75800-1 MS
Matrix: Water
Analysis Batch: 69531

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 69291

Surrogate	MS %Recovery	MS Qualifier	Limits
d5-NEtFOSAA	103		70 - 130
13C2 PFHxA	112		70 - 130
13C2 PFDA	103		70 - 130
13C3-GenX	102		70 - 130

Lab Sample ID: 380-75800-1 MSD
Matrix: Water
Analysis Batch: 69531

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 69291

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		25.1	26.3		ng/L		105	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	29.1		ng/L		110	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	26.9		ng/L		107	70 - 130	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	26.8		ng/L		107	70 - 130	0	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	27.2		ng/L		108	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	29.7		ng/L		114	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	26.4		ng/L		105	70 - 130	0	30
Perfluorooctanoic acid (PFOA)	<2.0		25.1	28.3		ng/L		110	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		25.1	27.4		ng/L		109	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	29.0		ng/L		111	70 - 130	4	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	27.0		ng/L		106	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	28.3		ng/L		111	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		25.1	28.2		ng/L		112	70 - 130	1	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	26.7		ng/L		106	70 - 130	0	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	26.4		ng/L		105	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	27.4		ng/L		109	70 - 130	3	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	27.7		ng/L		110	70 - 130	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	27.8		ng/L		111	70 - 130	1	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
d5-NEtFOSAA	101		70 - 130
13C2 PFHxA	109		70 - 130
13C2 PFDA	100		70 - 130
13C3-GenX	102		70 - 130

GC/MS Semi VOA

Prep Batch: 69138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-75800-1	MOANALUA WELLS	Total/NA	Water	525.2	
380-75800-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	525.2	
380-75800-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	525.2	
380-75800-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	525.2	
MB 380-69138/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-69138/24-A	Lab Control Sample	Total/NA	Water	525.2	
MRL 380-69138/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-75800-2 MS	AIEA GULCH WELLS PUMP 2	Total/NA	Water	525.2	
380-75800-3 DU	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	525.2	

Analysis Batch: 69231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-75800-1	MOANALUA WELLS	Total/NA	Water	525.2	69138
380-75800-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	525.2	69138
380-75800-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	525.2	69138
380-75800-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	525.2	69138
MB 380-69138/21-A	Method Blank	Total/NA	Water	525.2	69138
LCS 380-69138/24-A	Lab Control Sample	Total/NA	Water	525.2	69138
MRL 380-69138/22-A	Lab Control Sample	Total/NA	Water	525.2	69138
380-75800-2 MS	AIEA GULCH WELLS PUMP 2	Total/NA	Water	525.2	69138
380-75800-3 DU	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	525.2	69138

LCMS

Prep Batch: 69136

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-75800-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
380-75800-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	533	
380-75800-9	FB MOANALUA WELLS	Total/NA	Water	533	
380-75800-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-75800-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
380-75800-12	FB HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	533	
MBL 380-69136/18-A	Method Blank	Total/NA	Water	533	
LCS 380-69136/20-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-69136/19-A	Lab Control Sample	Total/NA	Water	533	
380-75855-B-1-B MS	Matrix Spike	Total/NA	Water	533	
380-75855-C-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Prep Batch: 69291

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-75800-1	MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-75800-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
380-75800-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-75800-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	537.1 DW	
380-75800-9	FB MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-75800-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
380-75800-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-75800-12	FB HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	537.1 DW	
MBL 380-69291/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-69291/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-69291/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	

LCMS (Continued)

Prep Batch: 69291 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-75800-1 MS	MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-75800-1 MSD	MOANALUA WELLS	Total/NA	Water	537.1 DW	

Analysis Batch: 69530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-75800-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	69136
380-75800-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	533	69136
380-75800-9	FB MOANALUA WELLS	Total/NA	Water	533	69136
380-75800-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	69136
380-75800-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	69136
380-75800-12	FB HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	533	69136
MBL 380-69136/18-A	Method Blank	Total/NA	Water	533	69136
LCS 380-69136/20-A	Lab Control Sample	Total/NA	Water	533	69136
MRL 380-69136/19-A	Lab Control Sample	Total/NA	Water	533	69136
380-75855-B-1-B MS	Matrix Spike	Total/NA	Water	533	69136
380-75855-C-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	533	69136

Analysis Batch: 69531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-75800-1	MOANALUA WELLS	Total/NA	Water	537.1	69291
380-75800-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	69291
380-75800-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	69291
380-75800-4	HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	537.1	69291
380-75800-9	FB MOANALUA WELLS	Total/NA	Water	537.1	69291
380-75800-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	69291
380-75800-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	69291
380-75800-12	FB HALAWA WELLS UNITS 1&2 P1	Total/NA	Water	537.1	69291
MBL 380-69291/21-A	Method Blank	Total/NA	Water	537.1	69291
LCS 380-69291/23-A	Lab Control Sample	Total/NA	Water	537.1	69291
MRL 380-69291/22-A	Lab Control Sample	Total/NA	Water	537.1	69291
380-75800-1 MS	MOANALUA WELLS	Total/NA	Water	537.1	69291
380-75800-1 MSD	MOANALUA WELLS	Total/NA	Water	537.1	69291

Prep Batch: 69771

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-75800-1	MOANALUA WELLS	Total/NA	Water	533	
380-75800-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
MBL 380-69771/19-A	Method Blank	Total/NA	Water	533	
LCS 380-69771/21-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-69771/20-A	Lab Control Sample	Total/NA	Water	533	
380-74117-C-4-A MS	Matrix Spike	Total/NA	Water	533	
380-74487-B-1-A DU	Duplicate	Total/NA	Water	533	

Analysis Batch: 69968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-75800-1	MOANALUA WELLS	Total/NA	Water	533	69771
380-75800-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	69771
MBL 380-69771/19-A	Method Blank	Total/NA	Water	533	69771
LCS 380-69771/21-A	Lab Control Sample	Total/NA	Water	533	69771
MRL 380-69771/20-A	Lab Control Sample	Total/NA	Water	533	69771
380-74117-C-4-A MS	Matrix Spike	Total/NA	Water	533	69771

LCMS (Continued)

Analysis Batch: 69968 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-74487-B-1-A DU	Duplicate	Total/NA	Water	533	69771

Lab Chronicle

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

Job ID: 380-75800-1
SDG: 525.2, 533 and 537.1

Client Sample ID: MOANALUA WELLS
Lab Sample ID: 380-75800-1
Date Collected: 12/18/23 10:05
Matrix: Water
Date Received: 12/20/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			69138	OTM3	EA POM	12/22/23 09:10
Total/NA	Analysis	525.2		1	69231	Q8LA	EA POM	12/22/23 23:33
Total/NA	Prep	533			69771	UMV1	EA POM	12/29/23 15:15
Total/NA	Analysis	533		1	69968	SZ9R	EA POM	01/02/24 17:46
Total/NA	Prep	537.1 DW			69291	A5GB	EA POM	12/22/23 16:01
Total/NA	Analysis	537.1		1	69531	R6YA	EA POM	12/27/23 16:56

Client Sample ID: AIEA GULCH WELLS PUMP 2
Lab Sample ID: 380-75800-2
Date Collected: 12/18/23 11:12
Matrix: Water
Date Received: 12/20/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			69138	OTM3	EA POM	12/22/23 09:10
Total/NA	Analysis	525.2		1	69231	Q8LA	EA POM	12/22/23 17:36
Total/NA	Prep	533			69771	UMV1	EA POM	12/29/23 15:15
Total/NA	Analysis	533		1	69968	SZ9R	EA POM	01/02/24 17:56
Total/NA	Prep	537.1 DW			69291	A5GB	EA POM	12/22/23 16:01
Total/NA	Analysis	537.1		1	69531	R6YA	EA POM	12/27/23 17:44

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Lab Sample ID: 380-75800-3
Date Collected: 12/18/23 11:37
Matrix: Water
Date Received: 12/20/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			69138	OTM3	EA POM	12/22/23 09:10
Total/NA	Analysis	525.2		1	69231	Q8LA	EA POM	12/22/23 17:56
Total/NA	Prep	533			69136	N8NE	EA POM	12/22/23 17:00
Total/NA	Analysis	533		1	69530	SZ9R	EA POM	12/28/23 01:45
Total/NA	Prep	537.1 DW			69291	A5GB	EA POM	12/22/23 16:01
Total/NA	Analysis	537.1		1	69531	R6YA	EA POM	12/27/23 17:54

Client Sample ID: HALAWA WELLS UNITS 1&2 P1
Lab Sample ID: 380-75800-4
Date Collected: 12/18/23 10:39
Matrix: Water
Date Received: 12/20/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			69138	OTM3	EA POM	12/22/23 09:10
Total/NA	Analysis	525.2		1	69231	Q8LA	EA POM	12/22/23 23:53
Total/NA	Prep	533			69136	N8NE	EA POM	12/22/23 17:00
Total/NA	Analysis	533		1	69530	SZ9R	EA POM	12/28/23 01:55
Total/NA	Prep	537.1 DW			69291	A5GB	EA POM	12/22/23 16:01
Total/NA	Analysis	537.1		1	69531	R6YA	EA POM	12/27/23 18:03

Lab Chronicle

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

Job ID: 380-75800-1
SDG: 525.2, 533 and 537.1

Client Sample ID: FB MOANALUA WELLS
Lab Sample ID: 380-75800-9
Date Collected: 12/18/23 10:05
Matrix: Water
Date Received: 12/20/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			69136	N8NE	EA POM	12/22/23 17:00
Total/NA	Analysis	533		1	69530	SZ9R	EA POM	12/28/23 02:04
Total/NA	Prep	537.1 DW			69291	A5GB	EA POM	12/22/23 16:01
Total/NA	Analysis	537.1		1	69531	R6YA	EA POM	12/27/23 18:13

Client Sample ID: FB AIEA GULCH WELLS PUMP 2
Lab Sample ID: 380-75800-10
Date Collected: 12/18/23 11:12
Matrix: Water
Date Received: 12/20/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			69136	N8NE	EA POM	12/22/23 17:00
Total/NA	Analysis	533		1	69530	SZ9R	EA POM	12/28/23 02:14
Total/NA	Prep	537.1 DW			69291	A5GB	EA POM	12/22/23 16:01
Total/NA	Analysis	537.1		1	69531	R6YA	EA POM	12/27/23 18:23

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2
Lab Sample ID: 380-75800-11
Date Collected: 12/18/23 11:37
Matrix: Water
Date Received: 12/20/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			69136	N8NE	EA POM	12/22/23 17:00
Total/NA	Analysis	533		1	69530	SZ9R	EA POM	12/28/23 02:23
Total/NA	Prep	537.1 DW			69291	A5GB	EA POM	12/22/23 16:01
Total/NA	Analysis	537.1		1	69531	R6YA	EA POM	12/27/23 18:32

Client Sample ID: FB HALAWA WELLS UNITS 1&2 P1
Lab Sample ID: 380-75800-12
Date Collected: 12/18/23 10:39
Matrix: Water
Date Received: 12/20/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			69136	N8NE	EA POM	12/22/23 17:00
Total/NA	Analysis	533		1	69530	SZ9R	EA POM	12/28/23 02:33
Total/NA	Prep	537.1 DW			69291	A5GB	EA POM	12/22/23 16:01
Total/NA	Analysis	537.1		1	69531	R6YA	EA POM	12/27/23 18:42

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: 380-75800-1
SDG: 525.2, 533 and 537.1

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

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

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

Method Summary

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

Job ID: 380-75800-1
SDG: 525.2, 533 and 537.1

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: 380-75800-1
SDG: 525.2, 533 and 537.1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-75800-1	MOANALUA WELLS	Water	12/18/23 10:05	12/20/23 10:30
380-75800-2	AIEA GULCH WELLS PUMP 2	Water	12/18/23 11:12	12/20/23 10:30
380-75800-3	AIEA WELLS PUMPS 1&2 (260) P2	Water	12/18/23 11:37	12/20/23 10:30
380-75800-4	HALAWA WELLS UNITS 1&2 P1	Water	12/18/23 10:39	12/20/23 10:30
380-75800-9	FB MOANALUA WELLS	Water	12/18/23 10:05	12/20/23 10:30
380-75800-10	FB AIEA GULCH WELLS PUMP 2	Water	12/18/23 11:12	12/20/23 10:30
380-75800-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Water	12/18/23 11:37	12/20/23 10:30
380-75800-12	FB HALAWA WELLS UNITS 1&2 P1	Water	12/18/23 10:39	12/20/23 10:30

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

Chain of Custody Record

eurofins

Client Information	Sampler: Bailey	Lab PM: Arada Rachelle	Carrier Tracking No(s):	COC No: 380-27941-2757 2
Client Contact: Dr Ron Fenstermacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 1 of 2
Company: City & County of Honolulu	PWSID:	Analysis Requested		Job #:
Address: 630 South Beretania Street, Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State, Zip: HI, 96843	Compliance Project: Δ No			
Phone: 808-748-5091 (tel)	PO #: C20525101 exp 05312023			
Email: rfenstemacher@hbws.org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc. RUSH Weekly Red Hill	Project #: 38001111			
Site:	SSOW#:			

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	SUBCONTRACT - 8015 Gas (Purgable) LL (EAL)	SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil	525.2_PREC - (MOD) 525plus PLUS TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note
			Preservation Code				R	R	RA		RA	Y	N		
MOANALUA WELLS	18-Dec-2023	1005	G	Water			2		2	2	4				chlorinated
AIEA GULCH WELLS PUMP2	18-Dec-2023	1112	G	Water			2		2	2	4				chlorinated
AIEA WELLS PUMPS 1&2 (260) P2	18-Dec-2023	1137	G	Water			2		2	2	4				
HALAWA WELLS UNITS 1&2 P1	18-Dec-2023	1039	G	Water			2		2	2	(4)	< 1 of 4 broken	(T)		
TB MOANALUA WELLS	18-Dec-2023	1005		Water							2				
TB AIEA GULCH WELLS PUMP2	18-Dec-2023	1112		Water							2				
TB AIEA WELLS PUMPS 1&2 (260)	18-Dec-2023	1137		Water							2				
TB HALAWA WELLS UNITS 1&2	18-Dec-2023	1039		Water							2				

380-75800 COC

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

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

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

Special Instructions/QC Requirements: 7745 4407 1717/1725/1739/1740

Empty Kit Relinquished by	Date	Time	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Bailey	19 Dec 2023 1400	HBWS	[illegible]	12/20/23 10:30	[illegible]
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks	
		6 CSA / 1.5 2.2 3.2 3.6 / 2.4 3.4	

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

Client Information	Sampler: Bailey	Lab PM: Arada Rachelle	Carrier Tracking No(s)	COC No: 380-27941-2757 2
Client Contact: Dr Ron Fenstermacher	Phone: 808-748-5840	E-Mail: Rachelle Arada@et euronisus com	State of Origin	Page: Page 2 of 2
Company: City & County of Honolulu	PWSID			Job #:
Address: 630 South Beretania Street, Chemistry Lab	Due Date Requested			
City: Honolulu	TAT Requested (days)			
State Zip: HI, 96843	Compliance Project Δ No			
Phone: 808-748-5091 (tel)	PO #: C20525101 exp 05312023			
Email: rfenstemacher@hbws org	WO #:			
Project Name: RED-HILL/HBWS sites Event Desc. RUSH Weekly Red Hill	Project #: 38001111			
Site	SSOW#:			

Analysis Requested

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	SUBCONTRACT - 8015 Gas (Purgable) LL (EAL)	SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil	525 2_PREC - (MOD) 525plus PLUS TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	537 1_DW_PREC - 537 1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note
			Preservation Code		X	X	R	R	RA		RA	Y	N	X	
MOANALUA WELLS	18-Dec-2023	1005	G	Water								3	3		chlorinated
AIEA GULCH WELLS PUMP2	18-Dec-2023	1112	G	Water								3	3		chlorinated
AIEA WELLS PUMPS 1&2 (260) P2	18-Dec-2023	1137	G	Water								3	3		
HALAWA WELLS UNITS 1&2 P1	18-Dec-2023	1039	G	Water								3	3		
FB MOANALUA WELLS	18-Dec-2023	1005		Water								1	1		
FB AIEA GULCH WELLS PUMP2	18-Dec-2023	1112		Water								1	1		
FB AIEA WELLS PUMPS 1&2 (260)	18-Dec-2023	1137		Water								1	1		
FB HALAWA WELLS UNITS 1&2	18-Dec-2023	1039		Water								1	1		

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

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

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

Special Instructions/QC Requirements

Empty Kit Relinquished by	Date	Time	Method of Shipment: 7743 4467 1717/1728/1739/1740

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Bailey	19dec2023 1400	HBWS	44101	12/21/23 1030	EEMP

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks: 6 USA / 1.3 2.6 → 2.2 3.6, 1.3 2.4 3.6 3.4 Ger

Ver 01/16/2019

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: ***12/13/2023 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: 380-75800-1
SDG Number: 525.2, 533 and 537.1

Login Number: 75800
List Number: 1
Creator: Do, Michelle

List Source: Eurofins Eaton Analytical Pomona

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