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ANALYTICAL REPORT

PREPARED FOR

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Honolulu, Hawaii 96843

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JOB DESCRIPTION

RED-HILL
525.2, 533 and 537.1
RUSH Weekly Red Hill

JOB NUMBER

380-74776-1

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

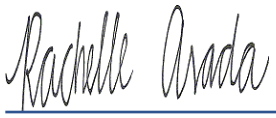
This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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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Authorized for release by
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Table of Contents

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
^+	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 Narrative
380-74776-1

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 12/13/2023 10:10 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7°C and 2.0°C

Receipt Exceptions
There is ice formation in one of the received 537.1 containers from site AIEA GULCH WELLS PUMP 2, and in one of the received 533 containers from site AIEA WELLS PUMPS 1&2 (260) P2. There is sufficient volume to perform analysis. AIEA GULCH WELLS PUMP 2 (380-74776-2), AIEA WELLS PUMPS 1&2 (260) P2.

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

PFAS
Method 537.1 DW: Surrogate recovery below QC acceptance criteria for samples FB MOANALUA WELLS (380-74776-9), FB AIEA GULCH WELLS PUMP 2 (380-74776-10), FB AIEA WELLS PUMPS 1&2 (260) P2 (380-74776-11) and FB HALAWA WELLS UNITS 1 & 2 P1 (380-74776-12). Insufficient volume for re-extraction / re-analysis. Any detection in associated native sample is not acceptable per method. Native samples MOANALUA WELLS (380-74776-1), AIEA GULCH WELLS PUMP 2 (380-74776-2) and FB AIEA WELLS PUMPS 1&2 (260) P2 (380-74776-3) were ND. Native sample HALAWA WELLS UNITS 1 & 2 P1 (380-74776-4) has detections therefore, data of both native and field blank samples excluded due to this QC issue.

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: 380-74776-1
SDG: 525.2, 533 and 537.1

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-74776-1

PWSID Number: HI0000331

No Detections.

Client Sample ID: AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-74776-2

PWSID Number: HI0000331

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-74776-3

PWSID Number: HI0000331

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-74776-4

PWSID Number: HI0000331

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.4		2.0		ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.2		2.0		ng/L	1		533	Total/NA

Client Sample ID: FB MOANALUA WELLS — Lab Sample ID: 380-74776-9

No Detections.

Client Sample ID: FB AIEA GULCH WELLS PUMP 2 — Lab Sample ID: 380-74776-10

No Detections.

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2 — Lab Sample ID: 380-74776-11

No Detections.

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-74776-12

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

Client Sample ID: MOANALUA WELLS
Date Collected: 12/11/23 09:50
Date Received: 12/13/23 10:10

Lab Sample ID: 380-74776-1
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
2,4'-DDD	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
2,4'-DDE	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
2,4'-DDT	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
2,4-Dinitrotoluene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
2,6-Dinitrotoluene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
2-Methylnaphthalene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
4,4'-DDD	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
4,4'-DDE	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
4,4'-DDT	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Acenaphthene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Acenaphthylene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Acetochlor	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Alachlor	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
alpha-BHC	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
alpha-Chlordane	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
Anthracene	<0.020		0.020		ug/L		12/15/23 09:30	12/17/23 14:13	1
Atrazine	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
Benz(a)anthracene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
Benzo[a]pyrene	<0.020		0.020		ug/L		12/15/23 09:30	12/17/23 14:13	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		12/15/23 09:30	12/17/23 14:13	1
Benzo[g,h,i]perylene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		12/15/23 09:30	12/17/23 14:13	1
beta-BHC	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60		ug/L		12/15/23 09:30	12/17/23 14:13	1
Bromacil	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Butachlor	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
Butylbenzylphthalate	<0.50		0.50		ug/L		12/15/23 09:30	12/17/23 14:13	1
Chlorobenzilate	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Chloroneb	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Chlorothalonil (Draconil, Bravo)	<0.099	^3+	0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Chlorpyrifos	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
Chrysene	<0.020		0.020		ug/L		12/15/23 09:30	12/17/23 14:13	1
delta-BHC	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Di(2-ethylhexyl)adipate	<0.60		0.60		ug/L		12/15/23 09:30	12/17/23 14:13	1
Dibenz(a,h)anthracene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
Diclorvos (DDVP)	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
Dieldrin	<0.20		0.20		ug/L		12/15/23 09:30	12/17/23 14:13	1
Diethylphthalate	<0.50		0.50		ug/L		12/15/23 09:30	12/17/23 14:13	1
Dimethylphthalate	<0.50		0.50		ug/L		12/15/23 09:30	12/17/23 14:13	1
Di-n-butyl phthalate	<0.99		0.99		ug/L		12/15/23 09:30	12/17/23 14:13	1
Di-n-octyl phthalate	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Endosulfan I (Alpha)	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Endosulfan II (Beta)	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Endosulfan sulfate	<0.099	*+	0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Endrin	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Endrin aldehyde	<0.099	^3+	0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
EPTC	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Fluoranthene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

Client Sample ID: MOANALUA WELLS
Date Collected: 12/11/23 09:50
Date Received: 12/13/23 10:10

Lab Sample ID: 380-74776-1
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
gamma-Chlordane	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
Heptachlor	<0.040		0.040		ug/L		12/15/23 09:30	12/17/23 14:13	1
Heptachlor epoxide (isomer B)	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
Hexachlorobenzene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
Hexachlorocyclopentadiene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
Isophorone	<0.50		0.50		ug/L		12/15/23 09:30	12/17/23 14:13	1
Lindane	<0.040		0.040		ug/L		12/15/23 09:30	12/17/23 14:13	1
Malathion	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Methoxychlor	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Metolachlor	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
Molinate	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Naphthalene	<0.30		0.30		ug/L		12/15/23 09:30	12/17/23 14:13	1
Parathion	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Pendimethalin (Penoxaline)	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Phenanthrene	<0.040		0.040		ug/L		12/15/23 09:30	12/17/23 14:13	1
Propachlor	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
Pyrene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
Simazine	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
Terbacil	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Terbuthylazine	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1
Thiobencarb	<0.20		0.20		ug/L		12/15/23 09:30	12/17/23 14:13	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		12/15/23 09:30	12/17/23 14:13	1
trans-Nonachlor	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:13	1
Trifluralin	<0.099	^+	0.099		ug/L		12/15/23 09:30	12/17/23 14:13	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*12/15/23 09:30*	*12/17/23 14:13*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*94*		*70 - 130*	*12/15/23 09:30*	*12/17/23 14:13*	*1*
Perylene-d12	*106*		*70 - 130*	*12/15/23 09:30*	*12/17/23 14:13*	*1*
Triphenylphosphate	*110*		*70 - 130*	*12/15/23 09:30*	*12/17/23 14:13*	*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-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

Client Sample ID: MOANALUA WELLS
Date Collected: 12/11/23 09:50
Date Received: 12/13/23 10:10

Lab Sample ID: 380-74776-1
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:49	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*71*		*50 - 200*	*12/19/23 15:07*	*12/20/23 23:49*	*1*
13C6 PFDA	*93*		*50 - 200*	*12/19/23 15:07*	*12/20/23 23:49*	*1*
13C5 PFHxA	*80*		*50 - 200*	*12/19/23 15:07*	*12/20/23 23:49*	*1*
13C4 PFHpA	*85*		*50 - 200*	*12/19/23 15:07*	*12/20/23 23:49*	*1*
13C8 PFOA	*89*		*50 - 200*	*12/19/23 15:07*	*12/20/23 23:49*	*1*
13C9 PFNA	*94*		*50 - 200*	*12/19/23 15:07*	*12/20/23 23:49*	*1*
13C7 PFUnA	*97*		*50 - 200*	*12/19/23 15:07*	*12/20/23 23:49*	*1*
13C2 PFDoA	*105*		*50 - 200*	*12/19/23 15:07*	*12/20/23 23:49*	*1*
13C4 PFBA	*82*		*50 - 200*	*12/19/23 15:07*	*12/20/23 23:49*	*1*
13C5 PFPeA	*84*		*50 - 200*	*12/19/23 15:07*	*12/20/23 23:49*	*1*
13C3 PFBS	*106*		*50 - 200*	*12/19/23 15:07*	*12/20/23 23:49*	*1*
13C3 PFHxS	*107*		*50 - 200*	*12/19/23 15:07*	*12/20/23 23:49*	*1*
13C8 PFOS	*109*		*50 - 200*	*12/19/23 15:07*	*12/20/23 23:49*	*1*
13C2-4:2-FTS	*129*		*50 - 200*	*12/19/23 15:07*	*12/20/23 23:49*	*1*
13C2-6:2-FTS	*124*		*50 - 200*	*12/19/23 15:07*	*12/20/23 23:49*	*1*
13C2-8:2-FTS	*127*		*50 - 200*	*12/19/23 15:07*	*12/20/23 23:49*	*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		12/21/23 08:33	12/22/23 17:04	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/21/23 08:33	12/22/23 17:04	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/21/23 08:33	12/22/23 17:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		12/21/23 08:33	12/22/23 17:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		12/21/23 08:33	12/22/23 17:04	1

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

Client Sample ID: MOANALUA WELLS

Date Collected: 12/11/23 09:50
Date Received: 12/13/23 10:10

Lab Sample ID: 380-74776-1
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/21/23 08:33	12/22/23 17:04	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/21/23 08:33	12/22/23 17:04	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/21/23 08:33	12/22/23 17:04	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/21/23 08:33	12/22/23 17:04	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/21/23 08:33	12/22/23 17:04	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/21/23 08:33	12/22/23 17:04	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/21/23 08:33	12/22/23 17:04	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/21/23 08:33	12/22/23 17:04	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		12/21/23 08:33	12/22/23 17:04	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		12/21/23 08:33	12/22/23 17:04	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/21/23 08:33	12/22/23 17:04	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/21/23 08:33	12/22/23 17:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/21/23 08:33	12/22/23 17:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*116*		*70 - 130*	*12/21/23 08:33*	*12/22/23 17:04*	*1*
13C2 PFHxA	*123*		*70 - 130*	*12/21/23 08:33*	*12/22/23 17:04*	*1*
13C2 PFDA	*111*		*70 - 130*	*12/21/23 08:33*	*12/22/23 17:04*	*1*
13C3-GenX	*114*		*70 - 130*	*12/21/23 08:33*	*12/22/23 17:04*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP 2

Date Collected: 12/11/23 10:48
Date Received: 12/13/23 10:10

Lab Sample ID: 380-74776-2
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
2,4'-DDD	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
2,4'-DDE	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
2,4'-DDT	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
2,4-Dinitrotoluene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
2,6-Dinitrotoluene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
2-Methylnaphthalene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
4,4'-DDD	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
4,4'-DDE	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
4,4'-DDT	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Acenaphthene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Acenaphthylene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Acetochlor	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Alachlor	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
alpha-BHC	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
alpha-Chlordane	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
Anthracene	<0.020		0.020		ug/L		12/15/23 09:30	12/17/23 14:33	1
Atrazine	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
Benz(a)anthracene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
Benzo[a]pyrene	<0.020		0.020		ug/L		12/15/23 09:30	12/17/23 14:33	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		12/15/23 09:30	12/17/23 14:33	1
Benzo[g,h,i]perylene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

Client Sample ID: AIEA GULCH WELLS PUMP 2
Date Collected: 12/11/23 10:48
Date Received: 12/13/23 10:10

Lab Sample ID: 380-74776-2
Matrix: Drinking Water
PWSID Number: HI0000331

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		12/15/23 09:30	12/17/23 14:33	1
beta-BHC	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60		ug/L		12/15/23 09:30	12/17/23 14:33	1
Bromacil	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Butachlor	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
Butylbenzylphthalate	<0.50		0.50		ug/L		12/15/23 09:30	12/17/23 14:33	1
Chlorobenzilate	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Chloroneb	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Chlorothalonil (Draconil, Bravo)	<0.099	^3+	0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Chlorpyrifos	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
Chrysene	<0.020		0.020		ug/L		12/15/23 09:30	12/17/23 14:33	1
delta-BHC	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Di(2-ethylhexyl)adipate	<0.60		0.60		ug/L		12/15/23 09:30	12/17/23 14:33	1
Dibenz(a,h)anthracene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
Diclorvos (DDVP)	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
Dieldrin	<0.20		0.20		ug/L		12/15/23 09:30	12/17/23 14:33	1
Diethylphthalate	<0.50		0.50		ug/L		12/15/23 09:30	12/17/23 14:33	1
Dimethylphthalate	<0.50		0.50		ug/L		12/15/23 09:30	12/17/23 14:33	1
Di-n-butyl phthalate	<0.99		0.99		ug/L		12/15/23 09:30	12/17/23 14:33	1
Di-n-octyl phthalate	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Endosulfan I (Alpha)	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Endosulfan II (Beta)	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Endosulfan sulfate	<0.099	*+	0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Endrin	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Endrin aldehyde	<0.099	^3+	0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
EPTC	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Fluoranthene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Fluorene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
gamma-Chlordane	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
Heptachlor	<0.040		0.040		ug/L		12/15/23 09:30	12/17/23 14:33	1
Heptachlor epoxide (isomer B)	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
Hexachlorobenzene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
Hexachlorocyclopentadiene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
Isophorone	<0.50		0.50		ug/L		12/15/23 09:30	12/17/23 14:33	1
Lindane	<0.040		0.040		ug/L		12/15/23 09:30	12/17/23 14:33	1
Malathion	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Methoxychlor	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Metolachlor	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
Molinate	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Naphthalene	<0.30		0.30		ug/L		12/15/23 09:30	12/17/23 14:33	1
Parathion	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Pendimethalin (Penoxaline)	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Phenanthrene	<0.040		0.040		ug/L		12/15/23 09:30	12/17/23 14:33	1
Propachlor	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
Pyrene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
Simazine	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
Terbacil	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1
Terbuthylazine	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

Client Sample ID: AIEA GULCH WELLS PUMP 2
Date Collected: 12/11/23 10:48
Date Received: 12/13/23 10:10

Lab Sample ID: 380-74776-2
Matrix: Drinking Water
PWSID Number: HI0000331

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		12/15/23 09:30	12/17/23 14:33	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		12/15/23 09:30	12/17/23 14:33	1
trans-Nonachlor	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 14:33	1
Trifluralin	<0.099	^+	0.099		ug/L		12/15/23 09:30	12/17/23 14:33	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*0.63*	*T J*	*ug/L*		*2.68*	*N/A*	*12/15/23 09:30*	*12/17/23 14:33*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*92*		*70 - 130*	*12/15/23 09:30*	*12/17/23 14:33*	*1*
Perylene-d12	*106*		*70 - 130*	*12/15/23 09:30*	*12/17/23 14:33*	*1*
Triphenylphosphate	*117*		*70 - 130*	*12/15/23 09:30*	*12/17/23 14:33*	*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		12/19/23 15:07	12/20/23 23:59	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		12/19/23 15:07	12/20/23 23:59	1

Client Sample ID: AIEA GULCH WELLS PUMP 2
Date Collected: 12/11/23 10:48
Date Received: 12/13/23 10:10

Lab Sample ID: 380-74776-2
Matrix: Drinking Water
PWSID Number: HI0000331

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	85		50 - 200	12/19/23 15:07	12/20/23 23:59	1
13C6 PFDA	97		50 - 200	12/19/23 15:07	12/20/23 23:59	1
13C5 PFHxA	93		50 - 200	12/19/23 15:07	12/20/23 23:59	1
13C4 PFHpA	93		50 - 200	12/19/23 15:07	12/20/23 23:59	1
13C8 PFOA	94		50 - 200	12/19/23 15:07	12/20/23 23:59	1
13C9 PFNA	103		50 - 200	12/19/23 15:07	12/20/23 23:59	1
13C7 PFUnA	99		50 - 200	12/19/23 15:07	12/20/23 23:59	1
13C2 PFDoA	104		50 - 200	12/19/23 15:07	12/20/23 23:59	1
13C4 PFBA	89		50 - 200	12/19/23 15:07	12/20/23 23:59	1
13C5 PFPeA	89		50 - 200	12/19/23 15:07	12/20/23 23:59	1
13C3 PFBS	102		50 - 200	12/19/23 15:07	12/20/23 23:59	1
13C3 PFHxS	100		50 - 200	12/19/23 15:07	12/20/23 23:59	1
13C8 PFOS	106		50 - 200	12/19/23 15:07	12/20/23 23:59	1
13C2-4:2-FTS	118		50 - 200	12/19/23 15:07	12/20/23 23:59	1
13C2-6:2-FTS	111		50 - 200	12/19/23 15:07	12/20/23 23:59	1
13C2-8:2-FTS	115		50 - 200	12/19/23 15:07	12/20/23 23:59	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		12/18/23 14:46	12/19/23 14:29	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/18/23 14:46	12/19/23 14:29	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/18/23 14:46	12/19/23 14:29	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		12/18/23 14:46	12/19/23 14:29	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		12/18/23 14:46	12/19/23 14:29	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/18/23 14:46	12/19/23 14:29	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/18/23 14:46	12/19/23 14:29	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/18/23 14:46	12/19/23 14:29	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/18/23 14:46	12/19/23 14:29	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/18/23 14:46	12/19/23 14:29	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/18/23 14:46	12/19/23 14:29	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/18/23 14:46	12/19/23 14:29	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/18/23 14:46	12/19/23 14:29	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		12/18/23 14:46	12/19/23 14:29	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		12/18/23 14:46	12/19/23 14:29	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/18/23 14:46	12/19/23 14:29	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/18/23 14:46	12/19/23 14:29	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/18/23 14:46	12/19/23 14:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	107		70 - 130	12/18/23 14:46	12/19/23 14:29	1
13C2 PFHxA	122		70 - 130	12/18/23 14:46	12/19/23 14:29	1
13C2 PFDA	106		70 - 130	12/18/23 14:46	12/19/23 14:29	1
13C3-GenX	123		70 - 130	12/18/23 14:46	12/19/23 14:29	1

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 12/11/23 11:15
Date Received: 12/13/23 10:10

Lab Sample ID: 380-74776-3
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
2,4'-DDD	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
2,4'-DDE	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
2,4'-DDT	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
2,4-Dinitrotoluene	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
2,6-Dinitrotoluene	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
2-Methylnaphthalene	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
4,4'-DDD	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
4,4'-DDE	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
4,4'-DDT	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Acenaphthene	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Acenaphthylene	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Acetochlor	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Alachlor	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
alpha-BHC	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
alpha-Chlordane	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
Anthracene	<0.020		0.020		ug/L		12/15/23 11:20	12/17/23 14:52	1
Atrazine	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
Benz(a)anthracene	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
Benzo[a]pyrene	<0.020		0.020		ug/L		12/15/23 11:20	12/17/23 14:52	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		12/15/23 11:20	12/17/23 14:52	1
Benzo[g,h,i]perylene	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		12/15/23 11:20	12/17/23 14:52	1
beta-BHC	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60		ug/L		12/15/23 11:20	12/17/23 14:52	1
Bromacil	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Butachlor	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
Butylbenzylphthalate	<0.50		0.50		ug/L		12/15/23 11:20	12/17/23 14:52	1
Chlorobenzilate	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Chloroneb	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Chlorothalonil (Draconil, Bravo)	<0.10	^3+	0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Chlorpyrifos	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
Chrysene	<0.020		0.020		ug/L		12/15/23 11:20	12/17/23 14:52	1
delta-BHC	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Di(2-ethylhexyl)adipate	<0.60		0.60		ug/L		12/15/23 11:20	12/17/23 14:52	1
Dibenz(a,h)anthracene	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
Diclorvos (DDVP)	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
Dieldrin	<0.20		0.20		ug/L		12/15/23 11:20	12/17/23 14:52	1
Diethylphthalate	<0.50		0.50		ug/L		12/15/23 11:20	12/17/23 14:52	1
Dimethylphthalate	<0.50		0.50		ug/L		12/15/23 11:20	12/17/23 14:52	1
Di-n-butyl phthalate	<1.0		1.0		ug/L		12/15/23 11:20	12/17/23 14:52	1
Di-n-octyl phthalate	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Endosulfan I (Alpha)	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Endosulfan II (Beta)	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Endosulfan sulfate	<0.10	*+	0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Endrin	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Endrin aldehyde	<0.10	^3+	0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
EPTC	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Fluoranthene	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 12/11/23 11:15
Date Received: 12/13/23 10:10

Lab Sample ID: 380-74776-3
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
gamma-Chlordane	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
Heptachlor	<0.040		0.040		ug/L		12/15/23 11:20	12/17/23 14:52	1
Heptachlor epoxide (isomer B)	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
Hexachlorobenzene	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
Hexachlorocyclopentadiene	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
Isophorone	<0.50		0.50		ug/L		12/15/23 11:20	12/17/23 14:52	1
Lindane	<0.040		0.040		ug/L		12/15/23 11:20	12/17/23 14:52	1
Malathion	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Methoxychlor	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Metolachlor	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
Molinate	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Naphthalene	<0.30		0.30		ug/L		12/15/23 11:20	12/17/23 14:52	1
Parathion	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Pendimethalin (Penoxaline)	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Phenanthrene	<0.040		0.040		ug/L		12/15/23 11:20	12/17/23 14:52	1
Propachlor	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
Pyrene	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
Simazine	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
Terbacil	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Terbuthylazine	<0.10		0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1
Thiobencarb	<0.20		0.20		ug/L		12/15/23 11:20	12/17/23 14:52	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		12/15/23 11:20	12/17/23 14:52	1
trans-Nonachlor	<0.050		0.050		ug/L		12/15/23 11:20	12/17/23 14:52	1
Trifluralin	<0.10	^+	0.10		ug/L		12/15/23 11:20	12/17/23 14:52	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*12/15/23 11:20*	*12/17/23 14:52*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*94*		*70 - 130*	*12/15/23 11:20*	*12/17/23 14:52*	*1*
Perylene-d12	*106*		*70 - 130*	*12/15/23 11:20*	*12/17/23 14:52*	*1*
Triphenylphosphate	*116*		*70 - 130*	*12/15/23 11:20*	*12/17/23 14:52*	*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		12/19/23 15:07	12/21/23 00:08	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 12/11/23 11:15
Date Received: 12/13/23 10:10

Lab Sample ID: 380-74776-3
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:08	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*83*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:08*	*1*
13C6 PFDA	*93*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:08*	*1*
13C5 PFHxA	*86*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:08*	*1*
13C4 PFHpA	*99*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:08*	*1*
13C8 PFOA	*93*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:08*	*1*
13C9 PFNA	*99*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:08*	*1*
13C7 PFUnA	*97*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:08*	*1*
13C2 PFDoA	*102*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:08*	*1*
13C4 PFBA	*92*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:08*	*1*
13C5 PFPeA	*93*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:08*	*1*
13C3 PFBS	*104*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:08*	*1*
13C3 PFHxS	*99*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:08*	*1*
13C8 PFOS	*104*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:08*	*1*
13C2-4:2-FTS	*129*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:08*	*1*
13C2-6:2-FTS	*147*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:08*	*1*
13C2-8:2-FTS	*119*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:08*	*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		12/18/23 14:46	12/19/23 14:38	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/18/23 14:46	12/19/23 14:38	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/18/23 14:46	12/19/23 14:38	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		12/18/23 14:46	12/19/23 14:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		12/18/23 14:46	12/19/23 14:38	1

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

Lab Sample ID: 380-74776-3

Date Collected: 12/11/23 11:15
Matrix: Drinking Water
Date Received: 12/13/23 10:10
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/18/23 14:46	12/19/23 14:38	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/18/23 14:46	12/19/23 14:38	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/18/23 14:46	12/19/23 14:38	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/18/23 14:46	12/19/23 14:38	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/18/23 14:46	12/19/23 14:38	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/18/23 14:46	12/19/23 14:38	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/18/23 14:46	12/19/23 14:38	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/18/23 14:46	12/19/23 14:38	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		12/18/23 14:46	12/19/23 14:38	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		12/18/23 14:46	12/19/23 14:38	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/18/23 14:46	12/19/23 14:38	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/18/23 14:46	12/19/23 14:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/18/23 14:46	12/19/23 14:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*101*		*70 - 130*	*12/18/23 14:46*	*12/19/23 14:38*	*1*
13C2 PFHxA	*121*		*70 - 130*	*12/18/23 14:46*	*12/19/23 14:38*	*1*
13C2 PFDA	*108*		*70 - 130*	*12/18/23 14:46*	*12/19/23 14:38*	*1*
13C3-GenX	*118*		*70 - 130*	*12/18/23 14:46*	*12/19/23 14:38*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-74776-4

Date Collected: 12/11/23 10:21
Matrix: Drinking Water
Date Received: 12/13/23 10:10
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
2,4'-DDD	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
2,4'-DDE	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
2,4'-DDT	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
2,4-Dinitrotoluene	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
2,6-Dinitrotoluene	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
2-Methylnaphthalene	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
4,4'-DDD	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
4,4'-DDE	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
4,4'-DDT	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Acenaphthene	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Acenaphthylene	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Acetochlor	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Alachlor	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
alpha-BHC	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
alpha-Chlordane	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
Anthracene	<0.020		0.020		ug/L		12/15/23 11:20	12/17/23 15:12	1
Atrazine	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
Benz(a)anthracene	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
Benzo[a]pyrene	<0.020		0.020		ug/L		12/15/23 11:20	12/17/23 15:12	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		12/15/23 11:20	12/17/23 15:12	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 12/11/23 10:21
Date Received: 12/13/23 10:10

Lab Sample ID: 380-74776-4
Matrix: Drinking Water
PWSID Number: HI0000331

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		12/15/23 11:20	12/17/23 15:12	1
beta-BHC	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		12/15/23 11:20	12/17/23 15:12	1
Bromacil	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Butachlor	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
Butylbenzylphthalate	<0.49		0.49		ug/L		12/15/23 11:20	12/17/23 15:12	1
Chlorobenzilate	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Chloroneb	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Chlorothalonil (Draconil, Bravo)	<0.099	^3+	0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Chlorpyrifos	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
Chrysene	<0.020		0.020		ug/L		12/15/23 11:20	12/17/23 15:12	1
delta-BHC	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		12/15/23 11:20	12/17/23 15:12	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
Dieldrin	<0.20		0.20		ug/L		12/15/23 11:20	12/17/23 15:12	1
Diethylphthalate	<0.49		0.49		ug/L		12/15/23 11:20	12/17/23 15:12	1
Dimethylphthalate	<0.49		0.49		ug/L		12/15/23 11:20	12/17/23 15:12	1
Di-n-butyl phthalate	<0.99		0.99		ug/L		12/15/23 11:20	12/17/23 15:12	1
Di-n-octyl phthalate	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Endosulfan I (Alpha)	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Endosulfan II (Beta)	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Endosulfan sulfate	<0.099	*+	0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Endrin	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Endrin aldehyde	<0.099	^3+	0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
EPTC	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Fluoranthene	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Fluorene	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
gamma-Chlordane	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
Heptachlor	<0.039		0.039		ug/L		12/15/23 11:20	12/17/23 15:12	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
Hexachlorobenzene	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
Isophorone	<0.49		0.49		ug/L		12/15/23 11:20	12/17/23 15:12	1
Lindane	<0.039		0.039		ug/L		12/15/23 11:20	12/17/23 15:12	1
Malathion	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Methoxychlor	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Metolachlor	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
Molinate	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Naphthalene	<0.30		0.30		ug/L		12/15/23 11:20	12/17/23 15:12	1
Parathion	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Pendimethalin (Penoxaline)	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Phenanthrene	<0.039		0.039		ug/L		12/15/23 11:20	12/17/23 15:12	1
Propachlor	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
Pyrene	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
Simazine	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
Terbacil	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1
Terbuthylazine	<0.099		0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 12/11/23 10:21
Date Received: 12/13/23 10:10

Lab Sample ID: 380-74776-4
Matrix: Drinking Water
PWSID Number: HI0000331

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		12/15/23 11:20	12/17/23 15:12	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		12/15/23 11:20	12/17/23 15:12	1
trans-Nonachlor	<0.049		0.049		ug/L		12/15/23 11:20	12/17/23 15:12	1
Trifluralin	<0.099	^+	0.099		ug/L		12/15/23 11:20	12/17/23 15:12	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*12/15/23 11:20*	*12/17/23 15:12*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*92*		*70 - 130*	*12/15/23 11:20*	*12/17/23 15:12*	*1*
Perylene-d12	*106*		*70 - 130*	*12/15/23 11:20*	*12/17/23 15:12*	*1*
Triphenylphosphate	*118*		*70 - 130*	*12/15/23 11:20*	*12/17/23 15:12*	*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		12/19/23 15:07	12/21/23 00:18	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Perfluorohexanesulfonic acid (PFHxS)	**2.4**		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Perfluoropentanoic acid (PFPeA)	**2.2**		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:18	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-74776-4

Date Collected: 12/11/23 10:21
Date Received: 12/13/23 10:10

Matrix: Drinking Water
PWSID Number: HI0000331

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*89*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:18*	*1*
13C6 PFDA	*94*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:18*	*1*
13C5 PFHxA	*91*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:18*	*1*
13C4 PFHpA	*98*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:18*	*1*
13C8 PFOA	*93*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:18*	*1*
13C9 PFNA	*96*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:18*	*1*
13C7 PFUnA	*95*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:18*	*1*
13C2 PFDoA	*100*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:18*	*1*
13C4 PFBA	*94*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:18*	*1*
13C5 PFPeA	*100*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:18*	*1*
13C3 PFBS	*106*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:18*	*1*
13C3 PFHxS	*102*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:18*	*1*
13C8 PFOS	*109*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:18*	*1*
13C2-4:2-FTS	*136*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:18*	*1*
13C2-6:2-FTS	*147*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:18*	*1*
13C2-8:2-FTS	*125*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:18*	*1*

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-74776-9

Date Collected: 12/11/23 09:50
Date Received: 12/13/23 10:10

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		12/19/23 15:07	12/21/23 00:28	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-74776-9

Date Collected: 12/11/23 09:50
Matrix: Water
Date Received: 12/13/23 10:10

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*89*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:28*	*1*
13C6 PFDA	*100*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:28*	*1*
13C5 PFHxA	*100*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:28*	*1*
13C4 PFHpA	*100*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:28*	*1*
13C8 PFOA	*99*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:28*	*1*
13C9 PFNA	*104*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:28*	*1*
13C7 PFUnA	*100*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:28*	*1*
13C2 PFDoA	*103*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:28*	*1*
13C4 PFBA	*98*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:28*	*1*
13C5 PFPeA	*98*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:28*	*1*
13C3 PFBS	*106*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:28*	*1*
13C3 PFHxS	*100*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:28*	*1*
13C8 PFOS	*108*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:28*	*1*
13C2-4:2-FTS	*119*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:28*	*1*
13C2-6:2-FTS	*120*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:28*	*1*
13C2-8:2-FTS	*116*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:28*	*1*

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-74776-10

Date Collected: 12/11/23 10:48
Matrix: Water
Date Received: 12/13/23 10:10

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		12/19/23 15:07	12/21/23 00:37	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-74776-10

Date Collected: 12/11/23 10:48
Matrix: Water
Date Received: 12/13/23 10:10

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		12/19/23 15:07	12/21/23 00:37	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:37	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*96*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:37*	*1*
13C6 PFDA	*105*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:37*	*1*
13C5 PFHxA	*108*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:37*	*1*
13C4 PFHpA	*108*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:37*	*1*
13C8 PFOA	*108*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:37*	*1*
13C9 PFNA	*113*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:37*	*1*
13C7 PFUnA	*112*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:37*	*1*
13C2 PFDoA	*110*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:37*	*1*
13C4 PFBA	*108*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:37*	*1*
13C5 PFPeA	*108*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:37*	*1*
13C3 PFBS	*108*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:37*	*1*
13C3 PFHxS	*105*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:37*	*1*
13C8 PFOS	*112*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:37*	*1*
13C2-4:2-FTS	*117*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:37*	*1*
13C2-6:2-FTS	*116*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:37*	*1*
13C2-8:2-FTS	*113*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:37*	*1*

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

Lab Sample ID: 380-74776-11

Date Collected: 12/11/23 11:15
Matrix: Water
Date Received: 12/13/23 10:10

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		12/19/23 15:07	12/21/23 00:47	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2
Date Collected: 12/11/23 11:15
Date Received: 12/13/23 10:10

Lab Sample ID: 380-74776-11
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		12/19/23 15:07	12/21/23 00:47	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:47	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*87*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:47*	*1*
13C6 PFDA	*98*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:47*	*1*
13C5 PFHxA	*98*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:47*	*1*
13C4 PFHpA	*99*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:47*	*1*
13C8 PFOA	*97*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:47*	*1*
13C9 PFNA	*104*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:47*	*1*
13C7 PFUnA	*100*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:47*	*1*
13C2 PFDoA	*103*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:47*	*1*
13C4 PFBA	*101*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:47*	*1*
13C5 PFPeA	*103*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:47*	*1*
13C3 PFBS	*102*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:47*	*1*
13C3 PFHxS	*100*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:47*	*1*
13C8 PFOS	*108*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:47*	*1*
13C2-4:2-FTS	*117*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:47*	*1*
13C2-6:2-FTS	*114*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:47*	*1*
13C2-8:2-FTS	*114*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:47*	*1*

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 12/11/23 10:21
Date Received: 12/13/23 10:10

Lab Sample ID: 380-74776-12
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		12/19/23 15:07	12/21/23 00:56	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		12/19/23 15:07	12/21/23 00:56	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*90*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:56*	*1*
13C6 PFDA	*102*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:56*	*1*
13C5 PFHxA	*103*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:56*	*1*
13C4 PFHpA	*105*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:56*	*1*
13C8 PFOA	*103*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:56*	*1*
13C9 PFNA	*109*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:56*	*1*
13C7 PFUnA	*110*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:56*	*1*
13C2 PFDoA	*108*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:56*	*1*
13C4 PFBA	*105*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:56*	*1*
13C5 PFPeA	*105*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:56*	*1*
13C3 PFBS	*107*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:56*	*1*
13C3 PFHxS	*103*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:56*	*1*
13C8 PFOS	*110*		*50 - 200*	*12/19/23 15:07*	*12/21/23 00:56*	*1*

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 12/11/23 10:21
Date Received: 12/13/23 10:10

Lab Sample ID: 380-74776-12
Matrix: Water

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	12/19/23 15:07	12/21/23 00:56	1
13C2-6:2-FTS	119		50 - 200	12/19/23 15:07	12/21/23 00:56	1
13C2-8:2-FTS	112		50 - 200	12/19/23 15:07	12/21/23 00:56	1

Action Limit Summary

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-74776-1

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL 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: 380-74776-2

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL 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 WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-74776-3

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL 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

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

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

Lab Sample ID: 380-74776-3

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
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	<0.10		ug/L	2	0.10	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	<0.10		ug/L	40	0.10	525.2	Total/NA
Simazine	<0.050		ug/L	4	0.050	525.2	Total/NA

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-74776-4

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL 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	<0.099		ug/L	2	0.099	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	<0.099		ug/L	40	0.099	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

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

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

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	PRY	TPP
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-74776-1	MOANALUA WELLS	94	106	110
380-74776-2	AIEA GULCH WELLS PUMP 2	92	106	117
380-74776-3	AIEA WELLS PUMPS 1&2 (260) P2	94	106	116
380-74776-4	HALAWA WELLS UNITS 1 & 2 P1	92	106	118

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	PRY	TPP
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-75122-Q-1-A MS	Matrix Spike	96	106	122
380-75146-Z-1-A DU	Duplicate	95	107	111
LCS 380-68072/23-A	Lab Control Sample	97	104	121
MB 380-68072/21-A	Method Blank	96	103	116
MRL 380-68072/22-A	Lab Control Sample	95	103	119

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS	PFHxA	PFDA	GenX
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
380-74776-1	MOANALUA WELLS	116	123	111	114
380-74776-2	AIEA GULCH WELLS PUMP 2	107	122	106	123
380-74776-3	AIEA WELLS PUMPS 1&2 (260) P2	101	121	108	118

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS	PFHxA	PFDA	GenX
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
380-75037-B-1-B MS	Matrix Spike	99	110	102	114

Surrogate Summary

Client: City & County of Honolulu
Job ID: 380-74776-1
Project/Site: RED-HILL
SDG: 525.2, 533 and 537.1

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

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS	PFHxA	PFDA	GenX
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
380-75037-B-1-C MSD	Matrix Spike Duplicate	103	115	103	121
380-75824-E-1-B MS	Matrix Spike	120	120	109	104
380-75824-F-1-B MSD	Matrix Spike Duplicate	114	119	108	108
LCS 380-68975/23-A	Lab Control Sample	108	110	110	84
LCSD 380-68447/22-A	Lab Control Sample	103	117	105	118
MBL 380-68447/19-A	Method Blank	109	125	110	125
MBL 380-68975/21-A	Method Blank	122	116	113	97
MRL 380-68447/20-A	Lab Control Sample	102	112	103	111
MRL 380-68975/22-A	Lab Control Sample	111	108	111	91

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: 380-74776-1
SDG: 525.2, 533 and 537.1

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

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA	C6PFDA	13C5PHA	C4PFHA	C8PFOA	C9PFNA	13C7PUA	PFDoA
Lab Sample ID	Client Sample ID	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)
380-74776-1	MOANALUA WELLS	71	93	80	85	89	94	97	105
380-74776-2	AIEA GULCH WELLS PUMP 2	85	97	93	93	94	103	99	104
380-74776-3	AIEA WELLS PUMPS 1&2 (260) P2	83	93	86	99	93	99	97	102
380-74776-4	HALAWA WELLS UNITS 1 & 2 P1	89	94	91	98	93	96	95	100

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	C3PFBS	C3PFHS	C8PFOS	42FTS	62FTS	82FTS
Lab Sample ID	Client Sample ID	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)
380-74776-1	MOANALUA WELLS	82	84	106	107	109	129	124	127
380-74776-2	AIEA GULCH WELLS PUMP 2	89	89	102	100	106	118	111	115
380-74776-3	AIEA WELLS PUMPS 1&2 (260) P2	92	93	104	99	104	129	147	119
380-74776-4	HALAWA WELLS UNITS 1 & 2 P1	94	100	106	102	109	136	147	125

Surrogate Legend

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

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

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA	C6PFDA	13C5PHA	C4PFHA	C8PFOA	C9PFNA	13C7PUA	PFDoA
Lab Sample ID	Client Sample ID	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)
380-74776-9	FB MOANALUA WELLS	89	100	100	100	99	104	100	103
380-74776-10	FB AIEA GULCH WELLS PUMP 2	96	105	108	108	108	113	112	110
380-74776-11	FB AIEA WELLS PUMPS 1&2 (260) P2	87	98	98	99	97	104	100	103
380-74776-12	FB HALAWA WELLS UNITS 1 & 2 P1	90	102	103	105	103	109	110	108
380-74786-B-1-A MS	Matrix Spike	97	106	112	103	106	113	113	117
380-74786-C-1-A MSD	Matrix Spike Duplicate	85	101	98	99	97	107	108	108
LCS 380-68611/23-A	Lab Control Sample	92	97	101	98	97	100	102	106
MBL 380-68611/21-A	Method Blank	75	87	85	85	86	92	91	92
MRL 380-68611/22-A	Lab Control Sample	82	91	95	95	93	97	92	97

Isotope Dilution Summary

Client: City & County of Honolulu
Job ID: 380-74776-1
Project/Site: RED-HILL
SDG: 525.2, 533 and 537.1

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

Matrix: Water
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	C3PFBS	C3PFHS	C8PFOS	42FTS	62FTS	82FTS
Lab Sample ID	Client Sample ID	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)
380-74776-9	FB MOANALUA WELLS	98	98	106	100	108	119	120	116
380-74776-10	FB AIEA GULCH WELLS PUMP 2	108	108	108	105	112	117	116	113
380-74776-11	FB AIEA WELLS PUMPS 1&2 (260) P2	101	103	102	100	108	117	114	114
380-74776-12	FB HALAWA WELLS UNITS 1 & 2 P1	105	105	107	103	110	124	119	112
380-74786-B-1-A MS	Matrix Spike	107	109	114	111	115	129	126	125
380-74786-C-1-A MSD	Matrix Spike Duplicate	97	103	100	103	107	122	113	114
LCS 380-68611/23-A	Lab Control Sample	96	98	106	99	106	120	114	113
MBL 380-68611/21-A	Method Blank	84	86	89	86	91	109	102	100
MRL 380-68611/22-A	Lab Control Sample	93	94	99	92	98	118	107	104

Surrogate Legend

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

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

Lab Sample ID: MB 380-68072/21-A
Matrix: Water
Analysis Batch: 68279

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 68072

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
2,4'-DDD	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
2,4'-DDE	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
2,4'-DDT	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
2,4-Dinitrotoluene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
2,6-Dinitrotoluene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
2-Methylnaphthalene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
4,4'-DDD	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
4,4'-DDE	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
4,4'-DDT	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Acenaphthene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Acenaphthylene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Acetochlor	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Alachlor	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
alpha-BHC	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
alpha-Chlordane	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
Anthracene	<0.020		0.020		ug/L		12/15/23 09:30	12/17/23 10:35	1
Atrazine	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
Benz(a)anthracene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
Benzo[a]pyrene	<0.020		0.020		ug/L		12/15/23 09:30	12/17/23 10:35	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		12/15/23 09:30	12/17/23 10:35	1
Benzo[g,h,i]perylene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		12/15/23 09:30	12/17/23 10:35	1
beta-BHC	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		12/15/23 09:30	12/17/23 10:35	1
Bromacil	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Butachlor	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
Butylbenzylphthalate	<0.50		0.50		ug/L		12/15/23 09:30	12/17/23 10:35	1
Chlorobenzilate	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Chloroneb	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Chlorpyrifos	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
Chrysene	<0.020		0.020		ug/L		12/15/23 09:30	12/17/23 10:35	1
delta-BHC	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		12/15/23 09:30	12/17/23 10:35	1
Dibenz(a,h)anthracene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
Diclorvos (DDVP)	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
Dieldrin	<0.20		0.20		ug/L		12/15/23 09:30	12/17/23 10:35	1
Diethylphthalate	<0.50		0.50		ug/L		12/15/23 09:30	12/17/23 10:35	1
Dimethylphthalate	<0.50		0.50		ug/L		12/15/23 09:30	12/17/23 10:35	1
Di-n-butyl phthalate	<0.99		0.99		ug/L		12/15/23 09:30	12/17/23 10:35	1
Di-n-octyl phthalate	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Endosulfan I (Alpha)	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Endosulfan II (Beta)	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Endosulfan sulfate	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Endrin	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Endrin aldehyde	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
EPTC	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1

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

Lab Sample ID: MB 380-68072/21-A
Matrix: Water
Analysis Batch: 68279

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 68072

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Fluorene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
gamma-Chlordane	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
Heptachlor	<0.040		0.040		ug/L		12/15/23 09:30	12/17/23 10:35	1
Heptachlor epoxide (isomer B)	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
Hexachlorobenzene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
Hexachlorocyclopentadiene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
Isophorone	<0.50		0.50		ug/L		12/15/23 09:30	12/17/23 10:35	1
Lindane	<0.040		0.040		ug/L		12/15/23 09:30	12/17/23 10:35	1
Malathion	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Methoxychlor	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Metolachlor	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
Molinate	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Naphthalene	<0.30		0.30		ug/L		12/15/23 09:30	12/17/23 10:35	1
Parathion	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Pendimethalin (Penoxaline)	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Phenanthrene	<0.040		0.040		ug/L		12/15/23 09:30	12/17/23 10:35	1
Propachlor	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
Pyrene	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
Simazine	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
Terbacil	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Terbuthylazine	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1
Thiobencarb	<0.20		0.20		ug/L		12/15/23 09:30	12/17/23 10:35	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		12/15/23 09:30	12/17/23 10:35	1
trans-Nonachlor	<0.050		0.050		ug/L		12/15/23 09:30	12/17/23 10:35	1
Trifluralin	<0.099		0.099		ug/L		12/15/23 09:30	12/17/23 10:35	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Camphene	*0.611*	*T J N*	*ug/L*		*2.29*	*79-92-5*	*12/15/23 09:30*	*12/17/23 10:35*	*1*
Decane	*2.63*	*T J N*	*ug/L*		*2.37*	*124-18-5*	*12/15/23 09:30*	*12/17/23 10:35*	*1*
Heptadecane, 2,6,10,15-tetramethyl-	*0.641*	*T J N*	*ug/L*		*2.56*	*54833-48-6*	*12/15/23 09:30*	*12/17/23 10:35*	*1*
9-Octadecenamide, (Z)-	*0.597*	*T J N*	*ug/L*		*7.48*	*301-02-0*	*12/15/23 09:30*	*12/17/23 10:35*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*96*		*70 - 130*	*12/15/23 09:30*	*12/17/23 10:35*	*1*
Perylene-d12	*103*		*70 - 130*	*12/15/23 09:30*	*12/17/23 10:35*	*1*
Triphenylphosphate	*116*		*70 - 130*	*12/15/23 09:30*	*12/17/23 10:35*	*1*

Lab Sample ID: LCS 380-68072/23-A
Matrix: Water
Analysis Batch: 68279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 68072

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1-Methylnaphthalene			1.98	1.95		ug/L		99	70 - 130		
2,4'-DDD			1.98	2.21		ug/L		112	70 - 130		
2,4'-DDE			1.98	2.29		ug/L		116	70 - 130		
2,4'-DDT			1.98	2.37		ug/L		120	70 - 130		

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

Lab Sample ID: LCS 380-68072/23-A
Matrix: Water
Analysis Batch: 68279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 68072

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dinitrotoluene	1.98	2.10		ug/L		106	70 - 130
2,6-Dinitrotoluene	1.98	1.99		ug/L		100	70 - 130
2-Methylnaphthalene	1.98	2.00		ug/L		101	70 - 130
4,4'-DDD	1.98	2.26		ug/L		114	70 - 130
4,4'-DDE	1.98	2.12		ug/L		107	70 - 130
4,4'-DDT	1.98	2.29		ug/L		116	70 - 130
Acenaphthene	1.98	1.88		ug/L		95	70 - 130
Acenaphthylene	1.98	1.87		ug/L		94	70 - 130
Acetochlor	1.98	1.90		ug/L		96	70 - 130
Alachlor	1.98	2.33		ug/L		118	70 - 130
alpha-BHC	1.98	1.94		ug/L		98	70 - 130
alpha-Chlordane	1.98	2.37		ug/L		120	70 - 130
Anthracene	1.98	2.03		ug/L		103	70 - 130
Atrazine	1.98	2.32		ug/L		117	70 - 130
Benz(a)anthracene	1.98	2.25		ug/L		113	70 - 130
Benzo[a]pyrene	1.98	2.14		ug/L		108	70 - 130
Benzo[b]fluoranthene	1.98	2.19		ug/L		111	70 - 130
Benzo[g,h,i]perylene	1.98	2.06		ug/L		104	70 - 130
Benzo[k]fluoranthene	1.98	2.20		ug/L		111	70 - 130
beta-BHC	1.98	1.98		ug/L		100	70 - 130
Bis(2-ethylhexyl) phthalate	1.98	2.04		ug/L		103	70 - 130
Bromacil	1.98	2.47		ug/L		125	70 - 130
Butachlor	1.98	2.52		ug/L		127	70 - 130
Butylbenzylphthalate	1.98	2.42		ug/L		122	70 - 130
Chlorobenzilate	1.98	2.08		ug/L		105	70 - 130
Chloroneb	1.98	2.10		ug/L		106	70 - 130
Chlorothalonil (Draconil, Bravo)	1.98	2.31		ug/L		117	70 - 130
Chlorpyrifos	1.98	2.27		ug/L		115	70 - 130
Chrysene	1.98	1.92		ug/L		97	70 - 130
delta-BHC	1.98	1.93		ug/L		97	70 - 130
Di(2-ethylhexyl)adipate	1.98	2.53		ug/L		128	70 - 130
Dibenz(a,h)anthracene	1.98	2.12		ug/L		107	70 - 130
Diclorvos (DDVP)	1.98	1.71		ug/L		87	70 - 130
Dieldrin	1.98	2.17		ug/L		110	70 - 130
Diethylphthalate	1.98	2.02		ug/L		102	70 - 130
Dimethylphthalate	1.98	2.07		ug/L		104	70 - 130
Di-n-butyl phthalate	3.96	4.70		ug/L		119	70 - 130
Di-n-octyl phthalate	1.98	1.79		ug/L		91	70 - 130
Endosulfan I (Alpha)	1.98	2.04		ug/L		103	70 - 130
Endosulfan II (Beta)	1.98	2.23		ug/L		113	70 - 130
Endosulfan sulfate	1.98	2.71	*+	ug/L		137	70 - 130
Endrin	1.98	2.35		ug/L		119	70 - 130
Endrin aldehyde	1.98	2.07		ug/L		104	70 - 130
EPTC	1.98	2.21		ug/L		112	70 - 130
Fluoranthene	1.98	2.19		ug/L		111	70 - 130
Fluorene	1.98	2.05		ug/L		103	70 - 130
gamma-Chlordane	1.98	2.52		ug/L		127	70 - 130
Heptachlor	1.98	2.05		ug/L		104	70 - 130
Heptachlor epoxide (isomer B)	1.98	2.38		ug/L		120	70 - 130

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

Lab Sample ID: LCS 380-68072/23-A
Matrix: Water
Analysis Batch: 68279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 68072

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorobenzene	1.98	2.16		ug/L		109	70 - 130
Hexachlorocyclopentadiene	1.98	2.10		ug/L		106	70 - 130
Indeno[1,2,3-cd]pyrene	1.98	2.14		ug/L		108	70 - 130
Isophorone	1.98	1.72		ug/L		87	70 - 130
Lindane	1.98	2.01		ug/L		102	70 - 130
Malathion	1.98	2.51		ug/L		127	70 - 130
Methoxychlor	1.98	1.94		ug/L		98	70 - 130
Metolachlor	1.98	2.23		ug/L		113	70 - 130
Molinate	1.98	2.04		ug/L		103	70 - 130
Naphthalene	1.98	1.87		ug/L		95	70 - 130
Parathion	1.98	2.05		ug/L		103	70 - 130
Pendimethalin (Penoxaline)	1.98	2.28		ug/L		115	70 - 130
Phenanthrene	1.98	1.98		ug/L		100	70 - 130
Propachlor	1.98	2.11		ug/L		106	70 - 130
Pyrene	1.98	2.21		ug/L		112	70 - 130
Simazine	1.98	2.41		ug/L		122	70 - 130
Terbacil	1.98	2.31		ug/L		117	70 - 130
Terbuthylazine	1.98	2.24		ug/L		113	70 - 130
Thiobencarb	1.98	2.03		ug/L		103	70 - 130
trans-Nonachlor	1.98	2.26		ug/L		114	70 - 130
Trifluralin	1.98	2.57		ug/L		130	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Nitro-m-xylene	*97*		*70 - 130*
Perylene-d12	*104*		*70 - 130*
Triphenylphosphate	*121*		*70 - 130*

Lab Sample ID: MRL 380-68072/22-A
Matrix: Water
Analysis Batch: 68279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 68072

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0991	0.111		ug/L		112	50 - 150
2,4'-DDD	0.0991	0.135		ug/L		136	50 - 150
2,4'-DDE	0.0991	0.0973	J	ug/L		98	50 - 150
2,4'-DDT	0.0991	0.0912	J	ug/L		92	50 - 150
2,4-Dinitrotoluene	0.0991	0.0876	J	ug/L		88	50 - 150
2,6-Dinitrotoluene	0.0991	0.0856	J	ug/L		86	50 - 150
2-Methylnaphthalene	0.0991	0.106		ug/L		107	50 - 150
4,4'-DDD	0.0991	0.0986	J	ug/L		99	50 - 150
4,4'-DDE	0.0991	0.138		ug/L		139	50 - 150
4,4'-DDT	0.0991	0.121		ug/L		122	50 - 150
Acenaphthene	0.0991	0.0906	J	ug/L		91	50 - 150
Acenaphthylene	0.0991	0.0851	J	ug/L		86	50 - 150
Acetochlor	0.0496	0.0457	J	ug/L		92	50 - 150
Alachlor	0.0496	0.0547		ug/L		110	50 - 150
alpha-BHC	0.0991	0.0967	J	ug/L		98	50 - 150
alpha-Chlordane	0.0248	0.0303	J	ug/L		122	50 - 150

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

Lab Sample ID: MRL 380-68072/22-A
Matrix: Water
Analysis Batch: 68279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 68072

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Anthracene	0.0198	0.0193	J	ug/L		97	50 - 150
Atrazine	0.0496	<0.048		ug/L		89	50 - 150
Benz(a)anthracene	0.0496	0.0611		ug/L		123	50 - 150
Benzo[a]pyrene	0.0198	0.0156	J	ug/L		79	50 - 150
Benzo[b]fluoranthene	0.0198	0.0169	J	ug/L		85	50 - 150
Benzo[g,h,i]perylene	0.0496	0.0411	J	ug/L		83	50 - 150
Benzo[k]fluoranthene	0.0198	<0.017		ug/L		83	50 - 150
beta-BHC	0.0991	0.0969	J	ug/L		98	50 - 150
Bis(2-ethylhexyl) phthalate	0.595	0.635		ug/L		107	50 - 150
Bromacil	0.0991	0.120		ug/L		121	50 - 150
Butachlor	0.0496	0.0570		ug/L		115	50 - 150
Butylbenzylphthalate	0.149	0.180	J	ug/L		121	50 - 150
Chlorobenzilate	0.0991	0.107		ug/L		108	50 - 150
Chloroneb	0.0991	0.105		ug/L		106	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0991	0.158	^3+	ug/L		159	50 - 150
Chlorpyrifos	0.0496	0.0553		ug/L		112	50 - 150
Chrysene	0.0198	0.0179	J	ug/L		90	50 - 150
delta-BHC	0.0991	0.104		ug/L		105	50 - 150
Di(2-ethylhexyl)adipate	0.297	0.398	J	ug/L		134	50 - 150
Dibenz(a,h)anthracene	0.0496	0.0427	J	ug/L		86	50 - 150
Diclorvos (DDVP)	0.0496	0.0504		ug/L		102	50 - 150
Dieldrin	0.0991	0.103	J	ug/L		104	50 - 150
Diethylphthalate	0.149	0.159	J	ug/L		107	50 - 150
Dimethylphthalate	0.297	0.291	J	ug/L		98	50 - 150
Di-n-butyl phthalate	0.297	0.415	J	ug/L		140	49 - 243
Di-n-octyl phthalate	0.0991	0.122		ug/L		123	50 - 150
Endosulfan I (Alpha)	0.0991	0.117		ug/L		118	50 - 150
Endosulfan II (Beta)	0.0991	0.127		ug/L		128	50 - 150
Endosulfan sulfate	0.0991	0.118		ug/L		119	50 - 150
Endrin	0.0991	0.107		ug/L		108	50 - 150
Endrin aldehyde	0.0991	0.155	^3+	ug/L		156	50 - 150
EPTC	0.0991	0.107		ug/L		108	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	0.0293	J	ug/L		118	50 - 150
Heptachlor	0.0396	0.0499		ug/L		126	50 - 150
Heptachlor epoxide (isomer B)	0.0496	0.0635		ug/L		128	50 - 150
Hexachlorobenzene	0.0496	0.0515		ug/L		104	50 - 150
Hexachlorocyclopentadiene	0.0496	0.0466	J	ug/L		94	50 - 150
Indeno[1,2,3-cd]pyrene	0.0496	0.0430	J	ug/L		87	50 - 150
Isophorone	0.0991	0.0964	J	ug/L		97	50 - 150
Lindane	0.0396	0.0429		ug/L		108	50 - 150
Malathion	0.0991	0.105		ug/L		106	50 - 150
Methoxychlor	0.0991	0.104		ug/L		105	50 - 150
Metolachlor	0.0496	0.0559		ug/L		113	50 - 150
Molinate	0.0991	0.101		ug/L		102	50 - 150
Naphthalene	0.0991	0.108	J	ug/L		109	50 - 150
Parathion	0.0991	0.132		ug/L		133	50 - 150
Pendimethalin (Penoxaline)	0.0991	0.103		ug/L		104	50 - 150

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

Lab Sample ID: MRL 380-68072/22-A
Matrix: Water
Analysis Batch: 68279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 68072

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Phenanthrene			0.0198	0.0214	J	ug/L		108	50 - 150		
Propachlor			0.0496	0.0535		ug/L		108	50 - 150		
Pyrene			0.0496	0.0533		ug/L		108	50 - 150		
Simazine			0.0496	0.0559		ug/L		113	50 - 150		
Terbacil			0.0991	0.123		ug/L		124	50 - 150		
Terbuthylazine			0.0991	0.101		ug/L		102	50 - 150		
Thiobencarb			0.0991	0.108	J	ug/L		109	50 - 150		
trans-Nonachlor			0.0248	0.0284	J	ug/L		115	50 - 150		
Trifluralin			0.0991	0.0894	J	ug/L		90	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
2-Nitro-m-xylene	*95*		*70 - 130*
Perylene-d12	*103*		*70 - 130*
Triphenylphosphate	*119*		*70 - 130*

Lab Sample ID: 380-75122-Q-1-A MS
Matrix: Water
Analysis Batch: 68279

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 68072

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1-Methylnaphthalene	<0.098	^+	1.99	1.95		ug/L		98	70 - 130		
2,4'-DDD	<0.098		1.99	2.23		ug/L		112	70 - 130		
2,4'-DDE	<0.098		1.99	2.24		ug/L		113	70 - 130		
2,4'-DDT	<0.098		1.99	2.34		ug/L		117	70 - 130		
2,4-Dinitrotoluene	<0.098		1.99	2.11		ug/L		106	70 - 130		
2,6-Dinitrotoluene	<0.098		1.99	1.99		ug/L		100	70 - 130		
2-Methylnaphthalene	<0.098		1.99	2.02		ug/L		102	70 - 130		
4,4'-DDD	<0.098		1.99	2.24		ug/L		112	70 - 130		
4,4'-DDE	<0.098		1.99	2.11		ug/L		106	70 - 130		
4,4'-DDT	<0.098		1.99	2.23		ug/L		112	70 - 130		
Acenaphthene	<0.098		1.99	1.88		ug/L		94	70 - 130		
Acenaphthylene	<0.098		1.99	1.87		ug/L		94	70 - 130		
Acetochlor	<0.098		1.99	1.87		ug/L		94	70 - 130		
Alachlor	<0.049		1.99	2.29		ug/L		115	70 - 130		
alpha-BHC	<0.098		1.99	1.91		ug/L		96	70 - 130		
alpha-Chlordane	<0.049		1.99	2.40		ug/L		121	70 - 130		
Anthracene	<0.020		1.99	1.93		ug/L		97	70 - 130		
Atrazine	<0.049		1.99	2.44		ug/L		123	70 - 130		
Benz(a)anthracene	<0.049		1.99	2.24		ug/L		113	70 - 130		
Benzo[a]pyrene	<0.020		1.99	2.14		ug/L		108	70 - 130		
Benzo[b]fluoranthene	<0.020		1.99	2.22		ug/L		112	70 - 130		
Benzo[g,h,i]perylene	<0.049		1.99	2.07		ug/L		104	70 - 130		
Benzo[k]fluoranthene	<0.020		1.99	2.32		ug/L		117	70 - 130		
beta-BHC	<0.098		1.99	2.01		ug/L		101	70 - 130		
Bis(2-ethylhexyl) phthalate	<0.59		1.99	2.05		ug/L		103	70 - 130		
Bromacil	<0.098		1.99	2.49		ug/L		125	70 - 130		
Butachlor	<0.049		1.99	2.50		ug/L		126	70 - 130		
Butylbenzylphthalate	<0.49		1.99	2.38		ug/L		119	70 - 130		

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

Lab Sample ID: 380-75122-Q-1-A MS
Matrix: Water
Analysis Batch: 68279

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 68072

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorobenzilate	<0.098		1.99	2.18		ug/L		110	70 - 130
Chloroneb	<0.098		1.99	2.13		ug/L		107	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.098	^3+	1.99	2.28		ug/L		115	70 - 130
Chlorpyrifos	<0.049		1.99	2.28		ug/L		114	70 - 130
Chrysene	<0.020		1.99	1.99		ug/L		100	70 - 130
delta-BHC	<0.098		1.99	1.92		ug/L		96	70 - 130
Di(2-ethylhexyl)adipate	<0.59		1.99	2.45		ug/L		123	70 - 130
Dibenz(a,h)anthracene	<0.049		1.99	2.19		ug/L		110	70 - 130
Diclorvos (DDVP)	<0.049		1.99	1.70		ug/L		86	70 - 130
Dieldrin	<0.20		1.99	2.14		ug/L		108	70 - 130
Diethylphthalate	<0.49		1.99	2.04		ug/L		102	70 - 130
Dimethylphthalate	<0.49		1.99	2.05		ug/L		103	70 - 130
Di-n-butyl phthalate	<0.98		3.98	4.49		ug/L		113	70 - 130
Di-n-octyl phthalate	<0.098		1.99	1.76		ug/L		88	70 - 130
Endosulfan I (Alpha)	<0.098		1.99	2.03		ug/L		102	70 - 130
Endosulfan II (Beta)	<0.098		1.99	2.22		ug/L		112	70 - 130
Endosulfan sulfate	<0.098	F1 *+	1.99	2.65	F1	ug/L		133	70 - 130
Endrin	<0.098		1.99	2.34		ug/L		118	70 - 130
Endrin aldehyde	<0.098	^3+	1.99	1.78		ug/L		90	70 - 130
EPTC	<0.098		1.99	2.25		ug/L		113	70 - 130
Fluoranthene	<0.098		1.99	2.22		ug/L		112	70 - 130
Fluorene	<0.049		1.99	2.02		ug/L		102	70 - 130
gamma-Chlordane	<0.049		1.99	2.46		ug/L		124	70 - 130
Heptachlor	<0.039		1.99	1.94		ug/L		98	70 - 130
Heptachlor epoxide (isomer B)	<0.049		1.99	2.36		ug/L		119	70 - 130
Hexachlorobenzene	<0.049		1.99	2.17		ug/L		109	70 - 130
Hexachlorocyclopentadiene	<0.049		1.99	2.18		ug/L		110	70 - 130
Indeno[1,2,3-cd]pyrene	<0.049		1.99	2.17		ug/L		109	70 - 130
Isophorone	<0.49		1.99	1.77		ug/L		89	70 - 130
Lindane	<0.039		1.99	2.00		ug/L		100	70 - 130
Malathion	<0.098		1.99	2.50		ug/L		126	70 - 130
Methoxychlor	<0.098		1.99	2.04		ug/L		102	70 - 130
Metolachlor	<0.049		1.99	2.26		ug/L		113	70 - 130
Molinate	<0.098		1.99	2.14		ug/L		108	70 - 130
Naphthalene	<0.30		1.99	1.88		ug/L		94	70 - 130
Parathion	<0.098		1.99	2.11		ug/L		106	70 - 130
Pendimethalin (Penoxaline)	<0.098		1.99	2.32		ug/L		117	70 - 130
Phenanthrene	<0.039		1.99	1.95		ug/L		98	70 - 130
Propachlor	<0.049		1.99	2.14		ug/L		108	70 - 130
Pyrene	<0.049		1.99	2.22		ug/L		112	70 - 130
Simazine	0.13		1.99	2.59		ug/L		124	70 - 130
Terbacil	<0.098		1.99	2.38		ug/L		119	70 - 130
Terbuthylazine	<0.098		1.99	2.36		ug/L		119	70 - 130
Thiobencarb	<0.20		1.99	2.07		ug/L		104	70 - 130
trans-Nonachlor	<0.049		1.99	2.27		ug/L		114	70 - 130
Trifluralin	<0.098	F1 ^+	1.99	2.61	F1	ug/L		131	70 - 130

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

Lab Sample ID: 380-75122-Q-1-A MS
Matrix: Water
Analysis Batch: 68279

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 68072

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Nitro-m-xylene	*96*		*70 - 130*
Perylene-d12	*106*		*70 - 130*
Triphenylphosphate	*122*		*70 - 130*

Lab Sample ID: 380-75146-Z-1-A DU
Matrix: Water
Analysis Batch: 68279

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 68072

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
1-Methylnaphthalene	<0.099	^+	<0.098		ug/L		NC	20
2,4'-DDD	<0.099		<0.098		ug/L		NC	20
2,4'-DDE	<0.099		<0.098		ug/L		NC	20
2,4'-DDT	<0.099		<0.098		ug/L		NC	20
2,4-Dinitrotoluene	<0.099		<0.098		ug/L		NC	20
2,6-Dinitrotoluene	<0.099		<0.098		ug/L		NC	20
2-Methylnaphthalene	<0.099		<0.098		ug/L		NC	20
4,4'-DDD	<0.099		<0.098		ug/L		NC	20
4,4'-DDE	<0.099		<0.098		ug/L		NC	20
4,4'-DDT	<0.099		<0.098		ug/L		NC	20
Acenaphthene	<0.099		<0.098		ug/L		NC	20
Acenaphthylene	<0.099		<0.098		ug/L		NC	20
Acetochlor	<0.099		<0.098		ug/L		NC	20
Alachlor	<0.049		<0.049		ug/L		NC	20
alpha-BHC	<0.099		<0.098		ug/L		NC	20
alpha-Chlordane	<0.049		<0.049		ug/L		NC	20
Anthracene	<0.020		<0.020		ug/L		NC	20
Atrazine	0.061		0.0632		ug/L		3	20
Benz(a)anthracene	<0.049		<0.049		ug/L		NC	20
Benzo[a]pyrene	<0.020		<0.020		ug/L		NC	20
Benzo[b]fluoranthene	<0.020		<0.020		ug/L		NC	20
Benzo[g,h,i]perylene	<0.049		<0.049		ug/L		NC	20
Benzo[k]fluoranthene	<0.020		<0.020		ug/L		NC	20
beta-BHC	<0.099		<0.098		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.59		<0.59		ug/L		NC	20
Bromacil	<0.099		<0.098		ug/L		NC	20
Butachlor	<0.049		<0.049		ug/L		NC	20
Butylbenzylphthalate	<0.49		<0.49		ug/L		NC	20
Chlorobenzilate	<0.099		<0.098		ug/L		NC	20
Chloroneb	<0.099		<0.098		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	<0.099	^3+	<0.098		ug/L		NC	20
Chlorpyrifos	<0.049		<0.049		ug/L		NC	20
Chrysene	<0.020		<0.020		ug/L		NC	20
delta-BHC	<0.099		<0.098		ug/L		NC	20
Di(2-ethylhexyl)adipate	<0.59		<0.59		ug/L		NC	20
Dibenz(a,h)anthracene	<0.049		<0.049		ug/L		NC	20
Diclorvos (DDVP)	<0.049		<0.049		ug/L		NC	20
Dieldrin	<0.20		<0.20		ug/L		NC	20
Diethylphthalate	<0.49		<0.49		ug/L		NC	20

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

Lab Sample ID: 380-75146-Z-1-A DU
Matrix: Water
Analysis Batch: 68279

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 68072

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Dimethylphthalate	<0.49			<0.49		ug/L				NC	20
Di-n-butyl phthalate	<0.99			<0.98		ug/L				NC	20
Di-n-octyl phthalate	<0.099			<0.098		ug/L				NC	20
Endosulfan I (Alpha)	<0.099			<0.098		ug/L				NC	20
Endosulfan II (Beta)	<0.099			<0.098		ug/L				NC	20
Endosulfan sulfate	<0.099	*+		<0.098	*+	ug/L				NC	20
Endrin	<0.099			<0.098		ug/L				NC	20
Endrin aldehyde	<0.099	^3+		<0.098		ug/L				NC	20
EPTC	<0.099			<0.098		ug/L				NC	20
Fluoranthene	<0.099			<0.098		ug/L				NC	20
Fluorene	<0.049			<0.049		ug/L				NC	20
gamma-Chlordane	<0.049			<0.049		ug/L				NC	20
Heptachlor	<0.039			<0.039		ug/L				NC	20
Heptachlor epoxide (isomer B)	<0.049			<0.049		ug/L				NC	20
Hexachlorobenzene	<0.049			<0.049		ug/L				NC	20
Hexachlorocyclopentadiene	<0.049			<0.049		ug/L				NC	20
Indeno[1,2,3-cd]pyrene	<0.049			<0.049		ug/L				NC	20
Isophorone	<0.49			<0.49		ug/L				NC	20
Lindane	<0.039			<0.039		ug/L				NC	20
Malathion	<0.099			<0.098		ug/L				NC	20
Methoxychlor	<0.099			<0.098		ug/L				NC	20
Metolachlor	<0.049			<0.049		ug/L				NC	20
Molinate	<0.099			<0.098		ug/L				NC	20
Naphthalene	<0.30			<0.29		ug/L				NC	20
Parathion	<0.099			<0.098		ug/L				NC	20
Pendimethalin (Penoxaline)	<0.099			<0.098		ug/L				NC	20
Phenanthrene	<0.039			<0.039		ug/L				NC	20
Propachlor	<0.049			<0.049		ug/L				NC	20
Pyrene	<0.049			<0.049		ug/L				NC	20
Simazine	0.077			0.0839		ug/L				9	20
Terbacil	<0.099			<0.098		ug/L				NC	20
Terbuthylazine	<0.099			<0.098		ug/L				NC	20
Thiobencarb	<0.20			<0.20		ug/L				NC	20
Total Permethrin (mixed isomers)	<0.20			<0.20		ug/L				NC	20
trans-Nonachlor	<0.049			<0.049		ug/L				NC	20
Trifluralin	<0.099	^+		<0.098		ug/L				NC	20

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
2-Nitro-m-xylene	*95*		*70 - 130*
Perylene-d12	*107*		*70 - 130*
Triphenylphosphate	*111*		*70 - 130*

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

Lab Sample ID: MBL 380-68611/21-A
Matrix: Water
Analysis Batch: 68805

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 68611

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		12/19/23 15:07	12/20/23 22:42	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		12/19/23 15:07	12/20/23 22:42	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*75*		*50 - 200*	*12/19/23 15:07*	*12/20/23 22:42*	*1*
13C6 PFDA	*87*		*50 - 200*	*12/19/23 15:07*	*12/20/23 22:42*	*1*
13C5 PFHxA	*85*		*50 - 200*	*12/19/23 15:07*	*12/20/23 22:42*	*1*
13C4 PFHpA	*85*		*50 - 200*	*12/19/23 15:07*	*12/20/23 22:42*	*1*
13C8 PFOA	*86*		*50 - 200*	*12/19/23 15:07*	*12/20/23 22:42*	*1*
13C9 PFNA	*92*		*50 - 200*	*12/19/23 15:07*	*12/20/23 22:42*	*1*
13C7 PFUnA	*91*		*50 - 200*	*12/19/23 15:07*	*12/20/23 22:42*	*1*
13C2 PFDoA	*92*		*50 - 200*	*12/19/23 15:07*	*12/20/23 22:42*	*1*
13C4 PFBA	*84*		*50 - 200*	*12/19/23 15:07*	*12/20/23 22:42*	*1*
13C5 PFPeA	*86*		*50 - 200*	*12/19/23 15:07*	*12/20/23 22:42*	*1*
13C3 PFBS	*89*		*50 - 200*	*12/19/23 15:07*	*12/20/23 22:42*	*1*
13C3 PFHxS	*86*		*50 - 200*	*12/19/23 15:07*	*12/20/23 22:42*	*1*

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

Lab Sample ID: MBL 380-68611/21-A
Matrix: Water
Analysis Batch: 68805

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 68611

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	91		50 - 200	12/19/23 15:07	12/20/23 22:42	1
13C2-4:2-FTS	109		50 - 200	12/19/23 15:07	12/20/23 22:42	1
13C2-6:2-FTS	102		50 - 200	12/19/23 15:07	12/20/23 22:42	1
13C2-8:2-FTS	100		50 - 200	12/19/23 15:07	12/20/23 22:42	1

Lab Sample ID: LCS 380-68611/23-A
Matrix: Water
Analysis Batch: 68805

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 68611

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.1	50.3		ng/L		84	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.1	48.6		ng/L		81	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.1	55.9		ng/L		93	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.1	54.8		ng/L		91	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.1	54.1		ng/L		90	70 - 130
Perfluorodecanoic acid (PFDA)	60.1	57.2		ng/L		95	70 - 130
Perfluorododecanoic acid (PFDoA)	60.1	53.8		ng/L		89	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.1	56.4		ng/L		94	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.1	54.8		ng/L		91	70 - 130
Perfluorohexanoic acid (PFHxA)	60.1	52.7		ng/L		88	70 - 130
Perfluorononanoic acid (PFNA)	60.1	56.0		ng/L		93	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.1	53.9		ng/L		90	70 - 130
Perfluorooctanoic acid (PFOA)	60.1	54.6		ng/L		91	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.1	55.2		ng/L		92	70 - 130
Perfluorobutanoic acid (PFBA)	60.1	55.9		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.1	53.3		ng/L		89	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.1	54.4		ng/L		91	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.1	55.8		ng/L		93	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.1	46.8		ng/L		78	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.1	50.1		ng/L		83	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.1	57.3		ng/L		95	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.1	56.2		ng/L		94	70 - 130
Perfluoropentanoic acid (PFPeA)	60.1	59.9		ng/L		100	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.1	51.7		ng/L		86	70 - 130

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

Lab Sample ID: LCS 380-68611/23-A
Matrix: Water
Analysis Batch: 68805

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 68611

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perfluoropentanesulfonic acid (PFPeS)			60.1	56.7		ng/L		94	70 - 130		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*92*		*50 - 200*
13C6 PFDA	*97*		*50 - 200*
13C5 PFHxA	*101*		*50 - 200*
13C4 PFHpA	*98*		*50 - 200*
13C8 PFOA	*97*		*50 - 200*
13C9 PFNA	*100*		*50 - 200*
13C7 PFUnA	*102*		*50 - 200*
13C2 PFDoA	*106*		*50 - 200*
13C4 PFBA	*96*		*50 - 200*
13C5 PFPeA	*98*		*50 - 200*
13C3 PFBS	*106*		*50 - 200*
13C3 PFHxS	*99*		*50 - 200*
13C8 PFOS	*106*		*50 - 200*
13C2-4:2-FTS	*120*		*50 - 200*
13C2-6:2-FTS	*114*		*50 - 200*
13C2-8:2-FTS	*113*		*50 - 200*

Lab Sample ID: MRL 380-68611/22-A
Matrix: Water
Analysis Batch: 68805

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 68611

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			2.01	1.67	J	ng/L		83	50 - 150		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			2.01	1.50	J	ng/L		75	50 - 150		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			2.01	1.71	J	ng/L		85	50 - 150		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			2.01	1.90	J	ng/L		95	50 - 150		
Perfluorobutanesulfonic acid (PFBS)			2.01	1.70	J	ng/L		85	50 - 150		
Perfluorodecanoic acid (PFDA)			2.01	1.86	J	ng/L		93	50 - 150		
Perfluorododecanoic acid (PFDoA)			2.01	1.86	J	ng/L		92	50 - 150		
Perfluoroheptanoic acid (PFHpA)			2.01	1.85	J	ng/L		92	50 - 150		
Perfluorohexanesulfonic acid (PFHxS)			2.01	1.81	J	ng/L		90	50 - 150		
Perfluorohexanoic acid (PFHxA)			2.01	1.73	J	ng/L		86	50 - 150		
Perfluorononanoic acid (PFNA)			2.01	1.74	J	ng/L		86	50 - 150		
Perfluorooctanesulfonic acid (PFOS)			2.01	1.77	J	ng/L		88	50 - 150		
Perfluorooctanoic acid (PFOA)			2.01	1.79	J	ng/L		89	50 - 150		
Perfluoroundecanoic acid (PFUnA)			2.01	1.81	J	ng/L		90	50 - 150		
Perfluorobutanoic acid (PFBA)			2.01	1.72	J	ng/L		86	50 - 150		

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

Lab Sample ID: MRL 380-68611/22-A
Matrix: Water
Analysis Batch: 68805

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 68611

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	1.91	J	ng/L		95	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	1.91	J	ng/L		95	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	1.91	J	ng/L		95	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	1.76	J	ng/L		88	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.01	1.53	J	ng/L		76	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	1.91	J	ng/L		95	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	1.81	J	ng/L		90	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.12	J	ng/L		105	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	1.67	J	ng/L		83	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.80	J	ng/L		90	50 - 150

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*82*		*50 - 200*
13C6 PFDA	*91*		*50 - 200*
13C5 PFHxA	*95*		*50 - 200*
13C4 PFHpA	*95*		*50 - 200*
13C8 PFOA	*93*		*50 - 200*
13C9 PFNA	*97*		*50 - 200*
13C7 PFUnA	*92*		*50 - 200*
13C2 PFDoA	*97*		*50 - 200*
13C4 PFBA	*93*		*50 - 200*
13C5 PFPeA	*94*		*50 - 200*
13C3 PFBS	*99*		*50 - 200*
13C3 PFHxS	*92*		*50 - 200*
13C8 PFOS	*98*		*50 - 200*
13C2-4:2-FTS	*118*		*50 - 200*
13C2-6:2-FTS	*107*		*50 - 200*
13C2-8:2-FTS	*104*		*50 - 200*

Lab Sample ID: 380-74786-B-1-A MS
Matrix: Water
Analysis Batch: 68805

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 68611

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		60.2	49.0		ng/L		81	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	49.7		ng/L		82	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	59.5		ng/L		99	70 - 130

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

Lab Sample ID: 380-74786-B-1-A MS
Matrix: Water
Analysis Batch: 68805

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 68611

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		60.2	57.1		ng/L		95	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	54.4		ng/L		90	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.2	57.7		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	56.2		ng/L		93	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	57.8		ng/L		96	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	55.3		ng/L		92	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	52.5		ng/L		87	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.2	54.8		ng/L		91	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	53.5		ng/L		89	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.2	53.0		ng/L		88	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	53.1		ng/L		88	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.2	57.4		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	55.9		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	55.6		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	55.0		ng/L		91	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	51.1		ng/L		85	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.2	50.1		ng/L		83	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	60.7		ng/L		101	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	58.4		ng/L		97	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	61.9		ng/L		103	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	53.7		ng/L		89	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	56.7		ng/L		94	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*97*		*50 - 200*
13C6 PFDA	*106*		*50 - 200*
13C5 PFHxA	*112*		*50 - 200*
13C4 PFHpA	*103*		*50 - 200*
13C8 PFOA	*106*		*50 - 200*
13C9 PFNA	*113*		*50 - 200*
13C7 PFUnA	*113*		*50 - 200*
13C2 PFDoA	*117*		*50 - 200*
13C4 PFBA	*107*		*50 - 200*
13C5 PFPeA	*109*		*50 - 200*
13C3 PFBS	*114*		*50 - 200*
13C3 PFHxS	*111*		*50 - 200*
13C8 PFOS	*115*		*50 - 200*

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

Lab Sample ID: 380-74786-B-1-A MS
Matrix: Water
Analysis Batch: 68805

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 68611

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	129		50 - 200
13C2-6:2-FTS	126		50 - 200
13C2-8:2-FTS	125		50 - 200

Lab Sample ID: 380-74786-C-1-A MSD
Matrix: Water
Analysis Batch: 68805

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 68611

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		60.2	51.9		ng/L		86	70 - 130	6	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	51.0		ng/L		85	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	56.3		ng/L		93	70 - 130	5	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	57.6		ng/L		96	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	58.1		ng/L		96	70 - 130	7	30
Perfluorodecanoic acid (PFDA)	<2.0		60.2	56.0		ng/L		93	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	56.0		ng/L		93	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	56.4		ng/L		94	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	55.3		ng/L		92	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	58.6		ng/L		97	70 - 130	11	30
Perfluorononanoic acid (PFNA)	<2.0		60.2	54.7		ng/L		91	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	55.8		ng/L		93	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	<2.0		60.2	54.6		ng/L		91	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	52.1		ng/L		86	70 - 130	2	30
Perfluorobutanoic acid (PFBA)	<2.0		60.2	59.0		ng/L		98	70 - 130	3	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	59.0		ng/L		98	70 - 130	5	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	57.1		ng/L		95	70 - 130	3	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	59.7		ng/L		99	70 - 130	8	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	51.2		ng/L		85	70 - 130	0	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.2	52.8		ng/L		88	70 - 130	5	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	61.2		ng/L		102	70 - 130	1	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	55.0		ng/L		91	70 - 130	6	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	61.7		ng/L		102	70 - 130	0	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	53.5		ng/L		89	70 - 130	0	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	56.2		ng/L		93	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	85		50 - 200
13C6 PFDA	101		50 - 200
13C5 PFHxA	98		50 - 200
13C4 PFHpA	99		50 - 200
13C8 PFOA	97		50 - 200
13C9 PFNA	107		50 - 200
13C7 PFUnA	108		50 - 200
13C2 PFDoA	108		50 - 200
13C4 PFBA	97		50 - 200
13C5 PFPeA	103		50 - 200
13C3 PFBS	100		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	107		50 - 200
13C2-4:2-FTS	122		50 - 200
13C2-6:2-FTS	113		50 - 200
13C2-8:2-FTS	114		50 - 200

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

Lab Sample ID: MBL 380-68447/19-A
Matrix: Water
Analysis Batch: 68543

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 68447

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		12/18/23 14:46	12/19/23 15:28	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		12/18/23 14:46	12/19/23 15:28	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		12/18/23 14:46	12/19/23 15:28	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0		ng/L		12/18/23 14:46	12/19/23 15:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0		ng/L		12/18/23 14:46	12/19/23 15:28	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		12/18/23 14:46	12/19/23 15:28	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		12/18/23 14:46	12/19/23 15:28	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		12/18/23 14:46	12/19/23 15:28	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		12/18/23 14:46	12/19/23 15:28	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		12/18/23 14:46	12/19/23 15:28	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		12/18/23 14:46	12/19/23 15:28	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		12/18/23 14:46	12/19/23 15:28	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		12/18/23 14:46	12/19/23 15:28	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0		ng/L		12/18/23 14:46	12/19/23 15:28	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0		ng/L		12/18/23 14:46	12/19/23 15:28	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		12/18/23 14:46	12/19/23 15:28	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		12/18/23 14:46	12/19/23 15:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		12/18/23 14:46	12/19/23 15:28	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	109		70 - 130	12/18/23 14:46	12/19/23 15:28	1
13C2 PFHxA	125		70 - 130	12/18/23 14:46	12/19/23 15:28	1
13C2 PFDA	110		70 - 130	12/18/23 14:46	12/19/23 15:28	1

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

Lab Sample ID: MBL 380-68447/19-A
Matrix: Water
Analysis Batch: 68543

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 68447

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	125		70 - 130	12/18/23 14:46	12/19/23 15:28	1

Lab Sample ID: LCSD 380-68447/22-A
Matrix: Water
Analysis Batch: 68543

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 68447

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	56.1		ng/L		112	70 - 130
Perfluorooctanesulfonic acid (PFOS)	50.1	50.6		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.1	50.6		ng/L		101	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	50.2		ng/L		100	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	49.5		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	50.1	53.4		ng/L		107	70 - 130
Perfluorododecanoic acid (PFDoA)	50.1	51.1		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	50.1	52.6		ng/L		105	70 - 130
Perfluorodecanoic acid (PFDA)	50.1	51.6		ng/L		103	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.1	55.0		ng/L		110	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.1	56.1		ng/L		112	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	52.9		ng/L		106	70 - 130
Perfluorononanoic acid (PFNA)	50.1	52.6		ng/L		105	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.1	53.2		ng/L		106	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.1	50.8		ng/L		101	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	50.1	51.6		ng/L		103	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.1	50.6		ng/L		101	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.1	52.3		ng/L		104	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	103		70 - 130
13C2 PFHxA	117		70 - 130
13C2 PFDA	105		70 - 130
13C3-GenX	118		70 - 130

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

Lab Sample ID: MRL 380-68447/20-A
Matrix: Water
Analysis Batch: 68543

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 68447

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.20	J	ng/L		110	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	2.14	J	ng/L		115	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.08	J	ng/L		104	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.07	J	ng/L		103	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.13	J	ng/L		106	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.19	J	ng/L		109	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.11	J	ng/L		105	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	2.19	J	ng/L		120	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	2.11	J	ng/L		119	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.22	J	ng/L		111	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	1.98	J	ng/L		99	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	1.98	J	ng/L		99	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	1.94	J	ng/L		103	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	2.01	J	ng/L		106	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.01	J	ng/L		106	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
d5-NEtFOSAA	*102*		*70 - 130*
13C2 PFHxA	*112*		*70 - 130*
13C2 PFDA	*103*		*70 - 130*
13C3-GenX	*111*		*70 - 130*

Lab Sample ID: 380-75037-B-1-B MS
Matrix: Water
Analysis Batch: 68543

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 68447

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	54.2		ng/L		108	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.2	51.6		ng/L		103	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	49.0		ng/L		98	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	47.5		ng/L		95	70 - 130

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

Lab Sample ID: 380-75037-B-1-B MS
Matrix: Water
Analysis Batch: 68543

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 68447

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	47.1		ng/L		94	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	50.8		ng/L		101	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	49.3		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		50.2	50.6		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		50.2	48.6		ng/L		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.2	57.5		ng/L		115	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	53.3		ng/L		106	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	51.9		ng/L		103	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		50.2	50.4		ng/L		100	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	51.3		ng/L		102	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	50.5		ng/L		101	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	51.5		ng/L		103	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	50.4		ng/L		100	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	50.3		ng/L		100	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
d5-NEtFOSAA	*99*		*70 - 130*
13C2 PFHxA	*110*		*70 - 130*
13C2 PFDA	*102*		*70 - 130*
13C3-GenX	*114*		*70 - 130*

Lab Sample ID: 380-75037-B-1-C MSD
Matrix: Water
Analysis Batch: 68543

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 68447

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	57.6		ng/L		115	70 - 130	6	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.2	50.8		ng/L		101	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	49.4		ng/L		98	70 - 130	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	49.9		ng/L		99	70 - 130	5	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	48.2		ng/L		96	70 - 130	2	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	54.5		ng/L		109	70 - 130	7	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	51.0		ng/L		102	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		50.2	51.4		ng/L		102	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		50.2	48.9		ng/L		97	70 - 130	1	30

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

Lab Sample ID: 380-75037-B-1-C MSD
Matrix: Water
Analysis Batch: 68543

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 68447

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.2	54.9		ng/L		109	70 - 130	5	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	56.5		ng/L		112	70 - 130	6	30
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	51.7		ng/L		103	70 - 130	0	30
Perfluorononanoic acid (PFNA)	<2.0		50.2	50.1		ng/L		100	70 - 130	1	30
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	50.9		ng/L		101	70 - 130	1	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	51.8		ng/L		103	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	50.7		ng/L		101	70 - 130	2	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	49.1		ng/L		98	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	52.0		ng/L		104	70 - 130	3	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
d5-NEtFOSAA	*103*		*70 - 130*
13C2 PFHxA	*115*		*70 - 130*
13C2 PFDA	*103*		*70 - 130*
13C3-GenX	*121*		*70 - 130*

Lab Sample ID: MBL 380-68975/21-A
Matrix: Water
Analysis Batch: 69178

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 68975

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		12/21/23 08:33	12/22/23 16:06	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		12/21/23 08:33	12/22/23 16:06	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		12/21/23 08:33	12/22/23 16:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0		ng/L		12/21/23 08:33	12/22/23 16:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0		ng/L		12/21/23 08:33	12/22/23 16:06	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		12/21/23 08:33	12/22/23 16:06	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		12/21/23 08:33	12/22/23 16:06	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		12/21/23 08:33	12/22/23 16:06	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		12/21/23 08:33	12/22/23 16:06	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		12/21/23 08:33	12/22/23 16:06	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		12/21/23 08:33	12/22/23 16:06	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		12/21/23 08:33	12/22/23 16:06	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		12/21/23 08:33	12/22/23 16:06	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0		ng/L		12/21/23 08:33	12/22/23 16:06	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0		ng/L		12/21/23 08:33	12/22/23 16:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		12/21/23 08:33	12/22/23 16:06	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		12/21/23 08:33	12/22/23 16:06	1

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

Lab Sample ID: MBL 380-68975/21-A
Matrix: Water
Analysis Batch: 69178

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 68975

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		12/21/23 08:33	12/22/23 16:06	1

Surrogate	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*122*		*70 - 130*	*12/21/23 08:33*	*12/22/23 16:06*	*1*
13C2 PFHxA	*116*		*70 - 130*	*12/21/23 08:33*	*12/22/23 16:06*	*1*
13C2 PFDA	*113*		*70 - 130*	*12/21/23 08:33*	*12/22/23 16:06*	*1*
13C3-GenX	*97*		*70 - 130*	*12/21/23 08:33*	*12/22/23 16:06*	*1*

Lab Sample ID: LCS 380-68975/23-A
Matrix: Water
Analysis Batch: 69178

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 68975

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			25.1	20.1		ng/L		80	70 - 130		
Perfluorooctanesulfonic acid (PFOS)			25.1	25.0		ng/L		100	70 - 130		
Perfluoroundecanoic acid (PFUnA)			25.1	27.1		ng/L		108	70 - 130		
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			25.1	25.4		ng/L		101	70 - 130		
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			25.1	25.9		ng/L		103	70 - 130		
Perfluorohexanoic acid (PFHxA)			25.1	24.9		ng/L		99	70 - 130		
Perfluorododecanoic acid (PFDoA)			25.1	25.6		ng/L		102	70 - 130		
Perfluorooctanoic acid (PFOA)			25.1	25.9		ng/L		103	70 - 130		
Perfluorodecanoic acid (PFDA)			25.1	26.5		ng/L		106	70 - 130		
Perfluorohexanesulfonic acid (PFHxS)			25.1	25.5		ng/L		102	70 - 130		
Perfluorobutanesulfonic acid (PFBS)			25.1	22.0		ng/L		87	70 - 130		
Perfluoroheptanoic acid (PFHpA)			25.1	25.5		ng/L		102	70 - 130		
Perfluorononanoic acid (PFNA)			25.1	28.9		ng/L		115	70 - 130		
Perfluorotetradecanoic acid (PFTA)			25.1	25.3		ng/L		101	70 - 130		
Perfluorotridecanoic acid (PFTrDA)			25.1	25.8		ng/L		103	70 - 130		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			25.1	25.7		ng/L		102	70 - 130		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			25.1	22.6		ng/L		90	70 - 130		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			25.1	25.5		ng/L		102	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
d5-NEtFOSAA	*108*		*70 - 130*
13C2 PFHxA	*110*		*70 - 130*
13C2 PFDA	*110*		*70 - 130*

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

Lab Sample ID: LCS 380-68975/23-A
Matrix: Water
Analysis Batch: 69178

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 68975

Surrogate	LCS %Recovery	LCS Qualifier	Limits
13C3-GenX	84		70 - 130

Lab Sample ID: MRL 380-68975/22-A
Matrix: Water
Analysis Batch: 69178

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 68975

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.53	J	ng/L		76	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	2.09	J	ng/L		113	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.12	J	ng/L		106	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.86	J	ng/L		93	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.97	J	ng/L		99	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.96	J	ng/L		98	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.15	J	ng/L		107	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.19	J	ng/L		109	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.23	J	ng/L		112	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	1.80	J	ng/L		98	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	1.66	J	ng/L		94	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.15	J	ng/L		107	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.32	J	ng/L		116	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	1.92	J	ng/L		96	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.02	J	ng/L		101	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	1.96	J	ng/L		105	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	1.76	J	ng/L		93	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	1.80	J	ng/L		95	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	111		70 - 130
13C2 PFHxA	108		70 - 130
13C2 PFDA	111		70 - 130
13C3-GenX	91		70 - 130

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

Lab Sample ID: 380-75824-E-1-B MS
Matrix: Water
Analysis Batch: 69178

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 68975

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		2.01	2.12		ng/L		106	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0	F1	1.86	2.39		ng/L		128	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.32		ng/L		116	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.01	2.18		ng/L		109	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.01	2.25		ng/L		112	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		2.01	3.27		ng/L		110	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.31		ng/L		115	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		2.01	3.29		ng/L		117	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.41		ng/L		120	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		1.83	3.33		ng/L		105	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		1.78	2.47		ng/L		106	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0	F1	2.01	2.77	F1	ng/L		138	70 - 130
Perfluorononanoic acid (PFNA)	<2.0	F1	2.01	2.65	F1	ng/L		132	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		2.01	<2.0		ng/L		88	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.01	2.10		ng/L		105	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		1.88	2.08		ng/L		111	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		1.90	<2.0		ng/L		99	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		1.90	2.19		ng/L		116	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
d5-NEtFOSAA	*120*		*70 - 130*
13C2 PFHxA	*120*		*70 - 130*
13C2 PFDA	*109*		*70 - 130*
13C3-GenX	*104*		*70 - 130*

Lab Sample ID: 380-75824-F-1-B MSD
Matrix: Water
Analysis Batch: 69178

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 68975

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		2.01	2.19		ng/L		109	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	<2.0	F1	1.86	2.48	F1	ng/L		134	70 - 130	4	30
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.40		ng/L		119	70 - 130	3	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.01	2.26		ng/L		113	70 - 130	4	30

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

Lab Sample ID: 380-75824-F-1-B MSD
Matrix: Water
Analysis Batch: 69178

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 68975

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.01	2.18		ng/L		109	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0		2.01	3.22		ng/L		107	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.29		ng/L		114	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		2.01	3.40		ng/L		122	70 - 130	3	30
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.44		ng/L		122	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		1.83	3.37		ng/L		107	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		1.78	2.54		ng/L		110	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<2.0	F1	2.01	2.85	F1	ng/L		142	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0	F1	2.01	2.64	F1	ng/L		132	70 - 130	0	30
Perfluorotetradecanoic acid (PFTA)	<2.0		2.01	<2.0		ng/L		87	70 - 130	1	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.01	2.04		ng/L		102	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		1.88	2.11		ng/L		112	70 - 130	1	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		1.90	<2.0		ng/L		99	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		1.90	2.29		ng/L		121	70 - 130	5	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
d5-NEtFOSAA	*114*		*70 - 130*
13C2 PFHxA	*119*		*70 - 130*
13C2 PFDA	*108*		*70 - 130*
13C3-GenX	*108*		*70 - 130*

GC/MS Semi VOA

Prep Batch: 68072

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-74776-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	
380-74776-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	
380-74776-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	525.2	
380-74776-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	525.2	
MB 380-68072/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-68072/23-A	Lab Control Sample	Total/NA	Water	525.2	
MRL 380-68072/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-75122-Q-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-75146-Z-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 68279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-74776-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	68072
380-74776-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	68072
380-74776-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	525.2	68072
380-74776-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	525.2	68072
MB 380-68072/21-A	Method Blank	Total/NA	Water	525.2	68072
LCS 380-68072/23-A	Lab Control Sample	Total/NA	Water	525.2	68072
MRL 380-68072/22-A	Lab Control Sample	Total/NA	Water	525.2	68072
380-75122-Q-1-A MS	Matrix Spike	Total/NA	Water	525.2	68072
380-75146-Z-1-A DU	Duplicate	Total/NA	Water	525.2	68072

LCMS

Prep Batch: 68447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-74776-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	537.1 DW	
380-74776-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	537.1 DW	
MBL 380-68447/19-A	Method Blank	Total/NA	Water	537.1 DW	
LCSD 380-68447/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-68447/20-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-75037-B-1-B MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-75037-B-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 68543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-74776-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	537.1	68447
380-74776-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	537.1	68447
MBL 380-68447/19-A	Method Blank	Total/NA	Water	537.1	68447
LCSD 380-68447/22-A	Lab Control Sample	Total/NA	Water	537.1	68447
MRL 380-68447/20-A	Lab Control Sample	Total/NA	Water	537.1	68447
380-75037-B-1-B MS	Matrix Spike	Total/NA	Water	537.1	68447
380-75037-B-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	68447

Prep Batch: 68611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-74776-1	MOANALUA WELLS	Total/NA	Drinking Water	533	
380-74776-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	533	
380-74776-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	533	
380-74776-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	533	
380-74776-9	FB MOANALUA WELLS	Total/NA	Water	533	

LCMS (Continued)

Prep Batch: 68611 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-74776-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-74776-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
380-74776-12	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	
MBL 380-68611/21-A	Method Blank	Total/NA	Water	533	
LCS 380-68611/23-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-68611/22-A	Lab Control Sample	Total/NA	Water	533	
380-74786-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-74786-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 68805

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-74776-1	MOANALUA WELLS	Total/NA	Drinking Water	533	68611
380-74776-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	533	68611
380-74776-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	533	68611
380-74776-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	533	68611
380-74776-9	FB MOANALUA WELLS	Total/NA	Water	533	68611
380-74776-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	68611
380-74776-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	68611
380-74776-12	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	68611
MBL 380-68611/21-A	Method Blank	Total/NA	Water	533	68611
LCS 380-68611/23-A	Lab Control Sample	Total/NA	Water	533	68611
MRL 380-68611/22-A	Lab Control Sample	Total/NA	Water	533	68611
380-74786-B-1-A MS	Matrix Spike	Total/NA	Water	533	68611
380-74786-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	68611

Prep Batch: 68975

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-74776-1	MOANALUA WELLS	Total/NA	Drinking Water	537.1 DW	
MBL 380-68975/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-68975/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-68975/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-75824-E-1-B MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-75824-F-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 69178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-74776-1	MOANALUA WELLS	Total/NA	Drinking Water	537.1	68975
MBL 380-68975/21-A	Method Blank	Total/NA	Water	537.1	68975
LCS 380-68975/23-A	Lab Control Sample	Total/NA	Water	537.1	68975
MRL 380-68975/22-A	Lab Control Sample	Total/NA	Water	537.1	68975
380-75824-E-1-B MS	Matrix Spike	Total/NA	Water	537.1	68975
380-75824-F-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	68975

Lab Chronicle

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-74776-1

Date Collected: 12/11/23 09:50
Date Received: 12/13/23 10:10

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			68072	OTM3	EA POM	12/15/23 09:30
Total/NA	Analysis	525.2		1	68279	Q8LA	EA POM	12/17/23 14:13
Total/NA	Prep	533			68611	A5GB	EA POM	12/19/23 15:07
Total/NA	Analysis	533		1	68805	SZ9R	EA POM	12/20/23 23:49
Total/NA	Prep	537.1 DW			68975	SL5Q	EA POM	12/21/23 08:33
Total/NA	Analysis	537.1		1	69178	SZ9R	EA POM	12/22/23 17:04

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-74776-2

Date Collected: 12/11/23 10:48
Date Received: 12/13/23 10:10

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			68072	OTM3	EA POM	12/15/23 09:30
Total/NA	Analysis	525.2		1	68279	Q8LA	EA POM	12/17/23 14:33
Total/NA	Prep	533			68611	A5GB	EA POM	12/19/23 15:07
Total/NA	Analysis	533		1	68805	SZ9R	EA POM	12/20/23 23:59
Total/NA	Prep	537.1 DW			68447	A5GB	EA POM	12/18/23 14:46
Total/NA	Analysis	537.1		1	68543	R6YA	EA POM	12/19/23 14:29

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

Lab Sample ID: 380-74776-3

Date Collected: 12/11/23 11:15
Date Received: 12/13/23 10:10

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			68072	OTM3	EA POM	12/15/23 11:20
Total/NA	Analysis	525.2		1	68279	Q8LA	EA POM	12/17/23 14:52
Total/NA	Prep	533			68611	A5GB	EA POM	12/19/23 15:07
Total/NA	Analysis	533		1	68805	SZ9R	EA POM	12/21/23 00:08
Total/NA	Prep	537.1 DW			68447	A5GB	EA POM	12/18/23 14:46
Total/NA	Analysis	537.1		1	68543	R6YA	EA POM	12/19/23 14:38

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-74776-4

Date Collected: 12/11/23 10:21
Date Received: 12/13/23 10:10

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			68072	OTM3	EA POM	12/15/23 11:20
Total/NA	Analysis	525.2		1	68279	Q8LA	EA POM	12/17/23 15:12
Total/NA	Prep	533			68611	A5GB	EA POM	12/19/23 15:07
Total/NA	Analysis	533		1	68805	SZ9R	EA POM	12/21/23 00:18

Lab Chronicle

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

Client Sample ID: FB MOANALUA WELLS
Lab Sample ID: 380-74776-9
Date Collected: 12/11/23 09:50
Matrix: Water
Date Received: 12/13/23 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			68611	A5GB	EA POM	12/19/23 15:07
Total/NA	Analysis	533		1	68805	SZ9R	EA POM	12/21/23 00:28

Client Sample ID: FB AIEA GULCH WELLS PUMP 2
Lab Sample ID: 380-74776-10
Date Collected: 12/11/23 10:48
Matrix: Water
Date Received: 12/13/23 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			68611	A5GB	EA POM	12/19/23 15:07
Total/NA	Analysis	533		1	68805	SZ9R	EA POM	12/21/23 00:37

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2
Lab Sample ID: 380-74776-11
Date Collected: 12/11/23 11:15
Matrix: Water
Date Received: 12/13/23 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			68611	A5GB	EA POM	12/19/23 15:07
Total/NA	Analysis	533		1	68805	SZ9R	EA POM	12/21/23 00:47

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1
Lab Sample ID: 380-74776-12
Date Collected: 12/11/23 10:21
Matrix: Water
Date Received: 12/13/23 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			68611	A5GB	EA POM	12/19/23 15:07
Total/NA	Analysis	533		1	68805	SZ9R	EA POM	12/21/23 00:56

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: 380-74776-1
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	Drinking Water	1-Methylnaphthalene
525.2	525.2	Drinking Water	2,4'-DDD
525.2	525.2	Drinking Water	2,4'-DDE
525.2	525.2	Drinking Water	2,4'-DDT
525.2	525.2	Drinking Water	2,4-Dinitrotoluene
525.2	525.2	Drinking Water	2,6-Dinitrotoluene
525.2	525.2	Drinking Water	2-Methylnaphthalene
525.2	525.2	Drinking Water	4,4'-DDD
525.2	525.2	Drinking Water	4,4'-DDE
525.2	525.2	Drinking Water	4,4'-DDT
525.2	525.2	Drinking Water	Acenaphthene
525.2	525.2	Drinking Water	Acenaphthylene
525.2	525.2	Drinking Water	Acetochlor
525.2	525.2	Drinking Water	alpha-BHC
525.2	525.2	Drinking Water	alpha-Chlordane
525.2	525.2	Drinking Water	Anthracene
525.2	525.2	Drinking Water	Benz(a)anthracene
525.2	525.2	Drinking Water	Benzo[b]fluoranthene
525.2	525.2	Drinking Water	Benzo[g,h,i]perylene
525.2	525.2	Drinking Water	Benzo[k]fluoranthene
525.2	525.2	Drinking Water	beta-BHC
525.2	525.2	Drinking Water	Bromacil
525.2	525.2	Drinking Water	Butylbenzylphthalate
525.2	525.2	Drinking Water	Chlorobenzilate
525.2	525.2	Drinking Water	Chloroneb
525.2	525.2	Drinking Water	Chlorothalonil (Draconil, Bravo)
525.2	525.2	Drinking Water	Chlorpyrifos
525.2	525.2	Drinking Water	Chrysene
525.2	525.2	Drinking Water	delta-BHC
525.2	525.2	Drinking Water	Dibenz(a,h)anthracene
525.2	525.2	Drinking Water	Diclorvos (DDVP)
525.2	525.2	Drinking Water	Diethylphthalate
525.2	525.2	Drinking Water	Dimethylphthalate
525.2	525.2	Drinking Water	Di-n-butyl phthalate
525.2	525.2	Drinking Water	Di-n-octyl phthalate
525.2	525.2	Drinking Water	Endosulfan I (Alpha)
525.2	525.2	Drinking Water	Endosulfan II (Beta)
525.2	525.2	Drinking Water	Endosulfan sulfate
525.2	525.2	Drinking Water	Endrin aldehyde
525.2	525.2	Drinking Water	EPTC
525.2	525.2	Drinking Water	Fluoranthene
525.2	525.2	Drinking Water	Fluorene
525.2	525.2	Drinking Water	gamma-Chlordane
525.2	525.2	Drinking Water	Indeno[1,2,3-cd]pyrene
525.2	525.2	Drinking Water	Isophorone

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

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

Job ID: 380-74776-1
SDG: 525.2, 533 and 537.1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

Authority	Program	Identification Number	Expiration Date

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
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	Drinking Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Drinking Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Drinking Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Drinking Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)

Method Summary

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

Job ID: 380-74776-1
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: 380-74776-1
SDG: 525.2, 533 and 537.1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-74776-1	MOANALUA WELLS	Drinking Water	12/11/23 09:50	12/13/23 10:10	HI0000331
380-74776-2	AIEA GULCH WELLS PUMP 2	Drinking Water	12/11/23 10:48	12/13/23 10:10	HI0000331
380-74776-3	AIEA WELLS PUMPS 1&2 (260) P2	Drinking Water	12/11/23 11:15	12/13/23 10:10	HI0000331
380-74776-4	HALAWA WELLS UNITS 1 & 2 P1	Drinking Water	12/11/23 10:21	12/13/23 10:10	HI0000331
380-74776-9	FB MOANALUA WELLS	Water	12/11/23 09:50	12/13/23 10:10	
380-74776-10	FB AIEA GULCH WELLS PUMP 2	Water	12/11/23 10:48	12/13/23 10:10	
380-74776-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Water	12/11/23 11:15	12/13/23 10:10	
380-74776-12	FB HALAWA WELLS UNITS 1 & 2 P1	Water	12/11/23 10:21	12/13/23 10:10	

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			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				R	R	RA		RA	Y	N		
MOANALUA WELLS	11-Dec-2023	0950	G	Water			2		2	2	4				chlorinated
AIEA GULCH WELLS PUMP2	11-Dec-2023	1048	G	Water			2		2	2	4				chlorinated
AIEA WELLS PUMPS 1&2 (260) PZ	11-Dec-2023	1115	G	Water			2		2	2	4				
HALAWA WELLS UNITS 1&2 P1	11-Dec-2023	1021	G	Water			2		2	2	4				
TB MOANALUA WELLS	11-Dec-2023	0950		Water							2				1 OUT OF 2 ARRIVED BROKEN 12/13/2023
TB AIEA GULCH WELLS PUMP2	11-Dec-2023	1048		Water							2				
TB AIEA WELLS PUMPS 1&2 (260)	11-Dec-2023	1115		Water							2				
TB HALAWA WELLS UNITS 1&2	11-Dec-2023	1021		Water							2				

380-74776 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: FED EX (1) 77444947 3054

Empty Kit Relinquished by | Date | Time | Method of Shipment: (2) 77444947 3065

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
BAILEY	12 dec. 2023 1400	HBWS	G REITNER	12/13/2023 10:10	EEAP
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: 757A (1) 2.1° @ 1°-2.0° (2) 1.8°-@ 1°-1.7° -GEL-FROZEN

Ver: 01/16/2019

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

Chain of Custody Record

eurofins

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 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:				R	R	RA		RA	Y	N		
MOANALUA WELLS	11-Dec-2023	0950	G	Water								3	3		chlorinated
AIEA GULCH WELLS PUMP2	11-Dec-2023	1048	G	Water								3	3		chlorinated
AIEA WELLS PUMPS 1&2 (260) P2	11-Dec-2023	1115	G	Water								3	3		
HALAWA WELLS UNITS 1&2 P1	11-Dec-2023	1021	G	Water								3	3		
FB MOANALUA WELLS	11-Dec-2023	0950		Water								1	1		
FB AIEA GULCH WELLS PUMP2	11-Dec-2023	1048		Water								1	1		
FB AIEA WELLS PUMPS 1&2 (260)	11-Dec-2023	1115		Water								1	1		
FB HALAWA WELLS UNITS 1&2	11-Dec-2023	1021		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: FED EX (1) 7744 4947 3054

Empty Kit Relinquished by	Date	Time	Method of Shipment: (2) 7744 4947 3065

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
BAILEY	12 Dec. 2023 1400	HBWS	G REITNER	12/13/2023 10:10	FEDEX
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
		(ISTA) (1) 2.1° 0.1° 2.0° (2) 1.5° 0.1°-1.7° - GEL-FROZEN

Ver 01/16/2019

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona, CA 91768-2642
Phone: 626-386-1100

Chain of Custody Record

eurofins | Envi

Loc: 380
74776

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-95151.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: Eurofins Environment Testing Southwest,		Accreditations Required (See note): State - Hawaii		Job #: 380-74776-1
Address: 2841 Dow Avenue, Suite 100, ,	Due Date Requested: 1/8/2024			
City: Tustin	TAT Requested (days):			
State, Zip: CA, 92780				
Phone: 714-895-5494(Tel)	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			

Analysis Requested

Preservation Codes:

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

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015B_GRO_LL/5030C (MOD) GRO	8015B_DAI/ Ethanol	8015B_DRO_LL_CS/3510C_LL HNL Ranges: C10-C24/C24-C36/C8-C18	8015B_GRO_LL/5030C GRO	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
MOANALUA WELLS (380-74776-1)	12/11/23	09:50 Hawaiian		Water			X	X	X		6	MRLs are needed., initial volume (500ml) and final volume (2ml). MRLs are needed.
AIEA GULCH WELLS PUMP 2 (380-74776-2)	12/11/23	10:48 Hawaiian		Water			X	X	X		6	MRLs are needed., initial volume (500ml) and final volume (2ml). MRLs are needed.
AIEA WELLS PUMPS 1&2 (260) P2 (380-74776-3)	12/11/23	11:15 Hawaiian		Water			X	X	X		6	MRLs are needed., initial volume (500ml) and final volume (2ml). MRLs are needed.
HALAWA WELLS UNITS 1 & 2 P1 (380-74776-4)	12/11/23	10:21 Hawaiian		Water			X	X	X		6	MRLs are needed., initial volume (500ml) and final volume (2ml). MRLs are needed.
TB MOANALUA WELLS (380-74776-5)	12/11/23	09:50 Hawaiian		Water						X	1	MRLs are needed.
TB AIEA GULCH WELLS PUMP 2 (380-74776-6)	12/11/23	10:48 Hawaiian		Water						X	2	MRLs are needed.
TB AIEA WELLS PUMPS 1&2 (260) P2 (380-74776-7)	12/11/23	11:15 Hawaiian		Water						X	2	MRLs are needed.
TB HALAWA WELLS UNITS 1 & 2 P1 (380-74776-8)	12/11/23	10:21 Hawaiian		Water						X	2	MRLs are needed.

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

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Xm	12/14/23 1440	EEA		12/14/23 14:40	EEC
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: 1.7 1.6 SC12

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-74776-1
SDG Number: 525.2, 533 and 537.1

Login Number: 74776
List Number: 1
Creator: Elyas, Matthew

List Source: Eurofins Eaton Analytical Pomona

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