eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 4/22/2024 9:54:59 AM

JOB DESCRIPTION

RED-HILL
525.2, 533, 537.1

JOB NUMBER

380-90733-1

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

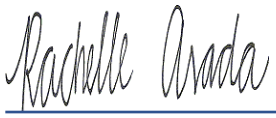
This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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



Generated
4/22/2024 9:54:59 AM

Authorized for release by
Rachelle Arada, Project Manager
Rachelle.Arada@et.eurofinsus.com
(626)386-1106

Table of Contents

Qualifiers

GC/MS Semi VOA

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.

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

Glossary

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

Job ID: 380-90733-1 — Eurofins Eaton Analytical Pomona

Job Narrative
380-90733-1

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 4/10/2024 10:17 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 1.3°C and 1.6°C.

Receipt Exceptions
Ice formation exists in one of the 537.1 samples from site HALAWA WELLS UNITS 1 & 2 P1 (380-90733-2), in one of the 533 samples from site HALAWA WELLS UNITS 1 & 2 P1 (380-90733-2), and in the received 533 FB sample from site FB: HALAWA WELLS UNITS 1 & 2 P1 (380-90733-4). Analysis of FB: HALAWA WELLS UNITS 1 & 2 P1 (380-90733-4) cancelled as there is no exta available volume.

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

PFAS
Method 533: Analysis found detections in the field sample, data excluded since analysis of the FRB is required if field sample contains analyte above the MRL. HALAWA WELLS UNITS 1 & 2 P1 (380-90733-2)

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: 380-90733-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-90733-1

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-90733-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0		ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0		ng/L	1		537.1	Total/NA

Client Sample ID: FB: MOANALUA WELLS — Lab Sample ID: 380-90733-3

No Detections.

Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-90733-4

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-90733-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS

Date Collected: 04/08/24 09:10
Date Received: 04/10/24 10:17

Lab Sample ID: 380-90733-1

Matrix: Drinking Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
2,4'-DDD	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
2,4'-DDE	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
2,4'-DDT	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
2,4-Dinitrotoluene	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
2,6-Dinitrotoluene	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
2-Methylnaphthalene	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
4,4'-DDD	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
4,4'-DDE	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
4,4'-DDT	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Acenaphthene	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Acenaphthylene	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Acetochlor	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Alachlor	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
alpha-BHC	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
alpha-Chlordane	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
Anthracene	<0.020	F1	0.020		ug/L		04/17/24 10:00	04/18/24 10:14	1
Atrazine	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
Benz(a)anthracene	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
Benzo[a]pyrene	<0.020	F1	0.020		ug/L		04/17/24 10:00	04/18/24 10:14	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		04/17/24 10:00	04/18/24 10:14	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		04/17/24 10:00	04/18/24 10:14	1
beta-BHC	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		04/17/24 10:00	04/18/24 10:14	1
Bromacil	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Butachlor	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
Butylbenzylphthalate	<0.49		0.49		ug/L		04/17/24 10:00	04/18/24 10:14	1
Chlorobenzilate	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Chloroneb	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Chlorpyrifos	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
Chrysene	<0.020		0.020		ug/L		04/17/24 10:00	04/18/24 10:14	1
delta-BHC	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		04/17/24 10:00	04/18/24 10:14	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
Dieldrin	<0.20		0.20		ug/L		04/17/24 10:00	04/18/24 10:14	1
Diethylphthalate	<0.49		0.49		ug/L		04/17/24 10:00	04/18/24 10:14	1
Dimethylphthalate	<0.49		0.49		ug/L		04/17/24 10:00	04/18/24 10:14	1
Di-n-butyl phthalate	<0.98		0.98		ug/L		04/17/24 10:00	04/18/24 10:14	1
Di-n-octyl phthalate	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Endosulfan I (Alpha)	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Endosulfan II (Beta)	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Endosulfan sulfate	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Endrin	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Endrin aldehyde	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
EPTC	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Fluoranthene	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1

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

Job ID: 380-90733-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
Date Collected: 04/08/24 09:10
Date Received: 04/10/24 10:17

Lab Sample ID: 380-90733-1
Matrix: Drinking Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
gamma-Chlordane	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
Heptachlor	<0.039		0.039		ug/L		04/17/24 10:00	04/18/24 10:14	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
Hexachlorobenzene	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
Isophorone	<0.49		0.49		ug/L		04/17/24 10:00	04/18/24 10:14	1
Lindane	<0.039		0.039		ug/L		04/17/24 10:00	04/18/24 10:14	1
Malathion	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Methoxychlor	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Metolachlor	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
Molinate	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Naphthalene	<0.29		0.29		ug/L		04/17/24 10:00	04/18/24 10:14	1
Parathion	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Pendimethalin (Penoxaline)	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Phenanthrene	<0.039		0.039		ug/L		04/17/24 10:00	04/18/24 10:14	1
Propachlor	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
Pyrene	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
Simazine	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
Terbacil	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Terbuthylazine	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1
Thiobencarb	<0.20		0.20		ug/L		04/17/24 10:00	04/18/24 10:14	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		04/17/24 10:00	04/18/24 10:14	1
trans-Nonachlor	<0.049		0.049		ug/L		04/17/24 10:00	04/18/24 10:14	1
Trifluralin	<0.098		0.098		ug/L		04/17/24 10:00	04/18/24 10:14	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*04/17/24 10:00*	*04/18/24 10:14*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*103*		*70 - 130*	*04/17/24 10:00*	*04/18/24 10:14*	*1*
Perylene-d12	*83*		*70 - 130*	*04/17/24 10:00*	*04/18/24 10:14*	*1*
Triphenylphosphate	*109*		*70 - 130*	*04/17/24 10:00*	*04/18/24 10:14*	*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		04/11/24 05:19	04/11/24 16:09	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1

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

Job ID: 380-90733-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
Date Collected: 04/08/24 09:10
Date Received: 04/10/24 10:17

Lab Sample ID: 380-90733-1
Matrix: Drinking Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:09	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*70*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:09*	*1*
13C6 PFDA	*87*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:09*	*1*
13C5 PFHxA	*78*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:09*	*1*
13C4 PFHpA	*79*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:09*	*1*
13C8 PFOA	*81*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:09*	*1*
13C9 PFNA	*82*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:09*	*1*
13C7 PFUnA	*87*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:09*	*1*
13C2 PFDoA	*87*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:09*	*1*
13C4 PFBA	*81*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:09*	*1*
13C5 PFPeA	*88*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:09*	*1*
13C3 PFBS	*93*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:09*	*1*
13C3 PFHxS	*93*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:09*	*1*
13C8 PFOS	*95*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:09*	*1*
13C2-4:2-FTS	*121*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:09*	*1*
13C2-6:2-FTS	*111*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:09*	*1*
13C2-8:2-FTS	*98*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:09*	*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		04/11/24 06:45	04/12/24 04:46	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		04/11/24 06:45	04/12/24 04:46	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		04/11/24 06:45	04/12/24 04:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		04/11/24 06:45	04/12/24 04:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		04/11/24 06:45	04/12/24 04:46	1

Client Sample ID: MOANALUA WELLS

Date Collected: 04/08/24 09:10
Date Received: 04/10/24 10:17

Lab Sample ID: 380-90733-1
Matrix: Drinking Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		04/11/24 06:45	04/12/24 04:46	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		04/11/24 06:45	04/12/24 04:46	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		04/11/24 06:45	04/12/24 04:46	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		04/11/24 06:45	04/12/24 04:46	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		04/11/24 06:45	04/12/24 04:46	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		04/11/24 06:45	04/12/24 04:46	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		04/11/24 06:45	04/12/24 04:46	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		04/11/24 06:45	04/12/24 04:46	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		04/11/24 06:45	04/12/24 04:46	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		04/11/24 06:45	04/12/24 04:46	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		04/11/24 06:45	04/12/24 04:46	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		04/11/24 06:45	04/12/24 04:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		04/11/24 06:45	04/12/24 04:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*109*		*70 - 130*	*04/11/24 06:45*	*04/12/24 04:46*	*1*
13C2 PFHxA	*117*		*70 - 130*	*04/11/24 06:45*	*04/12/24 04:46*	*1*
13C2 PFDA	*112*		*70 - 130*	*04/11/24 06:45*	*04/12/24 04:46*	*1*
13C3-GenX	*111*		*70 - 130*	*04/11/24 06:45*	*04/12/24 04:46*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Date Collected: 04/08/24 09:38
Date Received: 04/10/24 10:17

Lab Sample ID: 380-90733-2
Matrix: Drinking Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
2,4'-DDD	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
2,4'-DDE	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
2,4'-DDT	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
2,4-Dinitrotoluene	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
2,6-Dinitrotoluene	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
2-Methylnaphthalene	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
4,4'-DDD	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
4,4'-DDE	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
4,4'-DDT	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Acenaphthene	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Acenaphthylene	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Acetochlor	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Alachlor	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
alpha-BHC	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
alpha-Chlordane	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
Anthracene	<0.019		0.019		ug/L		04/17/24 12:00	04/18/24 12:33	1
Atrazine	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
Benz(a)anthracene	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
Benzo[a]pyrene	<0.019		0.019		ug/L		04/17/24 12:00	04/18/24 12:33	1
Benzo[b]fluoranthene	<0.019		0.019		ug/L		04/17/24 12:00	04/18/24 12:33	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1

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

Job ID: 380-90733-1
SDG: 525.2, 533, 537.1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 04/08/24 09:38
Date Received: 04/10/24 10:17

Lab Sample ID: 380-90733-2
Matrix: Drinking Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	<0.019		0.019		ug/L		04/17/24 12:00	04/18/24 12:33	1
beta-BHC	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58		ug/L		04/17/24 12:00	04/18/24 12:33	1
Bromacil	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Butachlor	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
Butylbenzylphthalate	<0.49		0.49		ug/L		04/17/24 12:00	04/18/24 12:33	1
Chlorobenzilate	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Chloroneb	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Chlorpyrifos	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
Chrysene	<0.019		0.019		ug/L		04/17/24 12:00	04/18/24 12:33	1
delta-BHC	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Di(2-ethylhexyl)adipate	<0.58		0.58		ug/L		04/17/24 12:00	04/18/24 12:33	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
Dieldrin	<0.19		0.19		ug/L		04/17/24 12:00	04/18/24 12:33	1
Diethylphthalate	<0.49		0.49		ug/L		04/17/24 12:00	04/18/24 12:33	1
Dimethylphthalate	<0.49		0.49		ug/L		04/17/24 12:00	04/18/24 12:33	1
Di-n-butyl phthalate	<0.97		0.97		ug/L		04/17/24 12:00	04/18/24 12:33	1
Di-n-octyl phthalate	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Endosulfan I (Alpha)	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Endosulfan II (Beta)	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Endosulfan sulfate	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Endrin	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Endrin aldehyde	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
EPTC	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Fluoranthene	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Fluorene	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
gamma-Chlordane	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
Heptachlor	<0.039		0.039		ug/L		04/17/24 12:00	04/18/24 12:33	1
Heptachlor epoxide (isomer B)	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
Hexachlorobenzene	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
Isophorone	<0.49		0.49		ug/L		04/17/24 12:00	04/18/24 12:33	1
Lindane	<0.039		0.039		ug/L		04/17/24 12:00	04/18/24 12:33	1
Malathion	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Methoxychlor	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Metolachlor	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
Molinate	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Naphthalene	<0.29		0.29		ug/L		04/17/24 12:00	04/18/24 12:33	1
Parathion	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Pendimethalin (Penoxaline)	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Phenanthrene	<0.039		0.039		ug/L		04/17/24 12:00	04/18/24 12:33	1
Propachlor	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
Pyrene	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
Simazine	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
Terbacil	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1
Terbuthylazine	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Date Collected: 04/08/24 09:38
Date Received: 04/10/24 10:17

Lab Sample ID: 380-90733-2

Matrix: Drinking Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Thiobencarb	<0.19		0.19		ug/L		04/17/24 12:00	04/18/24 12:33	1
Total Permethrin (mixed isomers)	<0.19		0.19		ug/L		04/17/24 12:00	04/18/24 12:33	1
trans-Nonachlor	<0.049		0.049		ug/L		04/17/24 12:00	04/18/24 12:33	1
Trifluralin	<0.097		0.097		ug/L		04/17/24 12:00	04/18/24 12:33	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown Carboxylic Acid	*0.54*	*T J*	*ug/L*		*5.24*	*N/A*	*04/17/24 12:00*	*04/18/24 12:33*	*1*
Unknown Carboxylic Acid	*2.0*	*T J*	*ug/L*		*6.59*	*N/A*	*04/17/24 12:00*	*04/18/24 12:33*	*1*
Unknown	*0.61*	*T J*	*ug/L*		*13.74*	*N/A*	*04/17/24 12:00*	*04/18/24 12:33*	*1*
unknown	*0.87*	*T J*	*ug/L*		*14.11*	*N/A*	*04/17/24 12:00*	*04/18/24 12:33*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*98*		*70 - 130*	*04/17/24 12:00*	*04/18/24 12:33*	*1*
Perylene-d12	*105*		*70 - 130*	*04/17/24 12:00*	*04/18/24 12:33*	*1*
Triphenylphosphate	*108*		*70 - 130*	*04/17/24 12:00*	*04/18/24 12:33*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:44	1
Perfluorooctanesulfonic acid (PFOS)	**2.3**		2.0		ng/L		04/12/24 06:53	04/12/24 16:44	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:44	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:44	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:44	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:44	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:44	1
Perfluorohexanesulfonic acid (PFHxS)	**2.6**		2.0		ng/L		04/12/24 06:53	04/12/24 16:44	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:44	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:44	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:44	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:44	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:44	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:44	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*115*		*70 - 130*	*04/12/24 06:53*	*04/12/24 16:44*	*1*
13C2 PFHxA	*111*		*70 - 130*	*04/12/24 06:53*	*04/12/24 16:44*	*1*
13C2 PFDA	*107*		*70 - 130*	*04/12/24 06:53*	*04/12/24 16:44*	*1*
13C3-GenX	*107*		*70 - 130*	*04/12/24 06:53*	*04/12/24 16:44*	*1*

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

Job ID: 380-90733-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB: MOANALUA WELLS

Date Collected: 04/08/24 09:10
Date Received: 04/10/24 10:17

Lab Sample ID: 380-90733-3

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		04/11/24 05:19	04/11/24 16:20	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		04/11/24 05:19	04/11/24 16:20	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*86*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:20*	*1*
13C6 PFDA	*96*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:20*	*1*
13C5 PFHxA	*89*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:20*	*1*
13C4 PFHpA	*93*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:20*	*1*
13C8 PFOA	*95*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:20*	*1*
13C9 PFNA	*94*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:20*	*1*
13C7 PFUnA	*100*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:20*	*1*
13C2 PFDoA	*95*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:20*	*1*
13C4 PFBA	*93*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:20*	*1*
13C5 PFPeA	*101*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:20*	*1*
13C3 PFBS	*92*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:20*	*1*
13C3 PFHxS	*93*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:20*	*1*
13C8 PFOS	*94*		*50 - 200*	*04/11/24 05:19*	*04/11/24 16:20*	*1*

Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-90733-3
Matrix: Water
Date Collected: 04/08/24 09:10
Date Received: 04/10/24 10:17

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	118		50 - 200	04/11/24 05:19	04/11/24 16:20	1
13C2-6:2-FTS	108		50 - 200	04/11/24 05:19	04/11/24 16:20	1
13C2-8:2-FTS	96		50 - 200	04/11/24 05:19	04/11/24 16:20	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		04/12/24 06:53	04/12/24 16:53	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:53	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:53	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:53	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:53	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:53	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:53	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:53	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:53	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:53	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:53	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:53	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:53	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:53	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:53	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 16:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	116		70 - 130	04/12/24 06:53	04/12/24 16:53	1
13C2 PFHxA	113		70 - 130	04/12/24 06:53	04/12/24 16:53	1
13C2 PFDA	108		70 - 130	04/12/24 06:53	04/12/24 16:53	1
13C3-GenX	110		70 - 130	04/12/24 06:53	04/12/24 16:53	1

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

Lab Sample ID: 380-90733-4
Matrix: Water
Date Collected: 04/08/24 09:38
Date Received: 04/10/24 10:17

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		04/12/24 06:53	04/12/24 17:02	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 17:02	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 17:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 17:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 17:02	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 17:02	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 17:02	1

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

Job ID: 380-90733-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 04/08/24 09:38
Date Received: 04/10/24 10:17

Lab Sample ID: 380-90733-4
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 17:02	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 17:02	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 17:02	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 17:02	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 17:02	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 17:02	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 17:02	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 17:02	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 17:02	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 17:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		04/12/24 06:53	04/12/24 17:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*121*		*70 - 130*	*04/12/24 06:53*	*04/12/24 17:02*	*1*
13C2 PFHxA	*120*		*70 - 130*	*04/12/24 06:53*	*04/12/24 17:02*	*1*
13C2 PFDA	*111*		*70 - 130*	*04/12/24 06:53*	*04/12/24 17:02*	*1*
13C3-GenX	*113*		*70 - 130*	*04/12/24 06:53*	*04/12/24 17:02*	*1*

Action Limit Summary

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

Job ID: 380-90733-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-90733-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		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	F1	ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		ug/L	6	0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.59		ug/L	400	0.59	525.2	Total/NA
Endrin	<0.098		ug/L	2	0.098	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.098		ug/L	40	0.098	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1 — Lab Sample ID: 380-90733-2

Compliance Check

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

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

Surrogate Summary

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

Job ID: 380-90733-1
SDG: 525.2, 533, 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)
380-90733-1	MOANALUA WELLS	103	83	109
380-90733-1 MS	MOANALUA WELLS	96	97	108
380-90733-2	HALAWA WELLS UNITS 1 & 2 P1	98	105	108

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)
380-90728-B-1-A DU	Duplicate	97	96	108
LCS 380-86272/23-A	Lab Control Sample	97	101	103
MB 380-86272/21-A	Method Blank	97	91	104
MRL 380-86272/22-A	Lab Control Sample	95	95	104

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)
380-90733-1	MOANALUA WELLS	109	117	112	111
380-90733-2	HALAWA WELLS UNITS 1 & 2 P1	115	111	107	107

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)
380-90728-D-2-A LMS	Matrix Spike	101	104	108	102
380-90728-E-2-A LMSD	Matrix Spike Duplicate	108	115	111	106
380-90733-3	FB: MOANALUA WELLS	116	113	108	110
380-90733-4	FB: HALAWA WELLS UNITS 1 & 2 P1	121	120	111	113

Surrogate Summary

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

Job ID: 380-90733-1
SDG: 525.2, 533, 537.1

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-90823-B-1-A MS	Matrix Spike	115	113	109	111
380-90823-C-1-A MSD	Matrix Spike Duplicate	116	117	108	111
LCS 380-85410/23-A	Lab Control Sample	103	112	111	111
LCS 380-85577/23-A	Lab Control Sample	112	109	107	106
MBL 380-85410/21-A	Method Blank	99	101	102	96
MBL 380-85577/21-A	Method Blank	99	106	96	99
MRL 380-85410/22-A	Lab Control Sample	103	103	110	99
MRL 380-85577/22-A	Lab Control Sample	112	106	104	107

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: 380-90733-1
SDG: 525.2, 533, 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)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-90733-1	MOANALUA WELLS	70	87	78	79	81	82	87	87
380-90733-G-2-A MS	380-90733-G-2-A MS	80	91	80	84	84	86	89	88
380-90733-H-2-A MSD	380-90733-H-2-A MSD	73	88	75	79	83	87	88	89

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-90733-1	MOANALUA WELLS	81	88	93	93	95	121	111	98
380-90733-G-2-A MS	380-90733-G-2-A MS	86	96	94	93	95	116	104	92
380-90733-H-2-A MSD	380-90733-H-2-A MSD	78	85	92	89	91	115	101	91

Surrogate Legend

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

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

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-90733-3	FB: MOANALUA WELLS	86	96	89	93	95	94	100	95
LCS 380-85405/22-A	Lab Control Sample	85	91	86	91	90	91	92	91
MBL 380-85405/20-A	Method Blank	78	88	81	87	88	88	91	87
MRL 380-85405/21-A	Lab Control Sample	79	88	81	84	87	87	87	87

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-90733-3	FB: MOANALUA WELLS	93	101	92	93	94	118	108	96
LCS 380-85405/22-A	Lab Control Sample	88	96	91	91	91	105	99	89
MBL 380-85405/20-A	Method Blank	88	93	88	90	90	101	92	87
MRL 380-85405/21-A	Lab Control Sample	86	91	89	88	90	102	94	87

Surrogate Legend

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

Isotope Dilution Summary

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

Job ID: 380-90733-1
SDG: 525.2, 533, 537.1

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 380-86272/21-A
Matrix: Water
Analysis Batch: 86505

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 86272

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
2,4'-DDD	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
2,4'-DDE	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
2,4'-DDT	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
2,4-Dinitrotoluene	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
2,6-Dinitrotoluene	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
2-Methylnaphthalene	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
4,4'-DDD	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
4,4'-DDE	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
4,4'-DDT	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Acenaphthene	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Acenaphthylene	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Acetochlor	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Alachlor	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
alpha-BHC	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
alpha-Chlordane	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
Anthracene	<0.020		0.020		ug/L		04/17/24 10:00	04/18/24 09:35	1
Atrazine	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
Benz(a)anthracene	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
Benzo[a]pyrene	<0.020		0.020		ug/L		04/17/24 10:00	04/18/24 09:35	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		04/17/24 10:00	04/18/24 09:35	1
Benzo[g,h,i]perylene	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		04/17/24 10:00	04/18/24 09:35	1
beta-BHC	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60		ug/L		04/17/24 10:00	04/18/24 09:35	1
Bromacil	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Butachlor	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
Butylbenzylphthalate	<0.50		0.50		ug/L		04/17/24 10:00	04/18/24 09:35	1
Chlorobenzilate	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Chloroneb	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Chlorpyrifos	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
Chrysene	<0.020		0.020		ug/L		04/17/24 10:00	04/18/24 09:35	1
delta-BHC	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Di(2-ethylhexyl)adipate	<0.60		0.60		ug/L		04/17/24 10:00	04/18/24 09:35	1
Dibenz(a,h)anthracene	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
Diclorvos (DDVP)	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
Dieldrin	<0.20		0.20		ug/L		04/17/24 10:00	04/18/24 09:35	1
Diethylphthalate	<0.50		0.50		ug/L		04/17/24 10:00	04/18/24 09:35	1
Dimethylphthalate	<0.50		0.50		ug/L		04/17/24 10:00	04/18/24 09:35	1
Di-n-butyl phthalate	<0.99		0.99		ug/L		04/17/24 10:00	04/18/24 09:35	1
Di-n-octyl phthalate	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Endosulfan I (Alpha)	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Endosulfan II (Beta)	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Endosulfan sulfate	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Endrin	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Endrin aldehyde	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
EPTC	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1

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

Lab Sample ID: MB 380-86272/21-A
Matrix: Water
Analysis Batch: 86505

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 86272

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Fluorene	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
gamma-Chlordane	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
Heptachlor	<0.040		0.040		ug/L		04/17/24 10:00	04/18/24 09:35	1
Heptachlor epoxide (isomer B)	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
Hexachlorobenzene	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
Hexachlorocyclopentadiene	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
Isophorone	<0.50		0.50		ug/L		04/17/24 10:00	04/18/24 09:35	1
Lindane	<0.040		0.040		ug/L		04/17/24 10:00	04/18/24 09:35	1
Malathion	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Methoxychlor	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Metolachlor	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
Molinate	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Naphthalene	<0.30		0.30		ug/L		04/17/24 10:00	04/18/24 09:35	1
Parathion	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Pendimethalin (Penoxaline)	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Phenanthrene	<0.040		0.040		ug/L		04/17/24 10:00	04/18/24 09:35	1
Propachlor	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
Pyrene	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
Simazine	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
Terbacil	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Terbuthylazine	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1
Thiobencarb	<0.20		0.20		ug/L		04/17/24 10:00	04/18/24 09:35	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		04/17/24 10:00	04/18/24 09:35	1
trans-Nonachlor	<0.050		0.050		ug/L		04/17/24 10:00	04/18/24 09:35	1
Trifluralin	<0.099		0.099		ug/L		04/17/24 10:00	04/18/24 09:35	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
3,6,6-Trimethyl-cyclohex-2-enol	*0.580*	*T J N*	*ug/L*		*2.29*	*73741-62-5*	*04/17/24 10:00*	*04/18/24 09:35*	*1*
Cyclotetrasiloxane, octamethyl-	*0.908*	*T J N*	*ug/L*		*2.34*	*556-67-2*	*04/17/24 10:00*	*04/18/24 09:35*	*1*
Camphene	*0.587*	*T J N*	*ug/L*		*2.41*	*79-92-5*	*04/17/24 10:00*	*04/18/24 09:35*	*1*
Cyclopentasiloxane, decamethyl-	*0.667*	*T J N*	*ug/L*		*2.77*	*541-02-6*	*04/17/24 10:00*	*04/18/24 09:35*	*1*
n-Hexadecanoic acid	*0.678*	*T J N*	*ug/L*		*5.96*	*57-10-3*	*04/17/24 10:00*	*04/18/24 09:35*	*1*
Unknown	*0.641*	*T J*	*ug/L*		*11.21*	*N/A*	*04/17/24 10:00*	*04/18/24 09:35*	*1*
Unknown	*0.531*	*T J*	*ug/L*		*11.26*	*N/A*	*04/17/24 10:00*	*04/18/24 09:35*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*97*		*70 - 130*	*04/17/24 10:00*	*04/18/24 09:35*	*1*
Perylene-d12	*91*		*70 - 130*	*04/17/24 10:00*	*04/18/24 09:35*	*1*
Triphenylphosphate	*104*		*70 - 130*	*04/17/24 10:00*	*04/18/24 09:35*	*1*

Lab Sample ID: LCS 380-86272/23-A
Matrix: Water
Analysis Batch: 86505

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 86272

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1-Methylnaphthalene			1.98	2.06		ug/L		104	70 - 130		

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

Lab Sample ID: LCS 380-86272/23-A
Matrix: Water
Analysis Batch: 86505

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 86272

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	1.98	2.11		ug/L		106	70 - 130
2,4'-DDE	1.98	2.02		ug/L		102	70 - 130
2,4'-DDT	1.98	2.16		ug/L		109	70 - 130
2,4-Dinitrotoluene	1.98	1.90		ug/L		96	70 - 130
2,6-Dinitrotoluene	1.98	1.86		ug/L		94	70 - 130
2-Methylnaphthalene	1.98	2.09		ug/L		106	70 - 130
4,4'-DDD	1.98	2.15		ug/L		109	70 - 130
4,4'-DDE	1.98	2.01		ug/L		101	70 - 130
4,4'-DDT	1.98	1.91		ug/L		96	70 - 130
Acenaphthene	1.98	1.95		ug/L		98	70 - 130
Acenaphthylene	1.98	2.05		ug/L		103	70 - 130
Acetochlor	1.98	2.12		ug/L		107	70 - 130
Alachlor	1.98	2.10		ug/L		106	70 - 130
alpha-BHC	1.98	2.01		ug/L		101	70 - 130
alpha-Chlordane	1.98	1.97		ug/L		99	70 - 130
Anthracene	1.98	1.68		ug/L		85	70 - 130
Atrazine	1.98	2.24		ug/L		113	70 - 130
Benz(a)anthracene	1.98	1.90		ug/L		96	70 - 130
Benzo[a]pyrene	1.98	1.98		ug/L		100	70 - 130
Benzo[b]fluoranthene	1.98	2.18		ug/L		110	70 - 130
Benzo[g,h,i]perylene	1.98	2.18		ug/L		110	70 - 130
Benzo[k]fluoranthene	1.98	2.24		ug/L		113	70 - 130
beta-BHC	1.98	2.02		ug/L		102	70 - 130
Bis(2-ethylhexyl) phthalate	1.98	1.94		ug/L		98	70 - 130
Bromacil	1.98	2.36		ug/L		119	70 - 130
Butachlor	1.98	2.25		ug/L		114	70 - 130
Butylbenzylphthalate	1.98	2.30		ug/L		116	70 - 130
Chlorobenzilate	1.98	2.23		ug/L		113	70 - 130
Chloroneb	1.98	1.99		ug/L		101	70 - 130
Chlorothalonil (Draconil, Bravo)	1.98	2.26		ug/L		114	70 - 130
Chlorpyrifos	1.98	2.20		ug/L		111	70 - 130
Chrysene	1.98	2.12		ug/L		107	70 - 130
delta-BHC	1.98	2.03		ug/L		102	70 - 130
Di(2-ethylhexyl)adipate	1.98	2.11		ug/L		106	70 - 130
Dibenz(a,h)anthracene	1.98	2.23		ug/L		113	70 - 130
Diclorvos (DDVP)	1.98	2.32		ug/L		117	70 - 130
Dieldrin	1.98	2.06		ug/L		104	70 - 130
Diethylphthalate	1.98	2.06		ug/L		104	70 - 130
Dimethylphthalate	1.98	2.05		ug/L		103	70 - 130
Di-n-butyl phthalate	3.96	4.41		ug/L		111	70 - 130
Di-n-octyl phthalate	1.98	1.65		ug/L		83	70 - 130
Endosulfan I (Alpha)	1.98	2.07		ug/L		104	70 - 130
Endosulfan II (Beta)	1.98	2.18		ug/L		110	70 - 130
Endosulfan sulfate	1.98	2.22		ug/L		112	70 - 130
Endrin	1.98	2.17		ug/L		109	70 - 130
Endrin aldehyde	1.98	1.35		ug/L		68	60 - 130
EPTC	1.98	2.47		ug/L		125	70 - 130
Fluoranthene	1.98	2.11		ug/L		106	70 - 130
Fluorene	1.98	2.06		ug/L		104	70 - 130

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

Lab Sample ID: LCS 380-86272/23-A
Matrix: Water
Analysis Batch: 86505

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 86272

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
gamma-Chlordane	1.98	2.00		ug/L		101	70 - 130
Heptachlor	1.98	2.18		ug/L		110	70 - 130
Heptachlor epoxide (isomer B)	1.98	2.07		ug/L		104	70 - 130
Hexachlorobenzene	1.98	1.90		ug/L		96	70 - 130
Hexachlorocyclopentadiene	1.98	2.12		ug/L		107	70 - 130
Indeno[1,2,3-cd]pyrene	1.98	2.20		ug/L		111	70 - 130
Isophorone	1.98	2.14		ug/L		108	70 - 130
Lindane	1.98	2.10		ug/L		106	70 - 130
Malathion	1.98	2.24		ug/L		113	70 - 130
Methoxychlor	1.98	2.12		ug/L		107	70 - 130
Metolachlor	1.98	2.21		ug/L		112	70 - 130
Molinate	1.98	2.09		ug/L		106	70 - 130
Naphthalene	1.98	1.93		ug/L		97	70 - 130
Parathion	1.98	2.13		ug/L		107	70 - 130
Pendimethalin (Penoxaline)	1.98	2.00		ug/L		101	70 - 130
Phenanthrene	1.98	1.95		ug/L		98	70 - 130
Propachlor	1.98	2.16		ug/L		109	70 - 130
Pyrene	1.98	2.14		ug/L		108	70 - 130
Simazine	1.98	2.25		ug/L		114	70 - 130
Terbacil	1.98	2.17		ug/L		109	70 - 130
Terbuthylazine	1.98	2.25		ug/L		114	70 - 130
Thiobencarb	1.98	2.30		ug/L		116	70 - 130
trans-Nonachlor	1.98	2.02		ug/L		102	70 - 130
Trifluralin	1.98	1.91		ug/L		96	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Nitro-m-xylene	*97*		*70 - 130*
Perylene-d12	*101*		*70 - 130*
Triphenylphosphate	*103*		*70 - 130*

Lab Sample ID: MRL 380-86272/22-A
Matrix: Water
Analysis Batch: 86505

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 86272

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0995	0.110		ug/L		110	50 - 150
2,4'-DDD	0.0995	0.117		ug/L		117	50 - 150
2,4'-DDE	0.0995	0.105		ug/L		105	50 - 150
2,4'-DDT	0.0995	0.0987	J	ug/L		99	50 - 150
2,4-Dinitrotoluene	0.0995	0.103		ug/L		103	50 - 150
2,6-Dinitrotoluene	0.0995	0.111		ug/L		111	50 - 150
2-Methylnaphthalene	0.0995	0.105		ug/L		105	50 - 150
4,4'-DDD	0.0995	0.102		ug/L		103	50 - 150
4,4'-DDE	0.0995	0.0949	J	ug/L		95	50 - 150
4,4'-DDT	0.0995	0.118		ug/L		118	50 - 150
Acenaphthene	0.0995	0.0973	J	ug/L		98	50 - 150
Acenaphthylene	0.0995	0.100		ug/L		101	50 - 150
Acetochlor	0.0497	0.0578	J	ug/L		116	50 - 150

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

Lab Sample ID: MRL 380-86272/22-A
Matrix: Water
Analysis Batch: 86505

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 86272

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Alachlor	0.0497	0.0564		ug/L		113	50 - 150
alpha-BHC	0.0995	0.109		ug/L		110	50 - 150
alpha-Chlordane	0.0249	<0.029		ug/L		88	50 - 150
Anthracene	0.0199	0.0194	J	ug/L		98	50 - 150
Atrazine	0.0497	0.0514		ug/L		103	50 - 150
Benz(a)anthracene	0.0497	0.0523		ug/L		105	50 - 150
Benzo[a]pyrene	0.0199	0.0165	J	ug/L		83	50 - 150
Benzo[b]fluoranthene	0.0199	0.0191	J	ug/L		96	50 - 150
Benzo[g,h,i]perylene	0.0497	0.0437	J	ug/L		88	50 - 150
Benzo[k]fluoranthene	0.0199	0.0182	J	ug/L		92	50 - 150
beta-BHC	0.0995	0.113		ug/L		113	50 - 150
Bis(2-ethylhexyl) phthalate	0.597	0.657		ug/L		110	50 - 150
Bromacil	0.0995	0.114		ug/L		114	50 - 150
Butachlor	0.0497	0.0537		ug/L		108	50 - 150
Butylbenzylphthalate	0.149	0.161	J	ug/L		108	50 - 150
Chlorobenzilate	0.0995	0.103		ug/L		104	50 - 150
Chloroneb	0.0995	0.101		ug/L		101	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0995	0.128		ug/L		129	50 - 150
Chlorpyrifos	0.0497	0.0532		ug/L		107	50 - 150
Chrysene	0.0199	0.0221		ug/L		111	50 - 150
delta-BHC	0.0995	0.121		ug/L		122	50 - 150
Di(2-ethylhexyl)adipate	0.298	0.347	J	ug/L		116	50 - 150
Dibenz(a,h)anthracene	0.0497	0.0419	J	ug/L		84	50 - 150
Diclorvos (DDVP)	0.0497	0.0725		ug/L		146	50 - 150
Dieldrin	0.0995	0.104	J	ug/L		104	50 - 150
Diethylphthalate	0.149	0.167	J	ug/L		112	50 - 150
Dimethylphthalate	0.298	0.322	J	ug/L		108	50 - 150
Di-n-butyl phthalate	0.298	0.365	J	ug/L		122	49 - 243
Di-n-octyl phthalate	0.0995	0.0992		ug/L		100	50 - 150
Endosulfan I (Alpha)	0.0995	0.107		ug/L		107	50 - 150
Endosulfan II (Beta)	0.0995	0.119		ug/L		119	50 - 150
Endosulfan sulfate	0.0995	0.0991		ug/L		100	50 - 150
Endrin	0.0995	0.113		ug/L		113	50 - 150
Endrin aldehyde	0.0995	<0.084		ug/L		76	50 - 150
EPTC	0.0995	0.111		ug/L		112	50 - 150
Fluoranthene	0.0497	0.0518	J	ug/L		104	50 - 150
Fluorene	0.0497	0.0514		ug/L		103	50 - 150
gamma-Chlordane	0.0249	0.0253	J	ug/L		102	50 - 150
Heptachlor	0.0398	0.0527		ug/L		133	50 - 150
Heptachlor epoxide (isomer B)	0.0497	0.0559		ug/L		112	50 - 150
Hexachlorobenzene	0.0497	0.0487	J	ug/L		98	50 - 150
Hexachlorocyclopentadiene	0.0497	0.0537		ug/L		108	50 - 150
Indeno[1,2,3-cd]pyrene	0.0497	0.0417	J	ug/L		84	50 - 150
Isophorone	0.0995	0.115	J	ug/L		116	50 - 150
Lindane	0.0398	0.0430		ug/L		108	50 - 150
Malathion	0.0995	0.105		ug/L		105	50 - 150
Methoxychlor	0.0995	0.108		ug/L		108	50 - 150
Metolachlor	0.0497	0.0612		ug/L		123	50 - 150
Molinate	0.0995	0.120		ug/L		120	50 - 150

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

Lab Sample ID: MRL 380-86272/22-A
Matrix: Water
Analysis Batch: 86505

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 86272

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Naphthalene	0.0995	0.103	J	ug/L		104	50 - 150
Parathion	0.0995	0.0984	J	ug/L		99	50 - 150
Pendimethalin (Penoxaline)	0.0995	0.0935	J	ug/L		94	50 - 150
Phenanthrene	0.0199	0.0210	J	ug/L		106	50 - 150
Propachlor	0.0497	0.0559		ug/L		112	50 - 150
Pyrene	0.0497	0.0533		ug/L		107	50 - 150
Simazine	0.0497	0.0481	J	ug/L		97	50 - 150
Terbacil	0.0995	0.116		ug/L		117	50 - 150
Terbuthylazine	0.0995	0.111		ug/L		111	50 - 150
Thiobencarb	0.0995	0.121	J	ug/L		122	50 - 150
trans-Nonachlor	0.0249	<0.026		ug/L		103	50 - 150
Trifluralin	0.0995	0.104		ug/L		105	50 - 150

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

Lab Sample ID: 380-90733-1 MS
Matrix: Drinking Water
Analysis Batch: 86505

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 86272

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.098		1.96	1.99		ug/L		102	70 - 130
2,4'-DDD	<0.098		1.96	2.17		ug/L		111	70 - 130
2,4'-DDE	<0.098		1.96	2.00		ug/L		102	70 - 130
2,4'-DDT	<0.098		1.96	2.07		ug/L		106	70 - 130
2,4-Dinitrotoluene	<0.098		1.96	1.83		ug/L		93	70 - 130
2,6-Dinitrotoluene	<0.098		1.96	1.85		ug/L		95	70 - 130
2-Methylnaphthalene	<0.098		1.96	2.00		ug/L		102	70 - 130
4,4'-DDD	<0.098		1.96	2.14		ug/L		110	70 - 130
4,4'-DDE	<0.098		1.96	1.90		ug/L		97	70 - 130
4,4'-DDT	<0.098		1.96	1.87		ug/L		95	70 - 130
Acenaphthene	<0.098		1.96	1.88		ug/L		96	70 - 130
Acenaphthylene	<0.098		1.96	1.92		ug/L		98	70 - 130
Acetochlor	<0.098		1.96	2.17		ug/L		111	70 - 130
Alachlor	<0.049		1.96	2.14		ug/L		109	70 - 130
alpha-BHC	<0.098		1.96	2.04		ug/L		104	70 - 130
alpha-Chlordane	<0.049		1.96	1.96		ug/L		100	70 - 130
Anthracene	<0.020	F1	1.96	0.556	F1	ug/L		28	70 - 130
Atrazine	<0.049		1.96	2.19		ug/L		112	70 - 130
Benz(a)anthracene	<0.049		1.96	1.57		ug/L		80	70 - 130
Benzo[a]pyrene	<0.020	F1	1.96	1.32	F1	ug/L		67	70 - 130
Benzo[b]fluoranthene	<0.020		1.96	2.06		ug/L		105	70 - 130
Benzo[g,h,i]perylene	<0.049		1.96	2.09		ug/L		107	70 - 130
Benzo[k]fluoranthene	<0.020		1.96	2.18		ug/L		111	70 - 130
beta-BHC	<0.098		1.96	2.09		ug/L		107	70 - 130
Bis(2-ethylhexyl) phthalate	<0.59		1.96	1.85		ug/L		95	70 - 130

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

Lab Sample ID: 380-90733-1 MS
Matrix: Drinking Water
Analysis Batch: 86505

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 86272

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Bromacil	<0.098		1.96	2.41		ug/L		123	70 - 130
Butachlor	<0.049		1.96	2.27		ug/L		116	70 - 130
Butylbenzylphthalate	<0.49		1.96	2.32		ug/L		119	70 - 130
Chlorobenzilate	<0.098		1.96	2.24		ug/L		115	70 - 130
Chloroneb	<0.098		1.96	2.00		ug/L		102	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.098		1.96	2.17		ug/L		111	70 - 130
Chlorpyrifos	<0.049		1.96	2.22		ug/L		114	70 - 130
Chrysene	<0.020		1.96	2.05		ug/L		105	70 - 130
delta-BHC	<0.098		1.96	2.04		ug/L		104	70 - 130
Di(2-ethylhexyl)adipate	<0.59		1.96	2.11		ug/L		108	70 - 130
Dibenz(a,h)anthracene	<0.049		1.96	2.14		ug/L		109	70 - 130
Diclorvos (DDVP)	<0.049		1.96	2.21		ug/L		113	70 - 130
Dieldrin	<0.20		1.96	2.01		ug/L		103	70 - 130
Diethylphthalate	<0.49		1.96	2.09		ug/L		107	70 - 130
Dimethylphthalate	<0.49		1.96	2.09		ug/L		107	70 - 130
Di-n-butyl phthalate	<0.98		3.91	4.42		ug/L		111	70 - 130
Di-n-octyl phthalate	<0.098		1.96	1.62		ug/L		83	70 - 130
Endosulfan I (Alpha)	<0.098		1.96	2.05		ug/L		105	70 - 130
Endosulfan II (Beta)	<0.098		1.96	2.20		ug/L		113	70 - 130
Endosulfan sulfate	<0.098		1.96	2.19		ug/L		112	70 - 130
Endrin	<0.098		1.96	2.16		ug/L		111	70 - 130
Endrin aldehyde	<0.098		1.96	1.96		ug/L		100	60 - 130
EPTC	<0.098		1.96	2.36		ug/L		121	70 - 130
Fluoranthene	<0.098		1.96	2.08		ug/L		106	70 - 130
Fluorene	<0.049		1.96	2.00		ug/L		102	70 - 130
gamma-Chlordane	<0.049		1.96	2.04		ug/L		104	70 - 130
Heptachlor	<0.039		1.96	2.14		ug/L		110	70 - 130
Heptachlor epoxide (isomer B)	<0.049		1.96	2.10		ug/L		107	70 - 130
Hexachlorobenzene	<0.049		1.96	1.86		ug/L		95	70 - 130
Hexachlorocyclopentadiene	<0.049		1.96	2.01		ug/L		103	70 - 130
Indeno[1,2,3-cd]pyrene	<0.049		1.96	2.08		ug/L		106	70 - 130
Isophorone	<0.49		1.96	2.04		ug/L		105	70 - 130
Lindane	<0.039		1.96	2.09		ug/L		107	70 - 130
Malathion	<0.098		1.96	2.23		ug/L		114	70 - 130
Methoxychlor	<0.098		1.96	2.17		ug/L		111	70 - 130
Metolachlor	<0.049		1.96	2.22		ug/L		114	70 - 130
Molinate	<0.098		1.96	2.03		ug/L		104	70 - 130
Naphthalene	<0.29		1.96	1.88		ug/L		96	70 - 130
Parathion	<0.098		1.96	2.08		ug/L		106	70 - 130
Pendimethalin (Penoxaline)	<0.098		1.96	1.95		ug/L		100	70 - 130
Phenanthrene	<0.039		1.96	1.91		ug/L		97	70 - 130
Propachlor	<0.049		1.96	2.17		ug/L		111	70 - 130
Pyrene	<0.049		1.96	2.06		ug/L		105	70 - 130
Simazine	<0.049		1.96	2.21		ug/L		113	70 - 130
Terbacil	<0.098		1.96	2.25		ug/L		115	70 - 130
Terbuthylazine	<0.098		1.96	2.23		ug/L		114	70 - 130
Thiobencarb	<0.20		1.96	2.32		ug/L		118	70 - 130
trans-Nonachlor	<0.049		1.96	1.97		ug/L		101	70 - 130
Trifluralin	<0.098		1.96	1.91		ug/L		97	70 - 130

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

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Nitro-m-xylene	96		70 - 130
Perylene-d12	97		70 - 130
Triphenylphosphate	108		70 - 130

Lab Sample ID: 380-90728-B-1-A DU
Matrix: Water
Analysis Batch: 86505

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 86272

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
1-Methylnaphthalene	<0.097			<0.098		ug/L				NC	20
2,4'-DDD	<0.097			<0.098		ug/L				NC	20
2,4'-DDE	<0.097			<0.098		ug/L				NC	20
2,4'-DDT	<0.097			<0.098		ug/L				NC	20
2,4-Dinitrotoluene	<0.097			<0.098		ug/L				NC	20
2,6-Dinitrotoluene	<0.097			<0.098		ug/L				NC	20
2-Methylnaphthalene	<0.097			<0.098		ug/L				NC	20
4,4'-DDD	<0.097			<0.098		ug/L				NC	20
4,4'-DDE	<0.097			<0.098		ug/L				NC	20
4,4'-DDT	<0.097			<0.098		ug/L				NC	20
Acenaphthene	<0.097			<0.098		ug/L				NC	20
Acenaphthylene	<0.097			<0.098		ug/L				NC	20
Acetochlor	<0.097			<0.098		ug/L				NC	20
Alachlor	<0.049			<0.049		ug/L				NC	20
alpha-BHC	<0.097			<0.098		ug/L				NC	20
alpha-Chlordane	<0.049			<0.049		ug/L				NC	20
Anthracene	<0.019			<0.020		ug/L				NC	20
Atrazine	<0.049			<0.049		ug/L				NC	20
Benz(a)anthracene	<0.049			<0.049		ug/L				NC	20
Benzo[a]pyrene	<0.019			<0.020		ug/L				NC	20
Benzo[b]fluoranthene	<0.019			<0.020		ug/L				NC	20
Benzo[g,h,i]perylene	<0.049			<0.049		ug/L				NC	20
Benzo[k]fluoranthene	<0.019			<0.020		ug/L				NC	20
beta-BHC	<0.097			<0.098		ug/L				NC	20
Bis(2-ethylhexyl) phthalate	<0.58			<0.59		ug/L				NC	20
Bromacil	<0.097			<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	<0.097			<0.098		ug/L				NC	20
Chloroneb	<0.097			<0.098		ug/L				NC	20
Chlorothalonil (Draconil, Bravo)	<0.097			<0.098		ug/L				NC	20
Chlorpyrifos	<0.049			<0.049		ug/L				NC	20
Chrysene	<0.019			<0.020		ug/L				NC	20
delta-BHC	<0.097			<0.098		ug/L				NC	20
Di(2-ethylhexyl)adipate	<0.58			<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	<0.19			<0.20		ug/L				NC	20
Diethylphthalate	<0.49			<0.49		ug/L				NC	20
Dimethylphthalate	<0.49			<0.49		ug/L				NC	20
Di-n-butyl phthalate	<0.97			<0.98		ug/L				NC	20
Di-n-octyl phthalate	<0.097			<0.098		ug/L				NC	20

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

Lab Sample ID: 380-90728-B-1-A DU
Matrix: Water
Analysis Batch: 86505

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 86272

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Endosulfan I (Alpha)	<0.097			<0.098		ug/L				NC	20
Endosulfan II (Beta)	<0.097			<0.098		ug/L				NC	20
Endosulfan sulfate	<0.097			<0.098		ug/L				NC	20
Endrin	<0.097			<0.098		ug/L				NC	20
Endrin aldehyde	<0.097			<0.098		ug/L				NC	20
EPTC	<0.097			<0.098		ug/L				NC	20
Fluoranthene	<0.097			<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	<0.097			<0.098		ug/L				NC	20
Methoxychlor	<0.097			<0.098		ug/L				NC	20
Metolachlor	<0.049			<0.049		ug/L				NC	20
Molinate	<0.097			<0.098		ug/L				NC	20
Naphthalene	<0.29			<0.29		ug/L				NC	20
Parathion	<0.097			<0.098		ug/L				NC	20
Pendimethalin (Penoxaline)	<0.097			<0.098		ug/L				NC	20
Phenanthrene	<0.039			<0.039		ug/L				NC	20
Propachlor	<0.049			<0.049		ug/L				NC	20
Pyrene	<0.049			<0.049		ug/L				NC	20
Simazine	<0.049			<0.049		ug/L				NC	20
Terbacil	<0.097			<0.098		ug/L				NC	20
Terbuthylazine	<0.097			<0.098		ug/L				NC	20
Thiobencarb	<0.19			<0.20		ug/L				NC	20
Total Permethrin (mixed isomers)	<0.19			<0.20		ug/L				NC	20
trans-Nonachlor	<0.049			<0.049		ug/L				NC	20
Trifluralin	<0.097			<0.098		ug/L				NC	20

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
2-Nitro-m-xylene	*97*		*70 - 130*
Perylene-d12	*96*		*70 - 130*
Triphenylphosphate	*108*		*70 - 130*

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

Lab Sample ID: MBL 380-85405/20-A
Matrix: Water
Analysis Batch: 85506

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 85405

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		04/11/24 05:19	04/11/24 14:55	1

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

Lab Sample ID: MBL 380-85405/20-A
Matrix: Water
Analysis Batch: 85506

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 85405

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		04/11/24 05:19	04/11/24 14:55	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*78*		*50 - 200*	*04/11/24 05:19*	*04/11/24 14:55*	*1*
13C6 PFDA	*88*		*50 - 200*	*04/11/24 05:19*	*04/11/24 14:55*	*1*
13C5 PFHxA	*81*		*50 - 200*	*04/11/24 05:19*	*04/11/24 14:55*	*1*
13C4 PFHpA	*87*		*50 - 200*	*04/11/24 05:19*	*04/11/24 14:55*	*1*
13C8 PFOA	*88*		*50 - 200*	*04/11/24 05:19*	*04/11/24 14:55*	*1*
13C9 PFNA	*88*		*50 - 200*	*04/11/24 05:19*	*04/11/24 14:55*	*1*
13C7 PFUnA	*91*		*50 - 200*	*04/11/24 05:19*	*04/11/24 14:55*	*1*
13C2 PFDoA	*87*		*50 - 200*	*04/11/24 05:19*	*04/11/24 14:55*	*1*
13C4 PFBA	*88*		*50 - 200*	*04/11/24 05:19*	*04/11/24 14:55*	*1*
13C5 PFPeA	*93*		*50 - 200*	*04/11/24 05:19*	*04/11/24 14:55*	*1*
13C3 PFBS	*88*		*50 - 200*	*04/11/24 05:19*	*04/11/24 14:55*	*1*
13C3 PFHxS	*90*		*50 - 200*	*04/11/24 05:19*	*04/11/24 14:55*	*1*
13C8 PFOS	*90*		*50 - 200*	*04/11/24 05:19*	*04/11/24 14:55*	*1*
13C2-4:2-FTS	*101*		*50 - 200*	*04/11/24 05:19*	*04/11/24 14:55*	*1*

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

Lab Sample ID: MBL 380-85405/20-A
Matrix: Water
Analysis Batch: 85506

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 85405

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-6:2-FTS	92		50 - 200	04/11/24 05:19	04/11/24 14:55	1
13C2-8:2-FTS	87		50 - 200	04/11/24 05:19	04/11/24 14:55	1

Lab Sample ID: LCS 380-85405/22-A
Matrix: Water
Analysis Batch: 85506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 85405

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.0	54.1		ng/L		90	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.0	53.7		ng/L		89	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.0	53.3		ng/L		89	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.0	58.9		ng/L		98	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.0	57.6		ng/L		96	70 - 130
Perfluorodecanoic acid (PFDA)	60.0	54.1		ng/L		90	70 - 130
Perfluorododecanoic acid (PFDoA)	60.0	58.4		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.0	55.0		ng/L		92	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.0	55.0		ng/L		92	70 - 130
Perfluorohexanoic acid (PFHxA)	60.0	56.8		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	60.0	56.5		ng/L		94	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.0	54.5		ng/L		91	70 - 130
Perfluorooctanoic acid (PFOA)	60.0	56.7		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.0	54.5		ng/L		91	70 - 130
Perfluorobutanoic acid (PFBA)	60.0	55.2		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.0	56.5		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.0	58.1		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.0	56.3		ng/L		94	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.0	60.0		ng/L		100	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.0	52.2		ng/L		87	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.0	58.5		ng/L		98	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.0	55.7		ng/L		93	70 - 130
Perfluoropentanoic acid (PFPeA)	60.0	56.5		ng/L		94	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.0	56.0		ng/L		93	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.0	55.8		ng/L		93	70 - 130

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

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C3 HFPO-DA	85		50 - 200
13C6 PFDA	91		50 - 200
13C5 PFHxA	86		50 - 200
13C4 PFHpA	91		50 - 200
13C8 PFOA	90		50 - 200
13C9 PFNA	91		50 - 200
13C7 PFUnA	92		50 - 200
13C2 PFDoA	91		50 - 200
13C4 PFBA	88		50 - 200
13C5 PFPeA	96		50 - 200
13C3 PFBS	91		50 - 200
13C3 PFHxS	91		50 - 200
13C8 PFOS	91		50 - 200
13C2-4:2-FTS	105		50 - 200
13C2-6:2-FTS	99		50 - 200
13C2-8:2-FTS	89		50 - 200

Lab Sample ID: MRL 380-85405/21-A
Matrix: Water
Analysis Batch: 85506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 85405

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.90	J	ng/L		95	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.94	J	ng/L		97	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.06	J	ng/L		103	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.13	J	ng/L		106	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.08	J	ng/L		104	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.13	J	ng/L		107	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.21	J	ng/L		110	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.04	J	ng/L		102	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.24	J	ng/L		112	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.01	J	ng/L		100	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.11	J	ng/L		105	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.07	J	ng/L		103	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	1.95	J	ng/L		97	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.24	J	ng/L		112	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.17	J	ng/L		109	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.23	J	ng/L		111	50 - 150

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

Lab Sample ID: MRL 380-85405/21-A
Matrix: Water
Analysis Batch: 85506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 85405

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)			2.00	2.27	J	ng/L		113	50 - 150		
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)			2.00	1.96	J	ng/L		98	50 - 150		
Perfluoro-3-methoxypropanoic acid (PFMPA)			2.00	1.98	J	ng/L		99	50 - 150		
Perfluoro-4-methoxybutanoic acid (PFMBA)			2.00	1.99	J	ng/L		99	50 - 150		
Perfluoropentanoic acid (PFPeA)			2.00	2.14	J	ng/L		107	50 - 150		
Perfluoroheptanesulfonic acid (PFHpS)			2.00	2.02	J	ng/L		101	50 - 150		
Perfluoropentanesulfonic acid (PFPeS)			2.00	1.98	J	ng/L		99	50 - 150		

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*79*		*50 - 200*
13C6 PFDA	*88*		*50 - 200*
13C5 PFHxA	*81*		*50 - 200*
13C4 PFHpA	*84*		*50 - 200*
13C8 PFOA	*87*		*50 - 200*
13C9 PFNA	*87*		*50 - 200*
13C7 PFUnA	*87*		*50 - 200*
13C2 PFDoA	*87*		*50 - 200*
13C4 PFBA	*86*		*50 - 200*
13C5 PFPeA	*91*		*50 - 200*
13C3 PFBS	*89*		*50 - 200*
13C3 PFHxS	*88*		*50 - 200*
13C8 PFOS	*90*		*50 - 200*
13C2-4:2-FTS	*102*		*50 - 200*
13C2-6:2-FTS	*94*		*50 - 200*
13C2-8:2-FTS	*87*		*50 - 200*

Lab Sample ID: 380-90733-G-2-A MS
Matrix: Drinking Water
Analysis Batch: 85506

Client Sample ID: 380-90733-G-2-A MS
Prep Type: Total/NA
Prep Batch: 85405

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		60.4	54.3		ng/L		90	70 - 130		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	51.9		ng/L		86	70 - 130		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	52.6		ng/L		87	70 - 130		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.4	59.7		ng/L		99	70 - 130		
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.4	57.5		ng/L		93	70 - 130		
Perfluorodecanoic acid (PFDA)	<2.0		60.4	54.7		ng/L		91	70 - 130		
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	56.9		ng/L		94	70 - 130		

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

Lab Sample ID: 380-90733-G-2-A MS
Matrix: Drinking Water
Analysis Batch: 85506

Client Sample ID: 380-90733-G-2-A MS
Prep Type: Total/NA
Prep Batch: 85405

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	58.0		ng/L		94	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	2.4		60.4	59.8		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	2.0		60.4	59.4		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.4	58.6		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	2.4		60.4	56.5		ng/L		90	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.4	59.6		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	55.7		ng/L		92	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.4	56.0		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	59.8		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	58.0		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	58.5		ng/L		97	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.4	60.1		ng/L		100	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.4	54.0		ng/L		89	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	57.7		ng/L		96	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	55.3		ng/L		92	70 - 130
Perfluoropentanoic acid (PFPeA)	2.2		60.4	58.5		ng/L		93	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	55.5		ng/L		92	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	57.5		ng/L		95	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*80*		*50 - 200*
13C6 PFDA	*91*		*50 - 200*
13C5 PFHxA	*80*		*50 - 200*
13C4 PFHpA	*84*		*50 - 200*
13C8 PFOA	*84*		*50 - 200*
13C9 PFNA	*86*		*50 - 200*
13C7 PFUnA	*89*		*50 - 200*
13C2 PFDoA	*88*		*50 - 200*
13C4 PFBA	*86*		*50 - 200*
13C5 PFPeA	*96*		*50 - 200*
13C3 PFBS	*94*		*50 - 200*
13C3 PFHxS	*93*		*50 - 200*
13C8 PFOS	*95*		*50 - 200*
13C2-4:2-FTS	*116*		*50 - 200*
13C2-6:2-FTS	*104*		*50 - 200*
13C2-8:2-FTS	*92*		*50 - 200*

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

Lab Sample ID: 380-90733-H-2-A MSD
Matrix: Drinking Water
Analysis Batch: 85506

Client Sample ID: 380-90733-H-2-A MSD
Prep Type: Total/NA
Prep Batch: 85405

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		60.6	54.2		ng/L		89	70 - 130	0	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.6	54.7		ng/L		90	70 - 130	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.6	52.4		ng/L		86	70 - 130	0	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.6	60.1		ng/L		99	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.6	59.2		ng/L		95	70 - 130	3	30
Perfluorodecanoic acid (PFDA)	<2.0		60.6	56.8		ng/L		94	70 - 130	4	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.6	57.3		ng/L		95	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.6	60.6		ng/L		98	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	2.4		60.6	63.0		ng/L		100	70 - 130	5	30
Perfluorohexanoic acid (PFHxA)	2.0		60.6	60.8		ng/L		97	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		60.6	58.6		ng/L		97	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	2.4		60.6	58.6		ng/L		93	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	<2.0		60.6	59.9		ng/L		96	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.6	59.1		ng/L		98	70 - 130	6	30
Perfluorobutanoic acid (PFBA)	<2.0		60.6	56.9		ng/L		93	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.6	59.3		ng/L		98	70 - 130	1	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.6	57.5		ng/L		95	70 - 130	1	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.6	59.1		ng/L		97	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.6	58.1		ng/L		96	70 - 130	3	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.6	53.7		ng/L		89	70 - 130	0	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.6	56.9		ng/L		94	70 - 130	1	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.6	54.8		ng/L		90	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	2.2		60.6	60.9		ng/L		97	70 - 130	4	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.6	57.7		ng/L		95	70 - 130	4	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.6	59.2		ng/L		98	70 - 130	3	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C3 HFPO-DA	*73*		*50 - 200*
13C6 PFDA	*88*		*50 - 200*
13C5 PFHxA	*75*		*50 - 200*
13C4 PFHpA	*79*		*50 - 200*
13C8 PFOA	*83*		*50 - 200*
13C9 PFNA	*87*		*50 - 200*

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

Lab Sample ID: 380-90733-H-2-A MSD
Matrix: Drinking Water
Analysis Batch: 85506

Client Sample ID: 380-90733-H-2-A MSD
Prep Type: Total/NA
Prep Batch: 85405

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C7 PFUnA	88		50 - 200
13C2 PFDoA	89		50 - 200
13C4 PFBA	78		50 - 200
13C5 PFPeA	85		50 - 200
13C3 PFBS	92		50 - 200
13C3 PFHxS	89		50 - 200
13C8 PFOS	91		50 - 200
13C2-4:2-FTS	115		50 - 200
13C2-6:2-FTS	101		50 - 200
13C2-8:2-FTS	91		50 - 200

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

Lab Sample ID: MBL 380-85410/21-A
Matrix: Water
Analysis Batch: 85521

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 85410

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		04/11/24 06:45	04/12/24 00:59	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		04/11/24 06:45	04/12/24 00:59	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		04/11/24 06:45	04/12/24 00:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0		ng/L		04/11/24 06:45	04/12/24 00:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0		ng/L		04/11/24 06:45	04/12/24 00:59	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		04/11/24 06:45	04/12/24 00:59	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		04/11/24 06:45	04/12/24 00:59	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		04/11/24 06:45	04/12/24 00:59	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		04/11/24 06:45	04/12/24 00:59	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		04/11/24 06:45	04/12/24 00:59	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		04/11/24 06:45	04/12/24 00:59	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		04/11/24 06:45	04/12/24 00:59	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		04/11/24 06:45	04/12/24 00:59	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0		ng/L		04/11/24 06:45	04/12/24 00:59	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0		ng/L		04/11/24 06:45	04/12/24 00:59	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		04/11/24 06:45	04/12/24 00:59	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		04/11/24 06:45	04/12/24 00:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		04/11/24 06:45	04/12/24 00:59	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	99		70 - 130	04/11/24 06:45	04/12/24 00:59	1
13C2 PFHxA	101		70 - 130	04/11/24 06:45	04/12/24 00:59	1
13C2 PFDA	102		70 - 130	04/11/24 06:45	04/12/24 00:59	1
13C3-GenX	96		70 - 130	04/11/24 06:45	04/12/24 00:59	1

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

Lab Sample ID: LCS 380-85410/23-A
Matrix: Water
Analysis Batch: 85521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 85410

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	50.9		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	50.1	54.7		ng/L		109	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.1	52.0		ng/L		104	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	53.7		ng/L		107	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	49.8		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	50.1	54.9		ng/L		110	70 - 130
Perfluorododecanoic acid (PFDoA)	50.1	54.1		ng/L		108	70 - 130
Perfluorooctanoic acid (PFOA)	50.1	54.7		ng/L		109	70 - 130
Perfluorodecanoic acid (PFDA)	50.1	55.7		ng/L		111	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.1	58.9		ng/L		118	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.1	49.2		ng/L		98	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	55.5		ng/L		111	70 - 130
Perfluorononanoic acid (PFNA)	50.1	53.0		ng/L		106	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.1	54.7		ng/L		109	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.1	55.3		ng/L		110	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	50.1	57.7		ng/L		115	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.1	54.8		ng/L		109	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.1	55.1		ng/L		110	70 - 130

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

Lab Sample ID: MRL 380-85410/22-A
Matrix: Water
Analysis Batch: 85521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 85410

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.13	J	ng/L		106	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.44	J	ng/L		122	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.34	J	ng/L		116	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	2.30	J	ng/L		115	50 - 150

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

Lab Sample ID: MRL 380-85410/22-A
Matrix: Water
Analysis Batch: 85521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 85410

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	2.23	J	ng/L		111	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.31	J	ng/L		115	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.42	J	ng/L		121	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.46	J	ng/L		123	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.44	J	ng/L		122	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.37	J	ng/L		118	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.19	J	ng/L		109	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.42	J	ng/L		120	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.49	J	ng/L		124	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	2.45	J	ng/L		122	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.01	2.52	J	ng/L		126	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.38	J	ng/L		119	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.30	J	ng/L		115	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.41	J	ng/L		120	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
d5-NEtFOSAA	*103*		*70 - 130*
13C2 PFHxA	*103*		*70 - 130*
13C2 PFDA	*110*		*70 - 130*
13C3-GenX	*99*		*70 - 130*

Lab Sample ID: 380-90728-D-2-A LMS
Matrix: Water
Analysis Batch: 85521

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 85410

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	2.08		ng/L		103	50 - 150
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.01	2.70		ng/L		134	50 - 150
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.28		ng/L		113	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.01	2.40		ng/L		119	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.01	2.18		ng/L		108	50 - 150
Perfluorohexanoic acid (PFHxA)	<2.0		2.01	2.95		ng/L		114	50 - 150
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.42		ng/L		120	50 - 150
Perfluorooctanoic acid (PFOA)	<2.0		2.01	2.83		ng/L		113	50 - 150
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.36		ng/L		117	50 - 150

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

Lab Sample ID: 380-90728-D-2-A LMS
Matrix: Water
Analysis Batch: 85521

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 85410

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.01	3.22		ng/L		125	50 - 150
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.01	2.78		ng/L		138	50 - 150
Perfluoroheptanoic acid (PFHpA)	<2.0		2.01	2.66		ng/L		132	50 - 150
Perfluorononanoic acid (PFNA)	<2.0		2.01	2.38		ng/L		118	50 - 150
Perfluorotetradecanoic acid (PFTA)	<2.0		2.01	2.39		ng/L		119	50 - 150
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.01	2.31		ng/L		115	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.01	2.46		ng/L		122	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.01	2.30		ng/L		114	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	2.51		ng/L		125	50 - 150

Surrogate	*LMS %Recovery*	*LMS Qualifier*	*Limits*
d5-NEtFOSAA	*101*		*70 - 130*
13C2 PFHxA	*104*		*70 - 130*
13C2 PFDA	*108*		*70 - 130*
13C3-GenX	*102*		*70 - 130*

Lab Sample ID: 380-90728-E-2-A LMSD
Matrix: Water
Analysis Batch: 85521

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 85410

Analyte	Sample Result	Sample Qualifier	Spike Added	LMSD Result	LMSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	2.15		ng/L		107	50 - 150	4	50
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.01	2.69		ng/L		133	50 - 150	0	50
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.30		ng/L		114	50 - 150	1	50
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.01	2.43		ng/L		121	50 - 150	1	50
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.01	2.25		ng/L		112	50 - 150	3	50
Perfluorohexanoic acid (PFHxA)	<2.0		2.01	3.06		ng/L		120	50 - 150	4	50
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.38		ng/L		118	50 - 150	2	50
Perfluorooctanoic acid (PFOA)	<2.0		2.01	2.93		ng/L		118	50 - 150	4	50
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.41		ng/L		120	50 - 150	2	50
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.01	2.95		ng/L		111	50 - 150	9	50
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.01	2.61		ng/L		129	50 - 150	6	50
Perfluoroheptanoic acid (PFHpA)	<2.0		2.01	2.69		ng/L		134	50 - 150	1	50
Perfluorononanoic acid (PFNA)	<2.0		2.01	2.43		ng/L		121	50 - 150	2	50
Perfluorotetradecanoic acid (PFTA)	<2.0		2.01	2.37		ng/L		118	50 - 150	1	50

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

Lab Sample ID: 380-90728-E-2-A LMSD
Matrix: Water
Analysis Batch: 85521

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 85410

Analyte	Sample Result	Sample Qualifier	Spike Added	LMSD Result	LMSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.01	2.40		ng/L		119	50 - 150	4	50
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.01	2.39		ng/L		119	50 - 150	3	50
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.01	2.31		ng/L		115	50 - 150	1	50
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	2.52		ng/L		125	50 - 150	0	50

Surrogate	*LMSD %Recovery*	*LMSD Qualifier*	*Limits*
d5-NEtFOSAA	*108*		*70 - 130*
13C2 PFHxA	*115*		*70 - 130*
13C2 PFDA	*111*		*70 - 130*
13C3-GenX	*106*		*70 - 130*

Lab Sample ID: MBL 380-85577/21-A
Matrix: Water
Analysis Batch: 85707

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 85577

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		04/12/24 06:53	04/12/24 15:36	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		04/12/24 06:53	04/12/24 15:36	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		04/12/24 06:53	04/12/24 15:36	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0		ng/L		04/12/24 06:53	04/12/24 15:36	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0		ng/L		04/12/24 06:53	04/12/24 15:36	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		04/12/24 06:53	04/12/24 15:36	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		04/12/24 06:53	04/12/24 15:36	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		04/12/24 06:53	04/12/24 15:36	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		04/12/24 06:53	04/12/24 15:36	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		04/12/24 06:53	04/12/24 15:36	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		04/12/24 06:53	04/12/24 15:36	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		04/12/24 06:53	04/12/24 15:36	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		04/12/24 06:53	04/12/24 15:36	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0		ng/L		04/12/24 06:53	04/12/24 15:36	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0		ng/L		04/12/24 06:53	04/12/24 15:36	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		04/12/24 06:53	04/12/24 15:36	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		04/12/24 06:53	04/12/24 15:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		04/12/24 06:53	04/12/24 15:36	1

Surrogate	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*99*		*70 - 130*	*04/12/24 06:53*	*04/12/24 15:36*	*1*
13C2 PFHxA	*106*		*70 - 130*	*04/12/24 06:53*	*04/12/24 15:36*	*1*
13C2 PFDA	*96*		*70 - 130*	*04/12/24 06:53*	*04/12/24 15:36*	*1*

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

Lab Sample ID: MBL 380-85577/21-A
Matrix: Water
Analysis Batch: 85707

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 85577

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	99		70 - 130	04/12/24 06:53	04/12/24 15:36	1

Lab Sample ID: LCS 380-85577/23-A
Matrix: Water
Analysis Batch: 85707

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 85577

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	24.8		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.1	27.5		ng/L		110	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	25.3		ng/L		101	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	26.4		ng/L		105	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	26.8		ng/L		107	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	25.6		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	25.0		ng/L		100	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	26.8		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	25.1		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.1	28.1		ng/L		112	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.1	26.4		ng/L		105	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	27.2		ng/L		109	70 - 130
Perfluorononanoic acid (PFNA)	25.1	26.3		ng/L		105	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	25.6		ng/L		102	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.1	24.9		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.1	26.6		ng/L		106	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	26.2		ng/L		104	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	27.1		ng/L		108	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	112		70 - 130
13C2 PFHxA	109		70 - 130
13C2 PFDA	107		70 - 130
13C3-GenX	106		70 - 130

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

Lab Sample ID: MRL 380-85577/22-A
Matrix: Water
Analysis Batch: 85707

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 85577

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.17	J	ng/L		108	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.38	J	ng/L		119	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.14	J	ng/L		107	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.31	J	ng/L		115	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.31	J	ng/L		115	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.36	J	ng/L		118	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.31	J	ng/L		115	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.13	J	ng/L		106	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.40	J	ng/L		120	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.25	J	ng/L		112	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.38	J	ng/L		119	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.31	J	ng/L		115	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.30	J	ng/L		115	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.13	J	ng/L		106	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.24	J	ng/L		112	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.16	J	ng/L		108	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.26	J	ng/L		113	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
d5-NEtFOSAA	*112*		*70 - 130*
13C2 PFHxA	*106*		*70 - 130*
13C2 PFDA	*104*		*70 - 130*
13C3-GenX	*107*		*70 - 130*

Lab Sample ID: 380-90823-B-1-A MS
Matrix: Water
Analysis Batch: 85707

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 85577

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.1	24.9		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	5.0		25.1	32.4		ng/L		109	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	26.0		ng/L		104	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	26.6		ng/L		106	70 - 130

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

Lab Sample ID: 380-90823-B-1-A MS
Matrix: Water
Analysis Batch: 85707

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 85577

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	27.2		ng/L		109	70 - 130
Perfluorohexanoic acid (PFHxA)	3.1		25.1	29.1		ng/L		104	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	25.2		ng/L		100	70 - 130
Perfluorooctanoic acid (PFOA)	10		25.1	38.7		ng/L		114	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	26.0		ng/L		104	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	7.6		25.1	35.3		ng/L		111	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	27.5		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	29.3		ng/L		111	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.1	27.0		ng/L		108	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	25.5		ng/L		102	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	25.2		ng/L		101	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	27.1		ng/L		108	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	26.3		ng/L		105	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	27.5		ng/L		110	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
d5-NEtFOSAA	*115*		*70 - 130*
13C2 PFHxA	*113*		*70 - 130*
13C2 PFDA	*109*		*70 - 130*
13C3-GenX	*111*		*70 - 130*

Lab Sample ID: 380-90823-C-1-A MSD
Matrix: Water
Analysis Batch: 85707

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 85577

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.2	24.3		ng/L		97	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	5.0		25.2	32.0		ng/L		107	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.2	24.4		ng/L		97	70 - 130	6	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.2	25.3		ng/L		101	70 - 130	5	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.2	25.9		ng/L		103	70 - 130	5	30
Perfluorohexanoic acid (PFHxA)	3.1		25.2	28.3		ng/L		100	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.2	23.9		ng/L		95	70 - 130	5	30
Perfluorooctanoic acid (PFOA)	10		25.2	36.3		ng/L		104	70 - 130	6	30
Perfluorodecanoic acid (PFDA)	<2.0		25.2	23.7		ng/L		94	70 - 130	9	30

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

Lab Sample ID: 380-90823-C-1-A MSD
Matrix: Water
Analysis Batch: 85707

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 85577

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	7.6		25.2	34.9		ng/L		108	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.2	28.7		ng/L		109	70 - 130	5	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.2	28.2		ng/L		106	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		25.2	25.7		ng/L		102	70 - 130	5	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.2	24.8		ng/L		99	70 - 130	3	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.2	24.2		ng/L		96	70 - 130	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.2	26.9		ng/L		107	70 - 130	1	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.2	25.6		ng/L		102	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.2	25.4		ng/L		101	70 - 130	8	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
d5-NEtFOSAA	*116*		*70 - 130*
13C2 PFHxA	*117*		*70 - 130*
13C2 PFDA	*108*		*70 - 130*
13C3-GenX	*111*		*70 - 130*

GC/MS Semi VOA

Prep Batch: 86272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-90733-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	
380-90733-2	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	525.2	
MB 380-86272/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-86272/23-A	Lab Control Sample	Total/NA	Water	525.2	
MRL 380-86272/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-90733-1 MS	MOANALUA WELLS	Total/NA	Drinking Water	525.2	
380-90728-B-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 86505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-90733-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	86272
380-90733-2	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	525.2	86272
MB 380-86272/21-A	Method Blank	Total/NA	Water	525.2	86272
LCS 380-86272/23-A	Lab Control Sample	Total/NA	Water	525.2	86272
MRL 380-86272/22-A	Lab Control Sample	Total/NA	Water	525.2	86272
380-90733-1 MS	MOANALUA WELLS	Total/NA	Drinking Water	525.2	86272
380-90728-B-1-A DU	Duplicate	Total/NA	Water	525.2	86272

LCMS

Prep Batch: 85405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-90733-1	MOANALUA WELLS	Total/NA	Drinking Water	533	
380-90733-3	FB: MOANALUA WELLS	Total/NA	Water	533	
MBL 380-85405/20-A	Method Blank	Total/NA	Water	533	
LCS 380-85405/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-85405/21-A	Lab Control Sample	Total/NA	Water	533	
380-90733-G-2-A MS	380-90733-G-2-A MS	Total/NA	Drinking Water	533	
380-90733-H-2-A MSD	380-90733-H-2-A MSD	Total/NA	Drinking Water	533	

Prep Batch: 85410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-90733-1	MOANALUA WELLS	Total/NA	Drinking Water	537.1 DW	
MBL 380-85410/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-85410/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-85410/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-90728-D-2-A LMS	Matrix Spike	Total/NA	Water	537.1 DW	
380-90728-E-2-A LMSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 85506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-90733-1	MOANALUA WELLS	Total/NA	Drinking Water	533	85405
380-90733-3	FB: MOANALUA WELLS	Total/NA	Water	533	85405
MBL 380-85405/20-A	Method Blank	Total/NA	Water	533	85405
LCS 380-85405/22-A	Lab Control Sample	Total/NA	Water	533	85405
MRL 380-85405/21-A	Lab Control Sample	Total/NA	Water	533	85405
380-90733-G-2-A MS	380-90733-G-2-A MS	Total/NA	Drinking Water	533	85405
380-90733-H-2-A MSD	380-90733-H-2-A MSD	Total/NA	Drinking Water	533	85405

LCMS

Analysis Batch: 85521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-90733-1	MOANALUA WELLS	Total/NA	Drinking Water	537.1	85410
MBL 380-85410/21-A	Method Blank	Total/NA	Water	537.1	85410
LCS 380-85410/23-A	Lab Control Sample	Total/NA	Water	537.1	85410
MRL 380-85410/22-A	Lab Control Sample	Total/NA	Water	537.1	85410
380-90728-D-2-A LMS	Matrix Spike	Total/NA	Water	537.1	85410
380-90728-E-2-A LMSD	Matrix Spike Duplicate	Total/NA	Water	537.1	85410

Prep Batch: 85577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-90733-2	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	537.1 DW	
380-90733-3	FB: MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-90733-4	FB: HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1 DW	
MBL 380-85577/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-85577/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-85577/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-90823-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-90823-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 85707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-90733-2	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	537.1	85577
380-90733-3	FB: MOANALUA WELLS	Total/NA	Water	537.1	85577
380-90733-4	FB: HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1	85577
MBL 380-85577/21-A	Method Blank	Total/NA	Water	537.1	85577
LCS 380-85577/23-A	Lab Control Sample	Total/NA	Water	537.1	85577
MRL 380-85577/22-A	Lab Control Sample	Total/NA	Water	537.1	85577
380-90823-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	85577
380-90823-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	85577

Lab Chronicle

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

Job ID: 380-90733-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
Date Collected: 04/08/24 09:10
Date Received: 04/10/24 10:17

Lab Sample ID: 380-90733-1
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			86272	KRD3	EA POM	04/17/24 10:00
Total/NA	Analysis	525.2		1	86505	UPAC	EA POM	04/18/24 10:14
Total/NA	Prep	533			85405	XTD8	EA POM	04/11/24 05:19
Total/NA	Analysis	533		1	85506	Y5FM	EA POM	04/11/24 16:09
Total/NA	Prep	537.1 DW			85410	SL5Q	EA POM	04/11/24 06:45
Total/NA	Analysis	537.1		1	85521	SZ9R	EA POM	04/12/24 04:46

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 04/08/24 09:38
Date Received: 04/10/24 10:17

Lab Sample ID: 380-90733-2
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			86272	KRD3	EA POM	04/17/24 12:00
Total/NA	Analysis	525.2		1	86505	UPAC	EA POM	04/18/24 12:33
Total/NA	Prep	537.1 DW			85577	SL5Q	EA POM	04/12/24 06:53
Total/NA	Analysis	537.1		1	85707	SZ9R	EA POM	04/12/24 16:44

Client Sample ID: FB: MOANALUA WELLS
Date Collected: 04/08/24 09:10
Date Received: 04/10/24 10:17

Lab Sample ID: 380-90733-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			85405	XTD8	EA POM	04/11/24 05:19
Total/NA	Analysis	533		1	85506	Y5FM	EA POM	04/11/24 16:20
Total/NA	Prep	537.1 DW			85577	SL5Q	EA POM	04/12/24 06:53
Total/NA	Analysis	537.1		1	85707	SZ9R	EA POM	04/12/24 16:53

Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2 P1
Date Collected: 04/08/24 09:38
Date Received: 04/10/24 10:17

Lab Sample ID: 380-90733-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			85577	SL5Q	EA POM	04/12/24 06:53
Total/NA	Analysis	537.1		1	85707	SZ9R	EA POM	04/12/24 17:02

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: 380-90733-1
SDG: 525.2, 533, 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	02-12-24 *

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

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Drinking Water	1-Methylnaphthalene
525.2	525.2	Drinking Water	2,4'-DDD
525.2	525.2	Drinking Water	2,4'-DDE
525.2	525.2	Drinking Water	2,4'-DDT
525.2	525.2	Drinking Water	2,4-Dinitrotoluene
525.2	525.2	Drinking Water	2,6-Dinitrotoluene
525.2	525.2	Drinking Water	2-Methylnaphthalene
525.2	525.2	Drinking Water	4,4'-DDD
525.2	525.2	Drinking Water	4,4'-DDE
525 2	525 2	Drinking Water	4,4' DDT
525.2	525.2	Drinking Water	Acenaphthene
525.2	525.2	Drinking Water	Acenaphthylene
525.2	525.2	Drinking Water	Acetochlor
525.2	525.2	Drinking Water	alpha-BHC
525.2	525.2	Drinking Water	alpha-Chlordane
525.2	525.2	Drinking Water	Anthracene
525.2	525.2	Drinking Water	Benz(a)anthracene
525.2	525.2	Drinking Water	Benzo[b]fluoranthene
525.2	525.2	Drinking Water	Benzo[g,h,i]perylene
525.2	525.2	Drinking Water	Benzo[k]fluoranthene
525.2	525.2	Drinking Water	beta-BHC
525.2	525.2	Drinking Water	Bromacil
525.2	525.2	Drinking Water	Butylbenzylphthalate
525.2	525.2	Drinking Water	Chlorobenzilate
525.2	525.2	Drinking Water	Chloroneb
525.2	525.2	Drinking Water	Chlorothalonil (Draconil, Bravo)
525.2	525.2	Drinking Water	Chlorpyrifos
525.2	525.2	Drinking Water	Chrysene
525.2	525.2	Drinking Water	delta-BHC
525.2	525.2	Drinking Water	Dibenz(a,h)anthracene
525.2	525.2	Drinking Water	Diclorvos (DDVP)
525.2	525.2	Drinking Water	Diethylphthalate
525.2	525.2	Drinking Water	Dimethylphthalate
525.2	525.2	Drinking Water	Di-n-butyl phthalate
525 2	525 2	Drinking Water	Di n octyl phthalate
525.2	525.2	Drinking Water	Endosulfan I (Alpha)
525.2	525.2	Drinking Water	Endosulfan II (Beta)
525.2	525.2	Drinking Water	Endosulfan sulfate
525.2	525.2	Drinking Water	Endrin aldehyde
525.2	525.2	Drinking Water	EPTC
525.2	525.2	Drinking Water	Fluoranthene
525.2	525.2	Drinking Water	Fluorene
525.2	525.2	Drinking Water	gamma-Chlordane
525.2	525.2	Drinking Water	Indeno[1,2,3-cd]pyrene
525.2	525.2	Drinking Water	Isophorone

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

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)

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

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

Job ID: 380-90733-1
SDG: 525.2, 533, 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)
537.1	537.1 DW	Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)

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

Method Summary

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

Job ID: 380-90733-1
SDG: 525.2, 533, 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: 380-90733-1
SDG: 525.2, 533, 537.1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-90733-1	MOANALUA WELLS	Drinking Water	04/08/24 09:10	04/10/24 10:17
380-90733-2	HALAWA WELLS UNITS 1 & 2 P1	Drinking Water	04/08/24 09:38	04/10/24 10:17
380-90733-3	FB: MOANALUA WELLS	Water	04/08/24 09:10	04/10/24 10:17
380-90733-4	FB: HALAWA WELLS UNITS 1 & 2 P1	Water	04/08/24 09:38	04/10/24 10:17

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	8015B_GRO_LL (MOD) GRO	8015B_DRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8 C18	525.2_PREC - (MOD) 525plus PLUS TICs	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note
			Preservation Code				R	A	Q		Y	N		
MOANALUA WELLS	8-Apr-2024	0910	G	Water							3	3		
HALAWA WELLS UNITS 1&2 PI	8-Apr-2024	0938	G	Water							3	3		
FB MOANALUA WELLS	8-Apr-2024	0910		Water							1	1		
FB HALAWA WELLS UNITS 1&2	8-Apr-2024	0938		Water							1	1		

380-90733 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

① 7958 8715 1795

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: FED EX ② 7758 8718 1800

Relinquished [redacted]	Date/Time: 04/9/2024 1400	Company: HBWS	Received by: G.REITNER	Date/Time: 04/10/2024 10:17	Company: EEAP
Relinquished	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 1.4°-0.1°=1.3° ② 1.7°-0.1°=1.6° GEL-FROZEN

Ver 01 16 2019

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-90733-1
SDG Number: 525.2, 533, 537.1

Login Number: 90733
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.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	