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ANALYTICAL REPORT

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Tel: (253)922-2310

Laboratory Job ID: 580-109239-1
Client Project/Site: Red Hill Drinking Water CV22F0106

For:
AECOM
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Honolulu, Hawaii 96813

Attn: Margie F Pascua

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Authorized for release by:
1/14/2022 5:26:09 PM
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Laboratory: Eurofins Seattle

Narrative

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Comments
No additional comments.

Receipt
The samples were received on 1/13/2022 10:15 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 0.9º C and 1.1º C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 580-378318 recovered above the upper control limit for Chloromethane, Bromomethane, Ethyl Chloride and Vinyl chloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: 20220111-H1-YT10 (580-109239-1), 20220111-H1-YT12 (580-109239-2), (CCVIS 580-378318/3).

Method 8260D: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 580-378318 recovered outside control limits for the following analytes: Chloromethane and Vinyl chloride. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: Surrogate Toluene-d8 (Surr) recovery for the following samples were outside control limits: 20220111-H1-YT10 (580-109239-1), 20220111-H1-YT12 (580-109239-2). Evidence of matrix interference is present; therefore, re-analysis was not performed.

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

GC/MS Semi VOA
Methods 625.1, 8270E: Surrogate recovery for the following samples was outside control limits: 20220111-H1-YT10 (580-109239-1), 20220111-H1-YT12 (580-109239-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8270E: The minimum response factor (RF) criteria for the continuing calibration verification (CCV) analyzed in batch 580-378282 was outside criteria for the following analytes: N-Nitrosodi-n-propylamine. As indicated in the reference method, sample analysis may proceed; however, any detection or non-detection for the affected analytes is considered estimated.

Methods 625.1, 8270E: The continuing calibration verification (CCV) associated with batch 580-378282 recovered above the upper control limit for Nitrobenzene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: 20220111-H1-YT10 (580-109239-1), 20220111-H1-YT12 (580-109239-2), (CCVIS 580-378282/3).
No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

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

Organic Prep
Method 3510C: A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows: due to a lack of one-liter sample ambers, two 500 mL ambers were combined within separatory funnel where they received solvent and surrogate spike. Sample was otherwise extracted/digested according to standard operating procedure.

Methods 3510C, CWA_Prep: Insufficient sample volume was available to perform a matrix spike duplicate/sample duplicate (MSD/DUP) associated with preparation batch 580-378233. Laboratory control sample/laboratory control sample duplicate were created and substituted for MSD/DUP.

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 580-378234. Laboratory control sample/laboratory control sample duplicate were created and substituted for MS/MSD/DUP.

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Laboratory: Eurofins Seattle (Continued)

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

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

Definitions/Glossary

Client: AECOM
Job ID: 580-109239-1
Project/Site: Red Hill Drinking Water CV22F0106

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Client: AECOM
Job ID: 580-109239-1
Project/Site: Red Hill Drinking Water CV22F0106

Client Sample ID: 20220111-H1-YT10
Lab Sample ID: 580-109239-1
Date Collected: 01/11/22 15:15
Matrix: Water
Date Received: 01/13/22 10:15

Method: 8260B/CA_LUFTMS - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	31	U	100	31	ug/L			01/14/22 02:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*78 - 120*		*01/14/22 02:51*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.2	U	15	3.2	ug/L			01/14/22 02:51	1
Benzene	0.24	U	1.0	0.24	ug/L			01/14/22 02:51	1
Bromodichloromethane	0.29	U	1.0	0.29	ug/L			01/14/22 02:51	1
Bromoform	0.51	U	1.0	0.51	ug/L			01/14/22 02:51	1
Bromomethane	0.21	U	1.0	0.21	ug/L			01/14/22 02:51	1
Carbon disulfide	0.53	U	1.0	0.53	ug/L			01/14/22 02:51	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			01/14/22 02:51	1
Chlorobenzene	0.44	U	1.0	0.44	ug/L			01/14/22 02:51	1
Chloroform	0.26	U	1.0	0.26	ug/L			01/14/22 02:51	1
Chloromethane	0.28	U *+	1.0	0.28	ug/L			01/14/22 02:51	1
cis-1,2-Dichloroethene	0.35	U	1.0	0.35	ug/L			01/14/22 02:51	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.20	ug/L			01/14/22 02:51	1
Dibromochloromethane	0.43	U	1.0	0.43	ug/L			01/14/22 02:51	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/14/22 02:51	1
1,2-Dichloroethane	0.42	U	1.0	0.42	ug/L			01/14/22 02:51	1
1,1-Dichloroethene	0.28	U	1.0	0.28	ug/L			01/14/22 02:51	1
1,2-Dichloroethene, Total	0.39	U	1.0	0.39	ug/L			01/14/22 02:51	1
Dichloromethane	1.4	U *1	3.0	1.4	ug/L			01/14/22 02:51	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			01/14/22 02:51	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			01/14/22 02:51	1
Ethyl Chloride	0.35	U	1.0	0.35	ug/L			01/14/22 02:51	1
2-Hexanone	4.0	U	15	4.0	ug/L			01/14/22 02:51	1
Methyl Ethyl Ketone	4.7	U	15	4.7	ug/L			01/14/22 02:51	1
Methyl isobutyl ketone (MIBK)	2.5	U	5.0	2.5	ug/L			01/14/22 02:51	1
m-Xylene & p-Xylene	0.53	U	2.0	0.53	ug/L			01/14/22 02:51	1
o-Xylene	0.39	U	1.0	0.39	ug/L			01/14/22 02:51	1
Styrene	0.53	U	1.0	0.53	ug/L			01/14/22 02:51	1
1,1,2,2-Tetrachloroethane	0.52	U	1.0	0.52	ug/L			01/14/22 02:51	1
Tetrachloroethene	0.41	U	1.0	0.41	ug/L			01/14/22 02:51	1
Toluene	0.39	U	1.0	0.39	ug/L			01/14/22 02:51	1
trans-1,2-Dichloroethene	0.39	U	1.0	0.39	ug/L			01/14/22 02:51	1
trans-1,3-Dichloropropene	0.41	U	1.0	0.41	ug/L			01/14/22 02:51	1
1,1,1-Trichloroethane	0.39	U	1.0	0.39	ug/L			01/14/22 02:51	1
1,1,2-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/14/22 02:51	1
Trichloroethene	0.26	U	1.0	0.26	ug/L			01/14/22 02:51	1
Vinyl chloride	0.22	U *+	1.0	0.22	ug/L			01/14/22 02:51	1
Xylenes, Total	0.53	U	2.0	0.53	ug/L			01/14/22 02:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*01/14/22 02:51*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*01/14/22 02:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*01/14/22 02:51*	*1*
Toluene-d8 (Surr)	*0.8*	*S1-*	*80 - 120*		*01/14/22 02:51*	*1*

Client: AECOM
Job ID: 580-109239-1
Project/Site: Red Hill Drinking Water CV22F0106

Client Sample ID: 20220111-H1-YT10
Lab Sample ID: 580-109239-1
Date Collected: 01/11/22 15:15
Matrix: Water
Date Received: 01/13/22 10:15

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.051	U	0.41	0.051	ug/L		01/13/22 12:56	01/13/22 23:03	1
Acenaphthylene	0.061	U	1.0	0.061	ug/L		01/13/22 12:56	01/13/22 23:03	1
Anthracene	0.051	U	1.0	0.051	ug/L		01/13/22 12:56	01/13/22 23:03	1
Benzo[a]anthracene	0.051	U	0.25	0.051	ug/L		01/13/22 12:56	01/13/22 23:03	1
Benzo[a]pyrene	0.041	U	0.25	0.041	ug/L		01/13/22 12:56	01/13/22 23:03	1
Benzo[b]fluoranthene	0.041	U	0.25	0.041	ug/L		01/13/22 12:56	01/13/22 23:03	1
Benzo[g,h,i]perylene	0.041	U	0.25	0.041	ug/L		01/13/22 12:56	01/13/22 23:03	1
Benzo[k]fluoranthene	0.051	U	0.25	0.051	ug/L		01/13/22 12:56	01/13/22 23:03	1
Bis(2-chloroethoxy)methane	0.051	U	0.61	0.051	ug/L		01/13/22 12:56	01/13/22 23:03	1
Bis(2-chloroethyl)ether	0.030	U	0.10	0.030	ug/L		01/13/22 12:56	01/13/22 23:03	1
Bis(2-ethylhexyl) phthalate	0.75	U	3.0	0.75	ug/L		01/13/22 12:56	01/13/22 23:03	1
4-Bromophenyl phenyl ether	0.061	U	0.61	0.061	ug/L		01/13/22 12:56	01/13/22 23:03	1
Butyl benzyl phthalate	0.27	U	4.1	0.27	ug/L		01/13/22 12:56	01/13/22 23:03	1
Carbazole	0.10	U	0.61	0.10	ug/L		01/13/22 12:56	01/13/22 23:03	1
4-Chloroaniline	0.60	U	2.0	0.60	ug/L		01/13/22 12:56	01/13/22 23:03	1
4-Chloro-3-methylphenol	0.13	U	0.61	0.13	ug/L		01/13/22 12:56	01/13/22 23:03	1
2-Chloronaphthalene	0.071	U	1.0	0.071	ug/L		01/13/22 12:56	01/13/22 23:03	1
2-Chlorophenol	0.051	U	1.0	0.051	ug/L		01/13/22 12:56	01/13/22 23:03	1
4-Chlorophenyl phenyl ether	0.051	U	0.61	0.051	ug/L		01/13/22 12:56	01/13/22 23:03	1
Chrysene	0.041	U	0.25	0.041	ug/L		01/13/22 12:56	01/13/22 23:03	1
Dibenz(a,h)anthracene	0.071	U	0.25	0.071	ug/L		01/13/22 12:56	01/13/22 23:03	1
Dibenzofuran	0.10	U	0.41	0.10	ug/L		01/13/22 12:56	01/13/22 23:03	1
1,2-Dichlorobenzene	0.051	U	0.41	0.051	ug/L		01/13/22 12:56	01/13/22 23:03	1
1,3-Dichlorobenzene	0.041	U	0.41	0.041	ug/L		01/13/22 12:56	01/13/22 23:03	1
1,4-Dichlorobenzene	0.041	U	0.41	0.041	ug/L		01/13/22 12:56	01/13/22 23:03	1
3,3'-Dichlorobenzidine	0.26	U	1.0	0.26	ug/L		01/13/22 12:56	01/13/22 23:03	1
2,4-Dichlorophenol	0.20	U	1.0	0.20	ug/L		01/13/22 12:56	01/13/22 23:03	1
Diethyl phthalate	0.15	U	1.0	0.15	ug/L		01/13/22 12:56	01/13/22 23:03	1
2,4-Dimethylphenol	0.16	U	4.1	0.16	ug/L		01/13/22 12:56	01/13/22 23:03	1
Dimethyl phthalate	0.061	U	0.61	0.061	ug/L		01/13/22 12:56	01/13/22 23:03	1
Di-n-butyl phthalate	0.19	U	3.0	0.19	ug/L		01/13/22 12:56	01/13/22 23:03	1
4,6-Dinitro-2-methylphenol	0.56	U	2.0	0.56	ug/L		01/13/22 12:56	01/13/22 23:03	1
2,4-Dinitrophenol	1.6	U	5.1	1.6	ug/L		01/13/22 12:56	01/13/22 23:03	1
2,4-Dinitrotoluene	0.10	U	1.0	0.10	ug/L		01/13/22 12:56	01/13/22 23:03	1
2,6-Dinitrotoluene	0.10	U	0.41	0.10	ug/L		01/13/22 12:56	01/13/22 23:03	1
Di-n-octyl phthalate	0.13	U	1.0	0.13	ug/L		01/13/22 12:56	01/13/22 23:03	1
Fluoranthene	0.061	U	0.25	0.061	ug/L		01/13/22 12:56	01/13/22 23:03	1
Fluorene	0.051	U	0.25	0.051	ug/L		01/13/22 12:56	01/13/22 23:03	1
Hexachlorobenzene	0.041	U	0.61	0.041	ug/L		01/13/22 12:56	01/13/22 23:03	1
Hexachlorobutadiene	0.061	U	1.0	0.061	ug/L		01/13/22 12:56	01/13/22 23:03	1
Hexachlorocyclopentadiene	0.14	U	1.0	0.14	ug/L		01/13/22 12:56	01/13/22 23:03	1
Hexachloroethane	0.051	U	1.0	0.051	ug/L		01/13/22 12:56	01/13/22 23:03	1
Indeno[1,2,3-cd]pyrene	0.13	U	0.41	0.13	ug/L		01/13/22 12:56	01/13/22 23:03	1
Isophorone	0.10	U	0.41	0.10	ug/L		01/13/22 12:56	01/13/22 23:03	1
2-Methylphenol	0.051	U	0.61	0.051	ug/L		01/13/22 12:56	01/13/22 23:03	1
3 & 4 Methylphenol	0.10	U	0.61	0.10	ug/L		01/13/22 12:56	01/13/22 23:03	1
Naphthalene	0.16	U	0.41	0.16	ug/L		01/13/22 12:56	01/13/22 23:03	1
2-Nitroaniline	0.10	U	1.0	0.10	ug/L		01/13/22 12:56	01/13/22 23:03	1
3-Nitroaniline	0.16	U	3.0	0.16	ug/L		01/13/22 12:56	01/13/22 23:03	1

Client Sample ID: 20220111-H1-YT10
Lab Sample ID: 580-109239-1
Date Collected: 01/11/22 15:15
Matrix: Water
Date Received: 01/13/22 10:15

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitroaniline	0.21	U	2.0	0.21	ug/L		01/13/22 12:56	01/13/22 23:03	1
Nitrobenzene	0.041	U	1.0	0.041	ug/L		01/13/22 12:56	01/13/22 23:03	1
4-Nitrophenol	1.7	U	10	1.7	ug/L		01/13/22 12:56	01/13/22 23:03	1
N-Nitrosodi-n-propylamine	0.061	U	0.41	0.061	ug/L		01/13/22 12:56	01/13/22 23:03	1
N-Nitrosodiphenylamine	0.071	U	1.0	0.071	ug/L		01/13/22 12:56	01/13/22 23:03	1
Pentachlorophenol	0.52	U	10	0.52	ug/L		01/13/22 12:56	01/13/22 23:03	1
Phenanthrene	0.12	U	1.0	0.12	ug/L		01/13/22 12:56	01/13/22 23:03	1
Phenol	0.36	U	1.0	0.36	ug/L		01/13/22 12:56	01/13/22 23:03	1
Pyrene	0.041	U	1.0	0.041	ug/L		01/13/22 12:56	01/13/22 23:03	1
1,2,4-Trichlorobenzene	0.091	U	0.41	0.091	ug/L		01/13/22 12:56	01/13/22 23:03	1
2,4,5-Trichlorophenol	0.10	U	0.41	0.10	ug/L		01/13/22 12:56	01/13/22 23:03	1
2,4,6-Trichlorophenol	0.10	U	0.61	0.10	ug/L		01/13/22 12:56	01/13/22 23:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*74*		*35 - 120*	*01/13/22 12:56*	*01/13/22 23:03*	*1*
2-Fluorophenol (Surr)	*0*	*S1-*	*21 - 120*	*01/13/22 12:56*	*01/13/22 23:03*	*1*
Nitrobenzene-d5 (Surr)	*80*		*39 - 120*	*01/13/22 12:56*	*01/13/22 23:03*	*1*
Phenol-d5 (Surr)	*0*	*S1-*	*10 - 120*	*01/13/22 12:56*	*01/13/22 23:03*	*1*
Terphenyl-d14	*106*		*63 - 137*	*01/13/22 12:56*	*01/13/22 23:03*	*1*
2,4,6-Tribromophenol	*109*		*50 - 130*	*01/13/22 12:56*	*01/13/22 23:03*	*1*

Method: 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	93	U	110	93	ug/L		01/13/22 13:00	01/13/22 21:42	1
C24-C40	190	U	210	190	ug/L		01/13/22 13:00	01/13/22 21:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*82*		*53 - 120*	*01/13/22 13:00*	*01/13/22 21:42*	*1*

Client: AECOM
Job ID: 580-109239-1
Project/Site: Red Hill Drinking Water CV22F0106

Client Sample ID: 20220111-H1-YT12
Lab Sample ID: 580-109239-2
Date Collected: 01/11/22 16:25
Matrix: Water
Date Received: 01/13/22 10:15

Method: 8260B/CA_LUFTMS - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	31	U	100	31	ug/L			01/14/22 03:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*78 - 120*		*01/14/22 03:15*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.2	U	15	3.2	ug/L			01/14/22 03:15	1
Benzene	0.24	U	1.0	0.24	ug/L			01/14/22 03:15	1
Bromodichloromethane	0.29	U	1.0	0.29	ug/L			01/14/22 03:15	1
Bromoform	0.51	U	1.0	0.51	ug/L			01/14/22 03:15	1
Bromomethane	0.21	U	1.0	0.21	ug/L			01/14/22 03:15	1
Carbon disulfide	0.53	U	1.0	0.53	ug/L			01/14/22 03:15	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			01/14/22 03:15	1
Chlorobenzene	0.44	U	1.0	0.44	ug/L			01/14/22 03:15	1
Chloroform	0.26	U	1.0	0.26	ug/L			01/14/22 03:15	1
Chloromethane	0.28	U *+	1.0	0.28	ug/L			01/14/22 03:15	1
cis-1,2-Dichloroethene	0.35	U	1.0	0.35	ug/L			01/14/22 03:15	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.20	ug/L			01/14/22 03:15	1
Dibromochloromethane	0.43	U	1.0	0.43	ug/L			01/14/22 03:15	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/14/22 03:15	1
1,2-Dichloroethane	0.42	U	1.0	0.42	ug/L			01/14/22 03:15	1
1,1-Dichloroethene	0.28	U	1.0	0.28	ug/L			01/14/22 03:15	1
1,2-Dichloroethene, Total	0.39	U	1.0	0.39	ug/L			01/14/22 03:15	1
Dichloromethane	1.4	U *1	3.0	1.4	ug/L			01/14/22 03:15	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			01/14/22 03:15	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			01/14/22 03:15	1
Ethyl Chloride	0.35	U	1.0	0.35	ug/L			01/14/22 03:15	1
2-Hexanone	4.0	U	15	4.0	ug/L			01/14/22 03:15	1
Methyl Ethyl Ketone	4.7	U	15	4.7	ug/L			01/14/22 03:15	1
Methyl isobutyl ketone (MIBK)	2.5	U	5.0	2.5	ug/L			01/14/22 03:15	1
m-Xylene & p-Xylene	0.53	U	2.0	0.53	ug/L			01/14/22 03:15	1
o-Xylene	0.39	U	1.0	0.39	ug/L			01/14/22 03:15	1
Styrene	0.53	U	1.0	0.53	ug/L			01/14/22 03:15	1
1,1,2,2-Tetrachloroethane	0.52	U	1.0	0.52	ug/L			01/14/22 03:15	1
Tetrachloroethene	0.41	U	1.0	0.41	ug/L			01/14/22 03:15	1
Toluene	0.39	U	1.0	0.39	ug/L			01/14/22 03:15	1
trans-1,2-Dichloroethene	0.39	U	1.0	0.39	ug/L			01/14/22 03:15	1
trans-1,3-Dichloropropene	0.41	U	1.0	0.41	ug/L			01/14/22 03:15	1
1,1,1-Trichloroethane	0.39	U	1.0	0.39	ug/L			01/14/22 03:15	1
1,1,2-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/14/22 03:15	1
Trichloroethene	0.26	U	1.0	0.26	ug/L			01/14/22 03:15	1
Vinyl chloride	0.22	U *+	1.0	0.22	ug/L			01/14/22 03:15	1
Xylenes, Total	0.53	U	2.0	0.53	ug/L			01/14/22 03:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*01/14/22 03:15*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 120*		*01/14/22 03:15*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*01/14/22 03:15*	*1*
Toluene-d8 (Surr)	*0.2*	*S1-*	*80 - 120*		*01/14/22 03:15*	*1*

Client: AECOM
Job ID: 580-109239-1
Project/Site: Red Hill Drinking Water CV22F0106

Client Sample ID: 20220111-H1-YT12
Lab Sample ID: 580-109239-2
Date Collected: 01/11/22 16:25
Matrix: Water
Date Received: 01/13/22 10:15

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.053	U	0.42	0.053	ug/L		01/13/22 12:56	01/13/22 23:26	1
Acenaphthylene	0.064	U	1.1	0.064	ug/L		01/13/22 12:56	01/13/22 23:26	1
Anthracene	0.053	U	1.1	0.053	ug/L		01/13/22 12:56	01/13/22 23:26	1
Benzo[a]anthracene	0.053	U	0.27	0.053	ug/L		01/13/22 12:56	01/13/22 23:26	1
Benzo[a]pyrene	0.042	U	0.27	0.042	ug/L		01/13/22 12:56	01/13/22 23:26	1
Benzo[b]fluoranthene	0.042	U	0.27	0.042	ug/L		01/13/22 12:56	01/13/22 23:26	1
Benzo[g,h,i]perylene	0.042	U	0.27	0.042	ug/L		01/13/22 12:56	01/13/22 23:26	1
Benzo[k]fluoranthene	0.053	U	0.27	0.053	ug/L		01/13/22 12:56	01/13/22 23:26	1
Bis(2-chloroethoxy)methane	0.053	U	0.64	0.053	ug/L		01/13/22 12:56	01/13/22 23:26	1
Bis(2-chloroethyl)ether	**3.3**		0.11	0.032	ug/L		01/13/22 12:56	01/13/22 23:26	1
Bis(2-ethylhexyl) phthalate	0.78	U	3.2	0.78	ug/L		01/13/22 12:56	01/13/22 23:26	1
4-Bromophenyl phenyl ether	0.064	U	0.64	0.064	ug/L		01/13/22 12:56	01/13/22 23:26	1
Butyl benzyl phthalate	0.29	U	4.2	0.29	ug/L		01/13/22 12:56	01/13/22 23:26	1
Carbazole	0.11	U	0.64	0.11	ug/L		01/13/22 12:56	01/13/22 23:26	1
4-Chloroaniline	0.63	U	2.1	0.63	ug/L		01/13/22 12:56	01/13/22 23:26	1
4-Chloro-3-methylphenol	0.14	U	0.64	0.14	ug/L		01/13/22 12:56	01/13/22 23:26	1
2-Chloronaphthalene	0.074	U	1.1	0.074	ug/L		01/13/22 12:56	01/13/22 23:26	1
2-Chlorophenol	0.053	U	1.1	0.053	ug/L		01/13/22 12:56	01/13/22 23:26	1
4-Chlorophenyl phenyl ether	0.053	U	0.64	0.053	ug/L		01/13/22 12:56	01/13/22 23:26	1
Chrysene	0.042	U	0.27	0.042	ug/L		01/13/22 12:56	01/13/22 23:26	1
Dibenz(a,h)anthracene	0.074	U	0.27	0.074	ug/L		01/13/22 12:56	01/13/22 23:26	1
Dibenzofuran	0.11	U	0.42	0.11	ug/L		01/13/22 12:56	01/13/22 23:26	1
1,2-Dichlorobenzene	0.053	U	0.42	0.053	ug/L		01/13/22 12:56	01/13/22 23:26	1
1,3-Dichlorobenzene	0.042	U	0.42	0.042	ug/L		01/13/22 12:56	01/13/22 23:26	1
1,4-Dichlorobenzene	0.042	U	0.42	0.042	ug/L		01/13/22 12:56	01/13/22 23:26	1
3,3'-Dichlorobenzidine	0.28	U	1.1	0.28	ug/L		01/13/22 12:56	01/13/22 23:26	1
2,4-Dichlorophenol	0.21	U	1.1	0.21	ug/L		01/13/22 12:56	01/13/22 23:26	1
Diethyl phthalate	0.16	U	1.1	0.16	ug/L		01/13/22 12:56	01/13/22 23:26	1
2,4-Dimethylphenol	0.17	U	4.2	0.17	ug/L		01/13/22 12:56	01/13/22 23:26	1
Dimethyl phthalate	0.064	U	0.64	0.064	ug/L		01/13/22 12:56	01/13/22 23:26	1
Di-n-butyl phthalate	0.20	U	3.2	0.20	ug/L		01/13/22 12:56	01/13/22 23:26	1
4,6-Dinitro-2-methylphenol	0.58	U	2.1	0.58	ug/L		01/13/22 12:56	01/13/22 23:26	1
2,4-Dinitrophenol	1.7	U	5.3	1.7	ug/L		01/13/22 12:56	01/13/22 23:26	1
2,4-Dinitrotoluene	0.11	U	1.1	0.11	ug/L		01/13/22 12:56	01/13/22 23:26	1
2,6-Dinitrotoluene	0.11	U	0.42	0.11	ug/L		01/13/22 12:56	01/13/22 23:26	1
Di-n-octyl phthalate	0.14	U	1.1	0.14	ug/L		01/13/22 12:56	01/13/22 23:26	1
Fluoranthene	0.064	U	0.27	0.064	ug/L		01/13/22 12:56	01/13/22 23:26	1
Fluorene	0.053	U	0.27	0.053	ug/L		01/13/22 12:56	01/13/22 23:26	1
Hexachlorobenzene	0.042	U	0.64	0.042	ug/L		01/13/22 12:56	01/13/22 23:26	1
Hexachlorobutadiene	0.064	U	1.1	0.064	ug/L		01/13/22 12:56	01/13/22 23:26	1
Hexachlorocyclopentadiene	0.15	U	1.1	0.15	ug/L		01/13/22 12:56	01/13/22 23:26	1
Hexachloroethane	0.053	U	1.1	0.053	ug/L		01/13/22 12:56	01/13/22 23:26	1
Indeno[1,2,3-cd]pyrene	0.14	U	0.42	0.14	ug/L		01/13/22 12:56	01/13/22 23:26	1
Isophorone	0.11	U	0.42	0.11	ug/L		01/13/22 12:56	01/13/22 23:26	1
2-Methylphenol	0.053	U	0.64	0.053	ug/L		01/13/22 12:56	01/13/22 23:26	1
3 & 4 Methylphenol	0.11	U	0.64	0.11	ug/L		01/13/22 12:56	01/13/22 23:26	1
Naphthalene	0.17	U	0.42	0.17	ug/L		01/13/22 12:56	01/13/22 23:26	1
2-Nitroaniline	0.11	U	1.1	0.11	ug/L		01/13/22 12:56	01/13/22 23:26	1
3-Nitroaniline	0.17	U	3.2	0.17	ug/L		01/13/22 12:56	01/13/22 23:26	1

Client: AECOM
Job ID: 580-109239-1
Project/Site: Red Hill Drinking Water CV22F0106

Client Sample ID: 20220111-H1-YT12
Lab Sample ID: 580-109239-2
Date Collected: 01/11/22 16:25
Matrix: Water
Date Received: 01/13/22 10:15

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitroaniline	0.22	U	2.1	0.22	ug/L		01/13/22 12:56	01/13/22 23:26	1
Nitrobenzene	0.042	U	1.1	0.042	ug/L		01/13/22 12:56	01/13/22 23:26	1
4-Nitrophenol	1.8	U	11	1.8	ug/L		01/13/22 12:56	01/13/22 23:26	1
N-Nitrosodi-n-propylamine	0.064	U	0.42	0.064	ug/L		01/13/22 12:56	01/13/22 23:26	1
N-Nitrosodiphenylamine	0.074	U	1.1	0.074	ug/L		01/13/22 12:56	01/13/22 23:26	1
Pentachlorophenol	0.54	U	11	0.54	ug/L		01/13/22 12:56	01/13/22 23:26	1
Phenanthrene	0.13	U	1.1	0.13	ug/L		01/13/22 12:56	01/13/22 23:26	1
Phenol	0.38	U	1.1	0.38	ug/L		01/13/22 12:56	01/13/22 23:26	1
Pyrene	0.042	U	1.1	0.042	ug/L		01/13/22 12:56	01/13/22 23:26	1
1,2,4-Trichlorobenzene	0.095	U	0.42	0.095	ug/L		01/13/22 12:56	01/13/22 23:26	1
2,4,5-Trichlorophenol	0.11	U	0.42	0.11	ug/L		01/13/22 12:56	01/13/22 23:26	1
2,4,6-Trichlorophenol	0.11	U	0.64	0.11	ug/L		01/13/22 12:56	01/13/22 23:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*67*		*35 - 120*	*01/13/22 12:56*	*01/13/22 23:26*	*1*
2-Fluorophenol (Surr)	*4*	*S1-*	*21 - 120*	*01/13/22 12:56*	*01/13/22 23:26*	*1*
Nitrobenzene-d5 (Surr)	*74*		*39 - 120*	*01/13/22 12:56*	*01/13/22 23:26*	*1*
Phenol-d5 (Surr)	*0*	*S1-*	*10 - 120*	*01/13/22 12:56*	*01/13/22 23:26*	*1*
Terphenyl-d14	*104*		*63 - 137*	*01/13/22 12:56*	*01/13/22 23:26*	*1*
2,4,6-Tribromophenol	*92*		*50 - 130*	*01/13/22 12:56*	*01/13/22 23:26*	*1*

Method: 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	89	U	110	89	ug/L		01/13/22 13:00	01/13/22 22:02	1
C24-C40	180	U	200	180	ug/L		01/13/22 13:00	01/13/22 22:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*69*		*53 - 120*	*01/13/22 13:00*	*01/13/22 22:02*	*1*

Method: 8260B/CA_LUFTMS - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-378319/5
Matrix: Water
Analysis Batch: 378319

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	31	U	100	31	ug/L			01/14/22 00:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*78 - 120*		*01/14/22 00:28*	*1*

Lab Sample ID: LCS 580-378319/8
Matrix: Water
Analysis Batch: 378319

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (C6-C12)			1000	1010		ug/L		101	75 - 127		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*78 - 120*

Lab Sample ID: LCSD 580-378319/9
Matrix: Water
Analysis Batch: 378319

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (C6-C12)			1000	1020		ug/L		102	75 - 127	1	13

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*78 - 120*

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-378318/5
Matrix: Water
Analysis Batch: 378318

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.2	U	15	3.2	ug/L			01/14/22 00:28	1
Benzene	0.24	U	1.0	0.24	ug/L			01/14/22 00:28	1
Bromodichloromethane	0.29	U	1.0	0.29	ug/L			01/14/22 00:28	1
Bromoform	0.51	U	1.0	0.51	ug/L			01/14/22 00:28	1
Bromomethane	0.21	U	1.0	0.21	ug/L			01/14/22 00:28	1
Carbon disulfide	0.53	U	1.0	0.53	ug/L			01/14/22 00:28	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			01/14/22 00:28	1
Chlorobenzene	0.44	U	1.0	0.44	ug/L			01/14/22 00:28	1
Chloroform	0.26	U	1.0	0.26	ug/L			01/14/22 00:28	1
Chloromethane	0.28	U	1.0	0.28	ug/L			01/14/22 00:28	1
cis-1,2-Dichloroethene	0.35	U	1.0	0.35	ug/L			01/14/22 00:28	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.20	ug/L			01/14/22 00:28	1
Dibromochloromethane	0.43	U	1.0	0.43	ug/L			01/14/22 00:28	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/14/22 00:28	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-378318/5
Matrix: Water
Analysis Batch: 378318

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	0.42	U	1.0	0.42	ug/L			01/14/22 00:28	1
1,1-Dichloroethene	0.28	U	1.0	0.28	ug/L			01/14/22 00:28	1
1,2-Dichloroethene, Total	0.39	U	1.0	0.39	ug/L			01/14/22 00:28	1
Dichloromethane	1.4	U	3.0	1.4	ug/L			01/14/22 00:28	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			01/14/22 00:28	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			01/14/22 00:28	1
Ethyl Chloride	0.35	U	1.0	0.35	ug/L			01/14/22 00:28	1
2-Hexanone	4.0	U	15	4.0	ug/L			01/14/22 00:28	1
Methyl Ethyl Ketone	4.7	U	15	4.7	ug/L			01/14/22 00:28	1
Methyl isobutyl ketone (MIBK)	2.5	U	5.0	2.5	ug/L			01/14/22 00:28	1
m-Xylene & p-Xylene	0.53	U	2.0	0.53	ug/L			01/14/22 00:28	1
o-Xylene	0.39	U	1.0	0.39	ug/L			01/14/22 00:28	1
Styrene	0.53	U	1.0	0.53	ug/L			01/14/22 00:28	1
1,1,2,2-Tetrachloroethane	0.52	U	1.0	0.52	ug/L			01/14/22 00:28	1
Tetrachloroethene	0.41	U	1.0	0.41	ug/L			01/14/22 00:28	1
Toluene	0.39	U	1.0	0.39	ug/L			01/14/22 00:28	1
trans-1,2-Dichloroethene	0.39	U	1.0	0.39	ug/L			01/14/22 00:28	1
trans-1,3-Dichloropropene	0.41	U	1.0	0.41	ug/L			01/14/22 00:28	1
1,1,1-Trichloroethane	0.39	U	1.0	0.39	ug/L			01/14/22 00:28	1
1,1,2-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/14/22 00:28	1
Trichloroethene	0.26	U	1.0	0.26	ug/L			01/14/22 00:28	1
Vinyl chloride	0.22	U	1.0	0.22	ug/L			01/14/22 00:28	1
Xylenes, Total	0.53	U	2.0	0.53	ug/L			01/14/22 00:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*01/14/22 00:28*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*01/14/22 00:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*01/14/22 00:28*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*01/14/22 00:28*	*1*

Lab Sample ID: LCS 580-378318/6
Matrix: Water
Analysis Batch: 378318

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	55.5		ug/L		111	44 - 150
Benzene	10.0	11.1		ug/L		111	80 - 122
Bromodichloromethane	10.0	10.4		ug/L		104	75 - 124
Bromoform	10.0	9.11		ug/L		91	56 - 139
Bromomethane	10.0	13.6		ug/L		136	36 - 150
Carbon disulfide	10.0	9.78		ug/L		98	63 - 134
Carbon tetrachloride	10.0	10.7		ug/L		107	72 - 129
Chlorobenzene	10.0	10.1		ug/L		101	80 - 120
Chloroform	10.0	11.1		ug/L		111	78 - 127
Chloromethane	10.0	21.1	*+	ug/L		211	25 - 150
cis-1,2-Dichloroethene	10.0	10.8		ug/L		108	76 - 120
cis-1,3-Dichloropropene	10.0	9.79		ug/L		98	77 - 120
Dibromochloromethane	10.0	9.73		ug/L		97	73 - 125

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-378318/6
Matrix: Water
Analysis Batch: 378318

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,1-Dichloroethane			10.0	11.5		ug/L		115	80 - 120		
1,2-Dichloroethane			10.0	10.8		ug/L		108	69 - 126		
1,1-Dichloroethene			10.0	11.2		ug/L		112	70 - 129		
1,2-Dichloroethene, Total			20.0	22.0		ug/L		110	76 - 129		
Dichloromethane			10.0	11.2		ug/L		112	77 - 125		
1,2-Dichloropropane			10.0	10.8		ug/L		108	80 - 120		
Ethylbenzene			10.0	10.1		ug/L		101	80 - 120		
Ethyl Chloride			10.0	13.1		ug/L		131	38 - 150		
2-Hexanone			50.0	49.3		ug/L		99	65 - 144		
Methyl Ethyl Ketone			50.0	52.9		ug/L		106	65 - 137		
Methyl isobutyl ketone (MIBK)			50.0	48.6		ug/L		97	59 - 141		
m-Xylene & p-Xylene			10.0	10.2		ug/L		102	80 - 120		
o-Xylene			10.0	9.72		ug/L		97	80 - 120		
Styrene			10.0	9.91		ug/L		99	76 - 122		
1,1,2,2-Tetrachloroethane			10.0	9.36		ug/L		94	74 - 124		
Tetrachloroethene			10.0	10.3		ug/L		103	76 - 125		
Toluene			10.0	10.2		ug/L		102	80 - 120		
trans-1,2-Dichloroethene			10.0	11.2		ug/L		112	75 - 120		
trans-1,3-Dichloropropene			10.0	9.16		ug/L		92	76 - 122		
1,1,1-Trichloroethane			10.0	12.1		ug/L		121	74 - 130		
1,1,2-Trichloroethane			10.0	9.93		ug/L		99	80 - 121		
Trichloroethene			10.0	11.1		ug/L		111	80 - 125		
Vinyl chloride			10.0	17.1	*+	ug/L		171	31 - 150		
Xylenes, Total			20.0	19.9		ug/L		100	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 580-378318/7
Matrix: Water
Analysis Batch: 378318

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone			50.0	62.6		ug/L		125	44 - 150	12	33
Benzene			10.0	11.2		ug/L		112	80 - 122	1	14
Bromodichloromethane			10.0	10.5		ug/L		105	75 - 124	1	13
Bromoform			10.0	9.23		ug/L		92	56 - 139	1	21
Bromomethane			10.0	13.9		ug/L		139	36 - 150	3	33
Carbon disulfide			10.0	9.98		ug/L		100	63 - 134	2	24
Carbon tetrachloride			10.0	10.7		ug/L		107	72 - 129	0	19
Chlorobenzene			10.0	10.1		ug/L		101	80 - 120	0	10
Chloroform			10.0	11.1		ug/L		111	78 - 127	0	14
Chloromethane			10.0	22.1	*+	ug/L		221	25 - 150	5	26
cis-1,2-Dichloroethene			10.0	10.8		ug/L		108	76 - 120	0	20
cis-1,3-Dichloropropene			10.0	9.89		ug/L		99	77 - 120	1	35

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-378318/7
Matrix: Water
Analysis Batch: 378318

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dibromochloromethane			10.0	9.82		ug/L		98	73 - 125	1	13
1,1-Dichloroethane			10.0	11.5		ug/L		115	80 - 120	0	15
1,2-Dichloroethane			10.0	11.2		ug/L		112	69 - 126	4	11
1,1-Dichloroethene			10.0	11.0		ug/L		110	70 - 129	2	23
1,2-Dichloroethene, Total			20.0	21.8		ug/L		109	76 - 129	1	21
Dichloromethane			10.0	11.6		ug/L		116	77 - 125	4	18
1,2-Dichloropropane			10.0	11.2		ug/L		112	80 - 120	3	14
Ethylbenzene			10.0	10.0		ug/L		100	80 - 120	1	14
Ethyl Chloride			10.0	12.4		ug/L		124	38 - 150	6	28
2-Hexanone			50.0	52.7		ug/L		105	65 - 144	7	26
Methyl Ethyl Ketone			50.0	58.8		ug/L		118	65 - 137	10	34
Methyl isobutyl ketone (MIBK)			50.0	51.6		ug/L		103	59 - 141	6	22
m-Xylene & p-Xylene			10.0	9.88		ug/L		99	80 - 120	3	14
o-Xylene			10.0	9.80		ug/L		98	80 - 120	1	16
Styrene			10.0	9.79		ug/L		98	76 - 122	1	16
1,1,2,2-Tetrachloroethane			10.0	9.77		ug/L		98	74 - 124	4	25
Tetrachloroethene			10.0	10.2		ug/L		102	76 - 125	1	13
Toluene			10.0	10.3		ug/L		103	80 - 120	1	13
trans-1,2-Dichloroethene			10.0	11.0		ug/L		110	75 - 120	2	21
trans-1,3-Dichloropropene			10.0	9.67		ug/L		97	76 - 122	5	20
1,1,1-Trichloroethane			10.0	10.1		ug/L		101	74 - 130	18	19
1,1,2-Trichloroethane			10.0	10.1		ug/L		101	80 - 121	2	14
Trichloroethene			10.0	11.2		ug/L		112	80 - 125	1	13
Vinyl chloride			10.0	17.6	*+	ug/L		176	31 - 150	2	26
Xylenes, Total			20.0	19.7		ug/L		98	80 - 120	1	16

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-378233/1-A
Matrix: Water
Analysis Batch: 378282

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 378233

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.050	U	0.40	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Acenaphthylene	0.060	U	1.0	0.060	ug/L		01/13/22 12:56	01/13/22 21:53	1
Anthracene	0.050	U	1.0	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Benzo[a]anthracene	0.050	U	0.25	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Benzo[a]pyrene	0.040	U	0.25	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
Benzo[b]fluoranthene	0.040	U	0.25	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
Benzo[g,h,i]perylene	0.040	U	0.25	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
Benzo[k]fluoranthene	0.050	U	0.25	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Bis(2-chloroethoxy)methane	0.050	U	0.60	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Bis(2-chloroethyl)ether	0.030	U	0.10	0.030	ug/L		01/13/22 12:56	01/13/22 21:53	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 580-378233/1-A
Matrix: Water
Analysis Batch: 378282

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 378233

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	0.74	U	3.0	0.74	ug/L		01/13/22 12:56	01/13/22 21:53	1
4-Bromophenyl phenyl ether	0.060	U	0.60	0.060	ug/L		01/13/22 12:56	01/13/22 21:53	1
Butyl benzyl phthalate	0.27	U	4.0	0.27	ug/L		01/13/22 12:56	01/13/22 21:53	1
Carbazole	0.10	U	0.60	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
4-Chloroaniline	0.59	U	2.0	0.59	ug/L		01/13/22 12:56	01/13/22 21:53	1
4-Chloro-3-methylphenol	0.13	U	0.60	0.13	ug/L		01/13/22 12:56	01/13/22 21:53	1
2-Chloronaphthalene	0.070	U	1.0	0.070	ug/L		01/13/22 12:56	01/13/22 21:53	1
2-Chlorophenol	0.050	U	1.0	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
4-Chlorophenyl phenyl ether	0.050	U	0.60	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Chrysene	0.040	U	0.25	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
Dibenz(a,h)anthracene	0.070	U	0.25	0.070	ug/L		01/13/22 12:56	01/13/22 21:53	1
Dibenzofuran	0.10	U	0.40	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
1,2-Dichlorobenzene	0.050	U	0.40	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
1,3-Dichlorobenzene	0.040	U	0.40	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
1,4-Dichlorobenzene	0.040	U	0.40	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
3,3'-Dichlorobenzidine	0.26	U	1.0	0.26	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,4-Dichlorophenol	0.20	U	1.0	0.20	ug/L		01/13/22 12:56	01/13/22 21:53	1
Diethyl phthalate	0.15	U	1.0	0.15	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,4-Dimethylphenol	0.16	U	4.0	0.16	ug/L		01/13/22 12:56	01/13/22 21:53	1
Dimethyl phthalate	0.060	U	0.60	0.060	ug/L		01/13/22 12:56	01/13/22 21:53	1
Di-n-butyl phthalate	0.19	U	3.0	0.19	ug/L		01/13/22 12:56	01/13/22 21:53	1
4,6-Dinitro-2-methylphenol	0.55	U	2.0	0.55	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,4-Dinitrophenol	1.6	U	5.0	1.6	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,4-Dinitrotoluene	0.10	U	1.0	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,6-Dinitrotoluene	0.10	U	0.40	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
Di-n-octyl phthalate	0.13	U	1.0	0.13	ug/L		01/13/22 12:56	01/13/22 21:53	1
Fluoranthene	0.060	U	0.25	0.060	ug/L		01/13/22 12:56	01/13/22 21:53	1
Fluorene	0.050	U	0.25	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Hexachlorobenzene	0.040	U	0.60	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
Hexachlorobutadiene	0.060	U	1.0	0.060	ug/L		01/13/22 12:56	01/13/22 21:53	1
Hexachlorocyclopentadiene	0.14	U	1.0	0.14	ug/L		01/13/22 12:56	01/13/22 21:53	1
Hexachloroethane	0.050	U	1.0	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Indeno[1,2,3-cd]pyrene	0.13	U	0.40	0.13	ug/L		01/13/22 12:56	01/13/22 21:53	1
Isophorone	0.10	U	0.40	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
2-Methylphenol	0.050	U	0.60	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
3 & 4 Methylphenol	0.10	U	0.60	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
Naphthalene	0.16	U	0.40	0.16	ug/L		01/13/22 12:56	01/13/22 21:53	1
2-Nitroaniline	0.10	U	1.0	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
3-Nitroaniline	0.16	U	3.0	0.16	ug/L		01/13/22 12:56	01/13/22 21:53	1
4-Nitroaniline	0.21	U	2.0	0.21	ug/L		01/13/22 12:56	01/13/22 21:53	1
Nitrobenzene	0.040	U	1.0	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
4-Nitrophenol	1.7	U	10	1.7	ug/L		01/13/22 12:56	01/13/22 21:53	1
N-Nitrosodi-n-propylamine	0.060	U	0.40	0.060	ug/L		01/13/22 12:56	01/13/22 21:53	1
N-Nitrosodiphenylamine	0.070	U	1.0	0.070	ug/L		01/13/22 12:56	01/13/22 21:53	1
Pentachlorophenol	0.51	U	10	0.51	ug/L		01/13/22 12:56	01/13/22 21:53	1
Phenanthrene	0.12	U	1.0	0.12	ug/L		01/13/22 12:56	01/13/22 21:53	1
Phenol	0.36	U	1.0	0.36	ug/L		01/13/22 12:56	01/13/22 21:53	1
Pyrene	0.040	U	1.0	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
1,2,4-Trichlorobenzene	0.090	U	0.40	0.090	ug/L		01/13/22 12:56	01/13/22 21:53	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 580-378233/1-A
Matrix: Water
Analysis Batch: 378282

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 378233

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-Trichlorophenol	0.10	U	0.40	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,4,6-Trichlorophenol	0.10	U	0.60	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*67*		*35 - 120*	*01/13/22 12:56*	*01/13/22 21:53*	*1*
2-Fluorophenol (Surr)	*49*		*21 - 120*	*01/13/22 12:56*	*01/13/22 21:53*	*1*
Nitrobenzene-d5 (Surr)	*76*		*39 - 120*	*01/13/22 12:56*	*01/13/22 21:53*	*1*
Phenol-d5 (Surr)	*30*		*10 - 120*	*01/13/22 12:56*	*01/13/22 21:53*	*1*
Terphenyl-d14	*125*		*63 - 137*	*01/13/22 12:56*	*01/13/22 21:53*	*1*
2,4,6-Tribromophenol	*83*		*50 - 130*	*01/13/22 12:56*	*01/13/22 21:53*	*1*

Lab Sample ID: LCS 580-378233/2-A
Matrix: Water
Analysis Batch: 378282

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 378233

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	2.00	1.38		ug/L		69	41 - 120
Acenaphthylene	2.00	1.41		ug/L		71	43 - 120
Anthracene	2.00	1.83		ug/L		91	58 - 120
Benzo[a]anthracene	2.00	1.95		ug/L		98	48 - 131
Benzo[a]pyrene	2.00	1.99		ug/L		99	55 - 125
Benzo[b]fluoranthene	2.00	1.90		ug/L		95	54 - 124
Benzo[g,h,i]perylene	2.00	1.93		ug/L		97	46 - 124
Benzo[k]fluoranthene	2.00	1.99		ug/L		100	52 - 132
Bis(2-chloroethoxy)methane	2.00	1.48		ug/L		74	38 - 120
Bis(2-ethylhexyl) phthalate	2.00	2.18	J	ug/L		109	41 - 150
4-Bromophenyl phenyl ether	2.00	1.57		ug/L		79	53 - 120
Butyl benzyl phthalate	2.00	2.22	J	ug/L		111	40 - 150
Carbazole	2.00	2.32		ug/L		116	61 - 150
4-Chloroaniline	2.00	1.26	J	ug/L		63	10 - 150
4-Chloro-3-methylphenol	2.00	1.48		ug/L		74	36 - 120
2-Chloronaphthalene	2.00	1.46		ug/L		73	35 - 120
2-Chlorophenol	2.00	1.36		ug/L		68	44 - 120
4-Chlorophenyl phenyl ether	2.00	1.47		ug/L		74	41 - 120
Chrysene	2.00	2.11		ug/L		106	57 - 125
Dibenz(a,h)anthracene	2.00	1.86		ug/L		93	48 - 126
Dibenzofuran	2.00	1.47		ug/L		74	45 - 120
1,2-Dichlorobenzene	2.00	1.19		ug/L		60	20 - 120
1,3-Dichlorobenzene	2.00	1.12		ug/L		56	20 - 120
1,4-Dichlorobenzene	2.00	1.14		ug/L		57	20 - 120
3,3'-Dichlorobenzidine	4.00	3.94		ug/L		99	33 - 150
2,4-Dichlorophenol	2.00	1.22		ug/L		61	45 - 120
Diethyl phthalate	2.00	2.07		ug/L		104	60 - 121
2,4-Dimethylphenol	2.00	1.56	J	ug/L		78	37 - 120
Dimethyl phthalate	2.00	1.70		ug/L		85	54 - 120
Di-n-butyl phthalate	2.00	2.32	J	ug/L		116	55 - 150
4,6-Dinitro-2-methylphenol	4.00	3.09		ug/L		77	29 - 136
2,4-Dinitrophenol	4.00	1.76	J	ug/L		44	10 - 146

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 580-378233/2-A
Matrix: Water
Analysis Batch: 378282

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 378233

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-Dinitrotoluene	2.00	1.82		ug/L		91	51 - 120
2,6-Dinitrotoluene	2.00	1.60		ug/L		80	52 - 120
Di-n-octyl phthalate	2.00	2.20		ug/L		110	48 - 140
Fluoranthene	2.00	2.26		ug/L		113	60 - 121
Fluorene	2.00	1.52		ug/L		76	20 - 120
Hexachlorobenzene	2.00	1.69		ug/L		85	49 - 120
Hexachlorobutadiene	2.00	1.05		ug/L		53	10 - 130
Hexachlorocyclopentadiene	2.00	0.678	J	ug/L		34	10 - 125
Hexachloroethane	2.00	1.16		ug/L		58	10 - 130
Indeno[1,2,3-cd]pyrene	2.00	1.76		ug/L		88	39 - 124
Isophorone	2.00	1.40		ug/L		70	41 - 120
2-Methylphenol	2.00	1.25		ug/L		63	30 - 120
3 & 4 Methylphenol	2.00	1.09		ug/L		54	29 - 120
Naphthalene	2.00	1.28		ug/L		64	42 - 120
2-Nitroaniline	2.00	1.59		ug/L		79	43 - 120
3-Nitroaniline	2.00	1.73	J	ug/L		86	10 - 138
4-Nitroaniline	2.00	2.18		ug/L		109	38 - 133
Nitrobenzene	2.00	1.92		ug/L		96	38 - 120
4-Nitrophenol	4.00	1.7	U	ug/L		30	10 - 120
N-Nitrosodi-n-propylamine	2.00	1.59		ug/L		79	39 - 120
N-Nitrosodiphenylamine	2.00	1.74		ug/L		87	52 - 120
Pentachlorophenol	4.00	1.79	J	ug/L		45	18 - 135
Phenanthrene	2.00	1.89		ug/L		95	54 - 120
Phenol	2.00	0.613	J	ug/L		31	13 - 120
Pyrene	2.00	2.26		ug/L		113	57 - 120
1,2,4-Trichlorobenzene	2.00	1.24		ug/L		62	21 - 120
2,4,5-Trichlorophenol	2.00	1.28		ug/L		64	45 - 120
2,4,6-Trichlorophenol	2.00	1.33		ug/L		66	43 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*57*		*35 - 120*
2-Fluorophenol (Surr)	*37*		*21 - 120*
Nitrobenzene-d5 (Surr)	*66*		*39 - 120*
Phenol-d5 (Surr)	*27*		*10 - 120*
Terphenyl-d14	*100*		*63 - 137*
2,4,6-Tribromophenol	*77*		*50 - 130*

Lab Sample ID: LCSD 580-378233/3-A
Matrix: Water
Analysis Batch: 378282

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 378233

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	2.00	1.42		ug/L		71	41 - 120	3	35
Acenaphthylene	2.00	1.43		ug/L		71	43 - 120	1	35
Anthracene	2.00	1.90		ug/L		95	58 - 120	4	35
Benzo[a]anthracene	2.00	2.20		ug/L		110	48 - 131	12	35
Benzo[a]pyrene	2.00	2.22		ug/L		111	55 - 125	11	35
Benzo[b]fluoranthene	2.00	2.14		ug/L		107	54 - 124	12	35

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 580-378233/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 378282
Prep Batch: 378233

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[g,h,i]perylene	2.00	2.19		ug/L		109	46 - 124	12	35
Benzo[k]fluoranthene	2.00	2.15		ug/L		108	52 - 132	8	35
Bis(2-chloroethoxy)methane	2.00	1.59		ug/L		79	38 - 120	7	35
Bis(2-ethylhexyl) phthalate	2.00	2.40	J	ug/L		120	41 - 150	10	35
4-Bromophenyl phenyl ether	2.00	1.56		ug/L		78	53 - 120	0	35
Butyl benzyl phthalate	2.00	2.48	J	ug/L		124	40 - 150	11	35
Carbazole	2.00	2.35		ug/L		117	61 - 150	1	35
4-Chloroaniline	2.00	1.05	J	ug/L		52	10 - 150	18	35
4-Chloro-3-methylphenol	2.00	1.61		ug/L		81	36 - 120	8	35
2-Chloronaphthalene	2.00	1.37		ug/L		68	35 - 120	6	35
2-Chlorophenol	2.00	1.35		ug/L		68	44 - 120	1	35
4-Chlorophenyl phenyl ether	2.00	1.49		ug/L		75	41 - 120	1	35
Chrysene	2.00	2.32		ug/L		116	57 - 125	9	35
Dibenz(a,h)anthracene	2.00	2.08		ug/L		104	48 - 126	11	35
Dibenzofuran	2.00	1.54		ug/L		77	45 - 120	4	35
1,2-Dichlorobenzene	2.00	1.19		ug/L		59	20 - 120	0	35
1,3-Dichlorobenzene	2.00	1.16		ug/L		58	20 - 120	4	35
1,4-Dichlorobenzene	2.00	1.18		ug/L		59	20 - 120	3	35
3,3'-Dichlorobenzidine	4.00	4.26		ug/L		107	33 - 150	8	35
2,4-Dichlorophenol	2.00	1.32		ug/L		66	45 - 120	8	35
Diethyl phthalate	2.00	2.26		ug/L		113	60 - 121	9	35
2,4-Dimethylphenol	2.00	1.53	J	ug/L		76	37 - 120	2	35
Dimethyl phthalate	2.00	1.76		ug/L		88	54 - 120	3	35
Di-n-butyl phthalate	2.00	2.33	J	ug/L		117	55 - 150	1	35
4,6-Dinitro-2-methylphenol	4.00	2.65		ug/L		66	29 - 136	15	35
2,4-Dinitrophenol	4.00	1.84	J	ug/L		46	10 - 146	4	35
2,4-Dinitrotoluene	2.00	2.08		ug/L		104	51 - 120	13	35
2,6-Dinitrotoluene	2.00	1.62		ug/L		81	52 - 120	1	35
Di-n-octyl phthalate	2.00	2.40		ug/L		120	48 - 140	9	35
Fluoranthene	2.00	2.28		ug/L		114	60 - 121	1	35
Fluorene	2.00	1.60		ug/L		80	20 - 120	5	35
Hexachlorobenzene	2.00	1.68		ug/L		84	49 - 120	1	35
Hexachlorobutadiene	2.00	1.00		ug/L		50	10 - 130	5	35
Hexachlorocyclopentadiene	2.00	0.664	J	ug/L		33	10 - 125	2	35
Hexachloroethane	2.00	1.17		ug/L		58	10 - 130	1	35
Indeno[1,2,3-cd]pyrene	2.00	2.16		ug/L		108	39 - 124	20	35
Isophorone	2.00	1.51		ug/L		76	41 - 120	7	35
2-Methylphenol	2.00	1.23		ug/L		61	30 - 120	2	35
3 & 4 Methylphenol	2.00	1.20		ug/L		60	29 - 120	10	35
Naphthalene	2.00	1.23		ug/L		61	42 - 120	4	35
2-Nitroaniline	2.00	1.69		ug/L		85	43 - 120	7	35
3-Nitroaniline	2.00	1.88	J	ug/L		94	10 - 138	9	35
4-Nitroaniline	2.00	2.43		ug/L		121	38 - 133	11	35
Nitrobenzene	2.00	2.02		ug/L		101	38 - 120	5	35
4-Nitrophenol	4.00	1.7	U	ug/L		41	10 - 120	32	35
N-Nitrosodi-n-propylamine	2.00	1.68		ug/L		84	39 - 120	6	35
N-Nitrosodiphenylamine	2.00	1.74		ug/L		87	52 - 120	0	35
Pentachlorophenol	4.00	1.37	J	ug/L		34	18 - 135	27	35
Phenanthrene	2.00	1.93		ug/L		96	54 - 120	2	35

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 580-378233/3-A
Matrix: Water
Analysis Batch: 378282

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 378233

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenol			2.00	0.674	J	ug/L		34	13 - 120	10	35
Pyrene			2.00	2.30		ug/L		115	57 - 120	2	35
1,2,4-Trichlorobenzene			2.00	1.17		ug/L		58	21 - 120	6	35
2,4,5-Trichlorophenol			2.00	1.68		ug/L		84	45 - 120	27	35
2,4,6-Trichlorophenol			2.00	1.39		ug/L		70	43 - 120	5	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*57*		*35 - 120*
2-Fluorophenol (Surr)	*41*		*21 - 120*
Nitrobenzene-d5 (Surr)	*63*		*39 - 120*
Phenol-d5 (Surr)	*29*		*10 - 120*
Terphenyl-d14	*104*		*63 - 137*
2,4,6-Tribromophenol	*80*		*50 - 130*

Method: 8015D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 580-378234/1-A
Matrix: Water
Analysis Batch: 378249

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 378234

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	90	U	110	90	ug/L		01/13/22 13:00	01/13/22 19:01	1
C24-C40	180	U	200	180	ug/L		01/13/22 13:00	01/13/22 19:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*73*		*53 - 120*	*01/13/22 13:00*	*01/13/22 19:01*	*1*

Lab Sample ID: LCS 580-378234/2-A
Matrix: Water
Analysis Batch: 378249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 378234

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C9-C25			4000	3210		ug/L		80	55 - 134
C24-C40			4000	3600		ug/L		90	36 - 143

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*80*		*53 - 120*

Lab Sample ID: LCSD 580-378234/3-A
Matrix: Water
Analysis Batch: 378249

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 378234

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C9-C25			4000	3240		ug/L		81	55 - 134	1	26
C24-C40			4000	3630		ug/L		91	36 - 143	1	24

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*77*		*53 - 120*

Lab Chronicle

Client: AECOM
Job ID: 580-109239-1
Project/Site: Red Hill Drinking Water CV22F0106

Client Sample ID: 20220111-H1-YT10
Lab Sample ID: 580-109239-1
Date Collected: 01/11/22 15:15
Matrix: Water
Date Received: 01/13/22 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	378319	01/14/22 02:51	JSM	FGS SEA
Total/NA	Analysis	8260D		1	378318	01/14/22 02:51	B1M	FGS SEA
Total/NA	Prep	3510C			378233	01/13/22 12:56	M1E	FGS SEA
Total/NA	Analysis	8270E		1	378282	01/13/22 23:03	T1L	FGS SEA
Total/NA	Prep	3510C			378234	01/13/22 13:00	M1E	FGS SEA
Total/NA	Analysis	8015D		1	378249	01/13/22 21:42	JAE	FGS SEA

Client Sample ID: 20220111-H1-YT12
Lab Sample ID: 580-109239-2
Date Collected: 01/11/22 16:25
Matrix: Water
Date Received: 01/13/22 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	378319	01/14/22 03:15	JSM	FGS SEA
Total/NA	Analysis	8260D		1	378318	01/14/22 03:15	B1M	FGS SEA
Total/NA	Prep	3510C			378233	01/13/22 12:56	M1E	FGS SEA
Total/NA	Analysis	8270E		1	378282	01/13/22 23:26	T1L	FGS SEA
Total/NA	Prep	3510C			378234	01/13/22 13:00	M1E	FGS SEA
Total/NA	Analysis	8015D		1	378249	01/13/22 22:02	JAE	FGS SEA

Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: AECOM
Job ID: 580-109239-1
Project/Site: Red Hill Drinking Water CV22F0106

Laboratory: Eurofins Seattle

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2236	01-19-22

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
8260D		Water	1,2-Dichloroethene, Total

Sample Summary

Client: AECOM
Job ID: 580-109239-1
Project/Site: Red Hill Drinking Water CV22F0106

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-109239-1	20220111-H1-YT10	Water	01/11/22 15:15	01/13/22 10:15
580-109239-2	20220111-H1-YT12	Water	01/11/22 16:25	01/13/22 10:15

Eurofins FGS, Seattle
5755 8th Street East
Tacoma, WA 98424

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: AECOM	Lab PM: Elaine Walker	Carrier Tracking No(s): FedEx	COC No: 01112022DW-75
Client Contact: Alethea Ramos (alternate: Margie Pascua)	Phone:	E-Mail: M.Elaine.Walker@EurofinsET.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: AECOM	PWSID:			Job #: 109239
Address: 1001 Bishop St. Suite 1600	Due Date Requested: see subcontract			
City: Honolulu	TAT Requested (days):			
State, Zip: Hawaii 96813	Compliance Project: Δ Yes Δ No			
Phone: 808-521-3051 (direct: 808-529-7283) (alternate: 808-356-5373)	PO #:			
Email: alethea.ramos@aecom.com (alternate: margie.pascua@aecom.com)	WO #:			
Project Name: CV22F0106	Project #: 60674414			
Site: RHSF	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, 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)	TPH-g (C6-C10) by 8260	TPH-d, TPH-o (C10-C24, C24-C40) by 8015	8270 SVOCs 8260 VOCs (Full Suite)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	N			
-1 20220111-HI-RTIO	1/11/22	1515	G	W	N	N	X	X	X	9	

1/11/22 GA

580-109239 Chain of Custody

Therm. ID: A3 Cor: 1.1 °C Unc: +1 °C
Cooler Dsc: DW25
Packing: Bub
Cust. Seal: Yes ✓ No
Blue Ice, Wet, Dry, None
FedEx: Ice
UPS:
Lab Cour: h)
Other: nths

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

Sample Disposal (A fee may be
☐ Return To Client

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

Prelim data (Level 1or2)=see TAT above. DoD Stage 4 report standard TAT. AECOM EQuIS EDD.

Special Instructions/QC Requirem

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/11/22 @ 1930	AECOM	Connie Porter	1/11/22 1930	AECOM
Connie Porter	1/12/22 1500	AECOM		1/12/22 1015	EFGS
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:

Eurofins FGS, Seattle
5755 8th Street East
Tacoma, WA 98424

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: AECOM	Lab PM: Elaine Walker	Carrier Tracking No(s): FedEx	COC No: 01112022DW-76
Client Contact: Alethea Ramos (alternate: Margie Pascua)	Phone:	E-Mail: M.Elaine.Walker@EurofinsET.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: AECOM	PWSID:	**Analysis Requested**		Job #: 109239

Address: 1001 Bishop St. Suite 1600	Due Date Requested: see subcontract
City: Honolulu	TAT Requested (days): 2
State, Zip: Hawaii 96813	Compliance Project: Δ Yes Δ No
Phone: 808-521-3051 (direct: 808-529-7283) (alternate: 808-356-5373)	PO #:
Email: alethea.ramos@aecom.com (alternate: margie.pascua@aecom.com)	WO #:
Project Name: CV22F0106	Project #: 60674414
Site: RHSF	SSOW#:

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA
M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; 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)	EPA 8260 TPH-g (HCl)	EPA 8015 TPH-d/o	8270 SVOCs	8260 VOCs (Full Suite)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	I				
-2 20220111-HI-YT12	1/11/22	1625	G	W			X	X	X	X	9	

1/11/22 SA

Therm. ID: 43 Cor: 0.9° Unc: 0.9°
Cooler Dsc: 76
FedEx: lo
Packing: Bub
UPS:
Cust. Seal: Yes / No
Lab Cour: hs
Blue Ice, Wet, Dry, None
Other:

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

Sample Disposal (A fee may be asse
☐ Return To Client ☐ Disp

Deliverable Requested: I, II, III, IV, Other (specify) — Prelim data (Level 1or2)=see TAT above. DoD Stage 4 report standard TAT. AECOM EQuIS EDD.

Special Instructions/QC Requirements:

Empty Kit Relinquished by: Date: Time:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/11/22 @ 1930	AECOM	Conner Potter	1/11/22 1930	AECOM
Conner Potter	1/12/22 1500	AECOM	[signature]	1/13/22 1015	FFGS

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

Ver: 01/16/2019
1/14/2022

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-109239-1

Login Number: 109239

List Source: Eurofins Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	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	
Is the Field Sampler's name present on COC?	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	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	Refer to Job Narrative for details.
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

Laboratory Job ID: 580-109258-1
Client Project/Site: Red Hill Drinking Water CV22F0106

For:
AECOM
1001 Bishop Street
Honolulu, Hawaii 96813

Attn: Margie F Pascua

Kristine D. Allen

Authorized for release by:
1/14/2022 4:41:56 PM
Kristine Allen, Client Service Manager
(253)248-4970
Kristine.Allen@Eurofinset.com

Designee for

Elaine Walker, Project Manager II
(253)248-4972
m.elaine.walker@eurofinset.com

Table of Contents

Job ID: 580-109258-1

Laboratory: Eurofins Seattle

Narrative

Job Narrative
580-109258-1

Comments
No additional comments.

Receipt
The sample was received on 1/13/2022 4:21 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.6º C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 580-378318 recovered above the upper control limit for Chloromethane, Bromomethane, Ethyl Chloride and Vinyl chloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: 20220111-H1-YT08 (580-109258-1), (CCVIS 580-378318/3), (580-109243-A-1) and (580-109243-A-1 MS).

Method 8260D: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 580-378318 recovered outside control limits for the following analytes: Chloromethane and Vinyl chloride. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: Surrogate Toluene-d8 (Surr) recovery for the following samples were outside control limits: 20220111-H1-YT08 (580-109258-1), (580-109243-A-1) and (580-109243-A-1 MS). Evidence of matrix interference is present; therefore, re-analysis was not performed.

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

GC/MS Semi VOA
Method 8270E: The minimum response factor (RF) criteria for the continuing calibration verification (CCV) analyzed in batch 580-378282 was outside criteria for the following analytes: N-Nitrosodi-n-propylamine. As indicated in the reference method, sample analysis may proceed; however, any detection or non-detection for the affected analytes is considered estimated.

Methods 625.1, 8270E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 580-378233 and analytical batch 580-378282 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Methods 625.1, 8270E: The continuing calibration verification (CCV) associated with batch 580-378282 recovered above the upper control limit for Nitrobenzene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: 20220111-H1-YT08 (580-109258-1), (CCVIS 580-378282/3).

Methods 625.1, 8270E: Surrogate recovery for the following samples was outside control limits: 20220111-H1-YT08 (580-109258-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

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

Organic Prep
Methods 3510C, CWA_Prep: Insufficient sample volume was available to perform a matrix spike duplicate/sample duplicate (MSD/DUP) associated with preparation batch 580-378233. Laboratory control sample/laboratory control sample duplicate were created and substituted for MSD/DUP.

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 580-378234. Laboratory control sample/laboratory control sample duplicate were created and substituted for MS/MSD/DUP.

Job ID: 580-109258-1 (Continued)

Laboratory: Eurofins Seattle (Continued)

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

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

Definitions/Glossary

Client: AECOM
Job ID: 580-109258-1
Project/Site: Red Hill Drinking Water CV22F0106

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Client: AECOM
Job ID: 580-109258-1
Project/Site: Red Hill Drinking Water CV22F0106

Client Sample ID: 20220111-H1-YT08
Lab Sample ID: 580-109258-1
Date Collected: 01/11/22 14:05
Matrix: Water
Date Received: 01/13/22 16:21

Method: 8260B/CA_LUFTMS - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	31	U	100	31	ug/L			01/14/22 06:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*78 - 120*		*01/14/22 06:50*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.2	U	15	3.2	ug/L			01/14/22 06:50	1
Benzene	0.24	U	1.0	0.24	ug/L			01/14/22 06:50	1
Bromodichloromethane	0.29	U	1.0	0.29	ug/L			01/14/22 06:50	1
Bromoform	0.51	U	1.0	0.51	ug/L			01/14/22 06:50	1
Bromomethane	0.21	U	1.0	0.21	ug/L			01/14/22 06:50	1
Carbon disulfide	0.53	U	1.0	0.53	ug/L			01/14/22 06:50	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			01/14/22 06:50	1
Chlorobenzene	0.44	U	1.0	0.44	ug/L			01/14/22 06:50	1
Chloroform	0.26	U	1.0	0.26	ug/L			01/14/22 06:50	1
Chloromethane	0.28	U *+	1.0	0.28	ug/L			01/14/22 06:50	1
cis-1,2-Dichloroethene	0.35	U	1.0	0.35	ug/L			01/14/22 06:50	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.20	ug/L			01/14/22 06:50	1
Dibromochloromethane	0.43	U	1.0	0.43	ug/L			01/14/22 06:50	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/14/22 06:50	1
1,2-Dichloroethane	0.42	U	1.0	0.42	ug/L			01/14/22 06:50	1
1,1-Dichloroethene	0.28	U	1.0	0.28	ug/L			01/14/22 06:50	1
1,2-Dichloroethene, Total	0.39	U	1.0	0.39	ug/L			01/14/22 06:50	1
Dichloromethane	1.4	U *1	3.0	1.4	ug/L			01/14/22 06:50	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			01/14/22 06:50	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			01/14/22 06:50	1
Ethyl Chloride	0.35	U	1.0	0.35	ug/L			01/14/22 06:50	1
2-Hexanone	4.0	U	15	4.0	ug/L			01/14/22 06:50	1
Methyl Ethyl Ketone	4.7	U	15	4.7	ug/L			01/14/22 06:50	1
Methyl isobutyl ketone (MIBK)	2.5	U	5.0	2.5	ug/L			01/14/22 06:50	1
m-Xylene & p-Xylene	0.53	U	2.0	0.53	ug/L			01/14/22 06:50	1
o-Xylene	0.39	U	1.0	0.39	ug/L			01/14/22 06:50	1
Styrene	0.53	U	1.0	0.53	ug/L			01/14/22 06:50	1
1,1,2,2-Tetrachloroethane	0.52	U	1.0	0.52	ug/L			01/14/22 06:50	1
Tetrachloroethene	0.41	U	1.0	0.41	ug/L			01/14/22 06:50	1
Toluene	0.39	U	1.0	0.39	ug/L			01/14/22 06:50	1
trans-1,2-Dichloroethene	0.39	U	1.0	0.39	ug/L			01/14/22 06:50	1
trans-1,3-Dichloropropene	0.41	U	1.0	0.41	ug/L			01/14/22 06:50	1
1,1,1-Trichloroethane	0.39	U	1.0	0.39	ug/L			01/14/22 06:50	1
1,1,2-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/14/22 06:50	1
Trichloroethene	0.26	U	1.0	0.26	ug/L			01/14/22 06:50	1
Vinyl chloride	0.22	U *+	1.0	0.22	ug/L			01/14/22 06:50	1
Xylenes, Total	0.53	U	2.0	0.53	ug/L			01/14/22 06:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*01/14/22 06:50*	*1*
Dibromofluoromethane (Surr)	*111*		*80 - 120*		*01/14/22 06:50*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*01/14/22 06:50*	*1*
Toluene-d8 (Surr)	*0.3*	*S1-*	*80 - 120*		*01/14/22 06:50*	*1*

Client: AECOM
Job ID: 580-109258-1
Project/Site: Red Hill Drinking Water CV22F0106

Client Sample ID: 20220111-H1-YT08
Lab Sample ID: 580-109258-1
Date Collected: 01/11/22 14:05
Matrix: Water
Date Received: 01/13/22 16:21

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.051	U	0.41	0.051	ug/L		01/13/22 17:01	01/14/22 01:43	1
Acenaphthylene	0.061	U	1.0	0.061	ug/L		01/13/22 17:01	01/14/22 01:43	1
Anthracene	0.051	U	1.0	0.051	ug/L		01/13/22 17:01	01/14/22 01:43	1
Benzo[a]anthracene	0.051	U	0.26	0.051	ug/L		01/13/22 17:01	01/14/22 01:43	1
Benzo[a]pyrene	0.041	U	0.26	0.041	ug/L		01/13/22 17:01	01/14/22 01:43	1
Benzo[b]fluoranthene	0.041	U	0.26	0.041	ug/L		01/13/22 17:01	01/14/22 01:43	1
Benzo[g,h,i]perylene	0.041	U	0.26	0.041	ug/L		01/13/22 17:01	01/14/22 01:43	1
Benzo[k]fluoranthene	0.051	U	0.26	0.051	ug/L		01/13/22 17:01	01/14/22 01:43	1
Bis(2-chloroethoxy)methane	0.051	U	0.61	0.051	ug/L		01/13/22 17:01	01/14/22 01:43	1
Bis(2-chloroethyl)ether	0.031	U	0.10	0.031	ug/L		01/13/22 17:01	01/14/22 01:43	1
Bis(2-ethylhexyl) phthalate	0.76	U	3.1	0.76	ug/L		01/13/22 17:01	01/14/22 01:43	1
4-Bromophenyl phenyl ether	0.061	U	0.61	0.061	ug/L		01/13/22 17:01	01/14/22 01:43	1
Butyl benzyl phthalate	0.28	U	4.1	0.28	ug/L		01/13/22 17:01	01/14/22 01:43	1
Carbazole	0.10	U	0.61	0.10	ug/L		01/13/22 17:01	01/14/22 01:43	1
4-Chloroaniline	0.60	U	2.0	0.60	ug/L		01/13/22 17:01	01/14/22 01:43	1
4-Chloro-3-methylphenol	0.13	U	0.61	0.13	ug/L		01/13/22 17:01	01/14/22 01:43	1
2-Chloronaphthalene	0.072	U	1.0	0.072	ug/L		01/13/22 17:01	01/14/22 01:43	1
2-Chlorophenol	0.051	U	1.0	0.051	ug/L		01/13/22 17:01	01/14/22 01:43	1
4-Chlorophenyl phenyl ether	0.051	U	0.61	0.051	ug/L		01/13/22 17:01	01/14/22 01:43	1
Chrysene	0.041	U	0.26	0.041	ug/L		01/13/22 17:01	01/14/22 01:43	1
Dibenz(a,h)anthracene	0.072	U	0.26	0.072	ug/L		01/13/22 17:01	01/14/22 01:43	1
Dibenzofuran	0.10	U	0.41	0.10	ug/L		01/13/22 17:01	01/14/22 01:43	1
1,2-Dichlorobenzene	0.051	U	0.41	0.051	ug/L		01/13/22 17:01	01/14/22 01:43	1
1,3-Dichlorobenzene	0.041	U	0.41	0.041	ug/L		01/13/22 17:01	01/14/22 01:43	1
1,4-Dichlorobenzene	0.041	U	0.41	0.041	ug/L		01/13/22 17:01	01/14/22 01:43	1
3,3'-Dichlorobenzidine	0.27	U	1.0	0.27	ug/L		01/13/22 17:01	01/14/22 01:43	1
2,4-Dichlorophenol	0.20	U	1.0	0.20	ug/L		01/13/22 17:01	01/14/22 01:43	1
Diethyl phthalate	0.15	U	1.0	0.15	ug/L		01/13/22 17:01	01/14/22 01:43	1
2,4-Dimethylphenol	0.16	U	4.1	0.16	ug/L		01/13/22 17:01	01/14/22 01:43	1
Dimethyl phthalate	0.061	U	0.61	0.061	ug/L		01/13/22 17:01	01/14/22 01:43	1
Di-n-butyl phthalate	0.19	U	3.1	0.19	ug/L		01/13/22 17:01	01/14/22 01:43	1
4,6-Dinitro-2-methylphenol	0.56	U	2.0	0.56	ug/L		01/13/22 17:01	01/14/22 01:43	1
2,4-Dinitrophenol	1.6	U	5.1	1.6	ug/L		01/13/22 17:01	01/14/22 01:43	1
2,4-Dinitrotoluene	0.10	U	1.0	0.10	ug/L		01/13/22 17:01	01/14/22 01:43	1
2,6-Dinitrotoluene	0.10	U	0.41	0.10	ug/L		01/13/22 17:01	01/14/22 01:43	1
Di-n-octyl phthalate	0.13	U	1.0	0.13	ug/L		01/13/22 17:01	01/14/22 01:43	1
Fluoranthene	0.061	U	0.26	0.061	ug/L		01/13/22 17:01	01/14/22 01:43	1
Fluorene	0.051	U	0.26	0.051	ug/L		01/13/22 17:01	01/14/22 01:43	1
Hexachlorobenzene	0.041	U	0.61	0.041	ug/L		01/13/22 17:01	01/14/22 01:43	1
Hexachlorobutadiene	0.061	U	1.0	0.061	ug/L		01/13/22 17:01	01/14/22 01:43	1
Hexachlorocyclopentadiene	0.14	U	1.0	0.14	ug/L		01/13/22 17:01	01/14/22 01:43	1
Hexachloroethane	0.051	U	1.0	0.051	ug/L		01/13/22 17:01	01/14/22 01:43	1
Indeno[1,2,3-cd]pyrene	0.13	U	0.41	0.13	ug/L		01/13/22 17:01	01/14/22 01:43	1
Isophorone	0.10	U	0.41	0.10	ug/L		01/13/22 17:01	01/14/22 01:43	1
2-Methylphenol	0.051	U	0.61	0.051	ug/L		01/13/22 17:01	01/14/22 01:43	1
3 & 4 Methylphenol	0.10	U	0.61	0.10	ug/L		01/13/22 17:01	01/14/22 01:43	1
Naphthalene	0.16	U	0.41	0.16	ug/L		01/13/22 17:01	01/14/22 01:43	1
2-Nitroaniline	0.10	U	1.0	0.10	ug/L		01/13/22 17:01	01/14/22 01:43	1
3-Nitroaniline	0.16	U	3.1	0.16	ug/L		01/13/22 17:01	01/14/22 01:43	1

Client: AECOM
Job ID: 580-109258-1
Project/Site: Red Hill Drinking Water CV22F0106

Client Sample ID: 20220111-H1-YT08
Lab Sample ID: 580-109258-1
Date Collected: 01/11/22 14:05
Matrix: Water
Date Received: 01/13/22 16:21

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitroaniline	0.22	U	2.0	0.22	ug/L		01/13/22 17:01	01/14/22 01:43	1
Nitrobenzene	0.041	U	1.0	0.041	ug/L		01/13/22 17:01	01/14/22 01:43	1
4-Nitrophenol	1.7	U	10	1.7	ug/L		01/13/22 17:01	01/14/22 01:43	1
N-Nitrosodi-n-propylamine	0.061	U	0.41	0.061	ug/L		01/13/22 17:01	01/14/22 01:43	1
N-Nitrosodiphenylamine	0.072	U	1.0	0.072	ug/L		01/13/22 17:01	01/14/22 01:43	1
Pentachlorophenol	0.52	U	10	0.52	ug/L		01/13/22 17:01	01/14/22 01:43	1
Phenanthrene	0.12	U	1.0	0.12	ug/L		01/13/22 17:01	01/14/22 01:43	1
Phenol	0.37	U	1.0	0.37	ug/L		01/13/22 17:01	01/14/22 01:43	1
Pyrene	0.041	U	1.0	0.041	ug/L		01/13/22 17:01	01/14/22 01:43	1
1,2,4-Trichlorobenzene	0.092	U	0.41	0.092	ug/L		01/13/22 17:01	01/14/22 01:43	1
2,4,5-Trichlorophenol	0.10	U	0.41	0.10	ug/L		01/13/22 17:01	01/14/22 01:43	1
2,4,6-Trichlorophenol	0.10	U	0.61	0.10	ug/L		01/13/22 17:01	01/14/22 01:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*107*		*35 - 120*	*01/13/22 17:01*	*01/14/22 01:43*	*1*
2-Fluorophenol (Surr)	*32*		*21 - 120*	*01/13/22 17:01*	*01/14/22 01:43*	*1*
Nitrobenzene-d5 (Surr)	*100*		*39 - 120*	*01/13/22 17:01*	*01/14/22 01:43*	*1*
Phenol-d5 (Surr)	*0*	*S1-*	*10 - 120*	*01/13/22 17:01*	*01/14/22 01:43*	*1*
Terphenyl-d14	*137*		*63 - 137*	*01/13/22 17:01*	*01/14/22 01:43*	*1*
2,4,6-Tribromophenol	*100*		*50 - 130*	*01/13/22 17:01*	*01/14/22 01:43*	*1*

Method: 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	92	U	110	92	ug/L		01/13/22 17:04	01/14/22 00:23	1
C24-C40	180	U	200	180	ug/L		01/13/22 17:04	01/14/22 00:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*99*		*53 - 120*	*01/13/22 17:04*	*01/14/22 00:23*	*1*

Method: 8260B/CA_LUFTMS - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-378319/5
Matrix: Water
Analysis Batch: 378319

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	31	U	100	31	ug/L			01/14/22 00:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*78 - 120*		*01/14/22 00:28*	*1*

Lab Sample ID: LCS 580-378319/8
Matrix: Water
Analysis Batch: 378319

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (C6-C12)			1000	1010		ug/L		101	75 - 127		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*78 - 120*

Lab Sample ID: LCSD 580-378319/9
Matrix: Water
Analysis Batch: 378319

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (C6-C12)			1000	1020		ug/L		102	75 - 127	1	13

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*78 - 120*

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-378318/5
Matrix: Water
Analysis Batch: 378318

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.2	U	15	3.2	ug/L			01/14/22 00:28	1
Benzene	0.24	U	1.0	0.24	ug/L			01/14/22 00:28	1
Bromodichloromethane	0.29	U	1.0	0.29	ug/L			01/14/22 00:28	1
Bromoform	0.51	U	1.0	0.51	ug/L			01/14/22 00:28	1
Bromomethane	0.21	U	1.0	0.21	ug/L			01/14/22 00:28	1
Carbon disulfide	0.53	U	1.0	0.53	ug/L			01/14/22 00:28	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			01/14/22 00:28	1
Chlorobenzene	0.44	U	1.0	0.44	ug/L			01/14/22 00:28	1
Chloroform	0.26	U	1.0	0.26	ug/L			01/14/22 00:28	1
Chloromethane	0.28	U	1.0	0.28	ug/L			01/14/22 00:28	1
cis-1,2-Dichloroethene	0.35	U	1.0	0.35	ug/L			01/14/22 00:28	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.20	ug/L			01/14/22 00:28	1
Dibromochloromethane	0.43	U	1.0	0.43	ug/L			01/14/22 00:28	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/14/22 00:28	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-378318/5
Matrix: Water
Analysis Batch: 378318

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	0.42	U	1.0	0.42	ug/L			01/14/22 00:28	1
1,1-Dichloroethene	0.28	U	1.0	0.28	ug/L			01/14/22 00:28	1
1,2-Dichloroethene, Total	0.39	U	1.0	0.39	ug/L			01/14/22 00:28	1
Dichloromethane	1.4	U	3.0	1.4	ug/L			01/14/22 00:28	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			01/14/22 00:28	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			01/14/22 00:28	1
Ethyl Chloride	0.35	U	1.0	0.35	ug/L			01/14/22 00:28	1
2-Hexanone	4.0	U	15	4.0	ug/L			01/14/22 00:28	1
Methyl Ethyl Ketone	4.7	U	15	4.7	ug/L			01/14/22 00:28	1
Methyl isobutyl ketone (MIBK)	2.5	U	5.0	2.5	ug/L			01/14/22 00:28	1
m-Xylene & p-Xylene	0.53	U	2.0	0.53	ug/L			01/14/22 00:28	1
o-Xylene	0.39	U	1.0	0.39	ug/L			01/14/22 00:28	1
Styrene	0.53	U	1.0	0.53	ug/L			01/14/22 00:28	1
1,1,2,2-Tetrachloroethane	0.52	U	1.0	0.52	ug/L			01/14/22 00:28	1
Tetrachloroethene	0.41	U	1.0	0.41	ug/L			01/14/22 00:28	1
Toluene	0.39	U	1.0	0.39	ug/L			01/14/22 00:28	1
trans-1,2-Dichloroethene	0.39	U	1.0	0.39	ug/L			01/14/22 00:28	1
trans-1,3-Dichloropropene	0.41	U	1.0	0.41	ug/L			01/14/22 00:28	1
1,1,1-Trichloroethane	0.39	U	1.0	0.39	ug/L			01/14/22 00:28	1
1,1,2-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/14/22 00:28	1
Trichloroethene	0.26	U	1.0	0.26	ug/L			01/14/22 00:28	1
Vinyl chloride	0.22	U	1.0	0.22	ug/L			01/14/22 00:28	1
Xylenes, Total	0.53	U	2.0	0.53	ug/L			01/14/22 00:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*01/14/22 00:28*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*01/14/22 00:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*01/14/22 00:28*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*01/14/22 00:28*	*1*

Lab Sample ID: LCS 580-378318/6
Matrix: Water
Analysis Batch: 378318

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	55.5		ug/L		111	44 - 150
Benzene	10.0	11.1		ug/L		111	80 - 122
Bromodichloromethane	10.0	10.4		ug/L		104	75 - 124
Bromoform	10.0	9.11		ug/L		91	56 - 139
Bromomethane	10.0	13.6		ug/L		136	36 - 150
Carbon disulfide	10.0	9.78		ug/L		98	63 - 134
Carbon tetrachloride	10.0	10.7		ug/L		107	72 - 129
Chlorobenzene	10.0	10.1		ug/L		101	80 - 120
Chloroform	10.0	11.1		ug/L		111	78 - 127
Chloromethane	10.0	21.1	*+	ug/L		211	25 - 150
cis-1,2-Dichloroethene	10.0	10.8		ug/L		108	76 - 120
cis-1,3-Dichloropropene	10.0	9.79		ug/L		98	77 - 120
Dibromochloromethane	10.0	9.73		ug/L		97	73 - 125

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-378318/6
Matrix: Water
Analysis Batch: 378318

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,1-Dichloroethane			10.0	11.5		ug/L		115	80 - 120		
1,2-Dichloroethane			10.0	10.8		ug/L		108	69 - 126		
1,1-Dichloroethene			10.0	11.2		ug/L		112	70 - 129		
1,2-Dichloroethene, Total			20.0	22.0		ug/L		110	76 - 129		
Dichloromethane			10.0	11.2		ug/L		112	77 - 125		
1,2-Dichloropropane			10.0	10.8		ug/L		108	80 - 120		
Ethylbenzene			10.0	10.1		ug/L		101	80 - 120		
Ethyl Chloride			10.0	13.1		ug/L		131	38 - 150		
2-Hexanone			50.0	49.3		ug/L		99	65 - 144		
Methyl Ethyl Ketone			50.0	52.9		ug/L		106	65 - 137		
Methyl isobutyl ketone (MIBK)			50.0	48.6		ug/L		97	59 - 141		
m-Xylene & p-Xylene			10.0	10.2		ug/L		102	80 - 120		
o-Xylene			10.0	9.72		ug/L		97	80 - 120		
Styrene			10.0	9.91		ug/L		99	76 - 122		
1,1,2,2-Tetrachloroethane			10.0	9.36		ug/L		94	74 - 124		
Tetrachloroethene			10.0	10.3		ug/L		103	76 - 125		
Toluene			10.0	10.2		ug/L		102	80 - 120		
trans-1,2-Dichloroethene			10.0	11.2		ug/L		112	75 - 120		
trans-1,3-Dichloropropene			10.0	9.16		ug/L		92	76 - 122		
1,1,1-Trichloroethane			10.0	12.1		ug/L		121	74 - 130		
1,1,2-Trichloroethane			10.0	9.93		ug/L		99	80 - 121		
Trichloroethene			10.0	11.1		ug/L		111	80 - 125		
Vinyl chloride			10.0	17.1	*+	ug/L		171	31 - 150		
Xylenes, Total			20.0	19.9		ug/L		100	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 580-378318/7
Matrix: Water
Analysis Batch: 378318

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone			50.0	62.6		ug/L		125	44 - 150	12	33
Benzene			10.0	11.2		ug/L		112	80 - 122	1	14
Bromodichloromethane			10.0	10.5		ug/L		105	75 - 124	1	13
Bromoform			10.0	9.23		ug/L		92	56 - 139	1	21
Bromomethane			10.0	13.9		ug/L		139	36 - 150	3	33
Carbon disulfide			10.0	9.98		ug/L		100	63 - 134	2	24
Carbon tetrachloride			10.0	10.7		ug/L		107	72 - 129	0	19
Chlorobenzene			10.0	10.1		ug/L		101	80 - 120	0	10
Chloroform			10.0	11.1		ug/L		111	78 - 127	0	14
Chloromethane			10.0	22.1	*+	ug/L		221	25 - 150	5	26
cis-1,2-Dichloroethene			10.0	10.8		ug/L		108	76 - 120	0	20
cis-1,3-Dichloropropene			10.0	9.89		ug/L		99	77 - 120	1	35

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-378318/7
Matrix: Water
Analysis Batch: 378318

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dibromochloromethane	10.0	9.82		ug/L		98	73 - 125	1	13
1,1-Dichloroethane	10.0	11.5		ug/L		115	80 - 120	0	15
1,2-Dichloroethane	10.0	11.2		ug/L		112	69 - 126	4	11
1,1-Dichloroethene	10.0	11.0		ug/L		110	70 - 129	2	23
1,2-Dichloroethene, Total	20.0	21.8		ug/L		109	76 - 129	1	21
Dichloromethane	10.0	11.6		ug/L		116	77 - 125	4	18
1,2-Dichloropropane	10.0	11.2		ug/L		112	80 - 120	3	14
Ethylbenzene	10.0	10.0		ug/L		100	80 - 120	1	14
Ethyl Chloride	10.0	12.4		ug/L		124	38 - 150	6	28
2-Hexanone	50.0	52.7		ug/L		105	65 - 144	7	26
Methyl Ethyl Ketone	50.0	58.8		ug/L		118	65 - 137	10	34
Methyl isobutyl ketone (MIBK)	50.0	51.6		ug/L		103	59 - 141	6	22
m-Xylene & p-Xylene	10.0	9.88		ug/L		99	80 - 120	3	14
o-Xylene	10.0	9.80		ug/L		98	80 - 120	1	16
Styrene	10.0	9.79		ug/L		98	76 - 122	1	16
1,1,2,2-Tetrachloroethane	10.0	9.77		ug/L		98	74 - 124	4	25
Tetrachloroethene	10.0	10.2		ug/L		102	76 - 125	1	13
Toluene	10.0	10.3		ug/L		103	80 - 120	1	13
trans-1,2-Dichloroethene	10.0	11.0		ug/L		110	75 - 120	2	21
trans-1,3-Dichloropropene	10.0	9.67		ug/L		97	76 - 122	5	20
1,1,1-Trichloroethane	10.0	10.1		ug/L		101	74 - 130	18	19
1,1,2-Trichloroethane	10.0	10.1		ug/L		101	80 - 121	2	14
Trichloroethene	10.0	11.2		ug/L		112	80 - 125	1	13
Vinyl chloride	10.0	17.6	*+	ug/L		176	31 - 150	2	26
Xylenes, Total	20.0	19.7		ug/L		98	80 - 120	1	16

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-378233/1-A
Matrix: Water
Analysis Batch: 378282

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 378233

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.050	U	0.40	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Acenaphthylene	0.060	U	1.0	0.060	ug/L		01/13/22 12:56	01/13/22 21:53	1
Anthracene	0.050	U	1.0	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Benzo[a]anthracene	0.050	U	0.25	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Benzo[a]pyrene	0.040	U	0.25	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
Benzo[b]fluoranthene	0.040	U	0.25	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
Benzo[g,h,i]perylene	0.040	U	0.25	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
Benzo[k]fluoranthene	0.050	U	0.25	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Bis(2-chloroethoxy)methane	0.050	U	0.60	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Bis(2-chloroethyl)ether	0.030	U	0.10	0.030	ug/L		01/13/22 12:56	01/13/22 21:53	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 580-378233/1-A
Matrix: Water
Analysis Batch: 378282

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 378233

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	0.74	U	3.0	0.74	ug/L		01/13/22 12:56	01/13/22 21:53	1
4-Bromophenyl phenyl ether	0.060	U	0.60	0.060	ug/L		01/13/22 12:56	01/13/22 21:53	1
Butyl benzyl phthalate	0.27	U	4.0	0.27	ug/L		01/13/22 12:56	01/13/22 21:53	1
Carbazole	0.10	U	0.60	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
4-Chloroaniline	0.59	U	2.0	0.59	ug/L		01/13/22 12:56	01/13/22 21:53	1
4-Chloro-3-methylphenol	0.13	U	0.60	0.13	ug/L		01/13/22 12:56	01/13/22 21:53	1
2-Chloronaphthalene	0.070	U	1.0	0.070	ug/L		01/13/22 12:56	01/13/22 21:53	1
2-Chlorophenol	0.050	U	1.0	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
4-Chlorophenyl phenyl ether	0.050	U	0.60	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Chrysene	0.040	U	0.25	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
Dibenz(a,h)anthracene	0.070	U	0.25	0.070	ug/L		01/13/22 12:56	01/13/22 21:53	1
Dibenzofuran	0.10	U	0.40	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
1,2-Dichlorobenzene	0.050	U	0.40	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
1,3-Dichlorobenzene	0.040	U	0.40	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
1,4-Dichlorobenzene	0.040	U	0.40	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
3,3'-Dichlorobenzidine	0.26	U	1.0	0.26	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,4-Dichlorophenol	0.20	U	1.0	0.20	ug/L		01/13/22 12:56	01/13/22 21:53	1
Diethyl phthalate	0.15	U	1.0	0.15	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,4-Dimethylphenol	0.16	U	4.0	0.16	ug/L		01/13/22 12:56	01/13/22 21:53	1
Dimethyl phthalate	0.060	U	0.60	0.060	ug/L		01/13/22 12:56	01/13/22 21:53	1
Di-n-butyl phthalate	0.19	U	3.0	0.19	ug/L		01/13/22 12:56	01/13/22 21:53	1
4,6-Dinitro-2-methylphenol	0.55	U	2.0	0.55	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,4-Dinitrophenol	1.6	U	5.0	1.6	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,4-Dinitrotoluene	0.10	U	1.0	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,6-Dinitrotoluene	0.10	U	0.40	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
Di-n-octyl phthalate	0.13	U	1.0	0.13	ug/L		01/13/22 12:56	01/13/22 21:53	1
Fluoranthene	0.060	U	0.25	0.060	ug/L		01/13/22 12:56	01/13/22 21:53	1
Fluorene	0.050	U	0.25	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Hexachlorobenzene	0.040	U	0.60	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
Hexachlorobutadiene	0.060	U	1.0	0.060	ug/L		01/13/22 12:56	01/13/22 21:53	1
Hexachlorocyclopentadiene	0.14	U	1.0	0.14	ug/L		01/13/22 12:56	01/13/22 21:53	1
Hexachloroethane	0.050	U	1.0	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Indeno[1,2,3-cd]pyrene	0.13	U	0.40	0.13	ug/L		01/13/22 12:56	01/13/22 21:53	1
Isophorone	0.10	U	0.40	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
2-Methylphenol	0.050	U	0.60	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
3 & 4 Methylphenol	0.10	U	0.60	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
Naphthalene	0.16	U	0.40	0.16	ug/L		01/13/22 12:56	01/13/22 21:53	1
2-Nitroaniline	0.10	U	1.0	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
3-Nitroaniline	0.16	U	3.0	0.16	ug/L		01/13/22 12:56	01/13/22 21:53	1
4-Nitroaniline	0.21	U	2.0	0.21	ug/L		01/13/22 12:56	01/13/22 21:53	1
Nitrobenzene	0.040	U	1.0	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
4-Nitrophenol	1.7	U	10	1.7	ug/L		01/13/22 12:56	01/13/22 21:53	1
N-Nitrosodi-n-propylamine	0.060	U	0.40	0.060	ug/L		01/13/22 12:56	01/13/22 21:53	1
N-Nitrosodiphenylamine	0.070	U	1.0	0.070	ug/L		01/13/22 12:56	01/13/22 21:53	1
Pentachlorophenol	0.51	U	10	0.51	ug/L		01/13/22 12:56	01/13/22 21:53	1
Phenanthrene	0.12	U	1.0	0.12	ug/L		01/13/22 12:56	01/13/22 21:53	1
Phenol	0.36	U	1.0	0.36	ug/L		01/13/22 12:56	01/13/22 21:53	1
Pyrene	0.040	U	1.0	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
1,2,4-Trichlorobenzene	0.090	U	0.40	0.090	ug/L		01/13/22 12:56	01/13/22 21:53	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 580-378233/1-A
Matrix: Water
Analysis Batch: 378282

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 378233

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-Trichlorophenol	0.10	U	0.40	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,4,6-Trichlorophenol	0.10	U	0.60	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*67*		*35 - 120*	*01/13/22 12:56*	*01/13/22 21:53*	*1*
2-Fluorophenol (Surr)	*49*		*21 - 120*	*01/13/22 12:56*	*01/13/22 21:53*	*1*
Nitrobenzene-d5 (Surr)	*76*		*39 - 120*	*01/13/22 12:56*	*01/13/22 21:53*	*1*
Phenol-d5 (Surr)	*30*		*10 - 120*	*01/13/22 12:56*	*01/13/22 21:53*	*1*
Terphenyl-d14	*125*		*63 - 137*	*01/13/22 12:56*	*01/13/22 21:53*	*1*
2,4,6-Tribromophenol	*83*		*50 - 130*	*01/13/22 12:56*	*01/13/22 21:53*	*1*

Lab Sample ID: LCS 580-378233/2-A
Matrix: Water
Analysis Batch: 378282

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 378233

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	2.00	1.38		ug/L		69	41 - 120
Acenaphthylene	2.00	1.41		ug/L		71	43 - 120
Anthracene	2.00	1.83		ug/L		91	58 - 120
Benzo[a]anthracene	2.00	1.95		ug/L		98	48 - 131
Benzo[a]pyrene	2.00	1.99		ug/L		99	55 - 125
Benzo[b]fluoranthene	2.00	1.90		ug/L		95	54 - 124
Benzo[g,h,i]perylene	2.00	1.93		ug/L		97	46 - 124
Benzo[k]fluoranthene	2.00	1.99		ug/L		100	52 - 132
Bis(2-chloroethoxy)methane	2.00	1.48		ug/L		74	38 - 120
Bis(2-ethylhexyl) phthalate	2.00	2.18	J	ug/L		109	41 - 150
4-Bromophenyl phenyl ether	2.00	1.57		ug/L		79	53 - 120
Butyl benzyl phthalate	2.00	2.22	J	ug/L		111	40 - 150
Carbazole	2.00	2.32		ug/L		116	61 - 150
4-Chloroaniline	2.00	1.26	J	ug/L		63	10 - 150
4-Chloro-3-methylphenol	2.00	1.48		ug/L		74	36 - 120
2-Chloronaphthalene	2.00	1.46		ug/L		73	35 - 120
2-Chlorophenol	2.00	1.36		ug/L		68	44 - 120
4-Chlorophenyl phenyl ether	2.00	1.47		ug/L		74	41 - 120
Chrysene	2.00	2.11		ug/L		106	57 - 125
Dibenz(a,h)anthracene	2.00	1.86		ug/L		93	48 - 126
Dibenzofuran	2.00	1.47		ug/L		74	45 - 120
1,2-Dichlorobenzene	2.00	1.19		ug/L		60	20 - 120
1,3-Dichlorobenzene	2.00	1.12		ug/L		56	20 - 120
1,4-Dichlorobenzene	2.00	1.14		ug/L		57	20 - 120
3,3'-Dichlorobenzidine	4.00	3.94		ug/L		99	33 - 150
2,4-Dichlorophenol	2.00	1.22		ug/L		61	45 - 120
Diethyl phthalate	2.00	2.07		ug/L		104	60 - 121
2,4-Dimethylphenol	2.00	1.56	J	ug/L		78	37 - 120
Dimethyl phthalate	2.00	1.70		ug/L		85	54 - 120
Di-n-butyl phthalate	2.00	2.32	J	ug/L		116	55 - 150
4,6-Dinitro-2-methylphenol	4.00	3.09		ug/L		77	29 - 136
2,4-Dinitrophenol	4.00	1.76	J	ug/L		44	10 - 146

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 580-378233/2-A
Matrix: Water
Analysis Batch: 378282

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 378233

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-Dinitrotoluene	2.00	1.82		ug/L		91	51 - 120
2,6-Dinitrotoluene	2.00	1.60		ug/L		80	52 - 120
Di-n-octyl phthalate	2.00	2.20		ug/L		110	48 - 140
Fluoranthene	2.00	2.26		ug/L		113	60 - 121
Fluorene	2.00	1.52		ug/L		76	20 - 120
Hexachlorobenzene	2.00	1.69		ug/L		85	49 - 120
Hexachlorobutadiene	2.00	1.05		ug/L		53	10 - 130
Hexachlorocyclopentadiene	2.00	0.678	J	ug/L		34	10 - 125
Hexachloroethane	2.00	1.16		ug/L		58	10 - 130
Indeno[1,2,3-cd]pyrene	2.00	1.76		ug/L		88	39 - 124
Isophorone	2.00	1.40		ug/L		70	41 - 120
2-Methylphenol	2.00	1.25		ug/L		63	30 - 120
3 & 4 Methylphenol	2.00	1.09		ug/L		54	29 - 120
Naphthalene	2.00	1.28		ug/L		64	42 - 120
2-Nitroaniline	2.00	1.59		ug/L		79	43 - 120
3-Nitroaniline	2.00	1.73	J	ug/L		86	10 - 138
4-Nitroaniline	2.00	2.18		ug/L		109	38 - 133
Nitrobenzene	2.00	1.92		ug/L		96	38 - 120
4-Nitrophenol	4.00	1.7	U	ug/L		30	10 - 120
N-Nitrosodi-n-propylamine	2.00	1.59		ug/L		79	39 - 120
N-Nitrosodiphenylamine	2.00	1.74		ug/L		87	52 - 120
Pentachlorophenol	4.00	1.79	J	ug/L		45	18 - 135
Phenanthrene	2.00	1.89		ug/L		95	54 - 120
Phenol	2.00	0.613	J	ug/L		31	13 - 120
Pyrene	2.00	2.26		ug/L		113	57 - 120
1,2,4-Trichlorobenzene	2.00	1.24		ug/L		62	21 - 120
2,4,5-Trichlorophenol	2.00	1.28		ug/L		64	45 - 120
2,4,6-Trichlorophenol	2.00	1.33		ug/L		66	43 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*57*		*35 - 120*
2-Fluorophenol (Surr)	*37*		*21 - 120*
Nitrobenzene-d5 (Surr)	*66*		*39 - 120*
Phenol-d5 (Surr)	*27*		*10 - 120*
Terphenyl-d14	*100*		*63 - 137*
2,4,6-Tribromophenol	*77*		*50 - 130*

Lab Sample ID: LCSD 580-378233/3-A
Matrix: Water
Analysis Batch: 378282

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 378233

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	2.00	1.42		ug/L		71	41 - 120	3	35
Acenaphthylene	2.00	1.43		ug/L		71	43 - 120	1	35
Anthracene	2.00	1.90		ug/L		95	58 - 120	4	35
Benzo[a]anthracene	2.00	2.20		ug/L		110	48 - 131	12	35
Benzo[a]pyrene	2.00	2.22		ug/L		111	55 - 125	11	35
Benzo[b]fluoranthene	2.00	2.14		ug/L		107	54 - 124	12	35

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 580-378233/3-A
Matrix: Water
Analysis Batch: 378282

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 378233

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[g,h,i]perylene	2.00	2.19		ug/L		109	46 - 124	12	35
Benzo[k]fluoranthene	2.00	2.15		ug/L		108	52 - 132	8	35
Bis(2-chloroethoxy)methane	2.00	1.59		ug/L		79	38 - 120	7	35
Bis(2-ethylhexyl) phthalate	2.00	2.40	J	ug/L		120	41 - 150	10	35
4-Bromophenyl phenyl ether	2.00	1.56		ug/L		78	53 - 120	0	35
Butyl benzyl phthalate	2.00	2.48	J	ug/L		124	40 - 150	11	35
Carbazole	2.00	2.35		ug/L		117	61 - 150	1	35
4-Chloroaniline	2.00	1.05	J	ug/L		52	10 - 150	18	35
4-Chloro-3-methylphenol	2.00	1.61		ug/L		81	36 - 120	8	35
2-Chloronaphthalene	2.00	1.37		ug/L		68	35 - 120	6	35
2-Chlorophenol	2.00	1.35		ug/L		68	44 - 120	1	35
4-Chlorophenyl phenyl ether	2.00	1.49		ug/L		75	41 - 120	1	35
Chrysene	2.00	2.32		ug/L		116	57 - 125	9	35
Dibenz(a,h)anthracene	2.00	2.08		ug/L		104	48 - 126	11	35
Dibenzofuran	2.00	1.54		ug/L		77	45 - 120	4	35
1,2-Dichlorobenzene	2.00	1.19		ug/L		59	20 - 120	0	35
1,3-Dichlorobenzene	2.00	1.16		ug/L		58	20 - 120	4	35
1,4-Dichlorobenzene	2.00	1.18		ug/L		59	20 - 120	3	35
3,3'-Dichlorobenzidine	4.00	4.26		ug/L		107	33 - 150	8	35
2,4-Dichlorophenol	2.00	1.32		ug/L		66	45 - 120	8	35
Diethyl phthalate	2.00	2.26		ug/L		113	60 - 121	9	35
2,4-Dimethylphenol	2.00	1.53	J	ug/L		76	37 - 120	2	35
Dimethyl phthalate	2.00	1.76		ug/L		88	54 - 120	3	35
Di-n-butyl phthalate	2.00	2.33	J	ug/L		117	55 - 150	1	35
4,6-Dinitro-2-methylphenol	4.00	2.65		ug/L		66	29 - 136	15	35
2,4-Dinitrophenol	4.00	1.84	J	ug/L		46	10 - 146	4	35
2,4-Dinitrotoluene	2.00	2.08		ug/L		104	51 - 120	13	35
2,6-Dinitrotoluene	2.00	1.62		ug/L		81	52 - 120	1	35
Di-n-octyl phthalate	2.00	2.40		ug/L		120	48 - 140	9	35
Fluoranthene	2.00	2.28		ug/L		114	60 - 121	1	35
Fluorene	2.00	1.60		ug/L		80	20 - 120	5	35
Hexachlorobenzene	2.00	1.68		ug/L		84	49 - 120	1	35
Hexachlorobutadiene	2.00	1.00		ug/L		50	10 - 130	5	35
Hexachlorocyclopentadiene	2.00	0.664	J	ug/L		33	10 - 125	2	35
Hexachloroethane	2.00	1.17		ug/L		58	10 - 130	1	35
Indeno[1,2,3-cd]pyrene	2.00	2.16		ug/L		108	39 - 124	20	35
Isophorone	2.00	1.51		ug/L		76	41 - 120	7	35
2-Methylphenol	2.00	1.23		ug/L		61	30 - 120	2	35
3 & 4 Methylphenol	2.00	1.20		ug/L		60	29 - 120	10	35
Naphthalene	2.00	1.23		ug/L		61	42 - 120	4	35
2-Nitroaniline	2.00	1.69		ug/L		85	43 - 120	7	35
3-Nitroaniline	2.00	1.88	J	ug/L		94	10 - 138	9	35
4-Nitroaniline	2.00	2.43		ug/L		121	38 - 133	11	35
Nitrobenzene	2.00	2.02		ug/L		101	38 - 120	5	35
4-Nitrophenol	4.00	1.7	U	ug/L		41	10 - 120	32	35
N-Nitrosodi-n-propylamine	2.00	1.68		ug/L		84	39 - 120	6	35
N-Nitrosodiphenylamine	2.00	1.74		ug/L		87	52 - 120	0	35
Pentachlorophenol	4.00	1.37	J	ug/L		34	18 - 135	27	35
Phenanthrene	2.00	1.93		ug/L		96	54 - 120	2	35

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 580-378233/3-A
Matrix: Water
Analysis Batch: 378282

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 378233

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenol			2.00	0.674	J	ug/L		34	13 - 120	10	35
Pyrene			2.00	2.30		ug/L		115	57 - 120	2	35
1,2,4-Trichlorobenzene			2.00	1.17		ug/L		58	21 - 120	6	35
2,4,5-Trichlorophenol			2.00	1.68		ug/L		84	45 - 120	27	35
2,4,6-Trichlorophenol			2.00	1.39		ug/L		70	43 - 120	5	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*57*		*35 - 120*
2-Fluorophenol (Surr)	*41*		*21 - 120*
Nitrobenzene-d5 (Surr)	*63*		*39 - 120*
Phenol-d5 (Surr)	*29*		*10 - 120*
Terphenyl-d14	*104*		*63 - 137*
2,4,6-Tribromophenol	*80*		*50 - 130*

Method: 8015D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 580-378234/1-A
Matrix: Water
Analysis Batch: 378249

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 378234

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	90	U	110	90	ug/L		01/13/22 13:00	01/13/22 19:01	1
C24-C40	180	U	200	180	ug/L		01/13/22 13:00	01/13/22 19:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*73*		*53 - 120*	*01/13/22 13:00*	*01/13/22 19:01*	*1*

Lab Sample ID: LCS 580-378234/2-A
Matrix: Water
Analysis Batch: 378249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 378234

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C9-C25			4000	3210		ug/L		80	55 - 134
C24-C40			4000	3600		ug/L		90	36 - 143

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*80*		*53 - 120*

Lab Sample ID: LCSD 580-378234/3-A
Matrix: Water
Analysis Batch: 378249

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 378234

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C9-C25			4000	3240		ug/L		81	55 - 134	1	26
C24-C40			4000	3630		ug/L		91	36 - 143	1	24

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*77*		*53 - 120*

Lab Chronicle

Client: AECOM
Job ID: 580-109258-1
Project/Site: Red Hill Drinking Water CV22F0106

Client Sample ID: 20220111-H1-YT08
Lab Sample ID: 580-109258-1
Date Collected: 01/11/22 14:05
Matrix: Water
Date Received: 01/13/22 16:21

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	378319	01/14/22 06:50	JSM	FGS SEA
Total/NA	Analysis	8260D		1	378318	01/14/22 06:50	B1M	FGS SEA
Total/NA	Prep	3510C			378233	01/13/22 17:01	M1E	FGS SEA
Total/NA	Analysis	8270E		1	378282	01/14/22 01:43	T1L	FGS SEA
Total/NA	Prep	3510C			378234	01/13/22 17:04	M1E	FGS SEA
Total/NA	Analysis	8015D		1	378249	01/14/22 00:23	JAE	FGS SEA

Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: AECOM
Job ID: 580-109258-1
Project/Site: Red Hill Drinking Water CV22F0106

Laboratory: Eurofins Seattle

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2236	01-19-22

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
8260D		Water	1,2-Dichloroethene, Total

Sample Summary

Client: AECOM
Job ID: 580-109258-1
Project/Site: Red Hill Drinking Water CV22F0106

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-109258-1	20220111-H1-YT08	Water	01/11/22 14:05	01/13/22 16:21

Chain of Custody Record

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580-109258 Chain of Custody

Client Contact: Alethea Ramos (alternate: Margie Pascua)	Sampler: AECOM	Lab PM: Elaine Walker	Carrier Tracking No(s): FedEx	COC No: 21112022OW-78
Company: AECOM	Phone:	E-Mail: M.Elaine.Walker@EurofinsET.com	State of Origin: Hawaii	Page: Page 1 of 1
Address: 1001 Bishop St. Suite 1600	PWSID:	Analysis Requested		Job #:
City: Honolulu	Due Date Requested: see subcontract			
State, Zip: Hawaii 96813	TAT Requested (days): 2			
Phone: 808-521-3051 (direct: 808-529-7283) (alternate: 808-356-5373)	Compliance Project: Δ Yes Δ No			
Email: alethea.ramos@aecom.com (alternate: margie.pascua@aecom.com)	PO #:			
Project Name: CV22F0106	WO #:			
Site: RHSF	Project #: 60674414			
	SSOW#:			

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	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)	EPA 8260 TPH-g (HCl)	EPA 8015 TPH-d/o	8270 SVOCs	8260 VOCs (FullSuite)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	I				
20220111-HI-VTOB	1/11/22	1405	G	W			X	X	X	X	9	

Therm. ID: A3 Cor: 2.6 ° Unc: 2.6 °
Cooler Dsc: Blue
Packing: Bubble
Cust. Seal: Yes ✓ No
Blue Ice: (Wet) Dry, None
FedEx: ✓
UPS:
Lab Cour:
Other:

1/11/22 SA

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)

Prelim data (Level 1or2)=see TAT above. DoD Stage 4 report standard TAT. AECOM EQuIS EDD.

Special Instructions/QC Requirements: DOD QSM project.

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by:	Date/Time: 1/11/2022 @ 1930	Company: AECOM	Received by: Conner Rotter	Date/Time: 1/11/22 1930	Company: AECOM		
Relinquished by: Conner Rotter	Date/Time: 1/12/22 1500	Company: AECOM	Received by:	Date/Time: 1/13/22 1015	Company: Eurofins		
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:

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-109258-1

Login Number: 109258

List Source: Eurofins Seattle

List Number: 1

Creator: Greene, Ashton R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	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	
Is the Field Sampler's name present on COC?	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	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

Laboratory Job ID: 580-109247-1
Client Project/Site: Red Hill Drinking Water CV22F0106

For:
AECOM
1001 Bishop Street
Honolulu, Hawaii 96813

Attn: Margie F Pascua

Kristine D. Allen

Authorized for release by:
1/14/2022 4:50:52 PM
Kristine Allen, Client Service Manager
(253)248-4970
Kristine.Allen@Eurofinset.com

Designee for

Elaine Walker, Project Manager II
(253)248-4972
m.elaine.walker@eurofinset.com

Table of Contents

Case Narrative

Client: AECOM
Job ID: 580-109247-1
Project/Site: Red Hill Drinking Water CV22F0106

Job ID: 580-109247-1

Laboratory: Eurofins Seattle

Narrative

Job Narrative
580-109247-1

Comments
No additional comments.

Receipt
The samples were received on 1/13/2022 10:15 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 0.3º C and 1.5º C.

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

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

Organic Prep
Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 580-378269. Laboratory control sample/laboratory control sample duplicate were created and substituted for MS/MSD/DUP.

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

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

Definitions/Glossary

Client: AECOM
Job ID: 580-109247-1
Project/Site: Red Hill Drinking Water CV22F0106

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Client: AECOM
Job ID: 580-109247-1
Project/Site: Red Hill Drinking Water CV22F0106

Client Sample ID: 20220111-H1-YT09
Lab Sample ID: 580-109247-1
Date Collected: 01/11/22 14:50
Matrix: Water
Date Received: 01/13/22 10:15

Method: 8260B/CA_LUFTMS - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	31	U	100	31	ug/L			01/13/22 16:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*78 - 120*		*01/13/22 16:06*	*1*

Method: 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	93	U	110	93	ug/L		01/13/22 17:57	01/14/22 01:44	1
C24-C40	190	U	210	190	ug/L		01/13/22 17:57	01/14/22 01:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*94*		*53 - 120*	*01/13/22 17:57*	*01/14/22 01:44*	*1*

Client: AECOM
Job ID: 580-109247-1
Project/Site: Red Hill Drinking Water CV22F0106

Client Sample ID: 20220111-H1-YT13
Lab Sample ID: 580-109247-2
Date Collected: 01/11/22 16:35
Matrix: Water
Date Received: 01/13/22 10:15

Method: 8260B/CA_LUFTMS - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	31	U	100	31	ug/L			01/13/22 16:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*78 - 120*		*01/13/22 16:54*	*1*

Method: 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	94	U	110	94	ug/L		01/13/22 17:57	01/14/22 02:24	1
C24-C40	190	U	210	190	ug/L		01/13/22 17:57	01/14/22 02:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*97*		*53 - 120*	*01/13/22 17:57*	*01/14/22 02:24*	*1*

Client: AECOM
Job ID: 580-109247-1
Project/Site: Red Hill Drinking Water CV22F0106

Client Sample ID: 20220111-H1-YT11
Lab Sample ID: 580-109247-3
Date Collected: 01/11/22 15:35
Matrix: Water
Date Received: 01/13/22 10:15

Method: 8260B/CA_LUFTMS - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	31	U	100	31	ug/L			01/13/22 17:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*78 - 120*		*01/13/22 17:18*	*1*

Method: 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	94	U	120	94	ug/L		01/13/22 17:57	01/14/22 02:44	1
C24-C40	190	U	210	190	ug/L		01/13/22 17:57	01/14/22 02:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*91*		*53 - 120*	*01/13/22 17:57*	*01/14/22 02:44*	*1*

Method: 8260B/CA_LUFTMS - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-378228/4
Matrix: Water
Analysis Batch: 378228

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	31	U	100	31	ug/L			01/13/22 11:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*78 - 120*		*01/13/22 11:27*	*1*

Lab Sample ID: LCS 580-378228/5
Matrix: Water
Analysis Batch: 378228

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (C6-C12)	1000	1100		ug/L		110	75 - 127

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*78 - 120*

Lab Sample ID: LCSD 580-378228/6
Matrix: Water
Analysis Batch: 378228

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (C6-C12)	1000	1140		ug/L		114	75 - 127	3	13

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*78 - 120*

Method: 8015D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 580-378269/1-A
Matrix: Water
Analysis Batch: 378249

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 378269

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	90	U	110	90	ug/L		01/13/22 17:57	01/14/22 00:43	1
C24-C40	180	U	200	180	ug/L		01/13/22 17:57	01/14/22 00:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*88*		*53 - 120*	*01/13/22 17:57*	*01/14/22 00:43*	*1*

Lab Sample ID: LCS 580-378269/2-A
Matrix: Water
Analysis Batch: 378249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 378269

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C9-C25	1000	898		ug/L		90	55 - 134
C24-C40	1000	957		ug/L		96	36 - 143

Method: 8015D - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 580-378269/2-A
Matrix: Water
Analysis Batch: 378249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 378269

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	86		53 - 120

Lab Sample ID: LCSD 580-378269/3-A
Matrix: Water
Analysis Batch: 378249

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 378269

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C9-C25			1000	955		ug/L		95	55 - 134	6	26
C24-C40			1000	1060		ug/L		106	36 - 143	11	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	90		53 - 120

Lab Chronicle

Client: AECOM
Job ID: 580-109247-1
Project/Site: Red Hill Drinking Water CV22F0106

Client Sample ID: 20220111-H1-YT09
Lab Sample ID: 580-109247-1
Date Collected: 01/11/22 14:50
Matrix: Water
Date Received: 01/13/22 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	378228	01/13/22 16:06	JSM	FGS SEA
Total/NA	Prep	3510C			378269	01/13/22 17:57	JHR	FGS SEA
Total/NA	Analysis	8015D		1	378249	01/14/22 01:44	JAE	FGS SEA

Client Sample ID: 20220111-H1-YT13
Lab Sample ID: 580-109247-2
Date Collected: 01/11/22 16:35
Matrix: Water
Date Received: 01/13/22 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	378228	01/13/22 16:54	JSM	FGS SEA
Total/NA	Prep	3510C			378269	01/13/22 17:57	JHR	FGS SEA
Total/NA	Analysis	8015D		1	378249	01/14/22 02:24	JAE	FGS SEA

Client Sample ID: 20220111-H1-YT11
Lab Sample ID: 580-109247-3
Date Collected: 01/11/22 15:35
Matrix: Water
Date Received: 01/13/22 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	378228	01/13/22 17:18	JSM	FGS SEA
Total/NA	Prep	3510C			378269	01/13/22 17:57	JHR	FGS SEA
Total/NA	Analysis	8015D		1	378249	01/14/22 02:44	JAE	FGS SEA

Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: AECOM
Job ID: 580-109247-1
Project/Site: Red Hill Drinking Water CV22F0106

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2236	01-19-22

Sample Summary

Client: AECOM
Job ID: 580-109247-1
Project/Site: Red Hill Drinking Water CV22F0106

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-109247-1	20220111-H1-YT09	Water	01/11/22 14:50	01/13/22 10:15
580-109247-2	20220111-H1-YT13	Water	01/11/22 16:35	01/13/22 10:15
580-109247-3	20220111-H1-YT11	Water	01/11/22 15:35	01/13/22 10:15

580-109247 Chain of Custody

Chain of Custody Record

eurofins Environment Testing America

Client Contact: Alethea Ramos (alternate: Margie Pascua)	Sampler: AECOM	Lab PM: Elaine Walker	Carrier Tracking No(s): FedEx	COC No: 01112022DW-58
Company: AECOM	Phone:	E-Mail: M.Elaine.Walker@EurofinsET.com	State of Origin: Hawaii	Page: Page 1 of 1
Address: 1001 Bishop St. Suite 1600	PWSID:			Job #:
City: Honolulu	Due Date Requested: see subcontract			
State, Zip: Hawaii 96813	TAT Requested (days): 48 hrs. 2 days			
Phone: 808-521-3051 (direct: 808-529-7283) (alternate: 808-356-5373)	Compliance Project: Δ Yes Δ No			
Email: alethea.ramos@aecom.com (alternate: margie.pascua@aecom.com)	PO #:			
Project Name: CV22F0106	WO #:			
Site: RHSF	Project #: 60674414			
	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	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)	EPA 8260 TPH-g (HCl)	EPA 8015 TPH-d/o	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	I		
20220111-HI-YT09	1/11/22	1450	G	W	N	N	X	X	5	

Therm. ID: AB Cor: 1.5 °C Unc: 1.5 °C
Cooler Dsc: SA
Packing:
Cust. Seal: Yes X No
Blue Ice, Wet, Dry, None

FedEx:
UPS:
Lab Cour:
Other:

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

Sample Disposal (A fee may be assessed if
☐ Return To Client ☐ Disposal By

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

Prelim data (Level 1or2)=see TAT above. DoD Stage 4 report standard TAT. AECOM EQuIS EDD.

Special Instructions/QC Requirements: DOD (

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by:	Date/Time: 1/11/22 @ 1930	Company: AECOM	Received by:	Date/Time: 1/11/22 1930	Company: AECOM		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 1/12/22 1015	Company: EFC		
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:

Eurofins FGS, Seattle
5755 8th Street East
Tacoma, WA 98424

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: AECOM	Lab PM: Elaine Walker	Carrier Tracking No(s): FedEx	COC No: 01112022DW-59
Client Contact: Alethea Ramos (alternate: Margie Pascua)	Phone:	E-Mail: M.Elaine.Walker@EurofinsET.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: AECOM	PWSID:			Job #:

Address: 1001 Bishop St. Suite 1600	Due Date Requested: see subcontract	Analysis Requested	Preservation Codes:
City: Honolulu	TAT Requested (days): 2		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, Z - other (specify)
State, Zip: Hawaii 96813	Compliance Project: Δ Yes Δ No		
Phone: 808-521-3051 (direct: 808-529-7283) (alternate: 808-356-5373)	PO #:		Other:
Email: alethea.ramos@aecom.com (alternate: margie.pascua@aecom.com)	WO #:		
Project Name: CV22F0106	Project #: 60674414		
Site: RHSF	SSOW#:		

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)	EPA 8260 TPH-g (HCl)	EPA 8015 TPH-d/o	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	I		
20220111-HI-YT13	1/11/22	1635	G	W	N	N	X	X	5	

Therm. ID: A3 Cor: 1.5 ° Unc: 1.5 °
Cooler Dsc: 59
Packing: Bag
Cust. Seal: Yes ☒ No ☐
Blue Ice (Wet, Dry, None)
FedEx: PO
UPS:
Lab Cour:
Other:

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

Sample Disposal (A fee may be assessed if s
☐ Return To Client ☐ Disposal By L

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

Prelim data (Level 1or2)=see TAT above. DoD Stage 4 report standard TAT. AECOM EQuIS EDD.

Special Instructions/QC Requirements: DOD QS

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 1/11/22 @ 1930	Company: AECOM	Received by:	Date/Time: 1/11/22 1930	Company: AECOM
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 1/13/22 1015	Company: EFG
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:

Eurofins FGS, Seattle
5755 8th Street East
Tacoma, WA 98424

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: AECOM	Lab PM: Elaine Walker	Carrier Tracking No(s): FedEx	COC No: 01112022 DW-61
Client Contact: Alethea Ramos (alternate: Margie Pascua)	Phone:	E-Mail: M.Elaine.Walker@EurofinsET.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: AECOM	PWSID:			Job #:

Address: 1001 Bishop St. Suite 1600	Due Date Requested: see subcontract
City: Honolulu	TAT Requested (days): 48 hr - 2 days
State, Zip: Hawaii 96813	Compliance Project: Δ Yes Δ No
Phone: 808-521-3051 (direct: 808-529-7283) (alternate: 808-356-5373)	PO #:
Email: alethea.ramos@aecom.com (alternate: margie.pascua@aecom.com)	WO #:
Project Name: CV22F0106	Project #: 60674414
Site: RHSF	SSOW#:

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	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)	EPA 8260 TPH-g (HCl)	EPA 8015 TPH-d/o	Total Number of containers	Special Instructions/Note:
Preservation Code:					X	X	A	I	X	
20220111-HI-YT11	1/11/22	1535	G	W	N	N	X	X	5	

1/11/22 SH

Therm. ID: A2 Cor: 0.5 ° Unc: 1.0 °
Cooler Dsc: ice
Packing: bubble
Cust. Seal: Yes X No
Blue Ice, Wet, Dry, None
FedEx: FD
UPS:
Lab Cour:
Other:

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)

Prelim data (Level 1or2)=see TAT above. DoD Stage 4 report standard TAT. AECOM EQuIS EDD.

Special Instructions/QC Requirements: DOD QSM project.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/11/22 1930	AECOM	Conner Potter	1/11/22 1930	AECOM
Conner Potter	1/12/22 1500	AECOM		1/13/22 1015	EFGS
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:

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-109247-1

Login Number: 109247

List Source: Eurofins Seattle

List Number: 1

Creator: Greene, Ashton R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	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	
Is the Field Sampler's name present on COC?	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	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders:	2A12048	**Report Date:**	1/15/2022
		Received Date:	1/12/2022
Project:	60674414, COC # 01112022DW-57	**Turnaround Time:**	3 workdays
		Phones:	(808) 529-7277
		Fax:	(808) 524-0246
Attn:	Margie Pascua	**P.O. #:**	reference number 60571032.02.46.01
Client:	AECOM - Honolulu 1001 Bishop Street Suite 1600 Honolulu, HI 96813	**Billing Code:**	

ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH #4047 • LACSD #10143 • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Margie Pascua,

Enclosed are the results of analyses for samples received 1/12/22 with the Chain-of-Custody document. The samples were received in good condition, at 2.7 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Brandon Gee For Kim G. Tu
Project Manager

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634

www.wecklabs.com

AECOM - Honolulu
1001 Bishop Street Suite 1600
Honolulu, HI 96813

Project Number: 60674414, COC # 01112022DW-57

Project Manager: Margie Pascua

Reported:
01/15/2022 17:03

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
20220111-H1-YT09	AECOM	2A12048-01	Water	01/11/22 14:50	

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

AECOM - Honolulu
1001 Bishop Street Suite 1600
Honolulu, HI 96813

Project Number: 60674414, COC # 01112022DW-57

Project Manager: Margie Pascua

Reported: 01/15/2022 17:03

Sample Results

Sample: 20220111-H1-YT09
2A12048-01 (Water)

Sampled: 01/11/22 14:50 by AECOM

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Chlorinated Pesticides and/or PCBs by GC/ECD							
Method: EPA 508.1			**Instr:** GC08				
Batch ID: W2A0878 **Preparation:** Method (SPE)			**Prepared:** 01/13/22 10:12				**Analyst:** rjg
Aroclor 1016	ND	0.0157	0.100	ug/l	1	01/14/22	A-01, U
Aroclor 1221	ND	0.0436	0.100	ug/l	1	01/14/22	A-01, U
Aroclor 1232	ND	0.0102	0.100	ug/l	1	01/14/22	A-01, U
Aroclor 1242	ND	0.0737	0.100	ug/l	1	01/14/22	A-01, U
Aroclor 1248	ND	0.0941	0.100	ug/l	1	01/14/22	A-01, U
Aroclor 1254	ND	0.0869	0.100	ug/l	1	01/14/22	A-01, U
Aroclor 1260	ND	0.0379	0.100	ug/l	1	01/14/22	A-01, U
Chlordane (tech)	ND	0.0669	0.100	ug/l	1	01/14/22	A-01, U
PCBs, Total	ND		0.500	ug/l	1	01/14/22	A-01, U
Surrogate(s)							
4,4-Dibromobiphenyl	*92%*	*Conc: 0.0951*	*70-130*			*01/14/22*	
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: SM 5310B			**Instr:** TOC02				
Batch ID: W2A0833 **Preparation:** _NONE (TOC/TOX)			**Prepared:** 01/13/22 09:58				**Analyst:** ajc
Total Organic Carbon (TOC)	ND	0.190	0.300	mg/l	1	01/13/22	U
Metals by EPA 200 Series Methods							
Method: EPA 200.8			**Instr:** ICPMS04				
Batch ID: W2A0825 **Preparation:** EPA 200.2			**Prepared:** 01/12/22 16:06				**Analyst:** mpn
Antimony, Total	ND	0.0889	0.500	ug/l	1	01/13/22	U
Arsenic, Total	**0.240**	0.0741	0.400	ug/l	1	01/13/22	J
Barium, Total	**1.96**	0.142	1.00	ug/l	1	01/13/22	
Beryllium, Total	ND	0.0624	0.100	ug/l	1	01/13/22	U
Cadmium, Total	ND	0.0416	0.200	ug/l	1	01/13/22	U
Chromium, Total	**1.46**	0.0887	0.200	ug/l	1	01/13/22	
Copper, Total	**3.50**	0.225	0.500	ug/l	1	01/13/22	
Lead, Total	**0.208**	0.0827	0.200	ug/l	1	01/13/22	
Selenium, Total	**1.01**	0.0666	0.400	ug/l	1	01/13/22	
Thallium, Total	ND	0.0210	0.200	ug/l	1	01/13/22	U
Method: EPA 245.1			**Instr:** HG03				
Batch ID: W2A0821 **Preparation:** EPA 245.1			**Prepared:** 01/12/22 15:39				**Analyst:** kvm
Mercury, Total	ND	0.0170	0.0500	ug/l	1	01/14/22	U
Semivolatile Organic Compounds by GC/MS							
Method: EPA 525.2			**Instr:** GCMS16				
Batch ID: W2A0884 **Preparation:** Method (SPE)			**Prepared:** 01/13/22 11:40				**Analyst:** rmr
1-Methylnaphthalene	ND	0.00801	0.0500	ug/l	1	01/13/22	A-01a, U
2-Methylnaphthalene	ND	0.00904	0.0500	ug/l	1	01/13/22	A-01a, U

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Project Number: 60674414, COC # 01112022DW-57

Project Manager: Margie Pascua

Reported: 01/15/2022 17:03

Sample Results

(Continued)

Sample: 20220111-H1-YT09
2A12048-01 (Water)

Sampled: 01/11/22 14:50 by AECOM

(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Semivolatile Organic Compounds by GC/MS (Continued)							
Method: EPA 525.2			**Instr:** GCMS16				
Batch ID: W2A0884 **Preparation:** Method (SPE)			**Prepared:** 01/13/22 11:40				**Analyst:** rmr
Alachlor	ND	0.0110	0.100	ug/l	1	01/13/22	A-01a, U
Atrazine	ND	0.00734	0.100	ug/l	1	01/13/22	A-01a, U
Benzo (a) pyrene	ND	0.0117	0.100	ug/l	1	01/13/22	A-01a, Q-02, U
Bis(2-ethylhexyl)adipate	ND	0.00962	5.00	ug/l	1	01/13/22	A-01a, U
Bis(2-ethylhexyl)phthalate	ND	0.437	3.00	ug/l	1	01/13/22	A-01a, U
Endrin	ND	0.00991	0.200	ug/l	1	01/13/22	A-01a, U
gamma-BHC (Lindane)	ND	0.00633	0.100	ug/l	1	01/13/22	A-01a, U
Heptachlor	ND	0.00965	0.100	ug/l	1	01/13/22	A-01a, U
Heptachlor epoxide	ND	0.0122	0.100	ug/l	1	01/13/22	A-01a, U
Hexachlorobenzene	ND	0.0980	0.100	ug/l	1	01/13/22	A-01a, U
Hexachlorocyclopentadiene	ND	0.00594	1.00	ug/l	1	01/13/22	A-01a, U
Methoxychlor	ND	0.00863	0.200	ug/l	1	01/13/22	A-01a, U
Naphthalene	ND	0.0103	0.0500	ug/l	1	01/13/22	A-01a, U
Pentachlorophenol	ND	0.0242	1.00	ug/l	1	01/13/22	A-01a, U
Simazine	ND	0.00734	0.100	ug/l	1	01/13/22	A-01a, U
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*100%*	*Conc: 5.16*	*70-130*			*01/13/22*	*A-01a*
Perylene-d12	*97%*	*Conc: 5.04*	*70-130*			*01/13/22*	*A-01a*
Triphenyl phosphate	*108%*	*Conc: 5.59*	*70-130*			*01/13/22*	*A-01a*
Volatile Organic Compounds by P&T and GC/MS							
Method: EPA 524.2			**Instr:** GCMS14				
Batch ID: W2A0744 **Preparation:** EPA 5030			**Prepared:** 01/13/22 00:00				**Analyst:** cam
1,1,1-Trichloroethane	ND	0.256	0.500	ug/l	1	01/13/22	U
1,1,2-Trichloroethane	ND	0.190	0.500	ug/l	1	01/13/22	U
1,1-Dichloroethene	ND	0.160	0.500	ug/l	1	01/13/22	U
1,2,4-Trichlorobenzene	ND	0.170	0.500	ug/l	1	01/13/22	U
1,2-Dichloroethane	ND	0.243	0.500	ug/l	1	01/13/22	U
1,2-Dichloropropane	ND	0.130	0.500	ug/l	1	01/13/22	U
Benzene	ND	0.150	0.500	ug/l	1	01/13/22	U
Carbon tetrachloride	ND	0.270	0.500	ug/l	1	01/13/22	U
Chlorobenzene	ND	0.150	0.500	ug/l	1	01/13/22	U
cis-1,2-Dichloroethene	ND	0.250	0.500	ug/l	1	01/13/22	U
Ethylbenzene	ND	0.210	0.500	ug/l	1	01/13/22	U
m,p-Xylene	ND	0.330	0.500	ug/l	1	01/13/22	U
Methylene chloride	ND	0.303	0.500	ug/l	1	01/13/22	U

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Project Number: 60674414, COC # 01112022DW-57

Project Manager: Margie Pascua

Reported:
01/15/2022 17:03

Sample Results

(Continued)

Sample: 20220111-H1-YT09
2A12048-01 (Water)

Sampled: 01/11/22 14:50 by AECOM

(Continued)

Volatile Organic Compounds by P&T and GC/MS (Continued)

Method: EPA 524.2 **Instr:** GCMS14

Batch ID: W2A0744 **Preparation:** EPA 5030 **Prepared:** 01/13/22 00:00 **Analyst:** cam

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
o-Dichlorobenzene	ND	0.190	0.500	ug/l	1	01/13/22	U
o-Xylene	ND	0.200	0.500	ug/l	1	01/13/22	U
p-Dichlorobenzene	ND	0.180	0.500	ug/l	1	01/13/22	U
Styrene	ND	0.190	0.500	ug/l	1	01/13/22	U
Tetrachloroethene	ND	0.180	0.500	ug/l	1	01/13/22	U
THMs, Total	ND		0.500	ug/l	1	01/13/22	U
Toluene	ND	0.294	0.500	ug/l	1	01/13/22	U
trans-1,2-Dichloroethene	ND	0.259	0.500	ug/l	1	01/13/22	U
Trichloroethene	ND	0.180	0.500	ug/l	1	01/13/22	U
Vinyl chloride	ND	0.180	0.500	ug/l	1	01/13/22	U

Surrogate(s)

1,2-Dichlorobenzene-d4	*85%*	*Conc: 8.55*	*70-130*	*01/13/22*
4-Bromofluorobenzene	*83%*	*Conc: 8.28*	*70-130*	*01/13/22*

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Project Manager: Margie Pascua

Reported: 01/15/2022 17:03

Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0878 - EPA 508.1											
Blank (W2A0878-BLK1)					**Prepared: 01/13/22 Analyzed: 01/14/22**						
Aroclor 1016	ND	0.0157	0.100	ug/l							U
Aroclor 1221	ND	0.0436	0.100	ug/l							U
Aroclor 1232	ND	0.0102	0.100	ug/l							U
Aroclor 1242	ND	0.0737	0.100	ug/l							U
Aroclor 1248	ND	0.0941	0.100	ug/l							U
Aroclor 1254	ND	0.0869	0.100	ug/l							U
Aroclor 1260	ND	0.0379	0.100	ug/l							U
Chlordane (tech)	ND	0.0669	0.100	ug/l							U
PCBs, Total	ND		0.500	ug/l							U
Surrogate(s)											
4,4-Dibromobiphenyl	*0.0759*			*ug/l*	*0.100*		*76*	*70-130*			
LCS (W2A0878-BS1)					**Prepared: 01/13/22 Analyzed: 01/14/22**						
Chlordane (tech)	0.460	0.0669	0.100	ug/l	0.500		92	70-130			
Surrogate(s)											
4,4-Dibromobiphenyl	*0.0817*			*ug/l*	*0.100*		*82*	*70-130*			
LCS Dup (W2A0878-BSD1)					**Prepared: 01/13/22 Analyzed: 01/14/22**						
Chlordane (tech)	0.451	0.0669	0.100	ug/l	0.500		90	70-130	2	30	
Surrogate(s)											
4,4-Dibromobiphenyl	*0.0789*			*ug/l*	*0.100*		*79*	*70-130*			

Quality Control Results

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0833 - SM 5310B											
Blank (W2A0833-BLK1)					**Prepared & Analyzed: 01/13/22**						
Total Organic Carbon (TOC)	ND	0.190	0.300	mg/l							U
LCS (W2A0833-BS1)					**Prepared & Analyzed: 01/13/22**						
Total Organic Carbon (TOC)	0.969	0.190	0.300	mg/l	1.00		97	85-115			
Matrix Spike (W2A0833-MS1)	**Source: 2A12046-01**				**Prepared & Analyzed: 01/13/22**						
Total Organic Carbon (TOC)	4.47	0.190	0.300	mg/l	5.00	ND	89	76-115			
Matrix Spike Dup (W2A0833-MSD1)	**Source: 2A12046-01**				**Prepared & Analyzed: 01/13/22**						
Total Organic Carbon (TOC)	4.48	0.190	0.300	mg/l	5.00	ND	90	76-115	0.2	20	

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Project Manager: Margie Pascua

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0821 - EPA 245.1											
Blank (W2A0821-BLK1)					**Prepared: 01/12/22**	**Analyzed: 01/14/22**					
Mercury, Total	ND	0.0170	0.0500	ug/l							U
LCS (W2A0821-BS1)					**Prepared: 01/12/22**	**Analyzed: 01/14/22**					
Mercury, Total	1.10	0.0170	0.0500	ug/l	1.00		110	85-115			
Matrix Spike (W2A0821-MS1)	**Source: 2A12046-01**				**Prepared: 01/12/22**	**Analyzed: 01/14/22**					
Mercury, Total	1.10	0.0170	0.0500	ug/l	1.00	ND	110	70-130			
Matrix Spike Dup (W2A0821-MSD1)	**Source: 2A12046-01**				**Prepared: 01/12/22**	**Analyzed: 01/14/22**					
Mercury, Total	0.874	0.0170	0.0500	ug/l	1.00	ND	87	70-130	23	20	QR-04
Batch: W2A0825 - EPA 200.8											
Blank (W2A0825-BLK1)					**Prepared: 01/12/22**	**Analyzed: 01/13/22**					
Antimony, Total	ND	0.0889	0.500	ug/l							U
Arsenic, Total	ND	0.0741	0.400	ug/l							U
Barium, Total	ND	0.142	1.00	ug/l							U
Beryllium, Total	ND	0.0624	0.100	ug/l							U
Cadmium, Total	ND	0.0416	0.200	ug/l							U
Chromium, Total	ND	0.0887	0.200	ug/l							U
Copper, Total	ND	0.225	0.500	ug/l							U
Lead, Total	ND	0.0827	0.200	ug/l							U
Selenium, Total	0.0788	0.0666	0.400	ug/l							J
Thallium, Total	ND	0.0210	0.200	ug/l							U
LCS (W2A0825-BS1)					**Prepared: 01/12/22**	**Analyzed: 01/13/22**					
Antimony, Total	48.3	0.0889	0.500	ug/l	50.0		97	85-115			
Arsenic, Total	51.8	0.0741	0.400	ug/l	50.0		104	85-115			
Barium, Total	50.0	0.142	1.00	ug/l	50.0		100	85-115			
Beryllium, Total	47.9	0.0624	0.100	ug/l	50.0		96	85-115			
Cadmium, Total	49.7	0.0416	0.200	ug/l	50.0		99	85-115			
Chromium, Total	51.9	0.0887	0.200	ug/l	50.0		104	85-115			
Copper, Total	52.5	0.225	0.500	ug/l	50.0		105	85-115			
Lead, Total	50.2	0.0827	0.200	ug/l	50.0		100	85-115			
Selenium, Total	50.1	0.0666	0.400	ug/l	50.0		100	85-115			
Thallium, Total	49.8	0.0210	0.200	ug/l	50.0		100	85-115			
Matrix Spike (W2A0825-MS1)	**Source: 2A12055-01**				**Prepared: 01/12/22**	**Analyzed: 01/13/22**					
Antimony, Total	51.9	0.0889	0.500	ug/l	50.0	ND	104	70-130			
Arsenic, Total	51.8	0.0741	0.400	ug/l	50.0	0.235	103	70-130			
Barium, Total	53.8	0.142	1.00	ug/l	50.0	2.06	103	70-130			
Beryllium, Total	48.1	0.0624	0.100	ug/l	50.0	ND	96	70-130			
Cadmium, Total	49.6	0.0416	0.200	ug/l	50.0	ND	99	70-130			
Chromium, Total	51.4	0.0887	0.200	ug/l	50.0	1.50	100	70-130			
Copper, Total	54.5	0.225	0.500	ug/l	50.0	4.09	101	70-130			

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Project Manager: Margie Pascua

Reported: 01/15/2022 17:03

Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0825 - EPA 200.8 (Continued)											
Matrix Spike (W2A0825-MS1)	**Source: 2A12055-01**				**Prepared: 01/12/22**	**Analyzed: 01/13/22**					
Lead, Total	50.4	0.0827	0.200	ug/l	50.0	0.672	99	70-130			
Selenium, Total	52.0	0.0666	0.400	ug/l	50.0	1.32	101	70-130			
Thallium, Total	46.3	0.0210	0.200	ug/l	50.0	ND	93	70-130			
Matrix Spike Dup (W2A0825-MSD1)	**Source: 2A12055-01**				**Prepared: 01/12/22**	**Analyzed: 01/13/22**					
Antimony, Total	50.6	0.0889	0.500	ug/l	50.0	ND	101	70-130	3	30	
Arsenic, Total	51.1	0.0741	0.400	ug/l	50.0	0.235	102	70-130	1	30	
Barium, Total	53.4	0.142	1.00	ug/l	50.0	2.06	103	70-130	0.8	30	
Beryllium, Total	47.3	0.0624	0.100	ug/l	50.0	ND	95	70-130	2	30	
Cadmium, Total	48.6	0.0416	0.200	ug/l	50.0	ND	97	70-130	2	30	
Chromium, Total	50.7	0.0887	0.200	ug/l	50.0	1.50	98	70-130	1	30	
Copper, Total	53.9	0.225	0.500	ug/l	50.0	4.09	100	70-130	1	30	
Lead, Total	49.6	0.0827	0.200	ug/l	50.0	0.672	98	70-130	2	30	
Selenium, Total	51.4	0.0666	0.400	ug/l	50.0	1.32	100	70-130	1	30	
Thallium, Total	45.3	0.0210	0.200	ug/l	50.0	ND	91	70-130	2	30	

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Quality Control Results

(Continued)

Semivolatile Organic Compounds by GC/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0884 - EPA 525.2											
Blank (W2A0884-BLK1)					**Prepared & Analyzed: 01/13/22**						
1-Methylnaphthalene	ND	0.00801	0.0500	ug/l							U
2-Methylnaphthalene	ND	0.00904	0.0500	ug/l							U
Alachlor	ND	0.0110	0.100	ug/l							U
Atrazine	ND	0.00734	0.100	ug/l							U
Benzo (a) pyrene	ND	0.0117	0.100	ug/l							U
Bis(2-ethylhexyl)adipate	ND	0.00962	5.00	ug/l							U
Bis(2-ethylhexyl)phthalate	ND	0.437	3.00	ug/l							U
Endrin	ND	0.00991	0.200	ug/l							U
gamma-BHC (Lindane)	ND	0.00633	0.100	ug/l							U
Heptachlor	ND	0.00965	0.100	ug/l							U
Heptachlor epoxide	ND	0.0122	0.100	ug/l							U
Hexachlorobenzene	ND	0.0980	0.100	ug/l							U
Hexachlorocyclopentadiene	ND	0.00594	1.00	ug/l							U
Methoxychlor	ND	0.00863	0.200	ug/l							U
Naphthalene	ND	0.0103	0.0500	ug/l							U
Pentachlorophenol	ND	0.0242	1.00	ug/l							U
Simazine	ND	0.00734	0.100	ug/l							U
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*4.77*			*ug/l*	*5.00*		*95*	*70-130*			
Perylene-d12	*4.79*			*ug/l*	*5.00*		*96*	*70-130*			
Triphenyl phosphate	*4.85*			*ug/l*	*5.00*		*97*	*70-130*			
LCS (W2A0884-BS1)					**Prepared & Analyzed: 01/13/22**						
1-Methylnaphthalene	0.200	0.00801	0.0500	ug/l	0.250		80	70-130			
2-Methylnaphthalene	0.200	0.00904	0.0500	ug/l	0.250		80	70-130			
Alachlor	0.410	0.0110	0.100	ug/l	0.500		82	70-130			
Atrazine	0.244	0.00734	0.100	ug/l	0.250		98	70-130			
Benzo (a) pyrene	0.140	0.0117	0.100	ug/l	0.250		56	60-130			Q-02
Bis(2-ethylhexyl)adipate	0.199	0.00962	5.00	ug/l	0.250		80	70-130			J
Bis(2-ethylhexyl)phthalate	0.222	0.00	3.00	ug/l	0.250		89	70-130			J
Endrin	0.234	0.00991	0.200	ug/l	0.250		94	70-130			
gamma-BHC (Lindane)	0.290	0.00633	0.100	ug/l	0.250		116	70-130			
Heptachlor	0.204	0.00965	0.100	ug/l	0.250		82	70-130			
Heptachlor epoxide	0.246	0.0122	0.100	ug/l	0.250		98	70-130			
Hexachlorobenzene	0.0436	0.00	0.100	ug/l	0.0500		87	70-130			J
Hexachlorocyclopentadiene	0.187	0.00594	1.00	ug/l	0.250		75	33-106			J
Methoxychlor	0.229	0.00863	0.200	ug/l	0.250		91	70-130			
Naphthalene	0.200	0.0103	0.0500	ug/l	0.250		80	70-130			
Pentachlorophenol	0.179	0.0242	1.00	ug/l	0.250		72	50-120			J
Simazine	0.209	0.00734	0.100	ug/l	0.250		84	60-130			

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Project Manager: Margie Pascua

Reported: 01/15/2022 17:03

Quality Control Results

(Continued)

Semivolatile Organic Compounds by GC/MS (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0884 - EPA 525.2 (Continued)											
LCS (W2A0884-BS1)					**Prepared & Analyzed: 01/13/22**						
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*4.73*			*ug/l*	*5.00*		*95*	*70-130*			
Perylene-d12	*4.93*			*ug/l*	*5.00*		*99*	*70-130*			
Triphenyl phosphate	*5.59*			*ug/l*	*5.00*		*112*	*70-130*			
LCS Dup (W2A0884-BSD1)					**Prepared & Analyzed: 01/13/22**						
1-Methylnaphthalene	0.209	0.00801	0.0500	ug/l	0.250		84	70-130	4	30	
2-Methylnaphthalene	0.207	0.00904	0.0500	ug/l	0.250		83	70-130	4	30	
Alachlor	0.414	0.0110	0.100	ug/l	0.500		83	70-130	0.9	30	
Atrazine	0.238	0.00734	0.100	ug/l	0.250		95	70-130	3	30	
Benzo (a) pyrene	0.140	0.0117	0.100	ug/l	0.250		56	60-130	0.09	30	Q-02
Bis(2-ethylhexyl)adipate	0.208	0.00962	5.00	ug/l	0.250		83	70-130	4	30	J
Bis(2-ethylhexyl)phthalate	0.225	0.00	3.00	ug/l	0.250		90	70-130	2	30	J
Endrin	0.231	0.00991	0.200	ug/l	0.250		92	70-130	1	30	
gamma-BHC (Lindane)	0.287	0.00633	0.100	ug/l	0.250		115	70-130	0.8	30	
Heptachlor	0.184	0.00965	0.100	ug/l	0.250		74	70-130	10	30	
Heptachlor epoxide	0.255	0.0122	0.100	ug/l	0.250		102	70-130	4	30	
Hexachlorobenzene	0.0416	0.00	0.100	ug/l	0.0500		83	70-130	5	30	J
Hexachlorocyclopentadiene	0.178	0.00594	1.00	ug/l	0.250		71	33-106	5	30	J
Methoxychlor	0.230	0.00863	0.200	ug/l	0.250		92	70-130	0.5	30	
Naphthalene	0.213	0.0103	0.0500	ug/l	0.250		85	70-130	6	30	
Pentachlorophenol	0.204	0.0242	1.00	ug/l	0.250		82	50-120	13	30	J
Simazine	0.221	0.00734	0.100	ug/l	0.250		88	60-130	6	30	
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*4.96*			*ug/l*	*5.00*		*99*	*70-130*			
Perylene-d12	*4.91*			*ug/l*	*5.00*		*98*	*70-130*			
Triphenyl phosphate	*5.41*			*ug/l*	*5.00*		*108*	*70-130*			

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Project Number: 60674414, COC # 01112022DW-57

Project Manager: Margie Pascua

Reported: 01/15/2022 17:03

Quality Control Results

(Continued)

Volatile Organic Compounds by P&T and GC/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0744 - EPA 524.2											
Blank (W2A0744-BLK1)					**Prepared: 01/12/22 Analyzed: 01/13/22**						
1,1,1-Trichloroethane	ND	0.256	0.500	ug/l				70-130			U
1,1,2-Trichloroethane	ND	0.190	0.500	ug/l				70-130			U
1,1-Dichloroethene	ND	0.160	0.500	ug/l				70-130			U
1,2,4-Trichlorobenzene	ND	0.170	0.500	ug/l				70-130			U
1,2-Dichloroethane	ND	0.243	0.500	ug/l				70-130			U
1,2-Dichloropropane	ND	0.130	0.500	ug/l				70-130			U
Benzene	ND	0.150	0.500	ug/l				70-130			U
Carbon tetrachloride	ND	0.270	0.500	ug/l				70-130			U
Chlorobenzene	ND	0.150	0.500	ug/l				70-130			U
cis-1,2-Dichloroethene	ND	0.250	0.500	ug/l				70-130			U
Ethylbenzene	ND	0.210	0.500	ug/l				70-130			U
m,p-Xylene	ND	0.330	0.500	ug/l				70-130			U
Methylene chloride	ND	0.303	0.500	ug/l				70-130			U
o-Dichlorobenzene	ND	0.190	0.500	ug/l				70-130			U
o-Xylene	ND	0.200	0.500	ug/l				70-130			U
p-Dichlorobenzene	ND	0.180	0.500	ug/l				70-130			U
Styrene	ND	0.190	0.500	ug/l				70-130			U
Tetrachloroethene	ND	0.180	0.500	ug/l				70-130			U
THMs, Total	ND		0.500	ug/l				70-130			U
Toluene	ND	0.294	0.500	ug/l				70-130			U
trans-1,2-Dichloroethene	ND	0.259	0.500	ug/l				70-130			U
Trichloroethene	ND	0.180	0.500	ug/l				70-130			U
Vinyl chloride	ND	0.180	0.500	ug/l				70-130			U
Surrogate(s)											
1,2-Dichlorobenzene-d4	*8.72*			*ug/l*	*10.0*		*87*	*70-130*			
4-Bromofluorobenzene	*8.48*			*ug/l*	*10.0*		*85*	*70-130*			
LCS (W2A0744-BS1)					**Prepared: 01/12/22 Analyzed: 01/13/22**						
1,1,1-Trichloroethane	5.49	0.256	0.500	ug/l	5.00		110	70-130			
1,1,2-Trichloroethane	5.43	0.190	0.500	ug/l	5.00		109	70-130			
1,1-Dichloroethene	5.45	0.160	0.500	ug/l	5.00		109	70-130			
1,2,4-Trichlorobenzene	5.60	0.170	0.500	ug/l	5.00		112	70-130			
1,2-Dichloroethane	5.24	0.243	0.500	ug/l	5.00		105	70-130			
1,2-Dichloropropane	5.23	0.130	0.500	ug/l	5.00		105	70-130			
Benzene	5.21	0.150	0.500	ug/l	5.00		104	70-130			
Carbon tetrachloride	5.70	0.270	0.500	ug/l	5.00		114	70-130			
Chlorobenzene	5.32	0.150	0.500	ug/l	5.00		106	70-130			
cis-1,2-Dichloroethene	5.33	0.250	0.500	ug/l	5.00		107	70-130			
Ethylbenzene	6.29	0.210	0.500	ug/l	5.00		126	70-130			
m,p-Xylene	6.23	0.330	0.500	ug/l	5.00		125	70-130			

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Project Number: 60674414, COC # 01112022DW-57

Project Manager: Margie Pascua

Reported: 01/15/2022 17:03

Quality Control Results

(Continued)

Volatile Organic Compounds by P&T and GC/MS (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0744 - EPA 524.2 (Continued)											
LCS (W2A0744-BS1)					**Prepared: 01/12/22 Analyzed: 01/13/22**						
Methylene chloride	5.31	0.303	0.500	ug/l	5.00		106	70-130			
o-Dichlorobenzene	5.35	0.190	0.500	ug/l	5.00		107	70-130			
o-Xylene	6.09	0.200	0.500	ug/l	5.00		122	70-130			
p-Dichlorobenzene	5.44	0.180	0.500	ug/l	5.00		109	70-130			
Styrene	6.05	0.190	0.500	ug/l	5.00		121	70-130			
Tetrachloroethene	5.63	0.180	0.500	ug/l	5.00		113	70-130			
Toluene	5.74	0.294	0.500	ug/l	5.00		115	70-130			
trans-1,2-Dichloroethene	5.49	0.259	0.500	ug/l	5.00		110	70-130			
Trichloroethene	5.46	0.180	0.500	ug/l	5.00		109	70-130			
Vinyl chloride	5.29	0.180	0.500	ug/l	5.00		106	70-130			
Surrogate(s)											
1,2-Dichlorobenzene-d4	*11.3*			*ug/l*	*10.0*		*113*	*70-130*			
4-Bromofluorobenzene	*11.3*			*ug/l*	*10.0*		*113*	*70-130*			
LCS Dup (W2A0744-BSD1)					**Prepared: 01/12/22 Analyzed: 01/13/22**						
1,1,1-Trichloroethane	4.87	0.256	0.500	ug/l	5.00		97	70-130	12	30	
1,1,2-Trichloroethane	5.13	0.190	0.500	ug/l	5.00		103	70-130	6	30	
1,1-Dichloroethene	4.78	0.160	0.500	ug/l	5.00		96	70-130	13	30	
1,2,4-Trichlorobenzene	5.18	0.170	0.500	ug/l	5.00		104	70-130	8	30	
1,2-Dichloroethane	4.98	0.243	0.500	ug/l	5.00		100	70-130	5	30	
1,2-Dichloropropane	5.00	0.130	0.500	ug/l	5.00		100	70-130	4	30	
Benzene	4.84	0.150	0.500	ug/l	5.00		97	70-130	7	30	
Carbon tetrachloride	4.94	0.270	0.500	ug/l	5.00		99	70-130	14	30	
Chlorobenzene	5.02	0.150	0.500	ug/l	5.00		100	70-130	6	30	
cis-1,2-Dichloroethene	4.88	0.250	0.500	ug/l	5.00		98	70-130	9	30	
Ethylbenzene	5.65	0.210	0.500	ug/l	5.00		113	70-130	11	30	
m,p-Xylene	5.68	0.330	0.500	ug/l	5.00		114	70-130	9	30	
Methylene chloride	5.13	0.303	0.500	ug/l	5.00		103	70-130	3	30	
o-Dichlorobenzene	4.88	0.190	0.500	ug/l	5.00		98	70-130	9	30	
o-Xylene	5.54	0.200	0.500	ug/l	5.00		111	70-130	9	30	
p-Dichlorobenzene	4.98	0.180	0.500	ug/l	5.00		100	70-130	9	30	
Styrene	5.52	0.190	0.500	ug/l	5.00		110	70-130	9	30	
Tetrachloroethene	4.89	0.180	0.500	ug/l	5.00		98	70-130	14	30	
Toluene	5.26	0.294	0.500	ug/l	5.00		105	70-130	9	30	
trans-1,2-Dichloroethene	4.95	0.259	0.500	ug/l	5.00		99	70-130	10	30	
Trichloroethene	5.00	0.180	0.500	ug/l	5.00		100	70-130	9	30	
Vinyl chloride	4.88	0.180	0.500	ug/l	5.00		98	70-130	8	30	
Surrogate(s)											
1,2-Dichlorobenzene-d4	*10.9*			*ug/l*	*10.0*		*109*	*70-130*			
4-Bromofluorobenzene	*11.0*			*ug/l*	*10.0*		*110*	*70-130*			

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Project Number: 60674414, COC # 01112022DW-57

Project Manager: Margie Pascua

Reported:
01/15/2022 17:03

Notes and Definitions

Item	Definition
A-01	Sample was acidified to pH < 2 prior to extraction.
A-01a	Sample was acidified to pH<2 prior to extraction.
J	Estimated conc. detected <MRL and >MDL.
Q-02	Low recovery of this analyte in the QC sample. The analysis of the low level standard produced acceptable recovery indicating that the sample result might be accurately reported as Not Detected.
Q-08	High bias in the QC sample does not affect sample result since analyte was not detected or below the reporting limit.
QR-04	The RPD value for the MS/MSD was outside of QC acceptance limits however both recoveries were acceptable. The QC batch was accepted based on acceptable results for the recoveries and RPD for the LCS and LCSD.
U	Analyte included in the analysis, but not detected
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

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Certificate of Analysis

FINAL REPORT

Work Orders:	2A12047	**Report Date:**	1/15/2022
		Received Date:	1/12/2022
Project:	60674414, COC # 01112022DW-60	**Turnaround Time:**	3 workdays
		Phones:	(808) 529-7277
		Fax:	(808) 524-0246
Attn:	Margie Pascua	**P.O. #:**	reference number 60571032.02.46.01
Client:	AECOM - Honolulu 1001 Bishop Street Suite 1600 Honolulu, HI 96813	**Billing Code:**	

ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH #4047 • LACSD #10143 • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Margie Pascua,

Enclosed are the results of analyses for samples received 1/12/22 with the Chain-of-Custody document. The samples were received in good condition, at 2.7 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Brandon Gee For Kim G. Tu
Project Manager

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Project Number: 60674414, COC # 01112022DW-60

Project Manager: Margie Pascua

Reported:
01/15/2022 16:52

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
20220111-H1-YT13	AECOM	2A12047-01	Water	01/11/22 16:35	

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Project Number: 60674414, COC # 01112022DW-60

Project Manager: Margie Pascua

Reported: 01/15/2022 16:52

Sample Results

Sample: 20220111-H1-YT13
2A12047-01 (Water)

Sampled: 01/11/22 16:35 by AECOM

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Chlorinated Pesticides and/or PCBs by GC/ECD							
Method: EPA 508.1			**Instr:** GC08				
Batch ID: W2A0878 **Preparation:** Method (SPE)			**Prepared:** 01/13/22 10:12				**Analyst:** rjg
Aroclor 1016	ND	0.0157	0.100	ug/l	1	01/14/22	U
Aroclor 1221	ND	0.0436	0.100	ug/l	1	01/14/22	U
Aroclor 1232	ND	0.0102	0.100	ug/l	1	01/14/22	U
Aroclor 1242	ND	0.0737	0.100	ug/l	1	01/14/22	U
Aroclor 1248	ND	0.0941	0.100	ug/l	1	01/14/22	U
Aroclor 1254	ND	0.0869	0.100	ug/l	1	01/14/22	U
Aroclor 1260	ND	0.0379	0.100	ug/l	1	01/14/22	U
Chlordane (tech)	ND	0.0669	0.100	ug/l	1	01/14/22	U
PCBs, Total	ND		0.500	ug/l	1	01/14/22	U
Surrogate(s)							
4,4-Dibromobiphenyl	*96%*	*Conc: 0.101*	*70-130*			*01/14/22*	
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: SM 5310B			**Instr:** TOC02				
Batch ID: W2A0833 **Preparation:** _NONE (TOC/TOX)			**Prepared:** 01/13/22 09:58				**Analyst:** ajc
Total Organic Carbon (TOC)	ND	0.190	0.300	mg/l	1	01/13/22	U
Metals by EPA 200 Series Methods							
Method: EPA 200.8			**Instr:** ICPMS04				
Batch ID: W2A0825 **Preparation:** EPA 200.2			**Prepared:** 01/12/22 16:06				**Analyst:** mpn
Antimony, Total	ND	0.0889	0.500	ug/l	1	01/13/22	U
Arsenic, Total	**0.262**	0.0741	0.400	ug/l	1	01/13/22	J
Barium, Total	**2.23**	0.142	1.00	ug/l	1	01/13/22	
Beryllium, Total	ND	0.0624	0.100	ug/l	1	01/13/22	U
Cadmium, Total	ND	0.0416	0.200	ug/l	1	01/13/22	U
Chromium, Total	**1.53**	0.0887	0.200	ug/l	1	01/13/22	
Copper, Total	**4.61**	0.225	0.500	ug/l	1	01/13/22	
Lead, Total	**0.484**	0.0827	0.200	ug/l	1	01/13/22	
Selenium, Total	**1.37**	0.0666	0.400	ug/l	1	01/13/22	
Thallium, Total	ND	0.0210	0.200	ug/l	1	01/13/22	U
Method: EPA 245.1			**Instr:** HG03				
Batch ID: W2A0821 **Preparation:** EPA 245.1			**Prepared:** 01/12/22 15:39				**Analyst:** kvm
Mercury, Total	ND	0.0170	0.0500	ug/l	1	01/14/22	U
Semivolatile Organic Compounds by GC/MS							
Method: EPA 525.2			**Instr:** GCMS16				
Batch ID: W2A0884 **Preparation:** Method (SPE)			**Prepared:** 01/13/22 11:40				**Analyst:** rmr
1-Methylnaphthalene	ND	0.00801	0.0500	ug/l	1	01/13/22	U
2-Methylnaphthalene	ND	0.00904	0.0500	ug/l	1	01/13/22	U

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Project Number: 60674414, COC # 01112022DW-60

Project Manager: Margie Pascua

Reported: 01/15/2022 16:52

Sample Results

(Continued)

Sample: 20220111-H1-YT13
2A12047-01 (Water)

Sampled: 01/11/22 16:35 by AECOM

(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Semivolatile Organic Compounds by GC/MS (Continued)							
Method: EPA 525.2			**Instr:** GCMS16				
Batch ID: W2A0884 **Preparation:** Method (SPE)			**Prepared:** 01/13/22 11:40				**Analyst:** rmr
Alachlor	ND	0.0110	0.100	ug/l	1	01/13/22	U
Atrazine	ND	0.00734	0.100	ug/l	1	01/13/22	U
Benzo (a) pyrene	ND	0.0117	0.100	ug/l	1	01/13/22	Q-02, U
Bis(2-ethylhexyl)adipate	ND	0.00962	5.00	ug/l	1	01/13/22	U
Bis(2-ethylhexyl)phthalate	ND	0.437	3.00	ug/l	1	01/13/22	U
Endrin	ND	0.00991	0.200	ug/l	1	01/13/22	U
gamma-BHC (Lindane)	ND	0.00633	0.100	ug/l	1	01/13/22	U
Heptachlor	ND	0.00965	0.100	ug/l	1	01/13/22	U
Heptachlor epoxide	ND	0.0122	0.100	ug/l	1	01/13/22	U
Hexachlorobenzene	ND	0.0980	0.100	ug/l	1	01/13/22	U
Hexachlorocyclopentadiene	ND	0.00594	1.00	ug/l	1	01/13/22	U
Methoxychlor	ND	0.00863	0.200	ug/l	1	01/13/22	U
Naphthalene	ND	0.0103	0.0500	ug/l	1	01/13/22	U
Pentachlorophenol	ND	0.0242	1.00	ug/l	1	01/13/22	U
Simazine	ND	0.00734	0.100	ug/l	1	01/13/22	U
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*100%*	*Conc: 5.23*	*70-130*			*01/13/22*	
Perylene-d12	*97%*	*Conc: 5.07*	*70-130*			*01/13/22*	
Triphenyl phosphate	*106%*	*Conc: 5.59*	*70-130*			*01/13/22*	
Volatile Organic Compounds by P&T and GC/MS							
Method: EPA 524.2			**Instr:** GCMS14				
Batch ID: W2A0744 **Preparation:** EPA 5030			**Prepared:** 01/13/22 00:00				**Analyst:** cam
1,1,1-Trichloroethane	ND	0.256	0.500	ug/l	1	01/13/22	U
1,1,2-Trichloroethane	ND	0.190	0.500	ug/l	1	01/13/22	U
1,1-Dichloroethene	ND	0.160	0.500	ug/l	1	01/13/22	U
1,2,4-Trichlorobenzene	ND	0.170	0.500	ug/l	1	01/13/22	U
1,2-Dichloroethane	ND	0.243	0.500	ug/l	1	01/13/22	U
1,2-Dichloropropane	ND	0.130	0.500	ug/l	1	01/13/22	U
Benzene	ND	0.150	0.500	ug/l	1	01/13/22	U
Carbon tetrachloride	ND	0.270	0.500	ug/l	1	01/13/22	U
Chlorobenzene	ND	0.150	0.500	ug/l	1	01/13/22	U
cis-1,2-Dichloroethene	ND	0.250	0.500	ug/l	1	01/13/22	U
Ethylbenzene	ND	0.210	0.500	ug/l	1	01/13/22	U
m,p-Xylene	ND	0.330	0.500	ug/l	1	01/13/22	U
Methylene chloride	ND	0.303	0.500	ug/l	1	01/13/22	U
o-Dichlorobenzene	ND	0.190	0.500	ug/l	1	01/13/22	U

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Project Number: 60674414, COC # 01112022DW-60

Project Manager: Margie Pascua

Reported: 01/15/2022 16:52

Sample Results

(Continued)

Sample: 20220111-H1-YT13
2A12047-01 (Water)

Sampled: 01/11/22 16:35 by AECOM

(Continued)

Volatile Organic Compounds by P&T and GC/MS (Continued)

Method: EPA 524.2 **Instr:** GCMS14

Batch ID: W2A0744 **Preparation:** EPA 5030 **Prepared:** 01/13/22 00:00 **Analyst:** cam

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
o-Xylene	ND	0.200	0.500	ug/l	1	01/13/22	U
p-Dichlorobenzene	ND	0.180	0.500	ug/l	1	01/13/22	U
Styrene	ND	0.190	0.500	ug/l	1	01/13/22	U
Tetrachloroethene	ND	0.180	0.500	ug/l	1	01/13/22	U
THMs, Total	ND		0.500	ug/l	1	01/13/22	U
Toluene	ND	0.294	0.500	ug/l	1	01/13/22	U
trans-1,2-Dichloroethene	ND	0.259	0.500	ug/l	1	01/13/22	U
Trichloroethene	ND	0.180	0.500	ug/l	1	01/13/22	U
Vinyl chloride	ND	0.180	0.500	ug/l	1	01/13/22	U
Surrogate(s)							
1,2-Dichlorobenzene-d4	*90%*	*Conc: 9.00*	*70-130*			*01/13/22*	
4-Bromofluorobenzene	*86%*	*Conc: 8.64*	*70-130*			*01/13/22*	

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Project Number: 60674414, COC # 01112022DW-60

Project Manager: Margie Pascua

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Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0878 - EPA 508.1											
Blank (W2A0878-BLK1)					**Prepared: 01/13/22 Analyzed: 01/14/22**						
Aroclor 1016	ND	0.0157	0.100	ug/l							U
Aroclor 1221	ND	0.0436	0.100	ug/l							U
Aroclor 1232	ND	0.0102	0.100	ug/l							U
Aroclor 1242	ND	0.0737	0.100	ug/l							U
Aroclor 1248	ND	0.0941	0.100	ug/l							U
Aroclor 1254	ND	0.0869	0.100	ug/l							U
Aroclor 1260	ND	0.0379	0.100	ug/l							U
Chlordane (tech)	ND	0.0669	0.100	ug/l							U
PCBs, Total	ND		0.500	ug/l							U
Surrogate(s)											
4,4-Dibromobiphenyl	*0.0759*			*ug/l*	*0.100*		*76*	*70-130*			
LCS (W2A0878-BS1)					**Prepared: 01/13/22 Analyzed: 01/14/22**						
Chlordane (tech)	0.460	0.0669	0.100	ug/l	0.500		92	70-130			
Surrogate(s)											
4,4-Dibromobiphenyl	*0.0817*			*ug/l*	*0.100*		*82*	*70-130*			
LCS Dup (W2A0878-BSD1)					**Prepared: 01/13/22 Analyzed: 01/14/22**						
Chlordane (tech)	0.451	0.0669	0.100	ug/l	0.500		90	70-130	2	30	
Surrogate(s)											
4,4-Dibromobiphenyl	*0.0789*			*ug/l*	*0.100*		*79*	*70-130*			

Quality Control Results

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0833 - SM 5310B											
Blank (W2A0833-BLK1)					**Prepared & Analyzed: 01/13/22**						
Total Organic Carbon (TOC)	ND	0.190	0.300	mg/l							U
LCS (W2A0833-BS1)					**Prepared & Analyzed: 01/13/22**						
Total Organic Carbon (TOC)	0.969	0.190	0.300	mg/l	1.00		97	85-115			
Matrix Spike (W2A0833-MS1)	**Source: 2A12046-01**				**Prepared & Analyzed: 01/13/22**						
Total Organic Carbon (TOC)	4.47	0.190	0.300	mg/l	5.00	ND	89	76-115			
Matrix Spike Dup (W2A0833-MSD1)	**Source: 2A12046-01**				**Prepared & Analyzed: 01/13/22**						
Total Organic Carbon (TOC)	4.48	0.190	0.300	mg/l	5.00	ND	90	76-115	0.2	20	

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0821 - EPA 245.1											
Blank (W2A0821-BLK1)					**Prepared: 01/12/22**	**Analyzed: 01/14/22**					
Mercury, Total	ND	0.0170	0.0500	ug/l							U
LCS (W2A0821-BS1)					**Prepared: 01/12/22**	**Analyzed: 01/14/22**					
Mercury, Total	1.10	0.0170	0.0500	ug/l	1.00		110	85-115			
Matrix Spike (W2A0821-MS1)	**Source: 2A12046-01**				**Prepared: 01/12/22**	**Analyzed: 01/14/22**					
Mercury, Total	1.10	0.0170	0.0500	ug/l	1.00	ND	110	70-130			
Matrix Spike Dup (W2A0821-MSD1)	**Source: 2A12046-01**				**Prepared: 01/12/22**	**Analyzed: 01/14/22**					
Mercury, Total	0.874	0.0170	0.0500	ug/l	1.00	ND	87	70-130	23	20	QR-04
Batch: W2A0825 - EPA 200.8											
Blank (W2A0825-BLK1)					**Prepared: 01/12/22**	**Analyzed: 01/13/22**					
Antimony, Total	ND	0.0889	0.500	ug/l							U
Arsenic, Total	ND	0.0741	0.400	ug/l							U
Barium, Total	ND	0.142	1.00	ug/l							U
Beryllium, Total	ND	0.0624	0.100	ug/l							U
Cadmium, Total	ND	0.0416	0.200	ug/l							U
Chromium, Total	ND	0.0887	0.200	ug/l							U
Copper, Total	ND	0.225	0.500	ug/l							U
Lead, Total	ND	0.0827	0.200	ug/l							U
Selenium, Total	0.0788	0.0666	0.400	ug/l							J
Thallium, Total	ND	0.0210	0.200	ug/l							U
LCS (W2A0825-BS1)					**Prepared: 01/12/22**	**Analyzed: 01/13/22**					
Antimony, Total	48.3	0.0889	0.500	ug/l	50.0		97	85-115			
Arsenic, Total	51.8	0.0741	0.400	ug/l	50.0		104	85-115			
Barium, Total	50.0	0.142	1.00	ug/l	50.0		100	85-115			
Beryllium, Total	47.9	0.0624	0.100	ug/l	50.0		96	85-115			
Cadmium, Total	49.7	0.0416	0.200	ug/l	50.0		99	85-115			
Chromium, Total	51.9	0.0887	0.200	ug/l	50.0		104	85-115			
Copper, Total	52.5	0.225	0.500	ug/l	50.0		105	85-115			
Lead, Total	50.2	0.0827	0.200	ug/l	50.0		100	85-115			
Selenium, Total	50.1	0.0666	0.400	ug/l	50.0		100	85-115			
Thallium, Total	49.8	0.0210	0.200	ug/l	50.0		100	85-115			
Matrix Spike (W2A0825-MS1)	**Source: 2A12055-01**				**Prepared: 01/12/22**	**Analyzed: 01/13/22**					
Antimony, Total	51.9	0.0889	0.500	ug/l	50.0	ND	104	70-130			
Arsenic, Total	51.8	0.0741	0.400	ug/l	50.0	0.235	103	70-130			
Barium, Total	53.8	0.142	1.00	ug/l	50.0	2.06	103	70-130			
Beryllium, Total	48.1	0.0624	0.100	ug/l	50.0	ND	96	70-130			
Cadmium, Total	49.6	0.0416	0.200	ug/l	50.0	ND	99	70-130			
Chromium, Total	51.4	0.0887	0.200	ug/l	50.0	1.50	100	70-130			
Copper, Total	54.5	0.225	0.500	ug/l	50.0	4.09	101	70-130			

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0825 - EPA 200.8 (Continued)											
Matrix Spike (W2A0825-MS1)	**Source: 2A12055-01**				**Prepared: 01/12/22**	**Analyzed: 01/13/22**					
Lead, Total	50.4	0.0827	0.200	ug/l	50.0	0.672	99	70-130			
Selenium, Total	52.0	0.0666	0.400	ug/l	50.0	1.32	101	70-130			
Thallium, Total	46.3	0.0210	0.200	ug/l	50.0	ND	93	70-130			
Matrix Spike Dup (W2A0825-MSD1)	**Source: 2A12055-01**				**Prepared: 01/12/22**	**Analyzed: 01/13/22**					
Antimony, Total	50.6	0.0889	0.500	ug/l	50.0	ND	101	70-130	3	30	
Arsenic, Total	51.1	0.0741	0.400	ug/l	50.0	0.235	102	70-130	1	30	
Barium, Total	53.4	0.142	1.00	ug/l	50.0	2.06	103	70-130	0.8	30	
Beryllium, Total	47.3	0.0624	0.100	ug/l	50.0	ND	95	70-130	2	30	
Cadmium, Total	48.6	0.0416	0.200	ug/l	50.0	ND	97	70-130	2	30	
Chromium, Total	50.7	0.0887	0.200	ug/l	50.0	1.50	98	70-130	1	30	
Copper, Total	53.9	0.225	0.500	ug/l	50.0	4.09	100	70-130	1	30	
Lead, Total	49.6	0.0827	0.200	ug/l	50.0	0.672	98	70-130	2	30	
Selenium, Total	51.4	0.0666	0.400	ug/l	50.0	1.32	100	70-130	1	30	
Thallium, Total	45.3	0.0210	0.200	ug/l	50.0	ND	91	70-130	2	30	

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Quality Control Results

(Continued)

Semivolatile Organic Compounds by GC/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0884 - EPA 525.2											
Blank (W2A0884-BLK1)					**Prepared & Analyzed: 01/13/22**						
1-Methylnaphthalene	ND	0.00801	0.0500	ug/l							U
2-Methylnaphthalene	ND	0.00904	0.0500	ug/l							U
Alachlor	ND	0.0110	0.100	ug/l							U
Atrazine	ND	0.00734	0.100	ug/l							U
Benzo (a) pyrene	ND	0.0117	0.100	ug/l							U
Bis(2-ethylhexyl)adipate	ND	0.00962	5.00	ug/l							U
Bis(2-ethylhexyl)phthalate	ND	0.437	3.00	ug/l							U
Endrin	ND	0.00991	0.200	ug/l							U
gamma-BHC (Lindane)	ND	0.00633	0.100	ug/l							U
Heptachlor	ND	0.00965	0.100	ug/l							U
Heptachlor epoxide	ND	0.0122	0.100	ug/l							U
Hexachlorobenzene	ND	0.0980	0.100	ug/l							U
Hexachlorocyclopentadiene	ND	0.00594	1.00	ug/l							U
Methoxychlor	ND	0.00863	0.200	ug/l							U
Naphthalene	ND	0.0103	0.0500	ug/l							U
Pentachlorophenol	ND	0.0242	1.00	ug/l							U
Simazine	ND	0.00734	0.100	ug/l							U
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*4.77*			*ug/l*	*5.00*		*95*	*70-130*			
Perylene-d12	*4.79*			*ug/l*	*5.00*		*96*	*70-130*			
Triphenyl phosphate	*4.85*			*ug/l*	*5.00*		*97*	*70-130*			
LCS (W2A0884-BS1)					**Prepared & Analyzed: 01/13/22**						
1-Methylnaphthalene	0.200	0.00801	0.0500	ug/l	0.250		80	70-130			
2-Methylnaphthalene	0.200	0.00904	0.0500	ug/l	0.250		80	70-130			
Alachlor	0.410	0.0110	0.100	ug/l	0.500		82	70-130			
Atrazine	0.244	0.00734	0.100	ug/l	0.250		98	70-130			
Benzo (a) pyrene	0.140	0.0117	0.100	ug/l	0.250		56	60-130			Q-02
Bis(2-ethylhexyl)adipate	0.199	0.00962	5.00	ug/l	0.250		80	70-130			J
Bis(2-ethylhexyl)phthalate	0.222	0.00	3.00	ug/l	0.250		89	70-130			J
Endrin	0.234	0.00991	0.200	ug/l	0.250		94	70-130			
gamma-BHC (Lindane)	0.290	0.00633	0.100	ug/l	0.250		116	70-130			
Heptachlor	0.204	0.00965	0.100	ug/l	0.250		82	70-130			
Heptachlor epoxide	0.246	0.0122	0.100	ug/l	0.250		98	70-130			
Hexachlorobenzene	0.0436	0.00	0.100	ug/l	0.0500		87	70-130			J
Hexachlorocyclopentadiene	0.187	0.00594	1.00	ug/l	0.250		75	33-106			J
Methoxychlor	0.229	0.00863	0.200	ug/l	0.250		91	70-130			
Naphthalene	0.200	0.0103	0.0500	ug/l	0.250		80	70-130			
Pentachlorophenol	0.179	0.0242	1.00	ug/l	0.250		72	50-120			J
Simazine	0.209	0.00734	0.100	ug/l	0.250		84	60-130			

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Project Manager: Margie Pascua

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Quality Control Results

(Continued)

Semivolatile Organic Compounds by GC/MS (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0884 - EPA 525.2 (Continued)											
LCS (W2A0884-BS1)					**Prepared & Analyzed: 01/13/22**						
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*4.73*			*ug/l*	*5.00*		*95*	*70-130*			
Perylene-d12	*4.93*			*ug/l*	*5.00*		*99*	*70-130*			
Triphenyl phosphate	*5.59*			*ug/l*	*5.00*		*112*	*70-130*			
LCS Dup (W2A0884-BSD1)					**Prepared & Analyzed: 01/13/22**						
1-Methylnaphthalene	0.209	0.00801	0.0500	ug/l	0.250		84	70-130	4	30	
2-Methylnaphthalene	0.207	0.00904	0.0500	ug/l	0.250		83	70-130	4	30	
Alachlor	0.414	0.0110	0.100	ug/l	0.500		83	70-130	0.9	30	
Atrazine	0.238	0.00734	0.100	ug/l	0.250		95	70-130	3	30	
Benzo (a) pyrene	0.140	0.0117	0.100	ug/l	0.250		56	60-130	0.09	30	Q-02
Bis(2-ethylhexyl)adipate	0.208	0.00962	5.00	ug/l	0.250		83	70-130	4	30	J
Bis(2-ethylhexyl)phthalate	0.225	0.00	3.00	ug/l	0.250		90	70-130	2	30	J
Endrin	0.231	0.00991	0.200	ug/l	0.250		92	70-130	1	30	
gamma-BHC (Lindane)	0.287	0.00633	0.100	ug/l	0.250		115	70-130	0.8	30	
Heptachlor	0.184	0.00965	0.100	ug/l	0.250		74	70-130	10	30	
Heptachlor epoxide	0.255	0.0122	0.100	ug/l	0.250		102	70-130	4	30	
Hexachlorobenzene	0.0416	0.00	0.100	ug/l	0.0500		83	70-130	5	30	J
Hexachlorocyclopentadiene	0.178	0.00594	1.00	ug/l	0.250		71	33-106	5	30	J
Methoxychlor	0.230	0.00863	0.200	ug/l	0.250		92	70-130	0.5	30	
Naphthalene	0.213	0.0103	0.0500	ug/l	0.250		85	70-130	6	30	
Pentachlorophenol	0.204	0.0242	1.00	ug/l	0.250		82	50-120	13	30	J
Simazine	0.221	0.00734	0.100	ug/l	0.250		88	60-130	6	30	
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*4.96*			*ug/l*	*5.00*		*99*	*70-130*			
Perylene-d12	*4.91*			*ug/l*	*5.00*		*98*	*70-130*			
Triphenyl phosphate	*5.41*			*ug/l*	*5.00*		*108*	*70-130*			

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Project Manager: Margie Pascua

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Quality Control Results

(Continued)

Volatile Organic Compounds by P&T and GC/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0744 - EPA 524.2											
Blank (W2A0744-BLK1)					**Prepared: 01/12/22 Analyzed: 01/13/22**						
1,1,1-Trichloroethane	ND	0.256	0.500	ug/l				70-130			U
1,1,2-Trichloroethane	ND	0.190	0.500	ug/l				70-130			U
1,1-Dichloroethene	ND	0.160	0.500	ug/l				70-130			U
1,2,4-Trichlorobenzene	ND	0.170	0.500	ug/l				70-130			U
1,2-Dichloroethane	ND	0.243	0.500	ug/l				70-130			U
1,2-Dichloropropane	ND	0.130	0.500	ug/l				70-130			U
Benzene	ND	0.150	0.500	ug/l				70-130			U
Carbon tetrachloride	ND	0.270	0.500	ug/l				70-130			U
Chlorobenzene	ND	0.150	0.500	ug/l				70-130			U
cis-1,2-Dichloroethene	ND	0.250	0.500	ug/l				70-130			U
Ethylbenzene	ND	0.210	0.500	ug/l				70-130			U
m,p-Xylene	ND	0.330	0.500	ug/l				70-130			U
Methylene chloride	ND	0.303	0.500	ug/l				70-130			U
o-Dichlorobenzene	ND	0.190	0.500	ug/l				70-130			U
o-Xylene	ND	0.200	0.500	ug/l				70-130			U
p-Dichlorobenzene	ND	0.180	0.500	ug/l				70-130			U
Styrene	ND	0.190	0.500	ug/l				70-130			U
Tetrachloroethene	ND	0.180	0.500	ug/l				70-130			U
THMs, Total	ND		0.500	ug/l				70-130			U
Toluene	ND	0.294	0.500	ug/l				70-130			U
trans-1,2-Dichloroethene	ND	0.259	0.500	ug/l				70-130			U
Trichloroethene	ND	0.180	0.500	ug/l				70-130			U
Vinyl chloride	ND	0.180	0.500	ug/l				70-130			U
Surrogate(s)											
1,2-Dichlorobenzene-d4	*8.72*			*ug/l*	*10.0*		*87*	*70-130*			
4-Bromofluorobenzene	*8.48*			*ug/l*	*10.0*		*85*	*70-130*			
LCS (W2A0744-BS1)					**Prepared: 01/12/22 Analyzed: 01/13/22**						
1,1,1-Trichloroethane	5.49	0.256	0.500	ug/l	5.00		110	70-130			
1,1,2-Trichloroethane	5.43	0.190	0.500	ug/l	5.00		109	70-130			
1,1-Dichloroethene	5.45	0.160	0.500	ug/l	5.00		109	70-130			
1,2,4-Trichlorobenzene	5.60	0.170	0.500	ug/l	5.00		112	70-130			
1,2-Dichloroethane	5.24	0.243	0.500	ug/l	5.00		105	70-130			
1,2-Dichloropropane	5.23	0.130	0.500	ug/l	5.00		105	70-130			
Benzene	5.21	0.150	0.500	ug/l	5.00		104	70-130			
Carbon tetrachloride	5.70	0.270	0.500	ug/l	5.00		114	70-130			
Chlorobenzene	5.32	0.150	0.500	ug/l	5.00		106	70-130			
cis-1,2-Dichloroethene	5.33	0.250	0.500	ug/l	5.00		107	70-130			
Ethylbenzene	6.29	0.210	0.500	ug/l	5.00		126	70-130			
m,p-Xylene	6.23	0.330	0.500	ug/l	5.00		125	70-130			

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Project Manager: Margie Pascua

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Quality Control Results

(Continued)

Volatile Organic Compounds by P&T and GC/MS (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0744 - EPA 524.2 (Continued)											
LCS (W2A0744-BS1)					**Prepared: 01/12/22 Analyzed: 01/13/22**						
Methylene chloride	5.31	0.303	0.500	ug/l	5.00		106	70-130			
o-Dichlorobenzene	5.35	0.190	0.500	ug/l	5.00		107	70-130			
o-Xylene	6.09	0.200	0.500	ug/l	5.00		122	70-130			
p-Dichlorobenzene	5.44	0.180	0.500	ug/l	5.00		109	70-130			
Styrene	6.05	0.190	0.500	ug/l	5.00		121	70-130			
Tetrachloroethene	5.63	0.180	0.500	ug/l	5.00		113	70-130			
Toluene	5.74	0.294	0.500	ug/l	5.00		115	70-130			
trans-1,2-Dichloroethene	5.49	0.259	0.500	ug/l	5.00		110	70-130			
Trichloroethene	5.46	0.180	0.500	ug/l	5.00		109	70-130			
Vinyl chloride	5.29	0.180	0.500	ug/l	5.00		106	70-130			
Surrogate(s)											
1,2-Dichlorobenzene-d4	*11.3*			*ug/l*	*10.0*		*113*	*70-130*			
4-Bromofluorobenzene	*11.3*			*ug/l*	*10.0*		*113*	*70-130*			
LCS Dup (W2A0744-BSD1)					**Prepared: 01/12/22 Analyzed: 01/13/22**						
1,1,1-Trichloroethane	4.87	0.256	0.500	ug/l	5.00		97	70-130	12	30	
1,1,2-Trichloroethane	5.13	0.190	0.500	ug/l	5.00		103	70-130	6	30	
1,1-Dichloroethene	4.78	0.160	0.500	ug/l	5.00		96	70-130	13	30	
1,2,4-Trichlorobenzene	5.18	0.170	0.500	ug/l	5.00		104	70-130	8	30	
1,2-Dichloroethane	4.98	0.243	0.500	ug/l	5.00		100	70-130	5	30	
1,2-Dichloropropane	5.00	0.130	0.500	ug/l	5.00		100	70-130	4	30	
Benzene	4.84	0.150	0.500	ug/l	5.00		97	70-130	7	30	
Carbon tetrachloride	4.94	0.270	0.500	ug/l	5.00		99	70-130	14	30	
Chlorobenzene	5.02	0.150	0.500	ug/l	5.00		100	70-130	6	30	
cis-1,2-Dichloroethene	4.88	0.250	0.500	ug/l	5.00		98	70-130	9	30	
Ethylbenzene	5.65	0.210	0.500	ug/l	5.00		113	70-130	11	30	
m,p-Xylene	5.68	0.330	0.500	ug/l	5.00		114	70-130	9	30	
Methylene chloride	5.13	0.303	0.500	ug/l	5.00		103	70-130	3	30	
o-Dichlorobenzene	4.88	0.190	0.500	ug/l	5.00		98	70-130	9	30	
o-Xylene	5.54	0.200	0.500	ug/l	5.00		111	70-130	9	30	
p-Dichlorobenzene	4.98	0.180	0.500	ug/l	5.00		100	70-130	9	30	
Styrene	5.52	0.190	0.500	ug/l	5.00		110	70-130	9	30	
Tetrachloroethene	4.89	0.180	0.500	ug/l	5.00		98	70-130	14	30	
Toluene	5.26	0.294	0.500	ug/l	5.00		105	70-130	9	30	
trans-1,2-Dichloroethene	4.95	0.259	0.500	ug/l	5.00		99	70-130	10	30	
Trichloroethene	5.00	0.180	0.500	ug/l	5.00		100	70-130	9	30	
Vinyl chloride	4.88	0.180	0.500	ug/l	5.00		98	70-130	8	30	
Surrogate(s)											
1,2-Dichlorobenzene-d4	*10.9*			*ug/l*	*10.0*		*109*	*70-130*			
4-Bromofluorobenzene	*11.0*			*ug/l*	*10.0*		*110*	*70-130*			

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Project Number: 60674414, COC # 01112022DW-60

Project Manager: Margie Pascua

Reported:
01/15/2022 16:52

Notes and Definitions

Item	Definition
J	Estimated conc. detected <MRL and >MDL.
Q-02	Low recovery of this analyte in the QC sample. The analysis of the low level standard produced acceptable recovery indicating that the sample result might be accurately reported as Not Detected.
Q-08	High bias in the QC sample does not affect sample result since analyte was not detected or below the reporting limit.
QR-04	The RPD value for the MS/MSD was outside of QC acceptance limits however both recoveries were acceptable. The QC batch was accepted based on acceptable results for the recoveries and RPD for the LCS and LCSD.
U	Analyte included in the analysis, but not detected
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

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Certificate of Analysis

FINAL REPORT

Work Orders:	2A12049	**Report Date:**	1/15/2022
		Received Date:	1/12/2022
Project:	60674414, COC # 01112022DW-62	**Turnaround Time:**	3 workdays
		Phones:	(808) 529-7277
		Fax:	(808) 524-0246
Attn:	Margie Pascua	**P.O. #:**	reference number 60571032.02.46.01
Client:	AECOM - Honolulu 1001 Bishop Street Suite 1600 Honolulu, HI 96813	**Billing Code:**	

ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH #4047 • LACSD #10143 • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Margie Pascua,

Enclosed are the results of analyses for samples received 1/12/22 with the Chain-of-Custody document. The samples were received in good condition, at 2.7 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Brandon Gee For Kim G. Tu
Project Manager

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Project Number: 60674414, COC # 01112022DW-62

Project Manager: Margie Pascua

Reported:
01/15/2022 17:13

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
20220111-H1-YT11	AECOM	2A12049-01	Water	01/11/22 15:35	

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Project Number: 60674414, COC # 01112022DW-62

Project Manager: Margie Pascua

Reported: 01/15/2022 17:13

Sample Results

Sample: 20220111-H1-YT11
2A12049-01 (Water)

Sampled: 01/11/22 15:35 by AECOM

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Chlorinated Pesticides and/or PCBs by GC/ECD							
Method: EPA 508.1			**Instr:** GC08				
Batch ID: W2A0878 **Preparation:** Method (SPE)			**Prepared:** 01/13/22 10:12				**Analyst:** rjg
Aroclor 1016	ND	0.0157	0.100	ug/l	1	01/14/22	U
Aroclor 1221	ND	0.0436	0.100	ug/l	1	01/14/22	U
Aroclor 1232	ND	0.0102	0.100	ug/l	1	01/14/22	U
Aroclor 1242	ND	0.0737	0.100	ug/l	1	01/14/22	U
Aroclor 1248	ND	0.0941	0.100	ug/l	1	01/14/22	U
Aroclor 1254	ND	0.0869	0.100	ug/l	1	01/14/22	U
Aroclor 1260	ND	0.0379	0.100	ug/l	1	01/14/22	U
Chlordane (tech)	ND	0.0669	0.100	ug/l	1	01/14/22	U
PCBs, Total	ND		0.500	ug/l	1	01/14/22	U
Surrogate(s)							
4,4-Dibromobiphenyl	*96%*	*Conc: 0.0980*	*70-130*			*01/14/22*	
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods							
Method: SM 5310B			**Instr:** TOC02				
Batch ID: W2A0833 **Preparation:** _NONE (TOC/TOX)			**Prepared:** 01/13/22 09:58				**Analyst:** ajc
Total Organic Carbon (TOC)	ND	0.190	0.300	mg/l	1	01/13/22	U
Metals by EPA 200 Series Methods							
Method: EPA 200.8			**Instr:** ICPMS04				
Batch ID: W2A0825 **Preparation:** EPA 200.2			**Prepared:** 01/12/22 16:06				**Analyst:** mpn
Antimony, Total	ND	0.0889	0.500	ug/l	1	01/13/22	U
Arsenic, Total	**0.258**	0.0741	0.400	ug/l	1	01/13/22	J
Barium, Total	**2.28**	0.142	1.00	ug/l	1	01/13/22	
Beryllium, Total	ND	0.0624	0.100	ug/l	1	01/13/22	U
Cadmium, Total	ND	0.0416	0.200	ug/l	1	01/13/22	U
Chromium, Total	**1.52**	0.0887	0.200	ug/l	1	01/13/22	
Copper, Total	**7.10**	0.225	0.500	ug/l	1	01/13/22	
Lead, Total	**1.02**	0.0827	0.200	ug/l	1	01/13/22	
Selenium, Total	**1.31**	0.0666	0.400	ug/l	1	01/13/22	
Thallium, Total	ND	0.0210	0.200	ug/l	1	01/13/22	U
Method: EPA 245.1			**Instr:** HG03				
Batch ID: W2A0821 **Preparation:** EPA 245.1			**Prepared:** 01/12/22 15:39				**Analyst:** kvm
Mercury, Total	ND	0.0170	0.0500	ug/l	1	01/14/22	U
Semivolatile Organic Compounds by GC/MS							
Method: EPA 525.2			**Instr:** GCMS16				
Batch ID: W2A0884 **Preparation:** Method (SPE)			**Prepared:** 01/13/22 11:40				**Analyst:** rmr
1-Methylnaphthalene	ND	0.00801	0.0500	ug/l	1	01/13/22	U
2-Methylnaphthalene	ND	0.00904	0.0500	ug/l	1	01/13/22	U

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Project Number: 60674414, COC # 01112022DW-62

Project Manager: Margie Pascua

Reported: 01/15/2022 17:13

Sample Results

(Continued)

Sample: 20220111-H1-YT11
2A12049-01 (Water)

Sampled: 01/11/22 15:35 by AECOM

(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Semivolatile Organic Compounds by GC/MS (Continued)							
Method: EPA 525.2			**Instr:** GCMS16				
Batch ID: W2A0884 **Preparation:** Method (SPE)			**Prepared:** 01/13/22 11:40				**Analyst:** rmr
Alachlor	ND	0.0110	0.100	ug/l	1	01/13/22	U
Atrazine	ND	0.00734	0.100	ug/l	1	01/13/22	U
Benzo (a) pyrene	ND	0.0117	0.100	ug/l	1	01/13/22	Q-02, U
Bis(2-ethylhexyl)adipate	**0.0581**	0.00962	5.00	ug/l	1	01/13/22	J
Bis(2-ethylhexyl)phthalate	ND	0.437	3.00	ug/l	1	01/13/22	U
Endrin	ND	0.00991	0.200	ug/l	1	01/13/22	U
gamma-BHC (Lindane)	ND	0.00633	0.100	ug/l	1	01/13/22	U
Heptachlor	ND	0.00965	0.100	ug/l	1	01/13/22	U
Heptachlor epoxide	ND	0.0122	0.100	ug/l	1	01/13/22	U
Hexachlorobenzene	ND	0.0980	0.100	ug/l	1	01/13/22	U
Hexachlorocyclopentadiene	ND	0.00594	1.00	ug/l	1	01/13/22	U
Methoxychlor	ND	0.00863	0.200	ug/l	1	01/13/22	U
Naphthalene	ND	0.0103	0.0500	ug/l	1	01/13/22	U
Pentachlorophenol	ND	0.0242	1.00	ug/l	1	01/13/22	U
Simazine	ND	0.00734	0.100	ug/l	1	01/13/22	U
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*99%*	*Conc: 5.06*	*70-130*			*01/13/22*	
Perylene-d12	*97%*	*Conc: 4.95*	*70-130*			*01/13/22*	
Triphenyl phosphate	*108%*	*Conc: 5.54*	*70-130*			*01/13/22*	
Volatile Organic Compounds by P&T and GC/MS							
Method: EPA 524.2			**Instr:** GCMS14				
Batch ID: W2A0744 **Preparation:** EPA 5030			**Prepared:** 01/13/22 00:00				**Analyst:** cam
1,1,1-Trichloroethane	ND	0.256	0.500	ug/l	1	01/13/22	U
1,1,2-Trichloroethane	ND	0.190	0.500	ug/l	1	01/13/22	U
1,1-Dichloroethene	ND	0.160	0.500	ug/l	1	01/13/22	U
1,2,4-Trichlorobenzene	ND	0.170	0.500	ug/l	1	01/13/22	U
1,2-Dichloroethane	ND	0.243	0.500	ug/l	1	01/13/22	U
1,2-Dichloropropane	ND	0.130	0.500	ug/l	1	01/13/22	U
Benzene	ND	0.150	0.500	ug/l	1	01/13/22	U
Carbon tetrachloride	ND	0.270	0.500	ug/l	1	01/13/22	U
Chlorobenzene	ND	0.150	0.500	ug/l	1	01/13/22	U
cis-1,2-Dichloroethene	ND	0.250	0.500	ug/l	1	01/13/22	U
Ethylbenzene	ND	0.210	0.500	ug/l	1	01/13/22	U
m,p-Xylene	ND	0.330	0.500	ug/l	1	01/13/22	U
Methylene chloride	ND	0.303	0.500	ug/l	1	01/13/22	U
o-Dichlorobenzene	ND	0.190	0.500	ug/l	1	01/13/22	U

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Project Number: 60674414, COC # 01112022DW-62

Project Manager: Margie Pascua

Reported:
01/15/2022 17:13

Sample Results

(Continued)

Sample: 20220111-H1-YT11
2A12049-01 (Water)

Sampled: 01/11/22 15:35 by AECOM

(Continued)

Volatile Organic Compounds by P&T and GC/MS (Continued)

Method: EPA 524.2 **Instr:** GCMS14

Batch ID: W2A0744 **Preparation:** EPA 5030 **Prepared:** 01/13/22 00:00 **Analyst:** cam

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
o-Xylene	ND	0.200	0.500	ug/l	1	01/13/22	U
p-Dichlorobenzene	ND	0.180	0.500	ug/l	1	01/13/22	U
Styrene	ND	0.190	0.500	ug/l	1	01/13/22	U
Tetrachloroethene	ND	0.180	0.500	ug/l	1	01/13/22	U
THMs, Total	ND		0.500	ug/l	1	01/13/22	U
Toluene	ND	0.294	0.500	ug/l	1	01/13/22	U
trans-1,2-Dichloroethene	ND	0.259	0.500	ug/l	1	01/13/22	U
Trichloroethene	ND	0.180	0.500	ug/l	1	01/13/22	U
Vinyl chloride	ND	0.180	0.500	ug/l	1	01/13/22	U
Surrogate(s)							
1,2-Dichlorobenzene-d4	*90%*	*Conc: 9.03*	*70-130*			*01/13/22*	
4-Bromofluorobenzene	*87%*	*Conc: 8.74*	*70-130*			*01/13/22*	

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Project Manager: Margie Pascua

Reported: 01/15/2022 17:13

Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0878 - EPA 508.1											
Blank (W2A0878-BLK1)					**Prepared: 01/13/22 Analyzed: 01/14/22**						
Aroclor 1016	ND	0.0157	0.100	ug/l							U
Aroclor 1221	ND	0.0436	0.100	ug/l							U
Aroclor 1232	ND	0.0102	0.100	ug/l							U
Aroclor 1242	ND	0.0737	0.100	ug/l							U
Aroclor 1248	ND	0.0941	0.100	ug/l							U
Aroclor 1254	ND	0.0869	0.100	ug/l							U
Aroclor 1260	ND	0.0379	0.100	ug/l							U
Chlordane (tech)	ND	0.0669	0.100	ug/l							U
PCBs, Total	ND		0.500	ug/l							U
Surrogate(s)											
4,4-Dibromobiphenyl	*0.0759*			*ug/l*	*0.100*		*76*	*70-130*			
LCS (W2A0878-BS1)					**Prepared: 01/13/22 Analyzed: 01/14/22**						
Chlordane (tech)	0.460	0.0669	0.100	ug/l	0.500		92	70-130			
Surrogate(s)											
4,4-Dibromobiphenyl	*0.0817*			*ug/l*	*0.100*		*82*	*70-130*			
LCS Dup (W2A0878-BSD1)					**Prepared: 01/13/22 Analyzed: 01/14/22**						
Chlordane (tech)	0.451	0.0669	0.100	ug/l	0.500		90	70-130	2	30	
Surrogate(s)											
4,4-Dibromobiphenyl	*0.0789*			*ug/l*	*0.100*		*79*	*70-130*			

Quality Control Results

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0833 - SM 5310B											
Blank (W2A0833-BLK1)					**Prepared & Analyzed: 01/13/22**						
Total Organic Carbon (TOC)	ND	0.190	0.300	mg/l							U
LCS (W2A0833-BS1)					**Prepared & Analyzed: 01/13/22**						
Total Organic Carbon (TOC)	0.969	0.190	0.300	mg/l	1.00		97	85-115			
Matrix Spike (W2A0833-MS1)	**Source: 2A12046-01**				**Prepared & Analyzed: 01/13/22**						
Total Organic Carbon (TOC)	4.47	0.190	0.300	mg/l	5.00	ND	89	76-115			
Matrix Spike Dup (W2A0833-MSD1)	**Source: 2A12046-01**				**Prepared & Analyzed: 01/13/22**						
Total Organic Carbon (TOC)	4.48	0.190	0.300	mg/l	5.00	ND	90	76-115	0.2	20	

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Project Number: 60674414, COC # 01112022DW-62

Project Manager: Margie Pascua

Reported: 01/15/2022 17:13

Quality Control Results

(Continued)

Metals by EPA 200 Series Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0821 - EPA 245.1											
Blank (W2A0821-BLK1)					**Prepared: 01/12/22 Analyzed: 01/14/22**						
Mercury, Total	ND	0.0170	0.0500	ug/l							U
LCS (W2A0821-BS1)					**Prepared: 01/12/22 Analyzed: 01/14/22**						
Mercury, Total	1.10	0.0170	0.0500	ug/l	1.00		110	85-115			
Matrix Spike (W2A0821-MS1)	**Source: 2A12046-01**				**Prepared: 01/12/22 Analyzed: 01/14/22**						
Mercury, Total	1.10	0.0170	0.0500	ug/l	1.00	ND	110	70-130			
Matrix Spike Dup (W2A0821-MSD1)	**Source: 2A12046-01**				**Prepared: 01/12/22 Analyzed: 01/14/22**						
Mercury, Total	0.874	0.0170	0.0500	ug/l	1.00	ND	87	70-130	23	20	QR-04
Batch: W2A0825 - EPA 200.8											
Blank (W2A0825-BLK1)					**Prepared: 01/12/22 Analyzed: 01/13/22**						
Antimony, Total	ND	0.0889	0.500	ug/l							U
Arsenic, Total	ND	0.0741	0.400	ug/l							U
Barium, Total	ND	0.142	1.00	ug/l							U
Beryllium, Total	ND	0.0624	0.100	ug/l							U
Cadmium, Total	ND	0.0416	0.200	ug/l							U
Chromium, Total	ND	0.0887	0.200	ug/l							U
Copper, Total	ND	0.225	0.500	ug/l							U
Lead, Total	ND	0.0827	0.200	ug/l							U
Selenium, Total	0.0788	0.0666	0.400	ug/l							J
Thallium, Total	ND	0.0210	0.200	ug/l							U
LCS (W2A0825-BS1)					**Prepared: 01/12/22 Analyzed: 01/13/22**						
Antimony, Total	48.3	0.0889	0.500	ug/l	50.0		97	85-115			
Arsenic, Total	51.8	0.0741	0.400	ug/l	50.0		104	85-115			
Barium, Total	50.0	0.142	1.00	ug/l	50.0		100	85-115			
Beryllium, Total	47.9	0.0624	0.100	ug/l	50.0		96	85-115			
Cadmium, Total	49.7	0.0416	0.200	ug/l	50.0		99	85-115			
Chromium, Total	51.9	0.0887	0.200	ug/l	50.0		104	85-115			
Copper, Total	52.5	0.225	0.500	ug/l	50.0		105	85-115			
Lead, Total	50.2	0.0827	0.200	ug/l	50.0		100	85-115			
Selenium, Total	50.1	0.0666	0.400	ug/l	50.0		100	85-115			
Thallium, Total	49.8	0.0210	0.200	ug/l	50.0		100	85-115			
Matrix Spike (W2A0825-MS1)	**Source: 2A12055-01**				**Prepared: 01/12/22 Analyzed: 01/13/22**						
Antimony, Total	51.9	0.0889	0.500	ug/l	50.0	ND	104	70-130			
Arsenic, Total	51.8	0.0741	0.400	ug/l	50.0	0.235	103	70-130			
Barium, Total	53.8	0.142	1.00	ug/l	50.0	2.06	103	70-130			
Beryllium, Total	48.1	0.0624	0.100	ug/l	50.0	ND	96	70-130			
Cadmium, Total	49.6	0.0416	0.200	ug/l	50.0	ND	99	70-130			
Chromium, Total	51.4	0.0887	0.200	ug/l	50.0	1.50	100	70-130			
Copper, Total	54.5	0.225	0.500	ug/l	50.0	4.09	101	70-130			

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Project Number: 60674414, COC # 01112022DW-62

Project Manager: Margie Pascua

Reported: 01/15/2022 17:13

Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0825 - EPA 200.8 (Continued)											
Matrix Spike (W2A0825-MS1)	**Source: 2A12055-01**				**Prepared: 01/12/22**	**Analyzed: 01/13/22**					
Lead, Total	50.4	0.0827	0.200	ug/l	50.0	0.672	99	70-130			
Selenium, Total	52.0	0.0666	0.400	ug/l	50.0	1.32	101	70-130			
Thallium, Total	46.3	0.0210	0.200	ug/l	50.0	ND	93	70-130			
Matrix Spike Dup (W2A0825-MSD1)	**Source: 2A12055-01**				**Prepared: 01/12/22**	**Analyzed: 01/13/22**					
Antimony, Total	50.6	0.0889	0.500	ug/l	50.0	ND	101	70-130	3	30	
Arsenic, Total	51.1	0.0741	0.400	ug/l	50.0	0.235	102	70-130	1	30	
Barium, Total	53.4	0.142	1.00	ug/l	50.0	2.06	103	70-130	0.8	30	
Beryllium, Total	47.3	0.0624	0.100	ug/l	50.0	ND	95	70-130	2	30	
Cadmium, Total	48.6	0.0416	0.200	ug/l	50.0	ND	97	70-130	2	30	
Chromium, Total	50.7	0.0887	0.200	ug/l	50.0	1.50	98	70-130	1	30	
Copper, Total	53.9	0.225	0.500	ug/l	50.0	4.09	100	70-130	1	30	
Lead, Total	49.6	0.0827	0.200	ug/l	50.0	0.672	98	70-130	2	30	
Selenium, Total	51.4	0.0666	0.400	ug/l	50.0	1.32	100	70-130	1	30	
Thallium, Total	45.3	0.0210	0.200	ug/l	50.0	ND	91	70-130	2	30	

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Project Manager: Margie Pascua

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Quality Control Results

(Continued)

Semivolatile Organic Compounds by GC/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0884 - EPA 525.2											
Blank (W2A0884-BLK1)					**Prepared & Analyzed: 01/13/22**						
1-Methylnaphthalene	ND	0.00801	0.0500	ug/l							U
2-Methylnaphthalene	ND	0.00904	0.0500	ug/l							U
Alachlor	ND	0.0110	0.100	ug/l							U
Atrazine	ND	0.00734	0.100	ug/l							U
Benzo (a) pyrene	ND	0.0117	0.100	ug/l							U
Bis(2-ethylhexyl)adipate	ND	0.00962	5.00	ug/l							U
Bis(2-ethylhexyl)phthalate	ND	0.437	3.00	ug/l							U
Endrin	ND	0.00991	0.200	ug/l							U
gamma-BHC (Lindane)	ND	0.00633	0.100	ug/l							U
Heptachlor	ND	0.00965	0.100	ug/l							U
Heptachlor epoxide	ND	0.0122	0.100	ug/l							U
Hexachlorobenzene	ND	0.0980	0.100	ug/l							U
Hexachlorocyclopentadiene	ND	0.00594	1.00	ug/l							U
Methoxychlor	ND	0.00863	0.200	ug/l							U
Naphthalene	ND	0.0103	0.0500	ug/l							U
Pentachlorophenol	ND	0.0242	1.00	ug/l							U
Simazine	ND	0.00734	0.100	ug/l							U
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*4.77*			*ug/l*	*5.00*		*95*	*70-130*			
Perylene-d12	*4.79*			*ug/l*	*5.00*		*96*	*70-130*			
Triphenyl phosphate	*4.85*			*ug/l*	*5.00*		*97*	*70-130*			
LCS (W2A0884-BS1)					**Prepared & Analyzed: 01/13/22**						
1-Methylnaphthalene	0.200	0.00801	0.0500	ug/l	0.250		80	70-130			
2-Methylnaphthalene	0.200	0.00904	0.0500	ug/l	0.250		80	70-130			
Alachlor	0.410	0.0110	0.100	ug/l	0.500		82	70-130			
Atrazine	0.244	0.00734	0.100	ug/l	0.250		98	70-130			
Benzo (a) pyrene	0.140	0.0117	0.100	ug/l	0.250		56	60-130			Q-02
Bis(2-ethylhexyl)adipate	0.199	0.00962	5.00	ug/l	0.250		80	70-130			J
Bis(2-ethylhexyl)phthalate	0.222	0.00	3.00	ug/l	0.250		89	70-130			J
Endrin	0.234	0.00991	0.200	ug/l	0.250		94	70-130			
gamma-BHC (Lindane)	0.290	0.00633	0.100	ug/l	0.250		116	70-130			
Heptachlor	0.204	0.00965	0.100	ug/l	0.250		82	70-130			
Heptachlor epoxide	0.246	0.0122	0.100	ug/l	0.250		98	70-130			
Hexachlorobenzene	0.0436	0.00	0.100	ug/l	0.0500		87	70-130			J
Hexachlorocyclopentadiene	0.187	0.00594	1.00	ug/l	0.250		75	33-106			J
Methoxychlor	0.229	0.00863	0.200	ug/l	0.250		91	70-130			
Naphthalene	0.200	0.0103	0.0500	ug/l	0.250		80	70-130			
Pentachlorophenol	0.179	0.0242	1.00	ug/l	0.250		72	50-120			J
Simazine	0.209	0.00734	0.100	ug/l	0.250		84	60-130			

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Project Manager: Margie Pascua

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Quality Control Results

(Continued)

Semivolatile Organic Compounds by GC/MS (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0884 - EPA 525.2 (Continued)											
LCS (W2A0884-BS1)					**Prepared & Analyzed: 01/13/22**						
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*4.73*			*ug/l*	*5.00*		*95*	*70-130*			
Perylene-d12	*4.93*			*ug/l*	*5.00*		*99*	*70-130*			
Triphenyl phosphate	*5.59*			*ug/l*	*5.00*		*112*	*70-130*			
LCS Dup (W2A0884-BSD1)					**Prepared & Analyzed: 01/13/22**						
1-Methylnaphthalene	0.209	0.00801	0.0500	ug/l	0.250		84	70-130	4	30	
2-Methylnaphthalene	0.207	0.00904	0.0500	ug/l	0.250		83	70-130	4	30	
Alachlor	0.414	0.0110	0.100	ug/l	0.500		83	70-130	0.9	30	
Atrazine	0.238	0.00734	0.100	ug/l	0.250		95	70-130	3	30	
Benzo (a) pyrene	0.140	0.0117	0.100	ug/l	0.250		56	60-130	0.09	30	Q-02
Bis(2-ethylhexyl)adipate	0.208	0.00962	5.00	ug/l	0.250		83	70-130	4	30	J
Bis(2-ethylhexyl)phthalate	0.225	0.00	3.00	ug/l	0.250		90	70-130	2	30	J
Endrin	0.231	0.00991	0.200	ug/l	0.250		92	70-130	1	30	
gamma-BHC (Lindane)	0.287	0.00633	0.100	ug/l	0.250		115	70-130	0.8	30	
Heptachlor	0.184	0.00965	0.100	ug/l	0.250		74	70-130	10	30	
Heptachlor epoxide	0.255	0.0122	0.100	ug/l	0.250		102	70-130	4	30	
Hexachlorobenzene	0.0416	0.00	0.100	ug/l	0.0500		83	70-130	5	30	J
Hexachlorocyclopentadiene	0.178	0.00594	1.00	ug/l	0.250		71	33-106	5	30	J
Methoxychlor	0.230	0.00863	0.200	ug/l	0.250		92	70-130	0.5	30	
Naphthalene	0.213	0.0103	0.0500	ug/l	0.250		85	70-130	6	30	
Pentachlorophenol	0.204	0.0242	1.00	ug/l	0.250		82	50-120	13	30	J
Simazine	0.221	0.00734	0.100	ug/l	0.250		88	60-130	6	30	
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*4.96*			*ug/l*	*5.00*		*99*	*70-130*			
Perylene-d12	*4.91*			*ug/l*	*5.00*		*98*	*70-130*			
Triphenyl phosphate	*5.41*			*ug/l*	*5.00*		*108*	*70-130*			

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Quality Control Results

(Continued)

Volatile Organic Compounds by P&T and GC/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0744 - EPA 524.2											
Blank (W2A0744-BLK1)					**Prepared: 01/12/22 Analyzed: 01/13/22**						
1,1,1-Trichloroethane	ND	0.256	0.500	ug/l				70-130			U
1,1,2-Trichloroethane	ND	0.190	0.500	ug/l				70-130			U
1,1-Dichloroethene	ND	0.160	0.500	ug/l				70-130			U
1,2,4-Trichlorobenzene	ND	0.170	0.500	ug/l				70-130			U
1,2-Dichloroethane	ND	0.243	0.500	ug/l				70-130			U
1,2-Dichloropropane	ND	0.130	0.500	ug/l				70-130			U
Benzene	ND	0.150	0.500	ug/l				70-130			U
Carbon tetrachloride	ND	0.270	0.500	ug/l				70-130			U
Chlorobenzene	ND	0.150	0.500	ug/l				70-130			U
cis-1,2-Dichloroethene	ND	0.250	0.500	ug/l				70-130			U
Ethylbenzene	ND	0.210	0.500	ug/l				70-130			U
m,p-Xylene	ND	0.330	0.500	ug/l				70-130			U
Methylene chloride	ND	0.303	0.500	ug/l				70-130			U
o-Dichlorobenzene	ND	0.190	0.500	ug/l				70-130			U
o-Xylene	ND	0.200	0.500	ug/l				70-130			U
p-Dichlorobenzene	ND	0.180	0.500	ug/l				70-130			U
Styrene	ND	0.190	0.500	ug/l				70-130			U
Tetrachloroethene	ND	0.180	0.500	ug/l				70-130			U
THMs, Total	ND		0.500	ug/l				70-130			U
Toluene	ND	0.294	0.500	ug/l				70-130			U
trans-1,2-Dichloroethene	ND	0.259	0.500	ug/l				70-130			U
Trichloroethene	ND	0.180	0.500	ug/l				70-130			U
Vinyl chloride	ND	0.180	0.500	ug/l				70-130			U
Surrogate(s)											
1,2-Dichlorobenzene-d4	*8.72*			*ug/l*	*10.0*		*87*	*70-130*			
4-Bromofluorobenzene	*8.48*			*ug/l*	*10.0*		*85*	*70-130*			
LCS (W2A0744-BS1)					**Prepared: 01/12/22 Analyzed: 01/13/22**						
1,1,1-Trichloroethane	5.49	0.256	0.500	ug/l	5.00		110	70-130			
1,1,2-Trichloroethane	5.43	0.190	0.500	ug/l	5.00		109	70-130			
1,1-Dichloroethene	5.45	0.160	0.500	ug/l	5.00		109	70-130			
1,2,4-Trichlorobenzene	5.60	0.170	0.500	ug/l	5.00		112	70-130			
1,2-Dichloroethane	5.24	0.243	0.500	ug/l	5.00		105	70-130			
1,2-Dichloropropane	5.23	0.130	0.500	ug/l	5.00		105	70-130			
Benzene	5.21	0.150	0.500	ug/l	5.00		104	70-130			
Carbon tetrachloride	5.70	0.270	0.500	ug/l	5.00		114	70-130			
Chlorobenzene	5.32	0.150	0.500	ug/l	5.00		106	70-130			
cis-1,2-Dichloroethene	5.33	0.250	0.500	ug/l	5.00		107	70-130			
Ethylbenzene	6.29	0.210	0.500	ug/l	5.00		126	70-130			
m,p-Xylene	6.23	0.330	0.500	ug/l	5.00		125	70-130			

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Project Number: 60674414, COC # 01112022DW-62

Project Manager: Margie Pascua

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Quality Control Results

(Continued)

Volatile Organic Compounds by P&T and GC/MS (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0744 - EPA 524.2 (Continued)											
LCS (W2A0744-BS1)					**Prepared: 01/12/22 Analyzed: 01/13/22**						
Methylene chloride	5.31	0.303	0.500	ug/l	5.00		106	70-130			
o-Dichlorobenzene	5.35	0.190	0.500	ug/l	5.00		107	70-130			
o-Xylene	6.09	0.200	0.500	ug/l	5.00		122	70-130			
p-Dichlorobenzene	5.44	0.180	0.500	ug/l	5.00		109	70-130			
Styrene	6.05	0.190	0.500	ug/l	5.00		121	70-130			
Tetrachloroethene	5.63	0.180	0.500	ug/l	5.00		113	70-130			
Toluene	5.74	0.294	0.500	ug/l	5.00		115	70-130			
trans-1,2-Dichloroethene	5.49	0.259	0.500	ug/l	5.00		110	70-130			
Trichloroethene	5.46	0.180	0.500	ug/l	5.00		109	70-130			
Vinyl chloride	5.29	0.180	0.500	ug/l	5.00		106	70-130			
Surrogate(s)											
1,2-Dichlorobenzene-d4	*11.3*			*ug/l*	*10.0*		*113*	*70-130*			
4-Bromofluorobenzene	*11.3*			*ug/l*	*10.0*		*113*	*70-130*			
LCS Dup (W2A0744-BSD1)					**Prepared: 01/12/22 Analyzed: 01/13/22**						
1,1,1-Trichloroethane	4.87	0.256	0.500	ug/l	5.00		97	70-130	12	30	
1,1,2-Trichloroethane	5.13	0.190	0.500	ug/l	5.00		103	70-130	6	30	
1,1-Dichloroethene	4.78	0.160	0.500	ug/l	5.00		96	70-130	13	30	
1,2,4-Trichlorobenzene	5.18	0.170	0.500	ug/l	5.00		104	70-130	8	30	
1,2-Dichloroethane	4.98	0.243	0.500	ug/l	5.00		100	70-130	5	30	
1,2-Dichloropropane	5.00	0.130	0.500	ug/l	5.00		100	70-130	4	30	
Benzene	4.84	0.150	0.500	ug/l	5.00		97	70-130	7	30	
Carbon tetrachloride	4.94	0.270	0.500	ug/l	5.00		99	70-130	14	30	
Chlorobenzene	5.02	0.150	0.500	ug/l	5.00		100	70-130	6	30	
cis-1,2-Dichloroethene	4.88	0.250	0.500	ug/l	5.00		98	70-130	9	30	
Ethylbenzene	5.65	0.210	0.500	ug/l	5.00		113	70-130	11	30	
m,p-Xylene	5.68	0.330	0.500	ug/l	5.00		114	70-130	9	30	
Methylene chloride	5.13	0.303	0.500	ug/l	5.00		103	70-130	3	30	
o-Dichlorobenzene	4.88	0.190	0.500	ug/l	5.00		98	70-130	9	30	
o-Xylene	5.54	0.200	0.500	ug/l	5.00		111	70-130	9	30	
p-Dichlorobenzene	4.98	0.180	0.500	ug/l	5.00		100	70-130	9	30	
Styrene	5.52	0.190	0.500	ug/l	5.00		110	70-130	9	30	
Tetrachloroethene	4.89	0.180	0.500	ug/l	5.00		98	70-130	14	30	
Toluene	5.26	0.294	0.500	ug/l	5.00		105	70-130	9	30	
trans-1,2-Dichloroethene	4.95	0.259	0.500	ug/l	5.00		99	70-130	10	30	
Trichloroethene	5.00	0.180	0.500	ug/l	5.00		100	70-130	9	30	
Vinyl chloride	4.88	0.180	0.500	ug/l	5.00		98	70-130	8	30	
Surrogate(s)											
1,2-Dichlorobenzene-d4	*10.9*			*ug/l*	*10.0*		*109*	*70-130*			
4-Bromofluorobenzene	*11.0*			*ug/l*	*10.0*		*110*	*70-130*			

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Project Number: 60674414, COC # 01112022DW-62

Project Manager: Margie Pascua

Reported:
01/15/2022 17:13

Notes and Definitions

Item	Definition
J	Estimated conc. detected <MRL and >MDL.
Q-02	Low recovery of this analyte in the QC sample. The analysis of the low level standard produced acceptable recovery indicating that the sample result might be accurately reported as Not Detected.
Q-08	High bias in the QC sample does not affect sample result since analyte was not detected or below the reporting limit.
QR-04	The RPD value for the MS/MSD was outside of QC acceptance limits however both recoveries were acceptable. The QC batch was accepted based on acceptable results for the recoveries and RPD for the LCS and LCSD.
U	Analyte included in the analysis, but not detected
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

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Memorandum

To	Karen Mixon, Data Validation Manager	Info	Completed
Subject	Summary Data Quality Review Joint Base Pearl Harbor-Hickam, Hawaii Red Hill Bulk Fuel Storage Facility		
From	Paula DiMattei, Chemist		
Date	January 19, 2022		

The summary data quality review of six water samples collected on January 11, 2022, has been completed. The samples were collected by AECOM personnel and were analyzed at Eurofins TestAmerica, in Seattle, Washington for total petroleum hydrocarbons (TPHs) by EPA Method 8260/CALUFT (gasoline-range, C6-C12 hydrocarbons); EPA Method 8015D (diesel range, C9-C25 hydrocarbons, and motor oil range, C24-C40 hydrocarbons); volatile organic compounds (VOCs) by EPA Method 8260D; and semivolatile organic compounds (SVOCs) by EPA Method 8270E. The analyses were performed in general accordance with the specified TPH methods and/or with methods specified in EPA's *Test Methods for Evaluating Solid Waste (SW-846)*. The laboratory provided a summary report containing sample results and associated quality assurance (QA) and quality control (QC) data. The following samples are associated with Eurofins TestAmerica-Seattle laboratory groups: 580-109239-1, 580-109247-1, and 580-109258-1.

Sample ID	Laboratory IDs	Requested Analyses
20220111-H1-YT10	580-109239-1	TPH, VOCs, SVOCs
20220111-H1-YT12	580-109239-2	TPH, VOCs, SVOCs
20220111-H1-YT09	580-109247-1	TPH
20220111-H1-YT13	580-109247-2	TPH
20220111-H1-YT11	580-109247-3	TPH
20220111-H1-YT08	580-109258-1	TPH, VOCs, SVOCs

Upon receipt by the laboratory, the sample jar information was compared to the associated chain-of-custody (COC) and the cooler temperatures were recorded. The cooler temperatures were received within the EPA-recommended limits of greater than 0°C and less than or equal to 6°C.

Data validation is based on method performance criteria and QC criteria documented in the laboratory reports. Holding times, field/method/trip blanks, surrogate recoveries, laboratory control sample results, and reporting limits were reviewed to assess compliance with applicable methods and laboratory control criteria. If data qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in the EPA document *National Functional Guidelines for Organic Superfund Methods Data Review,* November 2020. The following results required qualification:

- No TPH data were qualified in association with these laboratory groups.

- The following percent recoveries for the VOC surrogates were below the laboratory control limits:

Sample	Surrogate	%Recovery	Control Limits
20220111-H1-YT10	Toluene-d8	0.8%	80-120%
20220111-H1-YT12	Toluene-d8	0.2%	80-120%
2022111-H1-YT08	Toluene-d8	0.3%	80-120%

The nondetect results for all VOC target compounds in samples 20220111-H1-YT10, 20220111-H1-YT12 and 20220111-H1-YT08 noted in the table above were rejected and flagged 'R' based on the very low (<10%) surrogate recoveries.

- The following percent recoveries for the SVOC surrogates were below the laboratory control limits:

Sample	**Surrogate**	**%Recovery**	**Control Limits**
20220111-H1-YT10	2-Fluorophenol	0%	21-120%
	Phenol-d5	0%	10-120%
20220111-H1-YT12	2-Fluorophenol	4%	21-120%
	Phenol-d5	0%	10-120%
2022111-H1-YT08	Phenol-d5	0%	10-120%

The nondetect results for the acid compounds in samples 20220111-H1-YT10, 20220111-H1-YT12 and 20220111-H1-YT08 noted in the table above were rejected and flagged 'R' based on the very low (<10%) acid surrogate recoveries. The compounds are listed below:

2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4-Dichlorophenol
2,4-Dimethylphenol
2,4-Dinitrophenol
2-Chlorophenol
2-Methylphenol
3 & 4 Methylphenol
4,6-Dinitro-2-methylphenol
4-Chloro-3-methylphenol
4-Nitrophenol
Pentachlorophenol
Phenol

- Project screening levels were met for all non-detect SVOC results, with the exception of hexachlorobenzene in samples 20220111-H1-YT10 (0.04 ug/L), 20220111-H1-YT12 (0.042 ug/L) and 20220111-H1-YT08 (0.041 ug/L) that had method detection limits noted in parentheses, which exceeded the project screening level of 0.0003 ug/L.

- The laboratory noted that the minimum response factors (RF) for n-nitroso-di-n-propylamine was outside the method control criteria in the continuing calibration verification (CCV) associated with samples 20220111-H1-YT10, 20220111-H1-YT12 and 20220111-H1-YT08. The results for these compounds in these samples were qualified as estimated and flagged 'UJ.'

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Memorandum

To	Karen Mixon, Data Validation Manager	Info	Completed
Subject	Summary Data Quality Review Joint Base Pearl Harbor-Hickam, Hawaii Red Hill Bulk Fuel Storage Facility		
From	Paula DiMattei, Chemist		
Date	January 19, 2022		

The summary data quality review of six water samples collected on January 11, 2022, has been completed. The samples were collected by AECOM personnel and were analyzed at Eurofins TestAmerica, in Seattle, Washington for total petroleum hydrocarbons (TPHs) by EPA Method 8260/CALUFT (gasoline-range, C6-C12 hydrocarbons); EPA Method 8015D (diesel range, C9-C25 hydrocarbons, and motor oil range, C24-C40 hydrocarbons); volatile organic compounds (VOCs) by EPA Method 8260D; and semivolatile organic compounds (SVOCs) by EPA Method 8270E. The analyses were performed in general accordance with the specified TPH methods and/or with methods specified in EPA's *Test Methods for Evaluating Solid Waste (SW-846)*. The laboratory provided a summary report containing sample results and associated quality assurance (QA) and quality control (QC) data. The following samples are associated with Eurofins TestAmerica-Seattle laboratory groups: 580-109239-1, 580-109247-1, and 580-109258-1.

Sample ID	Laboratory IDs	Requested Analyses
20220111-H1-YT10	580-109239-1	TPH, VOCs, SVOCs
20220111-H1-YT12	580-109239-2	TPH, VOCs, SVOCs
20220111-H1-YT09	580-109247-1	TPH
20220111-H1-YT13	580-109247-2	TPH
20220111-H1-YT11	580-109247-3	TPH
20220111-H1-YT08	580-109258-1	TPH, VOCs, SVOCs

Upon receipt by the laboratory, the sample jar information was compared to the associated chain-of-custody (COC) and the cooler temperatures were recorded. The cooler temperatures were received within the EPA-recommended limits of greater than 0°C and less than or equal to 6°C.

Data validation is based on method performance criteria and QC criteria documented in the laboratory reports. Holding times, field/method/trip blanks, surrogate recoveries, laboratory control sample results, and reporting limits were reviewed to assess compliance with applicable methods and laboratory control criteria. If data qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in the EPA document *National Functional Guidelines for Organic Superfund Methods Data Review,* November 2020. The following results required qualification:

- No TPH data were qualified in association with these laboratory groups.

- The following percent recoveries for the VOC surrogates were below the laboratory control limits:

Sample	Surrogate	%Recovery	Control Limits
20220111-H1-YT10	Toluene-d8	0.8%	80-120%
20220111-H1-YT12	Toluene-d8	0.2%	80-120%
2022111-H1-YT08	Toluene-d8	0.3%	80-120%

The nondetect results for all VOC target compounds in samples 20220111-H1-YT10, 20220111-H1-YT12 and 20220111-H1-YT08 noted in the table above were rejected and flagged 'R' based on the very low (<10%) surrogate recoveries.

- The following percent recoveries for the SVOC surrogates were below the laboratory control limits:

Sample	**Surrogate**	**%Recovery**	**Control Limits**
20220111-H1-YT10	2-Fluorophenol	0%	21-120%
	Phenol-d5	0%	10-120%
20220111-H1-YT12	2-Fluorophenol	4%	21-120%
	Phenol-d5	0%	10-120%
2022111-H1-YT08	Phenol-d5	0%	10-120%

The nondetect results for the acid compounds in samples 20220111-H1-YT10, 20220111-H1-YT12 and 20220111-H1-YT08 noted in the table above were rejected and flagged 'R' based on the very low (<10%) acid surrogate recoveries. The compounds are listed below:

2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4-Dichlorophenol
2,4-Dimethylphenol
2,4-Dinitrophenol
2-Chlorophenol
2-Methylphenol
3 & 4 Methylphenol
4,6-Dinitro-2-methylphenol
4-Chloro-3-methylphenol
4-Nitrophenol
Pentachlorophenol
Phenol

- Project screening levels were met for all non-detect SVOC results, with the exception of hexachlorobenzene in samples 20220111-H1-YT10 (0.04 ug/L), 20220111-H1-YT12 (0.042 ug/L) and 20220111-H1-YT08 (0.041 ug/L) that had method detection limits noted in parentheses, which exceeded the project screening level of 0.0003 ug/L.

- The laboratory noted that the minimum response factors (RF) for n-nitroso-di-n-propylamine was outside the method control criteria in the continuing calibration verification (CCV) associated with samples 20220111-H1-YT10, 20220111-H1-YT12 and 20220111-H1-YT08. The results for these compounds in these samples were qualified as estimated and flagged 'UJ.'

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Memorandum

To	Karen Mixon, Data Validation Manager	Info	Completed
Subject	Summary Data Quality Review Joint Base Pearl Harbor-Hickam, Hawaii Red Hill Bulk Fuel Storage Facility		
From	Paula DiMattei, Chemist		
Date	January 19, 2022		

The summary data quality review of six water samples collected on January 11, 2022, has been completed. The samples were collected by AECOM personnel and were analyzed at Eurofins TestAmerica, in Seattle, Washington for total petroleum hydrocarbons (TPHs) by EPA Method 8260/CALUFT (gasoline-range, C6-C12 hydrocarbons); EPA Method 8015D (diesel range, C9-C25 hydrocarbons, and motor oil range, C24-C40 hydrocarbons); volatile organic compounds (VOCs) by EPA Method 8260D; and semivolatile organic compounds (SVOCs) by EPA Method 8270E. The analyses were performed in general accordance with the specified TPH methods and/or with methods specified in EPA's *Test Methods for Evaluating Solid Waste (SW-846)*. The laboratory provided a summary report containing sample results and associated quality assurance (QA) and quality control (QC) data. The following samples are associated with Eurofins TestAmerica-Seattle laboratory groups: 580-109239-1, 580-109247-1, and 580-109258-1.

Sample ID	Laboratory IDs	Requested Analyses
20220111-H1-YT10	580-109239-1	TPH, VOCs, SVOCs
20220111-H1-YT12	580-109239-2	TPH, VOCs, SVOCs
20220111-H1-YT09	580-109247-1	TPH
20220111-H1-YT13	580-109247-2	TPH
20220111-H1-YT11	580-109247-3	TPH
20220111-H1-YT08	580-109258-1	TPH, VOCs, SVOCs

Upon receipt by the laboratory, the sample jar information was compared to the associated chain-of-custody (COC) and the cooler temperatures were recorded. The cooler temperatures were received within the EPA-recommended limits of greater than 0°C and less than or equal to 6°C.

Data validation is based on method performance criteria and QC criteria documented in the laboratory reports. Holding times, field/method/trip blanks, surrogate recoveries, laboratory control sample results, and reporting limits were reviewed to assess compliance with applicable methods and laboratory control criteria. If data qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in the EPA document *National Functional Guidelines for Organic Superfund Methods Data Review,* November 2020. The following results required qualification:

- No TPH data were qualified in association with these laboratory groups.

- The following percent recoveries for the VOC surrogates were below the laboratory control limits:

Sample	Surrogate	%Recovery	Control Limits
20220111-H1-YT10	Toluene-d8	0.8%	80-120%
20220111-H1-YT12	Toluene-d8	0.2%	80-120%
2022111-H1-YT08	Toluene-d8	0.3%	80-120%

The nondetect results for all VOC target compounds in samples 20220111-H1-YT10, 20220111-H1-YT12 and 20220111-H1-YT08 noted in the table above were rejected and flagged 'R' based on the very low (<10%) surrogate recoveries.

- The following percent recoveries for the SVOC surrogates were below the laboratory control limits:

Sample	**Surrogate**	**%Recovery**	**Control Limits**
20220111-H1-YT10	2-Fluorophenol	0%	21-120%
	Phenol-d5	0%	10-120%
20220111-H1-YT12	2-Fluorophenol	4%	21-120%
	Phenol-d5	0%	10-120%
2022111-H1-YT08	Phenol-d5	0%	10-120%

The nondetect results for the acid compounds in samples 20220111-H1-YT10, 20220111-H1-YT12 and 20220111-H1-YT08 noted in the table above were rejected and flagged 'R' based on the very low (<10%) acid surrogate recoveries. The compounds are listed below:

2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4-Dichlorophenol
2,4-Dimethylphenol
2,4-Dinitrophenol
2-Chlorophenol
2-Methylphenol
3 & 4 Methylphenol
4,6-Dinitro-2-methylphenol
4-Chloro-3-methylphenol
4-Nitrophenol
Pentachlorophenol
Phenol

- Project screening levels were met for all non-detect SVOC results, with the exception of hexachlorobenzene in samples 20220111-H1-YT10 (0.04 ug/L), 20220111-H1-YT12 (0.042 ug/L) and 20220111-H1-YT08 (0.041 ug/L) that had method detection limits noted in parentheses, which exceeded the project screening level of 0.0003 ug/L.

- The laboratory noted that the minimum response factors (RF) for n-nitroso-di-n-propylamine was outside the method control criteria in the continuing calibration verification (CCV) associated with samples 20220111-H1-YT10, 20220111-H1-YT12 and 20220111-H1-YT08. The results for these compounds in these samples were qualified as estimated and flagged 'UJ.'

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Memorandum

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To	Karen Mixon, Data Validation Manager	Info	Completed
Subject	Summary Data Quality Review Joint Base Pearl Harbor-Hickam, Hawaii Red Hill Bulk Fuel Storage Facility		
From	Waverly Braunstein, Chemist		
Date	January 18, 2022		

The summary data quality review of three water samples collected on January 11, 2022, has been completed. The samples were collected by AECOM personnel and were analyzed at WECK Laboratories, in City of Industry, California, for volatile organic compounds (VOCs) by EPA Method 524.2; semivolatile organic compounds (SVOCs) and organochlorine pesticides by EPA Method 525.2; total metals by EPA Method 200.8; total mercury by EPA Method 245.1; PCBs (Aroclors) by EPA Method 508.1; and total organic carbon (TOC) by Standard Methods 5310B. The analyses were performed in general accordance with the methods specified in EPA's drinking water program. The laboratory provided summary reports containing sample results and associated quality assurance (QA) and quality control (QC) data. The following samples are associated with WECK Laboratories groups 2A12047, 2A12048, and 2A12049:

Sample ID	Laboratory IDs	Requested Analyses
20220111-H1-YT13	2A12047-01	VOCs, SVOCs/Pest, Metals/Mercury, TOC, PCBs
20220111-H1-YT09	2A12048-01	VOCs, SVOCs/Pest, Metals/Mercury, TOC, PCBs
20220111-H1-YT11	2A12049-01	VOCs, SVOCs/Pest, Metals/Mercury, TOC, PCBs

Upon receipt by the laboratory, the sample jar information was compared to the associated chain-of-custody (COC) and the cooler temperatures were recorded. The cooler temperatures were received within the EPA-recommended limits of greater than 0°C and less than or equal to 6°C.

Data validation is based on method performance criteria and QC criteria documented in the laboratory reports. Holding times, field/method/trip blanks, surrogate recoveries, laboratory control sample results, and reporting limits were reviewed to assess compliance with applicable methods and laboratory control criteria. If data qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in the EPA documents *National Functional Guidelines for Organic Superfund Methods Data Review,* November 2020 and *National Functional Guidelines for Inorganic Superfund Methods Data Review,* November 2020. The following results required qualification:

- No data were qualified for VOCs, Metals/Mercury, TOC, or PCBs in association with laboratory groups 2A12047, 2A12048, and 2A12049.

- The following percent recoveries for the SVOC/Pesticide laboratory control sample (LCS) were below the laboratory control limits:

LCS	Analyte	%Recovery	Control Limits
W2A0884-BS1	Benzo (a) pyrene	56%	60-130%
W2A0884-BS1D	Benzo (a) pyrene	56%	60-130%

The non-detect results for benzo(a)pyrene in all samples were qualified as estimated and flagged 'J' based on the LCS recoveries noted in the table above.

- The following analytes exceeded the Incident Specific Screening Criteria:

Sample Name	Analyte	Result	MDL	Incident Specific Screening Criteria	Units
20220111-H1-YT13	Endrin	ND	0.00991	0.0023	µg/L
20220111-H1-YT13	Heptachlor	ND	0.00965	0.0036	µg/L
20220111-H1-YT13	Heptachlor epoxide	ND	0.0122	0.0036	µg/L
20220111-H1-YT13	Hexachlorobenzene	ND	0.098	0.0003	µg/L
20220111-H1-YT09	Endrin	ND	0.00991	0.0023	µg/L
20220111-H1-YT09	Heptachlor	ND	0.00965	0.0036	µg/L
20220111-H1-YT09	Heptachlor epoxide	ND	0.0122	0.0036	µg/L
20220111-H1-YT09	Hexachlorobenzene	ND	0.098	0.0003	µg/L
20220111-H1-YT11	Endrin	ND	0.00991	0.0023	µg/L
20220111-H1-YT11	Heptachlor	ND	0.00965	0.0036	µg/L
20220111-H1-YT11	Heptachlor epoxide	ND	0.0122	0.0036	µg/L
20220111-H1-YT11	Hexachlorobenzene	ND	0.098	0.0003	µg/L