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Environment Testing
America



ANALYTICAL REPORT

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Laboratory Job ID: 580-109011-1
Client Project/Site: Red Hill CV18F0126

For:
AECOM
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Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

6

7

8

9

10

11

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions	5
Client Sample Results	6
QC Sample Results	10
Chronicle	20
Certification Summary	21
Sample Summary	22
Chain of Custody	23
Receipt Checklists	24

Case Narrative

Client: AECOM
Project/Site: Red Hill CV18F0126

Job ID: 580-109011-1

Job ID: 580-109011-1

Laboratory: Eurofins Seattle

Narrative

Job Narrative 580-109011-1

Comments

No additional comments.

Receipt

The samples were received on 1/6/2022 10:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.8° C.

GC/MS VOA

Methods 8260/CALUFT DOD, 8260B/CA_LUFTMS: Internal standard, Chlorobenzene-d5, is low in the method blank. This creates a high bias in the surrogate for the method blank. IS recovery is within limits for all samples and have been reported. (MB 580-377733/5)

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-377826 recovered above the upper control limit for trans-1,2-Dichloroethene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: 20220105-D3-ZT01 (580-109011-1) and (CCVIS 580-377826/3).

Method 8260D: Surrogate recovery for the following sample was outside control limits for Toluene-d8 : 20220105-D3-ZT01 (580-109011-1). 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/MS Semi VOA

Method 8270E: The minimum response factor (RF) criteria for the continuing calibration verification (CCV) analyzed in batch 580-377665 was outside criteria for the following analytes: Bis(2-chloroethyl)ether and 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.

Method 8270E: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 580-377587 and analytical batch 580-377665 recovered outside control limits for several analytes. Individual recoveries of both the LCS and LCSD met the acceptance criteria.

Method 8270E: The following analyte have been identified, in the reference method and/or via historical data, to be poor and/or erratic performers: Hexachlorocyclopentadiene. These analytes may have a %D <60%.

Method 8270E: Surrogate recovery for the following sample was outside control limits: 20220105-D3-ZT01 (580-109011-1). 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/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 580-377587, so a laboratory control sample/laboratory control sample duplicate were created and substituted for the MS/MSD/DUP.

Method 3510C: The following sample: 20220105-F1-ZT02 (580-109011-2) was decanted prior to preparation, per client's request. The client-provided 500 mLs of sample which was decanted to 250 mL, then surrogated in the bottle. The bottle was also rinsed with solvent as per the standard operating procedure (SOP). The sample was otherwise processed normally according to the SOP.

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

VOA Prep

Case Narrative

Client: AECOM
Project/Site: Red Hill CV18F0126

Job ID: 580-109011-1

Job ID: 580-109011-1 (Continued)

Laboratory: Eurofins Seattle (Continued)

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

1

2

3

4

5

6

7

8

9

10

11

Definitions/Glossary

Client: AECOM
Project/Site: Red Hill CV18F0126

Job ID: 580-109011-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
Q	One or more quality control criteria failed.
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
*1	LCS/LCSD RPD exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
Q	One or more quality control criteria failed.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high 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 Sample Results

Client: AECOM
Project/Site: Red Hill CV18F0126

Job ID: 580-109011-1

Client Sample ID: 20220105-D3-ZT01

Lab Sample ID: 580-109011-1

Matrix: Water

Date Collected: 01/05/22 13:21
Date Received: 01/06/22 10:50

Method: 8260/CALUFT DOD - 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			01/08/22 16:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		69 - 133					01/08/22 16:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.2	U	15	3.2	ug/L			01/08/22 16:08	1
Benzene	0.24	U	1.0	0.24	ug/L			01/08/22 16:08	1
Bromodichloromethane	0.29	U	1.0	0.29	ug/L			01/08/22 16:08	1
Bromoform	0.51	U	1.0	0.51	ug/L			01/08/22 16:08	1
Bromomethane	0.21	U	1.0	0.21	ug/L			01/08/22 16:08	1
Carbon disulfide	0.53	U	1.0	0.53	ug/L			01/08/22 16:08	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			01/08/22 16:08	1
Chlorobenzene	0.44	U	1.0	0.44	ug/L			01/08/22 16:08	1
Chloroform	0.26	U	1.0	0.26	ug/L			01/08/22 16:08	1
Chloromethane	0.28	U	1.0	0.28	ug/L			01/08/22 16:08	1
cis-1,2-Dichloroethene	0.35	U	1.0	0.35	ug/L			01/08/22 16:08	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.20	ug/L			01/08/22 16:08	1
Dibromochloromethane	0.43	U	1.0	0.43	ug/L			01/08/22 16:08	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/08/22 16:08	1
1,2-Dichloroethane	0.42	U	1.0	0.42	ug/L			01/08/22 16:08	1
1,1-Dichloroethene	0.28	U	1.0	0.28	ug/L			01/08/22 16:08	1
1,2-Dichloroethene, Total	0.39	U	1.0	0.39	ug/L			01/08/22 16:08	1
Dichloromethane	1.4	U	3.0	1.4	ug/L			01/08/22 16:08	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			01/08/22 16:08	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			01/08/22 16:08	1
Ethyl Chloride	0.35	U	1.0	0.35	ug/L			01/08/22 16:08	1
2-Hexanone	4.0	U	15	4.0	ug/L			01/08/22 16:08	1
Methyl Ethyl Ketone	4.7	U	15	4.7	ug/L			01/08/22 16:08	1
Methyl isobutyl ketone (MIBK)	2.5	U	5.0	2.5	ug/L			01/08/22 16:08	1
m-Xylene & p-Xylene	0.53	U	2.0	0.53	ug/L			01/08/22 16:08	1
o-Xylene	0.39	U	1.0	0.39	ug/L			01/08/22 16:08	1
Styrene	0.53	U	1.0	0.53	ug/L			01/08/22 16:08	1
1,1,2,2-Tetrachloroethane	0.52	U	1.0	0.52	ug/L			01/08/22 16:08	1
Tetrachloroethene	0.41	U	1.0	0.41	ug/L			01/08/22 16:08	1
Toluene	0.39	U	1.0	0.39	ug/L			01/08/22 16:08	1
trans-1,2-Dichloroethene	0.39	U	1.0	0.39	ug/L			01/08/22 16:08	1
trans-1,3-Dichloropropene	0.41	U	1.0	0.41	ug/L			01/08/22 16:08	1
1,1,1-Trichloroethane	0.39	U	1.0	0.39	ug/L			01/08/22 16:08	1
1,1,2-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/08/22 16:08	1
Trichloroethene	0.26	U	1.0	0.26	ug/L			01/08/22 16:08	1
Vinyl chloride	0.22	U	1.0	0.22	ug/L			01/08/22 16:08	1
Xylenes, Total	0.53	U	2.0	0.53	ug/L			01/08/22 16:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		85 - 114		01/08/22 16:08	1
Dibromofluoromethane (Surr)	103		80 - 119		01/08/22 16:08	1
1,2-Dichloroethane-d4 (Surr)	96		81 - 118		01/08/22 16:08	1
Toluene-d8 (Surr)	6	S1-	89 - 112		01/08/22 16:08	1

Eurofins Seattle

Client Sample Results

Client: AECOM
Project/Site: Red Hill CV18F0126

Job ID: 580-109011-1

Client Sample ID: 20220105-D3-ZT01

Lab Sample ID: 580-109011-1

Matrix: Water

Date Collected: 01/05/22 13:21

Date Received: 01/06/22 10:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.054	U	0.43	0.054	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Acenaphthylene	0.065	U	1.1	0.065	ug/L	01/06/22 17:37	01/07/22 02:11	1	2
Anthracene	0.054	U	1.1	0.054	ug/L	01/06/22 17:37	01/07/22 02:11	1	3
Benzo[a]anthracene	0.054	U *1	0.27	0.054	ug/L	01/06/22 17:37	01/07/22 02:11	1	4
Benzo[a]pyrene	0.043	U	0.27	0.043	ug/L	01/06/22 17:37	01/07/22 02:11	1	5
Benzo[b]fluoranthene	0.043	U	0.27	0.043	ug/L	01/06/22 17:37	01/07/22 02:11	1	6
Benzo[g,h,i]perylene	0.043	U	0.27	0.043	ug/L	01/06/22 17:37	01/07/22 02:11	1	7
Benzo[k]fluoranthene	0.054	U *1	0.27	0.054	ug/L	01/06/22 17:37	01/07/22 02:11	1	8
Bis(2-chloroethoxy)methane	0.054	U	0.65	0.054	ug/L	01/06/22 17:37	01/07/22 02:11	1	9
Bis(2-chloroethyl)ether	0.032	U	0.11	0.032	ug/L	01/06/22 17:37	01/07/22 02:11	1	10
Bis(2-ethylhexyl) phthalate	0.80	U *1	3.2	0.80	ug/L	01/06/22 17:37	01/07/22 02:11	1	11
4-Bromophenyl phenyl ether	0.065	U	0.65	0.065	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Butyl benzyl phthalate	0.29	U *1	4.3	0.29	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Carbazole	0.11	U	0.65	0.11	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
4-Chloroaniline	0.64	U	2.2	0.64	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
4-Chloro-3-methylphenol	0.14	U	0.65	0.14	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
2-Chloronaphthalene	0.075	U	1.1	0.075	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
2-Chlorophenol	0.054	U	1.1	0.054	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
4-Chlorophenyl phenyl ether	0.054	U	0.65	0.054	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Chrysene	0.043	U *1	0.27	0.043	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Dibenz(a,h)anthracene	0.075	U	0.27	0.075	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Dibenzofuran	0.11	U	0.43	0.11	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
1,2-Dichlorobenzene	0.054	U	0.43	0.054	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
1,3-Dichlorobenzene	0.043	U	0.43	0.043	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
1,4-Dichlorobenzene	0.043	U	0.43	0.043	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
3,3'-Dichlorobenzidine	0.28	U *1	1.1	0.28	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
2,4-Dichlorophenol	0.22	U *1	1.1	0.22	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Diethyl phthalate	0.16	U	1.1	0.16	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
2,4-Dimethylphenol	0.17	U	4.3	0.17	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Dimethyl phthalate	0.065	U	0.65	0.065	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Di-n-butyl phthalate	0.20	U	3.2	0.20	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
4,6-Dinitro-2-methylphenol	0.59	U	2.2	0.59	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
2,4-Dinitrophenol	1.7	U	5.4	1.7	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
2,4-Dinitrotoluene	0.11	U	1.1	0.11	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
2,6-Dinitrotoluene	0.11	U	0.43	0.11	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Di-n-octyl phthalate	0.14	U	1.1	0.14	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Fluoranthene	0.065	U	0.27	0.065	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Fluorene	0.054	U	0.27	0.054	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Hexachlorobenzene	0.043	U	0.65	0.043	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Hexachlorobutadiene	0.065	U	1.1	0.065	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Hexachlorocyclopentadiene	0.15	U Q	1.1	0.15	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Hexachloroethane	0.054	U	1.1	0.054	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Indeno[1,2,3-cd]pyrene	0.14	U *1	0.43	0.14	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Isophorone	0.11	U	0.43	0.11	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
2-Methylphenol	0.054	U	0.65	0.054	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
3 & 4 Methylphenol	0.11	U	0.65	0.11	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
Naphthalene	0.17	U	0.43	0.17	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
2-Nitroaniline	0.11	U	1.1	0.11	ug/L	01/06/22 17:37	01/07/22 02:11	1	1
3-Nitroaniline	0.17	U	3.2	0.17	ug/L	01/06/22 17:37	01/07/22 02:11	1	1

Eurofins Seattle

Client Sample Results

Client: AECOM
Project/Site: Red Hill CV18F0126

Job ID: 580-109011-1

Client Sample ID: 20220105-D3-ZT01

Lab Sample ID: 580-109011-1

Matrix: Water

Date Collected: 01/05/22 13:21
Date Received: 01/06/22 10:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitroaniline	0.23	U	2.2	0.23	ug/L		01/06/22 17:37	01/07/22 02:11	1
Nitrobenzene	0.043	U	1.1	0.043	ug/L		01/06/22 17:37	01/07/22 02:11	1
4-Nitrophenol	1.8	U	11	1.8	ug/L		01/06/22 17:37	01/07/22 02:11	1
N-Nitrosodi-n-propylamine	0.065	U *1	0.43	0.065	ug/L		01/06/22 17:37	01/07/22 02:11	1
N-Nitrosodiphenylamine	0.075	U	1.1	0.075	ug/L		01/06/22 17:37	01/07/22 02:11	1
Pentachlorophenol	0.55	U	11	0.55	ug/L		01/06/22 17:37	01/07/22 02:11	1
Phenanthrene	0.13	U	1.1	0.13	ug/L		01/06/22 17:37	01/07/22 02:11	1
Phenol	0.39	U	1.1	0.39	ug/L		01/06/22 17:37	01/07/22 02:11	1
Pyrene	0.043	U	1.1	0.043	ug/L		01/06/22 17:37	01/07/22 02:11	1
1,2,4-Trichlorobenzene	0.097	U	0.43	0.097	ug/L		01/06/22 17:37	01/07/22 02:11	1
2,4,5-Trichlorophenol	0.11	U	0.43	0.11	ug/L		01/06/22 17:37	01/07/22 02:11	1
2,4,6-Trichlorophenol	0.11	U	0.65	0.11	ug/L		01/06/22 17:37	01/07/22 02:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
2-Fluorobiphenyl	64		44 - 119		01/06/22 17:37	01/07/22 02:11	1
2-Fluorophenol (Surr)	1	S1-	19 - 119		01/06/22 17:37	01/07/22 02:11	1
Nitrobenzene-d5 (Surr)	82		44 - 120		01/06/22 17:37	01/07/22 02:11	1
Phenol-d5 (Surr)	0.5	S1-	10 - 120		01/06/22 17:37	01/07/22 02:11	1
Terphenyl-d14	107		50 - 134		01/06/22 17:37	01/07/22 02:11	1
2,4,6-Tribromophenol	151	S1+	43 - 140		01/06/22 17:37	01/07/22 02:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	90	U	110	90	ug/L		01/06/22 17:38	01/07/22 01:09	1
C24-C40	180	U	350	180	ug/L		01/06/22 17:38	01/07/22 01:09	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
<i>o-Terphenyl</i>	78		56 - 125		01/06/22 17:38	01/07/22 01:09	1		

Client Sample Results

Client: AECOM
Project/Site: Red Hill CV18F0126

Job ID: 580-109011-1

Client Sample ID: 20220105-F1-ZT02

Lab Sample ID: 580-109011-2

Matrix: Water

Date Collected: 01/05/22 14:30
Date Received: 01/06/22 10:50

Method: 8260/CALUFT DOD - 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			01/06/22 16:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103	Q	69 - 133					01/06/22 16:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	96	U	120	96	ug/L		01/06/22 17:38	01/07/22 01:29	1
C24-C40	190	U	370	190	ug/L		01/06/22 17:38	01/07/22 01:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	83		56 - 125				01/06/22 17:38	01/07/22 01:29	1

QC Sample Results

Client: AECOM
Project/Site: Red Hill CV18F0126

Job ID: 580-109011-1

Method: 8260/CALUFT DOD - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-377733/5

Matrix: Water

Analysis Batch: 377733

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			01/06/22 12:54	1
<hr/>									
Surrogate									
4-Bromofluorobenzene (Surr)									
MB MB									
%Recovery Qualifier Limits									
130 *3 69 - 133									

Lab Sample ID: LCS 580-377733/8

Matrix: Water

Analysis Batch: 377733

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
Gasoline Range Organics (C6-C12)	1000	995		ug/L		99	78 - 122
<hr/>							
Surrogate							
4-Bromofluorobenzene (Surr)							
LCS LCS							
%Recovery Qualifier Limits							
101 69 - 133							

Lab Sample ID: LCSD 580-377733/9

Matrix: Water

Analysis Batch: 377733

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	RPD	RPD	Limit
Gasoline Range Organics (C6-C12)	1000	1070		ug/L		107	78 - 122	8	30
<hr/>									
Surrogate									
4-Bromofluorobenzene (Surr)									
LCSD LCSD									
%Recovery Qualifier Limits									
118 69 - 133									

Lab Sample ID: MB 580-377829/4

Matrix: Water

Analysis Batch: 377829

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			01/08/22 14:09	1
<hr/>									
Surrogate									
4-Bromofluorobenzene (Surr)									
MB MB									
%Recovery Qualifier Limits									
93 69 - 133									

Lab Sample ID: LCS 580-377829/5

Matrix: Water

Analysis Batch: 377829

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
Gasoline Range Organics (C6-C12)	1000	942		ug/L		94	78 - 122
<hr/>							
Surrogate							
4-Bromofluorobenzene (Surr)							
LCS LCS							
%Recovery Qualifier Limits							
98 69 - 133							

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QC Sample Results

Client: AECOM
Project/Site: Red Hill CV18F0126

Job ID: 580-109011-1

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

Lab Sample ID: LCSD 580-377829/6

Client Sample ID: Lab Control Sample Dup

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 377829

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec.	RPD	RPD Limit
		Result	Qualifier				ug/L		
Gasoline Range Organics (C6-C12)	1000	942				94	78 - 122	0	30
<hr/>									
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	99		69 - 133						

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

Lab Sample ID: MB 580-377826/4

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 377826

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acetone	3.2	U	15	3.2	ug/L			01/08/22 14:09	1
Benzene	0.24	U	1.0	0.24	ug/L			01/08/22 14:09	1
Bromodichloromethane	0.29	U	1.0	0.29	ug/L			01/08/22 14:09	1
Bromoform	0.51	U	1.0	0.51	ug/L			01/08/22 14:09	1
Bromomethane	0.21	U	1.0	0.21	ug/L			01/08/22 14:09	1
Carbon disulfide	0.53	U	1.0	0.53	ug/L			01/08/22 14:09	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			01/08/22 14:09	1
Chlorobenzene	0.44	U	1.0	0.44	ug/L			01/08/22 14:09	1
Chloroform	0.26	U	1.0	0.26	ug/L			01/08/22 14:09	1
Chloromethane	0.28	U	1.0	0.28	ug/L			01/08/22 14:09	1
cis-1,2-Dichloroethene	0.35	U	1.0	0.35	ug/L			01/08/22 14:09	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.20	ug/L			01/08/22 14:09	1
Dibromochloromethane	0.43	U	1.0	0.43	ug/L			01/08/22 14:09	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/08/22 14:09	1
1,2-Dichloroethane	0.42	U	1.0	0.42	ug/L			01/08/22 14:09	1
1,1-Dichloroethene	0.28	U	1.0	0.28	ug/L			01/08/22 14:09	1
1,2-Dichloroethene, Total	0.39	U	1.0	0.39	ug/L			01/08/22 14:09	1
Dichloromethane	1.4	U	3.0	1.4	ug/L			01/08/22 14:09	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			01/08/22 14:09	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			01/08/22 14:09	1
Ethyl Chloride	0.35	U	1.0	0.35	ug/L			01/08/22 14:09	1
2-Hexanone	4.0	U	15	4.0	ug/L			01/08/22 14:09	1
Methyl Ethyl Ketone	4.7	U	15	4.7	ug/L			01/08/22 14:09	1
Methyl isobutyl ketone (MIBK)	2.5	U	5.0	2.5	ug/L			01/08/22 14:09	1
m-Xylene & p-Xylene	0.53	U	2.0	0.53	ug/L			01/08/22 14:09	1
o-Xylene	0.39	U	1.0	0.39	ug/L			01/08/22 14:09	1
Styrene	0.53	U	1.0	0.53	ug/L			01/08/22 14:09	1
1,1,2,2-Tetrachloroethane	0.52	U	1.0	0.52	ug/L			01/08/22 14:09	1
Tetrachloroethene	0.41	U	1.0	0.41	ug/L			01/08/22 14:09	1
Toluene	0.39	U	1.0	0.39	ug/L			01/08/22 14:09	1
trans-1,2-Dichloroethene	0.39	U	1.0	0.39	ug/L			01/08/22 14:09	1
trans-1,3-Dichloropropene	0.41	U	1.0	0.41	ug/L			01/08/22 14:09	1
1,1,1-Trichloroethane	0.39	U	1.0	0.39	ug/L			01/08/22 14:09	1
1,1,2-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/08/22 14:09	1
Trichloroethene	0.26	U	1.0	0.26	ug/L			01/08/22 14:09	1
Vinyl chloride	0.22	U	1.0	0.22	ug/L			01/08/22 14:09	1

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QC Sample Results

Client: AECOM
Project/Site: Red Hill CV18F0126

Job ID: 580-109011-1

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

Lab Sample ID: MB 580-377826/4

Matrix: Water

Analysis Batch: 377826

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Xylenes, Total	0.53	U	2.0	0.53	ug/L			01/08/22 14:09	1
Surrogate									
4-Bromofluorobenzene (Surr)									
4-Bromofluorobenzene (Surr)	96		85 - 114					01/08/22 14:09	1
Dibromofluoromethane (Surr)	105		80 - 119					01/08/22 14:09	1
1,2-Dichloroethane-d4 (Surr)	94		81 - 118					01/08/22 14:09	1
Toluene-d8 (Surr)	106		89 - 112					01/08/22 14:09	1

Lab Sample ID: LCS 580-377826/5

Matrix: Water

Analysis Batch: 377826

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

Analyte	Spikes	LCS	LCS	Unit	D	%Rec	Limits
	Added	Result	Qualifier				
Acetone	50.0	47.1		ug/L		94	39 - 160
Benzene	10.0	11.8		ug/L		118	79 - 120
Bromodichloromethane	10.0	10.2		ug/L		102	79 - 125
Bromoform	10.0	9.60		ug/L		96	66 - 130
Bromomethane	10.0	12.3		ug/L		123	53 - 141
Carbon disulfide	10.0	10.7		ug/L		107	64 - 133
Carbon tetrachloride	10.0	11.0		ug/L		110	72 - 136
Chlorobenzene	10.0	11.6		ug/L		116	82 - 118
Chloroform	10.0	11.6		ug/L		116	79 - 124
Chloromethane	10.0	11.8		ug/L		118	50 - 139
cis-1,2-Dichloroethene	10.0	11.8		ug/L		118	78 - 123
cis-1,3-Dichloropropene	10.0	9.86		ug/L		99	75 - 124
Dibromochloromethane	10.0	9.85		ug/L		98	74 - 126
1,1-Dichloroethane	10.0	11.4		ug/L		114	77 - 125
1,2-Dichloroethane	10.0	11.0		ug/L		110	73 - 128
1,1-Dichloroethene	10.0	11.9		ug/L		119	71 - 131
1,2-Dichloroethene, Total	20.0	24.0		ug/L		120	78 - 123
Dichloromethane	10.0	11.6		ug/L		116	74 - 124
1,2-Dichloropropane	10.0	11.2		ug/L		112	78 - 122
Ethylbenzene	10.0	11.1		ug/L		111	79 - 121
Ethyl Chloride	10.0	12.2		ug/L		122	60 - 138
2-Hexanone	50.0	44.3		ug/L		89	57 - 139
Methyl Ethyl Ketone	50.0	53.2		ug/L		106	56 - 143
Methyl isobutyl ketone (MIBK)	50.0	46.5		ug/L		93	67 - 130
m-Xylene & p-Xylene	10.0	10.9		ug/L		109	80 - 121
o-Xylene	10.0	10.5		ug/L		105	78 - 122
Styrene	10.0	10.6		ug/L		106	78 - 123
1,1,2,2-Tetrachloroethane	10.0	8.82		ug/L		88	71 - 121
Tetrachloroethylene	10.0	11.8		ug/L		118	74 - 129
Toluene	10.0	11.7		ug/L		117	80 - 121
trans-1,2-Dichloroethene	10.0	12.2		ug/L		122	75 - 124
trans-1,3-Dichloropropene	10.0	9.54		ug/L		95	73 - 127
1,1,1-Trichloroethane	10.0	9.33		ug/L		93	74 - 131
1,1,2-Trichloroethane	10.0	10.9		ug/L		109	80 - 119
Trichloroethene	10.0	11.7		ug/L		117	79 - 123

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QC Sample Results

Client: AECOM
Project/Site: Red Hill CV18F0126

Job ID: 580-109011-1

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

Lab Sample ID: LCS 580-377826/5

Matrix: Water

Analysis Batch: 377826

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Vinyl chloride	10.0	11.1		ug/L	111	58 - 137	
Xylenes, Total	20.0	21.4		ug/L	107	79 - 121	
Surrogate							
Surrogate	%Recovery	LCS	LCS	Qualifier	Limits		
4-Bromofluorobenzene (Surr)	100			85 - 114			
Dibromofluoromethane (Surr)	107			80 - 119			
1,2-Dichloroethane-d4 (Surr)	97			81 - 118			
Toluene-d8 (Surr)	106			89 - 112			

Lab Sample ID: LCSD 580-377826/6

Matrix: Water

Analysis Batch: 377826

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.	RPD	Limit
		Result	Qualifier				Limits		
Acetone	50.0	51.9		ug/L	104	39 - 160	10	20	
Benzene	10.0	11.8		ug/L	118	79 - 120	1	20	
Bromodichloromethane	10.0	10.5		ug/L	105	79 - 125	3	20	
Bromoform	10.0	9.84		ug/L	98	66 - 130	2	20	
Bromomethane	10.0	10.8		ug/L	108	53 - 141	14	20	
Carbon disulfide	10.0	10.2		ug/L	102	64 - 133	4	20	
Carbon tetrachloride	10.0	11.1		ug/L	111	72 - 136	1	20	
Chlorobenzene	10.0	11.7		ug/L	117	82 - 118	1	20	
Chloroform	10.0	11.5		ug/L	115	79 - 124	1	20	
Chloromethane	10.0	10.9		ug/L	109	50 - 139	8	20	
cis-1,2-Dichloroethene	10.0	12.2		ug/L	122	78 - 123	3	20	
cis-1,3-Dichloropropene	10.0	10.0		ug/L	100	75 - 124	2	20	
Dibromochloromethane	10.0	10.2		ug/L	102	74 - 126	3	20	
1,1-Dichloroethane	10.0	11.8		ug/L	118	77 - 125	3	20	
1,2-Dichloroethane	10.0	11.5		ug/L	115	73 - 128	4	20	
1,1-Dichloroethene	10.0	12.4		ug/L	124	71 - 131	4	20	
1,2-Dichloroethene, Total	20.0	24.4		ug/L	122	78 - 123	2	20	
Dichloromethane	10.0	9.49		ug/L	95	74 - 124	20	20	
1,2-Dichloropropane	10.0	11.4		ug/L	114	78 - 122	2	20	
Ethylbenzene	10.0	11.3		ug/L	113	79 - 121	2	20	
Ethyl Chloride	10.0	11.3		ug/L	113	60 - 138	8	20	
2-Hexanone	50.0	46.6		ug/L	93	57 - 139	5	20	
Methyl Ethyl Ketone	50.0	53.4		ug/L	107	56 - 143	0	20	
Methyl isobutyl ketone (MIBK)	50.0	50.0		ug/L	100	67 - 130	7	20	
m-Xylene & p-Xylene	10.0	11.1		ug/L	111	80 - 121	2	20	
o-Xylene	10.0	10.8		ug/L	108	78 - 122	2	20	
Styrene	10.0	10.6		ug/L	106	78 - 123	1	20	
1,1,2,2-Tetrachloroethane	10.0	9.11		ug/L	91	71 - 121	3	20	
Tetrachloroethene	10.0	11.7		ug/L	117	74 - 129	1	20	
Toluene	10.0	12.0		ug/L	120	80 - 121	2	20	
trans-1,2-Dichloroethene	10.0	12.2		ug/L	122	75 - 124	0	20	
trans-1,3-Dichloropropene	10.0	10.0		ug/L	100	73 - 127	5	20	
1,1,1-Trichloroethane	10.0	8.85		ug/L	89	74 - 131	5	20	
1,1,2-Trichloroethane	10.0	11.4		ug/L	114	80 - 119	4	20	

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QC Sample Results

Client: AECOM
Project/Site: Red Hill CV18F0126

Job ID: 580-109011-1

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

Lab Sample ID: LCSD 580-377826/6

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

Matrix: Water

Analysis Batch: 377826

Analyte		Spike	LCSD	LCSD	Unit	D	%Rec	Limits	RPD	RPD Limit
		Added	Result	Qualifier						
Trichloroethene		10.0	11.9		ug/L		119	79 - 123	1	20
Vinyl chloride		10.0	10.4		ug/L		104	58 - 137	7	20
Xylenes, Total		20.0	21.9		ug/L		110	79 - 121	2	20

Surrogate	LCSD		LCSD	Limits
	%Recovery	Qualifier		
4-Bromofluorobenzene (Surr)	102		85 - 114	
Dibromofluoromethane (Surr)	107		80 - 119	
1,2-Dichloroethane-d4 (Surr)	99		81 - 118	
Toluene-d8 (Surr)	108		89 - 112	

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

Lab Sample ID: MB 580-377587/1-A

Client Sample ID: Method Blank

Matrix: Water

Analysis Batch: 377665

Prep Type: Total/NA
Prep Batch: 377587

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acenaphthene	0.050	U	0.40	0.050	ug/L		01/06/22 10:50	01/06/22 21:57	1
Acenaphthylene	0.060	U	1.0	0.060	ug/L		01/06/22 10:50	01/06/22 21:57	1
Anthracene	0.050	U	1.0	0.050	ug/L		01/06/22 10:50	01/06/22 21:57	1
Benzo[a]anthracene	0.050	U	0.25	0.050	ug/L		01/06/22 10:50	01/06/22 21:57	1
Benzo[a]pyrene	0.040	U	0.25	0.040	ug/L		01/06/22 10:50	01/06/22 21:57	1
Benzo[b]fluoranthene	0.040	U	0.25	0.040	ug/L		01/06/22 10:50	01/06/22 21:57	1
Benzo[g,h,i]perylene	0.040	U	0.25	0.040	ug/L		01/06/22 10:50	01/06/22 21:57	1
Benzo[k]fluoranthene	0.050	U	0.25	0.050	ug/L		01/06/22 10:50	01/06/22 21:57	1
Bis(2-chloroethoxy)methane	0.050	U	0.60	0.050	ug/L		01/06/22 10:50	01/06/22 21:57	1
Bis(2-chloroethyl)ether	0.030	U	0.10	0.030	ug/L		01/06/22 10:50	01/06/22 21:57	1
Bis(2-ethylhexyl) phthalate	0.74	U	3.0	0.74	ug/L		01/06/22 10:50	01/06/22 21:57	1
4-Bromophenyl phenyl ether	0.060	U	0.60	0.060	ug/L		01/06/22 10:50	01/06/22 21:57	1
Butyl benzyl phthalate	0.27	U	4.0	0.27	ug/L		01/06/22 10:50	01/06/22 21:57	1
Carbazole	0.10	U	0.60	0.10	ug/L		01/06/22 10:50	01/06/22 21:57	1
4-Chloroaniline	0.59	U	2.0	0.59	ug/L		01/06/22 10:50	01/06/22 21:57	1
4-Chloro-3-methylphenol	0.13	U	0.60	0.13	ug/L		01/06/22 10:50	01/06/22 21:57	1
2-Chloronaphthalene	0.070	U	1.0	0.070	ug/L		01/06/22 10:50	01/06/22 21:57	1
2-Chlorophenol	0.050	U	1.0	0.050	ug/L		01/06/22 10:50	01/06/22 21:57	1
4-Chlorophenyl phenyl ether	0.050	U	0.60	0.050	ug/L		01/06/22 10:50	01/06/22 21:57	1
Chrysene	0.040	U	0.25	0.040	ug/L		01/06/22 10:50	01/06/22 21:57	1
Dibenz(a,h)anthracene	0.070	U	0.25	0.070	ug/L		01/06/22 10:50	01/06/22 21:57	1
Dibenzofuran	0.10	U	0.40	0.10	ug/L		01/06/22 10:50	01/06/22 21:57	1
1,2-Dichlorobenzene	0.050	U	0.40	0.050	ug/L		01/06/22 10:50	01/06/22 21:57	1
1,3-Dichlorobenzene	0.040	U	0.40	0.040	ug/L		01/06/22 10:50	01/06/22 21:57	1
1,4-Dichlorobenzene	0.040	U	0.40	0.040	ug/L		01/06/22 10:50	01/06/22 21:57	1
3,3'-Dichlorobenzidine	0.26	U	1.0	0.26	ug/L		01/06/22 10:50	01/06/22 21:57	1
2,4-Dichlorophenol	0.20	U	1.0	0.20	ug/L		01/06/22 10:50	01/06/22 21:57	1
Diethyl phthalate	0.15	U	1.0	0.15	ug/L		01/06/22 10:50	01/06/22 21:57	1
2,4-Dimethylphenol	0.16	U	4.0	0.16	ug/L		01/06/22 10:50	01/06/22 21:57	1
Dimethyl phthalate	0.060	U	0.60	0.060	ug/L		01/06/22 10:50	01/06/22 21:57	1
Di-n-butyl phthalate	0.19	U	3.0	0.19	ug/L		01/06/22 10:50	01/06/22 21:57	1
4,6-Dinitro-2-methylphenol	0.55	U	2.0	0.55	ug/L		01/06/22 10:50	01/06/22 21:57	1

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QC Sample Results

Client: AECOM

Job ID: 580-109011-1

Project/Site: Red Hill CV18F0126

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

Lab Sample ID: MB 580-377587/1-A

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 377665

Prep Batch: 377587

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier									
2,4-Dinitrophenol	1.6	U			5.0	1.6	ug/L		01/06/22 10:50	01/06/22 21:57	1
2,4-Dinitrotoluene	0.10	U			1.0	0.10	ug/L		01/06/22 10:50	01/06/22 21:57	1
2,6-Dinitrotoluene	0.10	U			0.40	0.10	ug/L		01/06/22 10:50	01/06/22 21:57	1
Di-n-octyl phthalate	0.13	U			1.0	0.13	ug/L		01/06/22 10:50	01/06/22 21:57	1
Fluoranthene	0.060	U			0.25	0.060	ug/L		01/06/22 10:50	01/06/22 21:57	1
Fluorene	0.050	U			0.25	0.050	ug/L		01/06/22 10:50	01/06/22 21:57	1
Hexachlorobenzene	0.040	U			0.60	0.040	ug/L		01/06/22 10:50	01/06/22 21:57	1
Hexachlorobutadiene	0.060	U			1.0	0.060	ug/L		01/06/22 10:50	01/06/22 21:57	1
Hexachlorocyclopentadiene	0.14	U			1.0	0.14	ug/L		01/06/22 10:50	01/06/22 21:57	1
Hexachloroethane	0.050	U			1.0	0.050	ug/L		01/06/22 10:50	01/06/22 21:57	1
Indeno[1,2,3-cd]pyrene	0.13	U			0.40	0.13	ug/L		01/06/22 10:50	01/06/22 21:57	1
Isophorone	0.10	U			0.40	0.10	ug/L		01/06/22 10:50	01/06/22 21:57	1
2-Methylphenol	0.050	U			0.60	0.050	ug/L		01/06/22 10:50	01/06/22 21:57	1
3 & 4 Methylphenol	0.10	U			0.60	0.10	ug/L		01/06/22 10:50	01/06/22 21:57	1
Naphthalene	0.16	U			0.40	0.16	ug/L		01/06/22 10:50	01/06/22 21:57	1
2-Nitroaniline	0.10	U			1.0	0.10	ug/L		01/06/22 10:50	01/06/22 21:57	1
3-Nitroaniline	0.16	U			3.0	0.16	ug/L		01/06/22 10:50	01/06/22 21:57	1
4-Nitroaniline	0.21	U			2.0	0.21	ug/L		01/06/22 10:50	01/06/22 21:57	1
Nitrobenzene	0.040	U			1.0	0.040	ug/L		01/06/22 10:50	01/06/22 21:57	1
4-Nitrophenol	1.7	U			10	1.7	ug/L		01/06/22 10:50	01/06/22 21:57	1
N-Nitrosodi-n-propylamine	0.060	U			0.40	0.060	ug/L		01/06/22 10:50	01/06/22 21:57	1
N-Nitrosodiphenylamine	0.070	U			1.0	0.070	ug/L		01/06/22 10:50	01/06/22 21:57	1
Pentachlorophenol	0.51	U			10	0.51	ug/L		01/06/22 10:50	01/06/22 21:57	1
Phenanthrene	0.12	U			1.0	0.12	ug/L		01/06/22 10:50	01/06/22 21:57	1
Phenol	0.36	U			1.0	0.36	ug/L		01/06/22 10:50	01/06/22 21:57	1
Pyrene	0.040	U			1.0	0.040	ug/L		01/06/22 10:50	01/06/22 21:57	1
1,2,4-Trichlorobenzene	0.090	U			0.40	0.090	ug/L		01/06/22 10:50	01/06/22 21:57	1
2,4,5-Trichlorophenol	0.10	U			0.40	0.10	ug/L		01/06/22 10:50	01/06/22 21:57	1
2,4,6-Trichlorophenol	0.10	U			0.60	0.10	ug/L		01/06/22 10:50	01/06/22 21:57	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared		Analyzed	Dil Fac
				Spike	Added		
2-Fluorobiphenyl	60		44 - 119			01/06/22 10:50	01/06/22 21:57
2-Fluorophenol (Surr)	40		19 - 119			01/06/22 10:50	01/06/22 21:57
Nitrobenzene-d5 (Surr)	62		44 - 120			01/06/22 10:50	01/06/22 21:57
Phenol-d5 (Surr)	23		10 - 120			01/06/22 10:50	01/06/22 21:57
Terphenyl-d14	95		50 - 134			01/06/22 10:50	01/06/22 21:57
2,4,6-Tribromophenol	66		43 - 140			01/06/22 10:50	01/06/22 21:57

Lab Sample ID: LCS 580-377587/2-A

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 377665

Prep Batch: 377587

Analyte	Spike	Added	LCS			Unit	D	%Rec	Limits
			Result	Qualifier	Unit				
Acenaphthene		2.00	1.35		ug/L		67		47 - 122
Acenaphthylene		2.00	1.32		ug/L		66		41 - 130
Anthracene		2.00	1.50		ug/L		75		57 - 123
Benzo[a]anthracene		2.00	1.40		ug/L		70		58 - 125
Benzo[a]pyrene		2.00	1.43		ug/L		71		54 - 128

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QC Sample Results

Client: AECOM

Job ID: 580-109011-1

Project/Site: Red Hill CV18F0126

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

Lab Sample ID: LCS 580-377587/2-A

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 377665

Prep Batch: 377587

Analyte	Spike	LCS	LCS	Unit	D	%Rec	Limits
	Added	Result	Qualifier				
Benzo[b]fluoranthene	2.00	1.45		ug/L	72	53 - 131	
Benzo[g,h,i]perylene	2.00	1.40		ug/L	70	50 - 134	
Benzo[k]fluoranthene	2.00	1.35		ug/L	68	57 - 129	
Bis(2-chloroethoxy)methane	2.00	1.41		ug/L	71	48 - 120	
Bis(2-ethylhexyl) phthalate	2.00	1.68	J	ug/L	84	55 - 135	
4-Bromophenyl phenyl ether	2.00	1.39		ug/L	69	55 - 124	
Butyl benzyl phthalate	2.00	1.65	J	ug/L	82	53 - 134	
Carbazole	2.00	1.62		ug/L	81	60 - 122	
4-Chloroaniline	2.00	1.17	J	ug/L	58	33 - 117	
4-Chloro-3-methylphenol	2.00	1.25		ug/L	62	52 - 119	
2-Chloronaphthalene	2.00	1.31		ug/L	66	40 - 116	
2-Chlorophenol	2.00	1.25		ug/L	63	38 - 117	
4-Chlorophenyl phenyl ether	2.00	1.43		ug/L	72	53 - 121	
Chrysene	2.00	1.58		ug/L	79	59 - 123	
Dibenz(a,h)anthracene	2.00	1.35		ug/L	67	51 - 134	
Dibenzofuran	2.00	1.44		ug/L	72	53 - 118	
1,2-Dichlorobenzene	2.00	1.11		ug/L	56	32 - 111	
1,3-Dichlorobenzene	2.00	1.05		ug/L	52	28 - 110	
1,4-Dichlorobenzene	2.00	1.07		ug/L	53	29 - 112	
3,3'-Dichlorobenzidine	4.00	2.81		ug/L	70	27 - 129	
2,4-Dichlorophenol	2.00	1.14		ug/L	57	47 - 121	
Diethyl phthalate	2.00	1.80		ug/L	90	56 - 125	
2,4-Dimethylphenol	2.00	1.40	J	ug/L	70	31 - 124	
Dimethyl phthalate	2.00	1.70		ug/L	85	45 - 127	
Di-n-butyl phthalate	2.00	1.71	J	ug/L	85	59 - 127	
4,6-Dinitro-2-methylphenol	4.00	2.37		ug/L	59	44 - 137	
2,4-Dinitrophenol	4.00	2.61	J	ug/L	65	23 - 143	
2,4-Dinitrotoluene	2.00	1.48		ug/L	74	57 - 128	
2,6-Dinitrotoluene	2.00	1.42		ug/L	71	57 - 124	
Di-n-octyl phthalate	2.00	1.61		ug/L	81	51 - 140	
Fluoranthene	2.00	1.62		ug/L	81	57 - 128	
Fluorene	2.00	1.50		ug/L	75	52 - 124	
Hexachlorobenzene	2.00	1.29		ug/L	64	53 - 125	
Hexachlorobutadiene	2.00	1.03		ug/L	51	22 - 124	
Hexachlorocyclopentadiene	2.00	0.445	J	ug/L	22	20 - 125	
Hexachloroethane	2.00	1.05		ug/L	53	21 - 115	
Indeno[1,2,3-cd]pyrene	2.00	1.16		ug/L	58	52 - 134	
Isophorone	2.00	1.42		ug/L	71	42 - 124	
2-Methylphenol	2.00	1.19		ug/L	59	30 - 117	
3 & 4 Methylphenol	2.00	1.13		ug/L	56	29 - 110	
Naphthalene	2.00	1.14		ug/L	57	40 - 121	
2-Nitroaniline	2.00	1.38		ug/L	69	55 - 127	
3-Nitroaniline	2.00	1.37	J	ug/L	69	41 - 128	
4-Nitroaniline	2.00	1.50	J	ug/L	75	70 - 125	
Nitrobenzene	2.00	1.44		ug/L	72	45 - 121	
4-Nitrophenol	4.00	1.85	J	ug/L	46	35 - 145	
N-Nitrosodi-n-propylamine	2.00	1.46		ug/L	73	49 - 119	
N-Nitrosodiphenylamine	2.00	1.43		ug/L	71	51 - 123	
Pentachlorophenol	4.00	2.01	J	ug/L	50	35 - 138	

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QC Sample Results

Client: AECOM

Job ID: 580-109011-1

Project/Site: Red Hill CV18F0126

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

Lab Sample ID: LCS 580-377587/2-A

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 377665

Prep Batch: 377587

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Phenanthrene	2.00	1.41		ug/L	71	59 - 120	
Phenol	2.00	0.602	J	ug/L	30	13 - 120	
Pyrene	2.00	1.63		ug/L	82	57 - 126	
1,2,4-Trichlorobenzene	2.00	1.12		ug/L	56	29 - 116	
2,4,5-Trichlorophenol	2.00	1.51		ug/L	75	53 - 123	
2,4,6-Trichlorophenol	2.00	1.24		ug/L	62	50 - 125	

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	63		44 - 119
2-Fluorophenol (Surr)	43		19 - 119
Nitrobenzene-d5 (Surr)	70		44 - 120
Phenol-d5 (Surr)	27		10 - 120
Terphenyl-d14	88		50 - 134
2,4,6-Tribromophenol	77		43 - 140

Lab Sample ID: LCSD 580-377587/3-A

Client Sample ID: Lab Control Sample Dup

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 377665

Prep Batch: 377587

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec.	RPD
		Result	Qualifier				Limits	RPD
Acenaphthene	2.00	1.52		ug/L	76	47 - 122	12	20
Acenaphthylene	2.00	1.56		ug/L	78	41 - 130	17	20
Anthracene	2.00	1.51		ug/L	75	57 - 123	0	20
Benzo[a]anthracene	2.00	1.76	*1	ug/L	88	58 - 125	23	20
Benzo[a]pyrene	2.00	1.74		ug/L	87	54 - 128	20	20
Benzo[b]fluoranthene	2.00	1.57		ug/L	78	53 - 131	8	20
Benzo[g,h,i]perylene	2.00	1.66		ug/L	83	50 - 134	17	20
Benzo[k]fluoranthene	2.00	1.91	*1	ug/L	96	57 - 129	34	20
Bis(2-chloroethoxy)methane	2.00	1.65		ug/L	83	48 - 120	16	20
Bis(2-ethylhexyl) phthalate	2.00	2.13	J *1	ug/L	106	55 - 135	23	20
4-Bromophenyl phenyl ether	2.00	1.50		ug/L	75	55 - 124	8	20
Butyl benzyl phthalate	2.00	2.06	J *1	ug/L	103	53 - 134	22	20
Carbazole	2.00	1.81		ug/L	90	60 - 122	11	20
4-Chloroaniline	2.00	1.09	J	ug/L	54	33 - 117	7	20
4-Chloro-3-methylphenol	2.00	1.50		ug/L	75	52 - 119	19	20
2-Chloronaphthalene	2.00	1.47		ug/L	73	40 - 116	11	20
2-Chlorophenol	2.00	1.47		ug/L	74	38 - 117	16	20
4-Chlorophenyl phenyl ether	2.00	1.65		ug/L	82	53 - 121	14	20
Chrysene	2.00	2.01	*1	ug/L	101	59 - 123	24	20
Dibenz(a,h)anthracene	2.00	1.61		ug/L	80	51 - 134	18	20
Dibenzofuran	2.00	1.64		ug/L	82	53 - 118	13	20
1,2-Dichlorobenzene	2.00	1.19		ug/L	59	32 - 111	7	20
1,3-Dichlorobenzene	2.00	1.11		ug/L	56	28 - 110	6	20
1,4-Dichlorobenzene	2.00	1.11		ug/L	56	29 - 112	4	20
3,3'-Dichlorobenzidine	4.00	3.47	*1	ug/L	87	27 - 129	21	20
2,4-Dichlorophenol	2.00	1.42	*1	ug/L	71	47 - 121	22	20
Diethyl phthalate	2.00	1.98		ug/L	99	56 - 125	10	20
2,4-Dimethylphenol	2.00	1.68	J	ug/L	84	31 - 124	18	20

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QC Sample Results

Client: AECOM
Project/Site: Red Hill CV18F0126

Job ID: 580-109011-1

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

Lab Sample ID: LCSD 580-377587/3-A

Matrix: Water

Analysis Batch: 377665

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 377587

Analyte	Spike Added	LCSD		Unit	D	%Rec	%Rec.		RPD	RPD Limit
		Result	Qualifier				Limits	RPD		
Dimethyl phthalate	2.00	1.80		ug/L		90	45 - 127	6	20	
Di-n-butyl phthalate	2.00	1.89	J	ug/L		94	59 - 127	10	20	
4,6-Dinitro-2-methylphenol	4.00	2.74		ug/L		68	44 - 137	14	20	
2,4-Dinitrophenol	4.00	3.21	J	ug/L		80	23 - 143	20	20	
2,4-Dinitrotoluene	2.00	1.69		ug/L		84	57 - 128	13	20	
2,6-Dinitrotoluene	2.00	1.65		ug/L		82	57 - 124	15	20	
Di-n-octyl phthalate	2.00	1.97		ug/L		99	51 - 140	20	20	
Fluoranthene	2.00	1.75		ug/L		87	57 - 128	8	20	
Fluorene	2.00	1.66		ug/L		83	52 - 124	10	20	
Hexachlorobenzene	2.00	1.46		ug/L		73	53 - 125	13	20	
Hexachlorobutadiene	2.00	1.00		ug/L		50	22 - 124	2	20	
Hexachlorocyclopentadiene	2.00	0.460	J	ug/L		23	20 - 125	3	20	
Hexachloroethane	2.00	1.13		ug/L		56	21 - 115	7	20	
Indeno[1,2,3-cd]pyrene	2.00	1.46	*1	ug/L		73	52 - 134	23	20	
Isophorone	2.00	1.60		ug/L		80	42 - 124	12	20	
2-Methylphenol	2.00	1.45		ug/L		73	30 - 117	20	20	
3 & 4 Methylphenol	2.00	1.30		ug/L		65	29 - 110	14	20	
Naphthalene	2.00	1.33		ug/L		66	40 - 121	15	20	
2-Nitroaniline	2.00	1.56		ug/L		78	55 - 127	12	20	
3-Nitroaniline	2.00	1.44	J	ug/L		72	41 - 128	5	20	
4-Nitroaniline	2.00	1.84	J	ug/L		92	70 - 125	20	20	
Nitrobenzene	2.00	1.62		ug/L		81	45 - 121	12	20	
4-Nitrophenol	4.00	1.95	J	ug/L		49	35 - 145	5	20	
N-Nitrosodi-n-propylamine	2.00	1.80	*1	ug/L		90	49 - 119	21	20	
N-Nitrosodiphenylamine	2.00	1.55		ug/L		78	51 - 123	9	20	
Pentachlorophenol	4.00	2.13	J	ug/L		53	35 - 138	6	20	
Phenanthrene	2.00	1.54		ug/L		77	59 - 120	8	20	
Phenol	2.00	0.655	J	ug/L		33	13 - 120	8	20	
Pyrene	2.00	1.78		ug/L		89	57 - 126	8	20	
1,2,4-Trichlorobenzene	2.00	1.26		ug/L		63	29 - 116	12	20	
2,4,5-Trichlorophenol	2.00	1.47		ug/L		73	53 - 123	3	20	
2,4,6-Trichlorophenol	2.00	1.45		ug/L		73	50 - 125	16	20	

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	72		44 - 119
2-Fluorophenol (Surr)	51		19 - 119
Nitrobenzene-d5 (Surr)	82		44 - 120
Phenol-d5 (Surr)	31		10 - 120
Terphenyl-d14	96		50 - 134
2,4,6-Tribromophenol	80		43 - 140

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

Lab Sample ID: MB 580-377585/1-A

Matrix: Water

Analysis Batch: 377651

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 377585

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
C9-C25	90	U	110	90	ug/L		01/06/22 10:45	01/06/22 21:07	1

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QC Sample Results

Client: AECOM
Project/Site: Red Hill CV18F0126

Job ID: 580-109011-1

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

Lab Sample ID: MB 580-377585/1-A

Matrix: Water

Analysis Batch: 377651

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 377585

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
	Result	Qualifier								
C24-C40	180	U	350	180	ug/L		01/06/22 10:45	01/06/22 21:07	1	
Surrogate										
<i>o-Terphenyl</i>										
		MB		Limits						
		%Recovery	Qualifer	56 - 125				Prepared	Analyzed	Dil Fac
		77						01/06/22 10:45	01/06/22 21:07	1

Lab Sample ID: LCS 580-377585/2-A

Matrix: Water

Analysis Batch: 377651

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 377585

Analyte	Spike		Result	LCS	LCS	Unit	D	%Rec	Limits	%Rec.
	Added									
C9-C25	4000		2790			ug/L		70	36 - 132	
C24-C40	4000		3320			ug/L		83	41 - 113	
Surrogate										
<i>o-Terphenyl</i>		%Recovery	Qualifer	Limits						
		70		56 - 125						

Lab Sample ID: LCSD 580-377585/3-A

Matrix: Water

Analysis Batch: 377651

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 377585

Analyte	Spike		Result	LCSD	LCSD	Unit	D	%Rec	Limits	%Rec.	RPD
	Added										
C9-C25	4000		2980			ug/L		74	36 - 132		7
C24-C40	4000		3670			ug/L		92	41 - 113		10
Surrogate											
<i>o-Terphenyl</i>		%Recovery	Qualifer	Limits							
		80		56 - 125							

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Lab Chronicle

Client: AECOM
Project/Site: Red Hill CV18F0126

Job ID: 580-109011-1

Client Sample ID: 20220105-D3-ZT01

Lab Sample ID: 580-109011-1

Matrix: Water

Date Collected: 01/05/22 13:21

Date Received: 01/06/22 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260/CALUFT DOD		1	377829	01/08/22 16:08	CJ	FGS SEA
Total/NA	Analysis	8260D		1	377826	01/08/22 16:08	JSM	FGS SEA
Total/NA	Prep	3510C			377587	01/06/22 17:37	M1E	FGS SEA
Total/NA	Analysis	8270E		1	377665	01/07/22 02:11	E1L	FGS SEA
Total/NA	Prep	3510C			377585	01/06/22 17:38	M1E	FGS SEA
Total/NA	Analysis	8015D DRO		1	377651	01/07/22 01:09	JAE	FGS SEA

Client Sample ID: 20220105-F1-ZT02

Lab Sample ID: 580-109011-2

Matrix: Water

Date Collected: 01/05/22 14:30

Date Received: 01/06/22 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260/CALUFT DOD		1	377733	01/06/22 16:44	JSM	FGS SEA
Total/NA	Prep	3510C			377585	01/06/22 17:38	M1E	FGS SEA
Total/NA	Analysis	8015D DRO		1	377651	01/07/22 01:29	JAE	FGS SEA

Laboratory References:

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

Eurofins Seattle

Accreditation/Certification Summary

Client: AECOM

Project/Site: Red Hill CV18F0126

Job ID: 580-109011-1

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 8260D	Prep Method	Matrix Water	Analyte 1,2-Dichloroethene, Total

Sample Summary

Client: AECOM

Project/Site: Red Hill CV18F0126

Job ID: 580-109011-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-109011-1	20220105-D3-ZT01	Water	01/05/22 13:21	01/06/22 10:50
580-109011-2	20220105-F1-ZT02	Water	01/05/22 14:30	01/06/22 10:50

Chain of Custody Record

Client Information		Sampler: AECOM		Lab PM: Elaine Walker		Carrier Tracking No(s): FedEx		COC No: <i>01052022-Dw03</i>	
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): Rush							
State, Zip: Hawaii 96813		Compliance Project: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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: CV18F0126		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)	Total Number of containers	Special Instructions/Note:
20220105-D3-ZT01		1/5/22	1321	G	W	N	X X X X	8	
20220105-F1-ZT02		1/5/22	1430	G	W	V	M X X	5	
 <i>(S)</i> 580-109011 Chain of Custody									
Therm. ID: <u>Ica</u> Cor: <u>0.3</u> ° Unc: <u>0.5</u> Cooler Dsc: <u>L3</u> FedEx: <u>P0</u> Packing: <u>dry ice</u> UPS: _____ Cust. Seal: Yes <input checked="" type="checkbox"/> No <u> </u> Lab Cour: _____ Blue Ice, Wet, Dry, None Other: _____									
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months				
Deliverable Requested: I, II, III, IV, Other (specify) _____					Prelim data (Level 1or2)=see TAT above. DoD Stage 4 report standard TAT. AFMOM/EQuIS EDD.				
Empty Kit Relinquished by: _____					Date: _____	Time: _____	Method of Shipment: _____		
Relinquished by: <i>Barbara Walker</i>		Date/Time: <i>1/5/22 1450</i>	Company: AECOM	Received by: <i>SCOTTY</i>	Date/Time: <i>1/5/22 @1450</i>	Company: AECOM			
Relinquished by: <i>John Doe</i>		Date/Time: <i>1/5/22 @ 1515</i>	Company: _____	Received by: <i>John Doe</i>	Date/Time: <i>1/6/22 1050</i>	Company: FGS			
Relinquished by: _____		Date/Time: _____	Company: _____	Received by: _____	Date/Time: _____	Company: _____			
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					Cooler Temperature(s) °C and Other Remarks: _____				

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-109011-1

Login Number: 109011

List Source: Eurofins Seattle

List Number: 1

Creator: Vallelunga, Diana L

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.	N/A	
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Environment Testing
America

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ANALYTICAL REPORT

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

Laboratory Job ID: 580-109054-1
Client Project/Site: Red Hill CV22F0106
Revision: 1

For:
AECOM
1001 Bishop Street
Honolulu, Hawaii 96813

Attn: Margie F Pascua

Kristine D. Allen

Authorized for release by:
1/15/2022 4:50:13 PM
Kristine Allen, Client Service Manager
(253)248-4970
Kristine.Allen@Eurofinset.com

Designee for
Elaine Walker, Project Manager II
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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions	5
Client Sample Results	6
QC Sample Results	11
Chronicle	22
Certification Summary	23
Sample Summary	24
Chain of Custody	25
Receipt Checklists	28

Case Narrative

Client: AECOM
Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

Job ID: 580-109054-1

Laboratory: Eurofins Seattle

Narrative

01/15/2022: Report was revised to include the method 8015DRO QC samples which were not included in the original report.

Job Narrative 580-109054-1

Receipt

Three samples were received on 1/7/2022 11:00 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 -0.7° C and -0.2° C.

GC/MS VOA

Method 8260/CALUFT DOD: Surrogate recovery for the following QC samples was outside the upper control limit: (CCVIS 580-377719/4). This sample did not contain any target analytes; therefore, re-analysis was not performed.

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-377897 recovered above the upper control limit for Carbon disulfide and Carbon tetrachloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: 20220105-C1-ZT03 (580-109054-1) and (CCVIS 580-377897/3).

Method 8260D: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 580-377897 recovered outside control limits for the following analytes: Carbon disulfide and Carbon tetrachloride. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 580-377897 recovered outside control limits for the following analytes: Carbon disulfide.

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 580-377805 was outside criteria for the following analytes: Bis(2-chloroethyl)ether and 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.

Method 8270E: The laboratory control sample duplicate (LCSD) for preparation batch 580-377698 and analytical batch 580-377805 recovered outside control limits for the following analytes: 4-Nitrophenol. 4-Nitrophenol has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8270E: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 580-377698 and analytical batch 580-377805 recovered outside control limits for the following analytes: 4-Nitroaniline and 4-Nitrophenol.

Method 8270E: Surrogate 2-Fluorophenol (Surr) and Phenol-d5 (Surr) recovery for the following samples was outside control limits: 20220105-C1-ZT03 (580-109054-1). 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/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 580-377698. Laboratory control sample/laboratory control sample duplicate were created and substituted for MS/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 580-377700. Laboratory control sample/ laboratory control sample duplicate were created and substituted for MS/MSD/DUP.

Case Narrative

Client: AECOM
Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

Job ID: 580-109054-1 (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.

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Definitions/Glossary

Client: AECOM
Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

Qualifiers

GC/MS VOA

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

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*1	LCS/LCSD RPD exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
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 Sample Results

Client: AECOM
Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

Client Sample ID: 20220105-C1-ZT03

Lab Sample ID: 580-109054-1

Matrix: Water

Date Collected: 01/05/22 15:35
Date Received: 01/07/22 11:00

Method: 8260/CALUFT DOD - 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			01/07/22 18:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		69 - 133					01/07/22 18:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.2	U	15	3.2	ug/L			01/07/22 18:56	1
Bromodichloromethane	0.29	U	1.0	0.29	ug/L			01/07/22 18:56	1
Bromomethane	0.21	U	1.0	0.21	ug/L			01/07/22 18:56	1
Chlorobenzene	0.44	U	1.0	0.44	ug/L			01/07/22 18:56	1
Chloromethane	0.28	U	1.0	0.28	ug/L			01/07/22 18:56	1
cis-1,2-Dichloroethene	0.35	U	1.0	0.35	ug/L			01/07/22 18:56	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.20	ug/L			01/07/22 18:56	1
Dibromochloromethane	0.43	U	1.0	0.43	ug/L			01/07/22 18:56	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/07/22 18:56	1
1,2-Dichloroethane	0.42	U	1.0	0.42	ug/L			01/07/22 18:56	1
1,1-Dichloroethene	0.28	U	1.0	0.28	ug/L			01/07/22 18:56	1
1,2-Dichloroethene, Total	0.39	U	1.0	0.39	ug/L			01/07/22 18:56	1
Dichloromethane	1.4	U	3.0	1.4	ug/L			01/07/22 18:56	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			01/07/22 18:56	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			01/07/22 18:56	1
Ethyl Chloride	0.35	U	1.0	0.35	ug/L			01/07/22 18:56	1
2-Hexanone	4.0	U	15	4.0	ug/L			01/07/22 18:56	1
Methyl Ethyl Ketone	4.7	U	15	4.7	ug/L			01/07/22 18:56	1
Methyl isobutyl ketone (MIBK)	2.5	U	5.0	2.5	ug/L			01/07/22 18:56	1
o-Xylene	0.39	U	1.0	0.39	ug/L			01/07/22 18:56	1
Styrene	0.53	U	1.0	0.53	ug/L			01/07/22 18:56	1
1,1,2,2-Tetrachloroethane	0.52	U	1.0	0.52	ug/L			01/07/22 18:56	1
Tetrachloroethylene	0.41	U	1.0	0.41	ug/L			01/07/22 18:56	1
Toluene	0.39	U	1.0	0.39	ug/L			01/07/22 18:56	1
trans-1,2-Dichloroethene	0.39	U	1.0	0.39	ug/L			01/07/22 18:56	1
trans-1,3-Dichloropropene	0.41	U	1.0	0.41	ug/L			01/07/22 18:56	1
1,1,1-Trichloroethane	0.39	U	1.0	0.39	ug/L			01/07/22 18:56	1
1,1,2-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/07/22 18:56	1
Trichloroethylene	0.26	U	1.0	0.26	ug/L			01/07/22 18:56	1
Vinyl chloride	0.22	U	1.0	0.22	ug/L			01/07/22 18:56	1
Xylenes, Total	0.53	U	2.0	0.53	ug/L			01/07/22 18:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		85 - 114			1
Dibromofluoromethane (Surr)	104		80 - 119			1
1,2-Dichloroethane-d4 (Surr)	100		81 - 118			1
Toluene-d8 (Surr)	98		89 - 112			1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.24	U	1.0	0.24	ug/L			01/10/22 14:56	1
Bromoform	4.1		1.0	0.51	ug/L			01/10/22 14:56	1
Carbon disulfide	0.53	U *+ *1	1.0	0.53	ug/L			01/10/22 14:56	1

Eurofins Seattle

Client Sample Results

Client: AECOM
Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

Client Sample ID: 20220105-C1-ZT03

Lab Sample ID: 580-109054-1

Matrix: Water

Date Collected: 01/05/22 15:35
Date Received: 01/07/22 11:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	0.30	U *+	1.0	0.30	ug/L			01/10/22 14:56	1
Chloroform	0.26	U	1.0	0.26	ug/L			01/10/22 14:56	1
m-Xylene & p-Xylene	0.53	U	2.0	0.53	ug/L			01/10/22 14:56	1
Surrogate	%Recovery	Qualifier	Limits			D	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		85 - 114					01/10/22 14:56	1
Dibromofluoromethane (Surr)	106		80 - 119					01/10/22 14:56	1
1,2-Dichloroethane-d4 (Surr)	106		81 - 118					01/10/22 14:56	1
Toluene-d8 (Surr)	100		89 - 112					01/10/22 14:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.052	U	0.42	0.052	ug/L			01/07/22 15:14	01/08/22 19:58
Acenaphthylene	0.063	U	1.0	0.063	ug/L			01/07/22 15:14	01/08/22 19:58
Anthracene	0.052	U	1.0	0.052	ug/L			01/07/22 15:14	01/08/22 19:58
Benzo[a]anthracene	0.052	U	0.26	0.052	ug/L			01/07/22 15:14	01/08/22 19:58
Benzo[a]pyrene	0.042	U	0.26	0.042	ug/L			01/07/22 15:14	01/08/22 19:58
Benzo[b]fluoranthene	0.042	U	0.26	0.042	ug/L			01/07/22 15:14	01/08/22 19:58
Benzo[g,h,i]perylene	0.042	U	0.26	0.042	ug/L			01/07/22 15:14	01/08/22 19:58
Benzo[k]fluoranthene	0.052	U	0.26	0.052	ug/L			01/07/22 15:14	01/08/22 19:58
Bis(2-chloroethoxy)methane	0.052	U	0.63	0.052	ug/L			01/07/22 15:14	01/08/22 19:58
Bis(2-chloroethyl)ether	0.10		0.10	0.031	ug/L			01/07/22 15:14	01/08/22 19:58
Bis(2-ethylhexyl) phthalate	0.77	U	3.1	0.77	ug/L			01/07/22 15:14	01/08/22 19:58
4-Bromophenyl phenyl ether	0.063	U	0.63	0.063	ug/L			01/07/22 15:14	01/08/22 19:58
Butyl benzyl phthalate	0.28	U	4.2	0.28	ug/L			01/07/22 15:14	01/08/22 19:58
Carbazole	0.10	U	0.63	0.10	ug/L			01/07/22 15:14	01/08/22 19:58
4-Chloroaniline	0.62	U	2.1	0.62	ug/L			01/07/22 15:14	01/08/22 19:58
4-Chloro-3-methylphenol	0.14	U	0.63	0.14	ug/L			01/07/22 15:14	01/08/22 19:58
2-Chloronaphthalene	0.073	U	1.0	0.073	ug/L			01/07/22 15:14	01/08/22 19:58
2-Chlorophenol	0.052	U	1.0	0.052	ug/L			01/07/22 15:14	01/08/22 19:58
4-Chlorophenyl phenyl ether	0.052	U	0.63	0.052	ug/L			01/07/22 15:14	01/08/22 19:58
Chrysene	0.042	U	0.26	0.042	ug/L			01/07/22 15:14	01/08/22 19:58
Dibenzo(a,h)anthracene	0.073	U	0.26	0.073	ug/L			01/07/22 15:14	01/08/22 19:58
Dibenzo[furan]	0.10	U	0.42	0.10	ug/L			01/07/22 15:14	01/08/22 19:58
1,2-Dichlorobenzene	0.052	U	0.42	0.052	ug/L			01/07/22 15:14	01/08/22 19:58
1,3-Dichlorobenzene	0.042	U	0.42	0.042	ug/L			01/07/22 15:14	01/08/22 19:58
1,4-Dichlorobenzene	0.042	U	0.42	0.042	ug/L			01/07/22 15:14	01/08/22 19:58
3,3'-Dichlorobenzidine	0.27	U	1.0	0.27	ug/L			01/07/22 15:14	01/08/22 19:58
2,4-Dichlorophenol	0.21	U	1.0	0.21	ug/L			01/07/22 15:14	01/08/22 19:58
Diethyl phthalate	0.16	U	1.0	0.16	ug/L			01/07/22 15:14	01/08/22 19:58
2,4-Dimethylphenol	0.17	U	4.2	0.17	ug/L			01/07/22 15:14	01/08/22 19:58
Dimethyl phthalate	0.063	U	0.63	0.063	ug/L			01/07/22 15:14	01/08/22 19:58
Di-n-butyl phthalate	0.20	U	3.1	0.20	ug/L			01/07/22 15:14	01/08/22 19:58
4,6-Dinitro-2-methylphenol	0.57	U	2.1	0.57	ug/L			01/07/22 15:14	01/08/22 19:58
2,4-Dinitrophenol	1.7	U	5.2	1.7	ug/L			01/07/22 15:14	01/08/22 19:58
2,4-Dinitrotoluene	0.10	U	1.0	0.10	ug/L			01/07/22 15:14	01/08/22 19:58
2,6-Dinitrotoluene	0.10	U	0.42	0.10	ug/L			01/07/22 15:14	01/08/22 19:58
Di-n-octyl phthalate	0.14	U	1.0	0.14	ug/L			01/07/22 15:14	01/08/22 19:58
Fluoranthene	0.063	U	0.26	0.063	ug/L			01/07/22 15:14	01/08/22 19:58
Fluorene	0.052	U	0.26	0.052	ug/L			01/07/22 15:14	01/08/22 19:58

Eurofins Seattle

Client Sample Results

Client: AECOM

Job ID: 580-109054-1

Project/Site: Red Hill CV22F0106

Client Sample ID: 20220105-C1-ZT03**Lab Sample ID: 580-109054-1**

Date Collected: 01/05/22 15:35

Matrix: Water

Date Received: 01/07/22 11:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobenzene	0.042	U	0.63	0.042	ug/L	01/07/22 15:14	01/08/22 19:58		1
Hexachlorobutadiene	0.063	U	1.0	0.063	ug/L	01/07/22 15:14	01/08/22 19:58		1
Hexachlorocyclopentadiene	0.15	U	1.0	0.15	ug/L	01/07/22 15:14	01/08/22 19:58		1
Hexachloroethane	0.052	U	1.0	0.052	ug/L	01/07/22 15:14	01/08/22 19:58		1
Indeno[1,2,3-cd]pyrene	0.14	U	0.42	0.14	ug/L	01/07/22 15:14	01/08/22 19:58		1
Isophorone	0.10	U	0.42	0.10	ug/L	01/07/22 15:14	01/08/22 19:58		1
2-Methylphenol	0.052	U	0.63	0.052	ug/L	01/07/22 15:14	01/08/22 19:58		1
3 & 4 Methylphenol	0.14	J	0.63	0.10	ug/L	01/07/22 15:14	01/08/22 19:58		1
Naphthalene	0.17	U	0.42	0.17	ug/L	01/07/22 15:14	01/08/22 19:58		1
2-Nitroaniline	0.10	U	1.0	0.10	ug/L	01/07/22 15:14	01/08/22 19:58		1
3-Nitroaniline	0.17	U	3.1	0.17	ug/L	01/07/22 15:14	01/08/22 19:58		1
4-Nitroaniline	0.22	U *1	2.1	0.22	ug/L	01/07/22 15:14	01/08/22 19:58		1
Nitrobenzene	0.042	U	1.0	0.042	ug/L	01/07/22 15:14	01/08/22 19:58		1
4-Nitrophenol	1.8	U *- *1	10	1.8	ug/L	01/07/22 15:14	01/08/22 19:58		1
N-Nitrosodi-n-propylamine	0.063	U	0.42	0.063	ug/L	01/07/22 15:14	01/08/22 19:58		1
N-Nitrosodiphenylamine	0.073	U	1.0	0.073	ug/L	01/07/22 15:14	01/08/22 19:58		1
Pentachlorophenol	0.53	U	10	0.53	ug/L	01/07/22 15:14	01/08/22 19:58		1
Phenanthrene	0.13	U	1.0	0.13	ug/L	01/07/22 15:14	01/08/22 19:58		1
Phenol	0.38	U	1.0	0.38	ug/L	01/07/22 15:14	01/08/22 19:58		1
Pyrene	0.042	U	1.0	0.042	ug/L	01/07/22 15:14	01/08/22 19:58		1
1,2,4-Trichlorobenzene	0.094	U	0.42	0.094	ug/L	01/07/22 15:14	01/08/22 19:58		1
2,4,5-Trichlorophenol	0.10	U	0.42	0.10	ug/L	01/07/22 15:14	01/08/22 19:58		1
2,4,6-Trichlorophenol	0.10	U	0.63	0.10	ug/L	01/07/22 15:14	01/08/22 19:58		1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	48		44 - 119	01/07/22 15:14	01/08/22 19:58	1
2-Fluorophenol (Surr)	6	S1-	19 - 119	01/07/22 15:14	01/08/22 19:58	1
Nitrobenzene-d5 (Surr)	72		44 - 120	01/07/22 15:14	01/08/22 19:58	1
Phenol-d5 (Surr)	0.3	S1-	10 - 120	01/07/22 15:14	01/08/22 19:58	1
Terphenyl-d14	120		50 - 134	01/07/22 15:14	01/08/22 19:58	1
2,4,6-Tribromophenol	140		43 - 140	01/07/22 15:14	01/08/22 19:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	87	U	110	87	ug/L	01/07/22 15:12	01/08/22 01:13		1
C24-C40	170	U	340	170	ug/L	01/07/22 15:12	01/08/22 01:13		1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
<i>o-Terphenyl</i>	86		56 - 125	01/07/22 15:12	01/08/22 01:13	1			

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Client Sample Results

Client: AECOM
Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

Client Sample ID: 20220106-D3-ZT02

Lab Sample ID: 580-109054-2

Matrix: Water

Date Collected: 01/06/22 13:10
Date Received: 01/07/22 11:00

Method: 8260/CALUFT DOD - 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			01/08/22 16:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		69 - 133					01/08/22 16:56	1

Client Sample Results

Client: AECOM
Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

Client Sample ID: 20220106-D3-ZT03

Lab Sample ID: 580-109054-3

Matrix: Water

Date Collected: 01/06/22 13:15
Date Received: 01/07/22 11:00

Method: 8260/CALUFT DOD - 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			01/08/22 17:20	1
Surrogate									
4-Bromofluorobenzene (Surr)	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	91	U	110	91	ug/L		01/07/22 15:12	01/08/22 01:33	1
C24-C40	180	U	350	180	ug/L		01/07/22 15:12	01/08/22 01:33	1
Surrogate									
<i>o-Terphenyl</i>	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

Eurofins Seattle

QC Sample Results

Client: AECOM
Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

Method: 8260/CALUFT DOD - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-377719/5

Matrix: Water

Analysis Batch: 377719

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			01/07/22 12:39	1
Surrogate									
4-Bromofluorobenzene (Surr)									

Lab Sample ID: LCS 580-377719/8

Matrix: Water

Analysis Batch: 377719

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	Limts
Gasoline Range Organics (C6-C12)	1000	1010		ug/L		101	78 - 122
Surrogate							
4-Bromofluorobenzene (Surr)							

Lab Sample ID: LCSD 580-377719/9

Matrix: Water

Analysis Batch: 377719

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec.	RPD	Limit
Gasoline Range Organics (C6-C12)	1000	1020		ug/L		102	78 - 122	1
Surrogate								
4-Bromofluorobenzene (Surr)								

Lab Sample ID: MB 580-377829/4

Matrix: Water

Analysis Batch: 377829

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			01/08/22 14:09	1
Surrogate									
4-Bromofluorobenzene (Surr)									

Lab Sample ID: LCS 580-377829/5

Matrix: Water

Analysis Batch: 377829

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	Limts
Gasoline Range Organics (C6-C12)	1000	942		ug/L		94	78 - 122
Surrogate							
4-Bromofluorobenzene (Surr)							

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QC Sample Results

Client: AECOM

Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

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

Lab Sample ID: LCSD 580-377829/6
Matrix: Water
Analysis Batch: 377829
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	RPD Limit
Gasoline Range Organics (C6-C12)	1000	942		ug/L		94	78 - 122	0	30
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	99		69 - 133						

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

Lab Sample ID: MB 580-377771/5
Matrix: Water
Analysis Batch: 377771
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			01/07/22 12:39	1
Bromodichloromethane	0.29	U	1.0	0.29	ug/L			01/07/22 12:39	1
Bromomethane	0.21	U	1.0	0.21	ug/L			01/07/22 12:39	1
Chlorobenzene	0.44	U	1.0	0.44	ug/L			01/07/22 12:39	1
Chloromethane	0.28	U	1.0	0.28	ug/L			01/07/22 12:39	1
cis-1,2-Dichloroethene	0.35	U	1.0	0.35	ug/L			01/07/22 12:39	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.20	ug/L			01/07/22 12:39	1
Dibromochloromethane	0.43	U	1.0	0.43	ug/L			01/07/22 12:39	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/07/22 12:39	1
1,2-Dichloroethane	0.42	U	1.0	0.42	ug/L			01/07/22 12:39	1
1,1-Dichloroethene	0.28	U	1.0	0.28	ug/L			01/07/22 12:39	1
1,2-Dichloroethene, Total	0.39	U	1.0	0.39	ug/L			01/07/22 12:39	1
Dichloromethane	1.4	U	3.0	1.4	ug/L			01/07/22 12:39	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			01/07/22 12:39	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			01/07/22 12:39	1
Ethyl Chloride	0.35	U	1.0	0.35	ug/L			01/07/22 12:39	1
2-Hexanone	4.0	U	15	4.0	ug/L			01/07/22 12:39	1
Methyl Ethyl Ketone	4.7	U	15	4.7	ug/L			01/07/22 12:39	1
Methyl isobutyl ketone (MIBK)	2.5	U	5.0	2.5	ug/L			01/07/22 12:39	1
o-Xylene	0.39	U	1.0	0.39	ug/L			01/07/22 12:39	1
Styrene	0.53	U	1.0	0.53	ug/L			01/07/22 12:39	1
1,1,2,2-Tetrachloroethane	0.52	U	1.0	0.52	ug/L			01/07/22 12:39	1
Tetrachloroethene	0.41	U	1.0	0.41	ug/L			01/07/22 12:39	1
Toluene	0.39	U	1.0	0.39	ug/L			01/07/22 12:39	1
trans-1,2-Dichloroethene	0.39	U	1.0	0.39	ug/L			01/07/22 12:39	1
trans-1,3-Dichloropropene	0.41	U	1.0	0.41	ug/L			01/07/22 12:39	1
1,1,1-Trichloroethane	0.39	U	1.0	0.39	ug/L			01/07/22 12:39	1
1,1,2-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/07/22 12:39	1
Trichloroethene	0.26	U	1.0	0.26	ug/L			01/07/22 12:39	1
Vinyl chloride	0.22	U	1.0	0.22	ug/L			01/07/22 12:39	1
Xylenes, Total	0.53	U	2.0	0.53	ug/L			01/07/22 12:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		85 - 114		01/07/22 12:39	1
Dibromofluoromethane (Surr)	103		80 - 119		01/07/22 12:39	1

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QC Sample Results

Client: AECOM

Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

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

Lab Sample ID: MB 580-377771/5

Matrix: Water

Analysis Batch: 377771

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

Surrogate	MB	MB	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	1,2-Dichloroethane-d4 (Surr)	101						
Toluene-d8 (Surr)		98			89 - 112		01/07/22 12:39	1

Lab Sample ID: LCS 580-377771/6

Matrix: Water

Analysis Batch: 377771

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

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.	Limits
	Added	Result	Qualifier					
Acetone	50.0	46.6		ug/L	93	39 - 160		
Bromodichloromethane	10.0	10.5		ug/L	105	79 - 125		
Bromomethane	10.0	11.3		ug/L	113	53 - 141		
Chlorobenzene	10.0	10.4		ug/L	104	82 - 118		
Chloromethane	10.0	8.94		ug/L	89	50 - 139		
cis-1,2-Dichloroethene	10.0	10.8		ug/L	108	78 - 123		
cis-1,3-Dichloropropene	10.0	9.85		ug/L	98	75 - 124		
Dibromochloromethane	10.0	10.9		ug/L	109	74 - 126		
1,1-Dichloroethane	10.0	10.6		ug/L	106	77 - 125		
1,2-Dichloroethane	10.0	10.0		ug/L	100	73 - 128		
1,1-Dichloroethene	10.0	11.7		ug/L	117	71 - 131		
1,2-Dichloroethene, Total	20.0	22.3		ug/L	112	78 - 123		
Dichloromethane	10.0	11.3		ug/L	113	74 - 124		
1,2-Dichloropropane	10.0	10.6		ug/L	106	78 - 122		
Ethylbenzene	10.0	10.6		ug/L	106	79 - 121		
Ethyl Chloride	10.0	10.2		ug/L	102	60 - 138		
2-Hexanone	50.0	49.5		ug/L	99	57 - 139		
Methyl Ethyl Ketone	50.0	49.6		ug/L	99	56 - 143		
Methyl isobutyl ketone (MIBK)	50.0	50.2		ug/L	100	67 - 130		
o-Xylene	10.0	10.6		ug/L	106	78 - 122		
Styrene	10.0	10.2		ug/L	102	78 - 123		
1,1,2,2-Tetrachloroethane	10.0	9.46		ug/L	95	71 - 121		
Tetrachloroethylene	10.0	10.6		ug/L	106	74 - 129		
Toluene	10.0	11.1		ug/L	111	80 - 121		
trans-1,2-Dichloroethene	10.0	11.5		ug/L	115	75 - 124		
trans-1,3-Dichloropropene	10.0	10.7		ug/L	107	73 - 127		
1,1,1-Trichloroethane	10.0	11.0		ug/L	110	74 - 131		
1,1,2-Trichloroethane	10.0	10.3		ug/L	103	80 - 119		
Trichloroethylene	10.0	11.0		ug/L	110	79 - 123		
Vinyl chloride	10.0	9.81		ug/L	98	58 - 137		
Xylenes, Total	20.0	20.9		ug/L	105	79 - 121		

Surrogate	LCS	LCS	%Recovery	Qualifier	Limits
	103	85 - 114			
4-Bromofluorobenzene (Surr)	103	85 - 114			
Dibromofluoromethane (Surr)	101	80 - 119			
1,2-Dichloroethane-d4 (Surr)	95	81 - 118			
Toluene-d8 (Surr)	106	89 - 112			

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QC Sample Results

Client: AECOM

Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

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

Lab Sample ID: LCSD 580-377771/7

Matrix: Water

Analysis Batch: 377771

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	49.1		ug/L		98	39 - 160	5	20
Bromodichloromethane	10.0	10.1		ug/L		101	79 - 125	3	20
Bromomethane	10.0	10.8		ug/L		108	53 - 141	4	20
Chlorobenzene	10.0	10.1		ug/L		101	82 - 118	3	20
Chloromethane	10.0	8.99		ug/L		90	50 - 139	0	20
cis-1,2-Dichloroethene	10.0	10.4		ug/L		104	78 - 123	4	20
cis-1,3-Dichloropropene	10.0	9.63		ug/L		96	75 - 124	2	20
Dibromochloromethane	10.0	10.6		ug/L		106	74 - 126	3	20
1,1-Dichloroethane	10.0	10.6		ug/L		106	77 - 125	1	20
1,2-Dichloroethane	10.0	10.1		ug/L		101	73 - 128	1	20
1,1-Dichloroethene	10.0	11.4		ug/L		114	71 - 131	2	20
1,2-Dichloroethene, Total	20.0	21.4		ug/L		107	78 - 123	4	20
Dichloromethane	10.0	11.0		ug/L		110	74 - 124	2	20
1,2-Dichloropropane	10.0	9.94		ug/L		99	78 - 122	6	20
Ethylbenzene	10.0	10.2		ug/L		102	79 - 121	3	20
Ethyl Chloride	10.0	10.0		ug/L		100	60 - 138	2	20
2-Hexanone	50.0	52.2		ug/L		104	57 - 139	5	20
Methyl Ethyl Ketone	50.0	50.6		ug/L		101	56 - 143	2	20
Methyl isobutyl ketone (MIBK)	50.0	50.8		ug/L		102	67 - 130	1	20
o-Xylene	10.0	10.2		ug/L		102	78 - 122	3	20
Styrene	10.0	9.88		ug/L		99	78 - 123	3	20
1,1,2,2-Tetrachloroethane	10.0	9.60		ug/L		96	71 - 121	1	20
Tetrachloroethylene	10.0	10.5		ug/L		105	74 - 129	1	20
Toluene	10.0	10.4		ug/L		104	80 - 121	6	20
trans-1,2-Dichloroethene	10.0	11.0		ug/L		110	75 - 124	5	20
trans-1,3-Dichloropropene	10.0	10.2		ug/L		102	73 - 127	5	20
1,1,1-Trichloroethane	10.0	10.7		ug/L		107	74 - 131	3	20
1,1,2-Trichloroethane	10.0	9.97		ug/L		100	80 - 119	3	20
Trichloroethylene	10.0	10.7		ug/L		107	79 - 123	3	20
Vinyl chloride	10.0	9.65		ug/L		97	58 - 137	2	20
Xylenes, Total	20.0	19.9		ug/L		99	79 - 121	5	20

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	100		85 - 114
Dibromofluoromethane (Surr)	100		80 - 119
1,2-Dichloroethane-d4 (Surr)	96		81 - 118
Toluene-d8 (Surr)	105		89 - 112

Lab Sample ID: MB 580-377897/7

Matrix: Water

Analysis Batch: 377897

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	0.24	U	1.0	0.24	ug/L			01/10/22 12:52	1
Bromoform	0.51	U	1.0	0.51	ug/L			01/10/22 12:52	1
Carbon disulfide	0.53	U	1.0	0.53	ug/L			01/10/22 12:52	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			01/10/22 12:52	1
Chloroform	0.26	U	1.0	0.26	ug/L			01/10/22 12:52	1

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QC Sample Results

Client: AECOM
Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

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

Lab Sample ID: MB 580-377897/7

Matrix: Water

Analysis Batch: 377897

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	0.53	U	2.0	0.53	ug/L			01/10/22 12:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		85 - 114		01/10/22 12:52	1
Dibromofluoromethane (Surr)	105		80 - 119		01/10/22 12:52	1
1,2-Dichloroethane-d4 (Surr)	106		81 - 118		01/10/22 12:52	1
Toluene-d8 (Surr)	99		89 - 112		01/10/22 12:52	1

Lab Sample ID: LCS 580-377897/4

Matrix: Water

Analysis Batch: 377897

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
Benzene	5.00	5.52		ug/L		110	79 - 120
Bromoform	5.00	5.74		ug/L		115	66 - 130
Carbon disulfide	5.00	7.96	*+	ug/L		159	64 - 133
Carbon tetrachloride	5.00	7.43	*+	ug/L		149	72 - 136
Chloroform	5.00	5.30		ug/L		106	79 - 124
m-Xylene & p-Xylene	5.00	5.83		ug/L		117	80 - 121

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		85 - 114
Dibromofluoromethane (Surr)	100		80 - 119
1,2-Dichloroethane-d4 (Surr)	95		81 - 118
Toluene-d8 (Surr)	101		89 - 112

Lab Sample ID: LCSD 580-377897/5

Matrix: Water

Analysis Batch: 377897

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.	RPD	Limit
Benzene	5.00	5.33		ug/L		107	79 - 120	3	20
Bromoform	5.00	5.57		ug/L		111	66 - 130	3	20
Carbon disulfide	5.00	5.92	*1	ug/L		118	64 - 133	29	20
Carbon tetrachloride	5.00	6.45		ug/L		129	72 - 136	14	20
Chloroform	5.00	5.05		ug/L		101	79 - 124	5	20
m-Xylene & p-Xylene	5.00	5.79		ug/L		116	80 - 121	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		85 - 114
Dibromofluoromethane (Surr)	99		80 - 119
1,2-Dichloroethane-d4 (Surr)	103		81 - 118
Toluene-d8 (Surr)	94		89 - 112

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QC Sample Results

Client: AECOM

Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

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

Lab Sample ID: MB 580-377698/1-A

Matrix: Water

Analysis Batch: 377805

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 377698

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.050	U	0.40	0.050	ug/L	01/07/22 10:46	01/08/22 14:38		1
Acenaphthylene	0.060	U	1.0	0.060	ug/L	01/07/22 10:46	01/08/22 14:38		1
Anthracene	0.050	U	1.0	0.050	ug/L	01/07/22 10:46	01/08/22 14:38		1
Benzo[a]anthracene	0.050	U	0.25	0.050	ug/L	01/07/22 10:46	01/08/22 14:38		1
Benzo[a]pyrene	0.040	U	0.25	0.040	ug/L	01/07/22 10:46	01/08/22 14:38		1
Benzo[b]fluoranthene	0.040	U	0.25	0.040	ug/L	01/07/22 10:46	01/08/22 14:38		1
Benzo[g,h,i]perylene	0.040	U	0.25	0.040	ug/L	01/07/22 10:46	01/08/22 14:38		1
Benzo[k]fluoranthene	0.050	U	0.25	0.050	ug/L	01/07/22 10:46	01/08/22 14:38		1
Bis(2-chloroethoxy)methane	0.050	U	0.60	0.050	ug/L	01/07/22 10:46	01/08/22 14:38		1
Bis(2-chloroethyl)ether	0.030	U	0.10	0.030	ug/L	01/07/22 10:46	01/08/22 14:38		1
Bis(2-ethylhexyl) phthalate	0.74	U	3.0	0.74	ug/L	01/07/22 10:46	01/08/22 14:38		1
4-Bromophenyl phenyl ether	0.060	U	0.60	0.060	ug/L	01/07/22 10:46	01/08/22 14:38		1
Butyl benzyl phthalate	0.27	U	4.0	0.27	ug/L	01/07/22 10:46	01/08/22 14:38		1
Carbazole	0.10	U	0.60	0.10	ug/L	01/07/22 10:46	01/08/22 14:38		1
4-Chloroaniline	0.59	U	2.0	0.59	ug/L	01/07/22 10:46	01/08/22 14:38		1
4-Chloro-3-methylphenol	0.13	U	0.60	0.13	ug/L	01/07/22 10:46	01/08/22 14:38		1
2-Chloronaphthalene	0.070	U	1.0	0.070	ug/L	01/07/22 10:46	01/08/22 14:38		1
2-Chlorophenol	0.050	U	1.0	0.050	ug/L	01/07/22 10:46	01/08/22 14:38		1
4-Chlorophenyl phenyl ether	0.050	U	0.60	0.050	ug/L	01/07/22 10:46	01/08/22 14:38		1
Chrysene	0.040	U	0.25	0.040	ug/L	01/07/22 10:46	01/08/22 14:38		1
Dibenz(a,h)anthracene	0.070	U	0.25	0.070	ug/L	01/07/22 10:46	01/08/22 14:38		1
Dibenzofuran	0.10	U	0.40	0.10	ug/L	01/07/22 10:46	01/08/22 14:38		1
1,2-Dichlorobenzene	0.050	U	0.40	0.050	ug/L	01/07/22 10:46	01/08/22 14:38		1
1,3-Dichlorobenzene	0.040	U	0.40	0.040	ug/L	01/07/22 10:46	01/08/22 14:38		1
1,4-Dichlorobenzene	0.040	U	0.40	0.040	ug/L	01/07/22 10:46	01/08/22 14:38		1
3,3'-Dichlorobenzidine	0.26	U	1.0	0.26	ug/L	01/07/22 10:46	01/08/22 14:38		1
2,4-Dichlorophenol	0.20	U	1.0	0.20	ug/L	01/07/22 10:46	01/08/22 14:38		1
Diethyl phthalate	0.15	U	1.0	0.15	ug/L	01/07/22 10:46	01/08/22 14:38		1
2,4-Dimethylphenol	0.16	U	4.0	0.16	ug/L	01/07/22 10:46	01/08/22 14:38		1
Dimethyl phthalate	0.060	U	0.60	0.060	ug/L	01/07/22 10:46	01/08/22 14:38		1
Di-n-butyl phthalate	0.19	U	3.0	0.19	ug/L	01/07/22 10:46	01/08/22 14:38		1
4,6-Dinitro-2-methylphenol	0.55	U	2.0	0.55	ug/L	01/07/22 10:46	01/08/22 14:38		1
2,4-Dinitrophenol	1.6	U	5.0	1.6	ug/L	01/07/22 10:46	01/08/22 14:38		1
2,4-Dinitrotoluene	0.10	U	1.0	0.10	ug/L	01/07/22 10:46	01/08/22 14:38		1
2,6-Dinitrotoluene	0.10	U	0.40	0.10	ug/L	01/07/22 10:46	01/08/22 14:38		1
Di-n-octyl phthalate	0.13	U	1.0	0.13	ug/L	01/07/22 10:46	01/08/22 14:38		1
Fluoranthene	0.060	U	0.25	0.060	ug/L	01/07/22 10:46	01/08/22 14:38		1
Fluorene	0.050	U	0.25	0.050	ug/L	01/07/22 10:46	01/08/22 14:38		1
Hexachlorobenzene	0.040	U	0.60	0.040	ug/L	01/07/22 10:46	01/08/22 14:38		1
Hexachlorobutadiene	0.060	U	1.0	0.060	ug/L	01/07/22 10:46	01/08/22 14:38		1
Hexachlorocyclopentadiene	0.14	U	1.0	0.14	ug/L	01/07/22 10:46	01/08/22 14:38		1
Hexachloroethane	0.050	U	1.0	0.050	ug/L	01/07/22 10:46	01/08/22 14:38		1
Indeno[1,2,3-cd]pyrene	0.13	U	0.40	0.13	ug/L	01/07/22 10:46	01/08/22 14:38		1
Isophorone	0.10	U	0.40	0.10	ug/L	01/07/22 10:46	01/08/22 14:38		1
2-Methylphenol	0.050	U	0.60	0.050	ug/L	01/07/22 10:46	01/08/22 14:38		1
3 & 4 Methylphenol	0.10	U	0.60	0.10	ug/L	01/07/22 10:46	01/08/22 14:38		1
Naphthalene	0.16	U	0.40	0.16	ug/L	01/07/22 10:46	01/08/22 14:38		1
2-Nitroaniline	0.10	U	1.0	0.10	ug/L	01/07/22 10:46	01/08/22 14:38		1

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QC Sample Results

Client: AECOM
Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

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

Lab Sample ID: MB 580-377698/1-A

Matrix: Water

Analysis Batch: 377805

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 377698

Analyte	MB		RL	MDL	Unit	D	Prepared		Analyzed	Dil Fac
	Result	Qualifier					Prepared	Analyzed		
3-Nitroaniline	0.16	U	3.0	0.16	ug/L		01/07/22 10:46	01/08/22 14:38		1
4-Nitroaniline	0.21	U	2.0	0.21	ug/L		01/07/22 10:46	01/08/22 14:38		1
Nitrobenzene	0.040	U	1.0	0.040	ug/L		01/07/22 10:46	01/08/22 14:38		1
4-Nitrophenol	1.7	U	10	1.7	ug/L		01/07/22 10:46	01/08/22 14:38		1
N-Nitrosodi-n-propylamine	0.060	U	0.40	0.060	ug/L		01/07/22 10:46	01/08/22 14:38		1
N-Nitrosodiphenylamine	0.070	U	1.0	0.070	ug/L		01/07/22 10:46	01/08/22 14:38		1
Pentachlorophenol	0.51	U	10	0.51	ug/L		01/07/22 10:46	01/08/22 14:38		1
Phenanthrene	0.12	U	1.0	0.12	ug/L		01/07/22 10:46	01/08/22 14:38		1
Phenol	0.36	U	1.0	0.36	ug/L		01/07/22 10:46	01/08/22 14:38		1
Pyrene	0.040	U	1.0	0.040	ug/L		01/07/22 10:46	01/08/22 14:38		1
1,2,4-Trichlorobenzene	0.090	U	0.40	0.090	ug/L		01/07/22 10:46	01/08/22 14:38		1
2,4,5-Trichlorophenol	0.10	U	0.40	0.10	ug/L		01/07/22 10:46	01/08/22 14:38		1
2,4,6-Trichlorophenol	0.10	U	0.60	0.10	ug/L		01/07/22 10:46	01/08/22 14:38		1

Surrogate	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2-Fluorobiphenyl	60		44 - 119		01/07/22 10:46	01/08/22 14:38
2-Fluorophenol (Surr)	32		19 - 119		01/07/22 10:46	01/08/22 14:38
Nitrobenzene-d5 (Surr)	60		44 - 120		01/07/22 10:46	01/08/22 14:38
Phenol-d5 (Surr)	20		10 - 120		01/07/22 10:46	01/08/22 14:38
Terphenyl-d14	95		50 - 134		01/07/22 10:46	01/08/22 14:38
2,4,6-Tribromophenol	53		43 - 140		01/07/22 10:46	01/08/22 14:38

Lab Sample ID: LCS 580-377698/2-A

Matrix: Water

Analysis Batch: 377805

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 377698

Analyte	Spike Added	LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Acenaphthene	2.00	1.24		ug/L		62	47 - 122
Acenaphthylene	2.00	1.26		ug/L		63	41 - 130
Anthracene	2.00	1.40		ug/L		70	57 - 123
Benzo[a]anthracene	2.00	1.62		ug/L		81	58 - 125
Benzo[a]pyrene	2.00	1.61		ug/L		80	54 - 128
Benzo[b]fluoranthene	2.00	1.41		ug/L		70	53 - 131
Benzo[g,h,i]perylene	2.00	1.57		ug/L		79	50 - 134
Benzo[k]fluoranthene	2.00	1.79		ug/L		89	57 - 129
Bis(2-chloroethoxy)methane	2.00	1.39		ug/L		69	48 - 120
Bis(2-ethylhexyl) phthalate	2.00	1.85 J		ug/L		93	55 - 135
4-Bromophenyl phenyl ether	2.00	1.36		ug/L		68	55 - 124
Butyl benzyl phthalate	2.00	1.88 J		ug/L		94	53 - 134
Carbazole	2.00	1.71		ug/L		85	60 - 122
4-Chloroaniline	2.00	0.922 J		ug/L		46	33 - 117
4-Chloro-3-methylphenol	2.00	1.29		ug/L		64	52 - 119
2-Chloronaphthalene	2.00	1.38		ug/L		69	40 - 116
2-Chlorophenol	2.00	1.26		ug/L		63	38 - 117
4-Chlorophenyl phenyl ether	2.00	1.35		ug/L		68	53 - 121
Chrysene	2.00	1.82		ug/L		91	59 - 123
Dibenz(a,h)anthracene	2.00	1.56		ug/L		78	51 - 134
Dibenzofuran	2.00	1.45		ug/L		73	53 - 118

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QC Sample Results

Client: AECOM

Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

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

Lab Sample ID: LCS 580-377698/2-A

Matrix: Water

Analysis Batch: 377805

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 377698

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	Limits
1,2-Dichlorobenzene	2.00	1.12		ug/L	56	32 - 111		
1,3-Dichlorobenzene	2.00	1.10		ug/L	55	28 - 110		
1,4-Dichlorobenzene	2.00	1.07		ug/L	53	29 - 112		
3,3'-Dichlorobenzidine	4.00	3.32		ug/L	83	27 - 129		
2,4-Dichlorophenol	2.00	1.14		ug/L	57	47 - 121		
Diethyl phthalate	2.00	1.74		ug/L	87	56 - 125		
2,4-Dimethylphenol	2.00	1.37	J	ug/L	69	31 - 124		
Dimethyl phthalate	2.00	1.54		ug/L	77	45 - 127		
Di-n-butyl phthalate	2.00	1.68	J	ug/L	84	59 - 127		
4,6-Dinitro-2-methylphenol	4.00	2.56		ug/L	64	44 - 137		
2,4-Dinitrophenol	4.00	2.71	J	ug/L	68	23 - 143		
2,4-Dinitrotoluene	2.00	1.43		ug/L	71	57 - 128		
2,6-Dinitrotoluene	2.00	1.39		ug/L	70	57 - 124		
Di-n-octyl phthalate	2.00	1.72		ug/L	86	51 - 140		
Fluoranthene	2.00	1.61		ug/L	80	57 - 128		
Fluorene	2.00	1.42		ug/L	71	52 - 124		
Hexachlorobenzene	2.00	1.30		ug/L	65	53 - 125		
Hexachlorobutadiene	2.00	0.999	J	ug/L	50	22 - 124		
Hexachlorocyclopentadiene	2.00	0.718	J	ug/L	36	20 - 125		
Hexachloroethane	2.00	1.12		ug/L	56	21 - 115		
Indeno[1,2,3-cd]pyrene	2.00	1.73		ug/L	87	52 - 134		
Isophorone	2.00	1.34		ug/L	67	42 - 124		
2-Methylphenol	2.00	1.08		ug/L	54	30 - 117		
3 & 4 Methylphenol	2.00	1.16		ug/L	58	29 - 110		
Naphthalene	2.00	1.20		ug/L	60	40 - 121		
2-Nitroaniline	2.00	1.31		ug/L	65	55 - 127		
3-Nitroaniline	2.00	1.30	J	ug/L	65	41 - 128		
4-Nitroaniline	2.00	1.45	J	ug/L	73	70 - 125		
Nitrobenzene	2.00	1.40		ug/L	70	45 - 121		
4-Nitrophenol	4.00	2.03	J	ug/L	51	35 - 145		
N-Nitrosodi-n-propylamine	2.00	1.44		ug/L	72	49 - 119		
N-Nitrosodiphenylamine	2.00	1.36		ug/L	68	51 - 123		
Pentachlorophenol	4.00	1.95	J	ug/L	49	35 - 138		
Phenanthrene	2.00	1.38		ug/L	69	59 - 120		
Phenol	2.00	0.573	J	ug/L	29	13 - 120		
Pyrene	2.00	1.62		ug/L	81	57 - 126		
1,2,4-Trichlorobenzene	2.00	1.17		ug/L	58	29 - 116		
2,4,5-Trichlorophenol	2.00	1.49		ug/L	74	53 - 123		
2,4,6-Trichlorophenol	2.00	1.24		ug/L	62	50 - 125		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	66		44 - 119
2-Fluorophenol (Surr)	42		19 - 119
Nitrobenzene-d5 (Surr)	70		44 - 120
Phenol-d5 (Surr)	25		10 - 120
Terphenyl-d14	90		50 - 134
2,4,6-Tribromophenol	72		43 - 140

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QC Sample Results

Client: AECOM

Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

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

Lab Sample ID: LCSD 580-377698/3-A

Matrix: Water

Analysis Batch: 377805

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 377698

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	2.00	1.47		ug/L		74	47 - 122	17	20
Acenaphthylene	2.00	1.43		ug/L		71	41 - 130	13	20
Anthracene	2.00	1.45		ug/L		72	57 - 123	3	20
Benzo[a]anthracene	2.00	1.51		ug/L		75	58 - 125	7	20
Benzo[a]pyrene	2.00	1.64		ug/L		82	54 - 128	2	20
Benzo[b]fluoranthene	2.00	1.72		ug/L		86	53 - 131	20	20
Benzo[g,h,i]perylene	2.00	1.69		ug/L		84	50 - 134	7	20
Benzo[k]fluoranthene	2.00	1.59		ug/L		79	57 - 129	12	20
Bis(2-chloroethoxy)methane	2.00	1.63		ug/L		81	48 - 120	16	20
Bis(2-ethylhexyl) phthalate	2.00	1.79 J		ug/L		90	55 - 135	3	20
4-Bromophenyl phenyl ether	2.00	1.47		ug/L		73	55 - 124	7	20
Butyl benzyl phthalate	2.00	1.74 J		ug/L		87	53 - 134	8	20
Carbazole	2.00	1.69		ug/L		84	60 - 122	1	20
4-Chloroaniline	2.00	1.03 J		ug/L		52	33 - 117	11	20
4-Chloro-3-methylphenol	2.00	1.42		ug/L		71	52 - 119	10	20
2-Chloronaphthalene	2.00	1.46		ug/L		73	40 - 116	6	20
2-Chlorophenol	2.00	1.46		ug/L		73	38 - 117	15	20
4-Chlorophenyl phenyl ether	2.00	1.49		ug/L		75	53 - 121	10	20
Chrysene	2.00	1.73		ug/L		87	59 - 123	5	20
Dibenz(a,h)anthracene	2.00	1.57		ug/L		79	51 - 134	1	20
Dibenzofuran	2.00	1.58		ug/L		79	53 - 118	8	20
1,2-Dichlorobenzene	2.00	1.30		ug/L		65	32 - 111	15	20
1,3-Dichlorobenzene	2.00	1.24		ug/L		62	28 - 110	12	20
1,4-Dichlorobenzene	2.00	1.27		ug/L		63	29 - 112	17	20
3,3'-Dichlorobenzidine	4.00	3.13		ug/L		78	27 - 129	6	20
2,4-Dichlorophenol	2.00	1.29		ug/L		65	47 - 121	13	20
Diethyl phthalate	2.00	1.77		ug/L		88	56 - 125	2	20
2,4-Dimethylphenol	2.00	1.64 J		ug/L		82	31 - 124	17	20
Dimethyl phthalate	2.00	1.67		ug/L		83	45 - 127	8	20
Di-n-butyl phthalate	2.00	1.69 J		ug/L		84	59 - 127	0	20
4,6-Dinitro-2-methylphenol	4.00	2.35		ug/L		59	44 - 137	9	20
2,4-Dinitrophenol	4.00	2.33 J		ug/L		58	23 - 143	15	20
2,4-Dinitrotoluene	2.00	1.55		ug/L		77	57 - 128	8	20
2,6-Dinitrotoluene	2.00	1.50		ug/L		75	57 - 124	7	20
Di-n-octyl phthalate	2.00	1.75		ug/L		88	51 - 140	2	20
Fluoranthene	2.00	1.64		ug/L		82	57 - 128	2	20
Fluorene	2.00	1.60		ug/L		80	52 - 124	12	20
Hexachlorobenzene	2.00	1.39		ug/L		70	53 - 125	7	20
Hexachlorobutadiene	2.00	1.16		ug/L		58	22 - 124	15	20
Hexachlorocyclopentadiene	2.00	0.855 J		ug/L		43	20 - 125	17	20
Hexachloroethane	2.00	1.34		ug/L		67	21 - 115	18	20
Indeno[1,2,3-cd]pyrene	2.00	1.71		ug/L		85	52 - 134	1	20
Isophorone	2.00	1.61		ug/L		81	42 - 124	18	20
2-Methylphenol	2.00	1.31		ug/L		66	30 - 117	20	20
3 & 4 Methylphenol	2.00	1.09		ug/L		55	29 - 110	6	20
Naphthalene	2.00	1.35		ug/L		68	40 - 121	12	20
2-Nitroaniline	2.00	1.50		ug/L		75	55 - 127	14	20
3-Nitroaniline	2.00	1.37 J		ug/L		69	41 - 128	6	20

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QC Sample Results

Client: AECOM

Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

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

Lab Sample ID: LCSD 580-377698/3-A

Matrix: Water

Analysis Batch: 377805

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 377698

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.	RPD	RPD Limit
4-Nitroaniline	2.00	1.83	J *1	ug/L	92	70 - 125	23	20	
Nitrobenzene	2.00	1.70		ug/L	85	45 - 121	19	20	
4-Nitrophenol	4.00	1.7	U *- *1	ug/L	32	35 - 145	44	20	
N-Nitrosodi-n-propylamine	2.00	1.76		ug/L	88	49 - 119	20	20	
N-Nitrosodiphenylamine	2.00	1.48		ug/L	74	51 - 123	9	20	
Pentachlorophenol	4.00	1.84	J	ug/L	46	35 - 138	6	20	
Phenanthrene	2.00	1.49		ug/L	74	59 - 120	8	20	
Phenol	2.00	0.667	J	ug/L	33	13 - 120	15	20	
Pyrene	2.00	1.61		ug/L	81	57 - 126	1	20	
1,2,4-Trichlorobenzene	2.00	1.36		ug/L	68	29 - 116	15	20	
2,4,5-Trichlorophenol	2.00	1.59		ug/L	79	53 - 123	7	20	
2,4,6-Trichlorophenol	2.00	1.37		ug/L	68	50 - 125	10	20	

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	71		44 - 119
2-Fluorophenol (Surr)	51		19 - 119
Nitrobenzene-d5 (Surr)	78		44 - 120
Phenol-d5 (Surr)	30		10 - 120
Terphenyl-d14	90		50 - 134
2,4,6-Tribromophenol	76		43 - 140

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

Lab Sample ID: MB 580-377700/1-A

Matrix: Water

Analysis Batch: 377794

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 377700

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
C9-C25	90	U	110	90	ug/L	01/07/22 10:54	01/07/22 20:31		1	
C24-C40	180	U	350	180	ug/L	01/07/22 10:54	01/07/22 20:31		1	
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac	
<i>o</i> -Terphenyl	88		56 - 125				01/07/22 10:54	01/07/22 20:31		1

Lab Sample ID: LCS 580-377700/2-A

Matrix: Water

Analysis Batch: 377794

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 377700

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	
C9-C25	4000	2870		ug/L	72	36 - 132		
C24-C40	4000	3620		ug/L	91	41 - 113		
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
<i>o</i> -Terphenyl	77		56 - 125					

Eurofins Seattle

QC Sample Results

Client: AECOM

Job ID: 580-109054-1

Project/Site: Red Hill CV22F0106

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

Lab Sample ID: LCSD 580-377700/3-A**Client Sample ID: Lab Control Sample Dup****Matrix: Water****Prep Type: Total/NA****Analysis Batch: 377794****Prep Batch: 377700**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C9-C25	4000	2890		ug/L		72	36 - 132	1	20
C24-C40	4000	3570		ug/L		89	41 - 113	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o-Terphenyl</i>	76		56 - 125

Eurofins Seattle

Lab Chronicle

Client: AECOM
Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

Client Sample ID: 20220105-C1-ZT03

Lab Sample ID: 580-109054-1

Matrix: Water

Date Collected: 01/05/22 15:35
Date Received: 01/07/22 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260/CALUFT DOD		1	377719	01/07/22 18:56	JSM	FGS SEA
Total/NA	Analysis	8260D		1	377771	01/07/22 18:56	JSM	FGS SEA
Total/NA	Analysis	8260D	RA	1	377897	01/10/22 14:56	B1M	FGS SEA
Total/NA	Prep	3510C			377698	01/07/22 15:14	M1E	FGS SEA
Total/NA	Analysis	8270E		1	377805	01/08/22 19:58	TL1	FGS SEA
Total/NA	Prep	3510C			377700	01/07/22 15:12	M1E	FGS SEA
Total/NA	Analysis	8015D DRO		1	377794	01/08/22 01:13	JAE	FGS SEA

Client Sample ID: 20220106-D3-ZT02

Lab Sample ID: 580-109054-2

Matrix: Water

Date Collected: 01/06/22 13:10
Date Received: 01/07/22 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260/CALUFT DOD		1	377829	01/08/22 16:56	CJ	FGS SEA

Client Sample ID: 20220106-D3-ZT03

Lab Sample ID: 580-109054-3

Matrix: Water

Date Collected: 01/06/22 13:15
Date Received: 01/07/22 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260/CALUFT DOD		1	377829	01/08/22 17:20	CJ	FGS SEA
Total/NA	Prep	3510C			377700	01/07/22 15:12	M1E	FGS SEA
Total/NA	Analysis	8015D DRO		1	377794	01/08/22 01:33	JAE	FGS SEA

Laboratory References:

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

Eurofins Seattle

Accreditation/Certification Summary

Client: AECOM
Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

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 8260D	Prep Method	Matrix Water	Analyte 1,2-Dichloroethene, Total

Sample Summary

Client: AECOM

Project/Site: Red Hill CV22F0106

Job ID: 580-109054-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-109054-1	20220105-C1-ZT03	Water	01/05/22 15:35	01/07/22 11:00
580-109054-2	20220106-D3-ZT02	Water	01/06/22 13:10	01/07/22 11:00
580-109054-3	20220106-D3-ZT03	Water	01/06/22 13:15	01/07/22 11:00

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580-109054 Chain of Custody

Chain of Custody Record

eurofins

Environment Testing
America

		Sampler: AECOM	Lab PM: Elaine Walker		Carrier Tracking No(s): FedEx		COC No: 01062022 DW - 01		
Alethea Ramos (alternate: Margie Pascua)		Phone:	E-Mail: M.Elaine.Walker@EurofinsET.com	State of Origin: Hawaii		Page: Page 1 of 1	Job #:		
Company: AECOM		PWSID:	Analysis Requested						
Address: 1001 Bishop St. Suite 1600		Due Date Requested: see subcontract				Preservation Codes:			
City: Honolulu		TAT Requested (days): <i>48hrs</i>				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:			
State, Zip: Hawaii 96813		Compliance Project: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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#:							
Sample Identification		Sample Date <i>20220105-C1-ZT03</i>	Sample Time <i>1/5/22 1535</i>	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=tissue, A=air)	Field Filtered Sample (Yes or No)	Parom MSDS (Yes or No)	Total Number of containers	Special Instructions/Note:
					<input checked="" type="checkbox"/>	A <input checked="" type="checkbox"/> I <input type="checkbox"/>	<input type="checkbox"/>		
					<input checked="" type="checkbox"/>	EPA 8260 TPH-g (HCl) <i>4 UU/C's</i>	<input type="checkbox"/>		
					<input checked="" type="checkbox"/>	EPA 8270 SVOCs (none)	<input type="checkbox"/>		
					<input checked="" type="checkbox"/>	EPA 8015 TPH-dlo	<input type="checkbox"/>		
Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)							
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> 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 FQuIS FDD							
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:					
Relinquished by: <i>South Wk</i>	Date/Time: <i>1/5/22 16:15</i>	Company: AECOM	Received by: <i>Thomas Aquilo Jr</i>	Date/Time: <i>01/03/22 16:15</i>	Company: AECOM				
Relinquished by: <i>Thomas Aquilo Jr</i>	Date/Time: <i>01/06/22 12:00</i>	Company: AECOM	Received by: <i>JG</i>	Date/Time: <i>1/7/22 11:00</i>	Company: EEGS				
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:				
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: Cooler Temperature(s) °C and Other Remarks: V1/15/2022 (Rev. 1)							

Chain of Custody Record

Client Information		Sampler: AECOM		Lab PM: Elaine Walker		Carrier Tracking No(s): FedEx		COC No: C1062e22DW-05				
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 #:		
Address: 1001 Bishop St. Suite 1600		Due Date Requested: see subcontract								Preservation Codes:		
City: Honolulu		TAT Requested (days): <i>Rush (2 days)</i>								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:		
State, Zip: Hawaii 96813		Compliance Project: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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#:										
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix (W=water, S=solid, O=waste/oil, B=tissue, A=Air)	Field Filtered Sample (Yes or No)	Paron (MSMSD) (Yes or No)	TPE 8260 4060 TPH-g (HCl)	EPA 8270 SVOCs (none)	EPA 8015 TPH-dlo	Total Number of containers	Special Instructions/Note:
20220106-D3-ZT02		01/06/22	1310	G	W	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2	
20220106-D3-ZT03		01/06/22	1315	G	W	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5	
<i>fa</i> <i>01/06/22</i>												
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months						
Deliverable Requested: I, II, III, IV, Other (specify)						Prelim data (Level 1 or 2)=see TAT above. DoD Stage 4 report standard TAT, AECOM EQULS FDD.						
Empty Kit Relinquished by:						Date:	Time:		Method of Shipment:			
Relinquished by: <i>Thomas Aguilo Aguilas</i>		Date/Time: 01/06/22 1350	Company: AECOM		Received by: <i>fa</i>	Date/Time: 1/7/21 1100	Company: EGGS					
Relinquished by:		Date/Time:	Company		Received by:	Date/Time:	Company					
Relinquished by:		Date/Time:	Company		Received by:	Date/Time:	Company					
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:										

48 hr

Therm. ID: A2 Cor: -0.7 ° Unc: 0.0 °
Cooler Dsc: 91 FedEx: PD
Packing: Blub UPS:
Cust. Seal: Yes No Lab Cour:
Blue Ice, Wet Dry, None Other:

48 hr

Therm. ID: A2 Cor: -0.2 ° Unc: 0.5 °
Cooler Dsc: 7605 FedEx: PD
Packing: Blub UPS:
Cust. Seal: Yes No Lab Cour:
Blue Ice, Wet Dry, None Other:

Standard

Therm. ID: TPA Cor: -0.0 ° Unc: -1.1 °
Cooler Dsc: 03 FedEx: PD
Packing: Blub UPS:
Cust. Seal: Yes No Lab Cour:
Blue Ice, Wet Dry, None Other:

Std

Therm. ID: A2 Cor: -0.7 ° Unc: 0.0 °
Cooler Dsc: 04 FedEx: PD
Packing: Blub UPS:
Cust. Seal: Yes No Lab Cour:
Blue Ice, Wet Dry, None Other:

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-109054-1

Login Number: 109054

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	

Certificate of Analysis

FINAL REPORT

Work Orders: 2A08002

Report Date: 1/12/2022

Received Date: 01/08/2022

Project: 60674414, COC # 01062022 DW-06

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

Billing Code:

1001 Bishop Street Suite 1600
Honolulu, HI 96813

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 1/08/22 with the Chain-of-Custody document. The samples were received in good condition, at 3.1 °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:



Kim G. Tu
Project Manager

2A08002





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

Certificate of Analysis

FINAL REPORT

Project Number: 60674414, COC # 01062022 DW-06

Reported:

01/12/2022 15:28

Project Manager: Margie Pascua

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
20220106-D3-ZT04	AECOM	2A08002-01	Water	01/06/22 15:25	
20220106-D3-ZT06	AECOM	2A08002-02	Water	01/06/22 15:30	



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

Certificate of Analysis

FINAL REPORT

Project Number: 60674414, COC # 01062022 DW-06

Reported:

01/12/2022 15:28

Project Manager: Margie Pascua

Sample Results

Sample: 20220106-D3-ZT04 Sampled: 01/06/22 15:25 by AECOM
2A08002-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Volatile Organic Compounds by P&T and GC/MS							
Method: EPA 524.2			Instr: GCMS14				
Batch ID: W2A0422	Preparation: Method (P+T)		Prepared: 01/09/22 09:16				Analyst: cam
1,1,1-Trichloroethane	ND	0.26	0.50	ug/l	1	01/09/22	U
1,1,2-Trichloroethane	ND	0.19	0.50	ug/l	1	01/09/22	U
1,1-Dichloroethene	ND	0.16	0.50	ug/l	1	01/09/22	U
1,2,4-Trichlorobenzene	ND	0.17	0.50	ug/l	1	01/09/22	U
1,2-Dichloroethane	ND	0.24	0.50	ug/l	1	01/09/22	U
1,2-Dichloropropane	ND	0.13	0.50	ug/l	1	01/09/22	U
Benzene	ND	0.15	0.50	ug/l	1	01/09/22	U
Carbon tetrachloride	ND	0.27	0.50	ug/l	1	01/09/22	U
Chlorobenzene	ND	0.15	0.50	ug/l	1	01/09/22	U
cis-1,2-Dichloroethene	ND	0.25	0.50	ug/l	1	01/09/22	U
Ethylbenzene	ND	0.21	0.50	ug/l	1	01/09/22	U
m,p-Xylene	ND	0.33	0.50	ug/l	1	01/09/22	U
Methylene chloride	ND	0.30	0.50	ug/l	1	01/09/22	U
o-Dichlorobenzene	ND	0.19	0.50	ug/l	1	01/09/22	U
o-Xylene	ND	0.20	0.50	ug/l	1	01/09/22	U
p-Dichlorobenzene	ND	0.18	0.50	ug/l	1	01/09/22	U
Styrene	ND	0.19	0.50	ug/l	1	01/09/22	U
Tetrachloroethene	ND	0.18	0.50	ug/l	1	01/09/22	U
THMs, Total	ND		0.50	ug/l	1	01/09/22	U
Toluene	ND	0.29	0.50	ug/l	1	01/09/22	U
trans-1,2-Dichloroethene	ND	0.26	0.50	ug/l	1	01/09/22	U
Trichloroethene	ND	0.18	0.50	ug/l	1	01/09/22	U
Vinyl chloride	ND	0.18	0.50	ug/l	1	01/09/22	U
Surrogate(s)							
1,2-Dichlorobenzene-d4	94%	Conc: 9.43	70-130			01/09/22	
4-Bromofluorobenzene	93%	Conc: 9.30	70-130			01/09/22	

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

Certificate of Analysis

FINAL REPORT

Project Number: 60674414, COC # 01062022 DW-06

Reported:
 01/12/2022 15:28

Project Manager: Margie Pascua

(Continued)

Sample Results

Sample:	20220106-D3-ZT06 2A08002-02 (Water)	Sampled: 01/06/22 15:30 by AECOM					
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Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Chlorinated Pesticides and/or PCBs by GC/ECD							
Method: EPA 508.1			Instr: GC08				
Batch ID: W2A0524	Preparation: Method (SPE)		Prepared: 01/08/22 12:31				Analyst: rjg
Aroclor 1016	ND	0.016	0.10	ug/l	1	01/10/22	U
Aroclor 1221	ND	0.044	0.10	ug/l	1	01/10/22	U
Aroclor 1232	ND	0.010	0.10	ug/l	1	01/10/22	U
Aroclor 1242	ND	0.074	0.10	ug/l	1	01/10/22	U
Aroclor 1248	ND	0.094	0.10	ug/l	1	01/10/22	U
Aroclor 1254	ND	0.087	0.10	ug/l	1	01/10/22	U
Aroclor 1260	ND	0.038	0.10	ug/l	1	01/10/22	U
Chlordane (tech)	ND	0.067	0.10	ug/l	1	01/10/22	U
PCBs, Total	ND		0.50	ug/l	1	01/10/22	U
Surrogate(s)							
4,4-Dibromobiphenyl	134%	Conc: 0.128	70-130			01/10/22	S-03

Method: SM 5310B	Instr: TOC02
Batch ID: W2A0446	Prepared: 01/07/22 09:18
Total Organic Carbon (TOC)	ND 0.19 0.30 mg/l 1 01/12/22

Method: EPA 200.8	Instr: ICPOMS04
Batch ID: W2A0526	Prepared: 01/08/22 14:00
Antimony, Total	ND 0.089 0.50 ug/l 1 01/10/22
Arsenic, Total	ND 0.074 0.40 ug/l 1 01/10/22
Barium, Total	2.0 0.14 1.0 ug/l 1 01/10/22
Beryllium, Total	ND 0.062 0.10 ug/l 1 01/10/22
Cadmium, Total	ND 0.042 0.20 ug/l 1 01/10/22
Chromium, Total	1.5 0.089 0.20 ug/l 1 01/10/22
Copper, Total	4.1 0.23 0.50 ug/l 1 01/10/22
Lead, Total	0.35 0.083 0.20 ug/l 1 01/10/22
Selenium, Total	ND 0.067 0.40 ug/l 1 01/10/22
Thallium, Total	ND 0.021 0.20 ug/l 1 01/10/22

Method: EPA 245.1	Instr: HG03
Batch ID: W2A0552	Prepared: 01/10/22 09:22
Mercury, Total	ND 0.017 0.050 ug/l 1 01/10/22

Method: EPA 525.2	Instr: GCMS16
Batch ID: W2A0525	Prepared: 01/08/22 12:37
1-Methylnaphthalene	ND 0.0080 0.050 ug/l 1 01/10/22
2-Methylnaphthalene	ND 0.0090 0.050 ug/l 1 01/10/22



Certificate of Analysis

FINAL REPORT

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

Project Number: 60674414, COC # 01062022 DW-06

Reported:
01/12/2022 15:28

Project Manager: Margie Pascua

(Continued)

Sample Results

Sample: 20220106-D3-ZT06

Sampled: 01/06/22 15:30 by AECOM

2A08002-02 (Water)

(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
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Semivolatile Organic Compounds by GC/MS (Continued)

Method: EPA 525.2			Instr: GCMS16				
Batch ID: W2A0525	Preparation: Method (SPE)		Prepared: 01/08/22 12:37				Analyst: rmr
Alachlor		ND	0.011	0.10	ug/l	1	01/10/22
Atrazine		ND	0.0073	0.10	ug/l	1	01/10/22
Benzo (a) pyrene		ND	0.012	0.050	ug/l	1	01/10/22
Bis(2-ethylhexyl)adipate	0.036	0.0096	5.0	ug/l	1	01/10/22	J
Bis(2-ethylhexyl)phthalate		ND	0.44	3.0	ug/l	1	01/10/22
Endrin		ND	0.0099	0.20	ug/l	1	01/10/22
gamma-BHC (Lindane)		ND	0.0063	0.10	ug/l	1	01/10/22
Heptachlor		ND	0.0096	0.10	ug/l	1	01/10/22
Heptachlor epoxide		ND	0.012	0.10	ug/l	1	01/10/22
Hexachlorobenzene		ND	0.098	0.10	ug/l	1	01/10/22
Hexachlorocyclopentadiene		ND	0.0059	1.0	ug/l	1	01/10/22
Methoxychlor		ND	0.0086	0.20	ug/l	1	01/10/22
Naphthalene		ND	0.010	0.050	ug/l	1	01/10/22
Pentachlorophenol		ND	0.024	1.0	ug/l	1	01/10/22
Simazine		ND	0.0073	0.10	ug/l	1	01/10/22
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene		110%	Conc: 0.528	70-130			01/10/22
Perylene-d12		119%	Conc: 0.570	70-130			01/10/22
Triphenyl phosphate		150%	Conc: 0.717	70-130			01/10/22
							S-11

Volatile Organic Compounds by P&T and GC/MS

Method: EPA 524.2			Instr: GCMS14				
Batch ID: W2A0422	Preparation: Method (P+T)		Prepared: 01/09/22 09:16				Analyst: cam
1,1,1-Trichloroethane		ND	0.26	0.50	ug/l	1	01/09/22
1,1,2-Trichloroethane		ND	0.19	0.50	ug/l	1	01/09/22
1,1-Dichloroethene		ND	0.16	0.50	ug/l	1	01/09/22
1,2,4-Trichlorobenzene		ND	0.17	0.50	ug/l	1	01/09/22
1,2-Dichloroethane		ND	0.24	0.50	ug/l	1	01/09/22
1,2-Dichloropropane		ND	0.13	0.50	ug/l	1	01/09/22
Benzene		ND	0.15	0.50	ug/l	1	01/09/22
Carbon tetrachloride		ND	0.27	0.50	ug/l	1	01/09/22
Chlorobenzene		ND	0.15	0.50	ug/l	1	01/09/22
cis-1,2-Dichloroethene		ND	0.25	0.50	ug/l	1	01/09/22
Ethylbenzene		ND	0.21	0.50	ug/l	1	01/09/22
m,p-Xylene		ND	0.33	0.50	ug/l	1	01/09/22
Methylene chloride		ND	0.30	0.50	ug/l	1	01/09/22
o-Dichlorobenzene		ND	0.19	0.50	ug/l	1	01/09/22

2A08002

Page 5 of 14



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

Certificate of Analysis

FINAL REPORT

Project Number: 60674414, COC # 01062022 DW-06

Reported:
01/12/2022 15:28

Project Manager: Margie Pascua

(Continued)

Sample Results

Sample: 20220106-D3-ZT06
2A08002-02 (Water) Sampled: 01/06/22 15:30 by AECOM

(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Volatile Organic Compounds by P&T and GC/MS (Continued)							
Method: EPA 524.2			Instr: GCMS14				
Batch ID: W2A0422	Preparation: Method (P+T)		Prepared: 01/09/22 09:16				Analyst: cam
o-Xylene	ND	0.20	0.50	ug/l	1	01/09/22	U
p-Dichlorobenzene	ND	0.18	0.50	ug/l	1	01/09/22	U
Styrene	ND	0.19	0.50	ug/l	1	01/09/22	U
Tetrachloroethene	ND	0.18	0.50	ug/l	1	01/09/22	U
THMs, Total	ND		0.50	ug/l	1	01/09/22	U
Toluene	ND	0.29	0.50	ug/l	1	01/09/22	U
trans-1,2-Dichloroethene	ND	0.26	0.50	ug/l	1	01/09/22	U
Trichloroethene	ND	0.18	0.50	ug/l	1	01/09/22	U
Vinyl chloride	ND	0.18	0.50	ug/l	1	01/09/22	U
<i>Surrogate(s)</i>							
1,2-Dichlorobenzene-d4	93%	Conc: 9.26	70-130			01/09/22	
4-Bromofluorobenzene	90%	Conc: 9.03	70-130			01/09/22	



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Honolulu, HI 96813

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FINAL REPORT

Project Number: 60674414, COC # 01062022 DW-06

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01/12/2022 15:28

Project Manager: Margie Pascua

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: W2A0524 - EPA 508.1											
Blank (W2A0524-BLK1)						Prepared: 01/08/22 Analyzed: 01/10/22					
Aroclor 1016	ND	0.016	0.10	ug/l							U
Aroclor 1221	ND	0.044	0.10	ug/l							U
Aroclor 1232	ND	0.010	0.10	ug/l							U
Aroclor 1242	ND	0.074	0.10	ug/l							U
Aroclor 1248	ND	0.094	0.10	ug/l							U
Aroclor 1254	ND	0.087	0.10	ug/l							U
Aroclor 1260	ND	0.038	0.10	ug/l							U
Chlordane (tech)	ND	0.067	0.10	ug/l							U
PCBs, Total	ND		0.50	ug/l							U
<i>Surrogate(s)</i>											
4,4-Dibromobiphenyl	0.129			ug/l	0.100		129	70-130			
LCS (W2A0524-BS1)											
Aroclor 1016	0.479	0.016	0.10	ug/l	0.500		96	70-130			
Aroclor 1260	0.513	0.038	0.10	ug/l	0.500		103	70-130			
<i>Surrogate(s)</i>											
4,4-Dibromobiphenyl	0.121			ug/l	0.100		121	70-130			
LCS Dup (W2A0524-BSD1)											
Aroclor 1016	0.409	0.016	0.10	ug/l	0.500		82	70-130	16	30	
Aroclor 1260	0.501	0.038	0.10	ug/l	0.500		100	70-130	2	30	
<i>Surrogate(s)</i>											
4,4-Dibromobiphenyl	0.123			ug/l	0.100		123	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: W2A0446 - SM 5310B											
Blank (W2A0446-BLK1)						Prepared: 01/07/22 Analyzed: 01/11/22					
Total Organic Carbon (TOC)	ND	0.19	0.30	mg/l							U
LCS (W2A0446-BS1)											
Total Organic Carbon (TOC)	1.02	0.19	0.30	mg/l	1.00		102	85-115			
Matrix Spike (W2A0446-MS1)											
Total Organic Carbon (TOC)	8.67	0.19	0.30	mg/l	5.00	3.80	97	76-115			
Matrix Spike Dup (W2A0446-MSD1)											
Total Organic Carbon (TOC)	8.68	0.19	0.30	mg/l	5.00	3.80	98	76-115	0.1	20	



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1001 Bishop Street Suite 1600
Honolulu, HI 96813

Project Number: 60674414, COC # 01062022 DW-06

Reported:

01/12/2022 15:28

Project Manager: Margie Pascua

(Continued)

Quality Control Results

Metals by EPA 200 Series Methods

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0526 - EPA 200.8											
Blank (W2A0526-BLK1)											
Prepared: 01/08/22 Analyzed: 01/10/22											
Antimony, Total	ND	0.089	0.50	ug/l							U
Arsenic, Total	ND	0.074	0.40	ug/l							U
Barium, Total	ND	0.14	1.0	ug/l							U
Beryllium, Total	ND	0.062	0.10	ug/l							U
Cadmium, Total	ND	0.042	0.20	ug/l							U
Chromium, Total	ND	0.089	0.20	ug/l							U
Copper, Total	ND	0.23	0.50	ug/l							U
Lead, Total	ND	0.083	0.20	ug/l							U
Selenium, Total	ND	0.067	0.40	ug/l							U
Thallium, Total	ND	0.021	0.20	ug/l							U
LCS (W2A0526-BS1)											
Prepared: 01/08/22 Analyzed: 01/10/22											
Antimony, Total	48.0	0.089	0.50	ug/l	50.0	96	85-115				
Arsenic, Total	47.3	0.074	0.40	ug/l	50.0	95	85-115				
Barium, Total	49.9	0.14	1.0	ug/l	50.0	100	85-115				
Beryllium, Total	45.2	0.062	0.10	ug/l	50.0	90	85-115				
Cadmium, Total	45.9	0.042	0.20	ug/l	50.0	92	85-115				
Chromium, Total	48.6	0.089	0.20	ug/l	50.0	97	85-115				
Copper, Total	49.7	0.23	0.50	ug/l	50.0	99	85-115				
Lead, Total	48.5	0.083	0.20	ug/l	50.0	97	85-115				
Selenium, Total	47.6	0.067	0.40	ug/l	50.0	95	85-115				
Thallium, Total	48.7	0.021	0.20	ug/l	50.0	97	85-115				
Matrix Spike (W2A0526-MS1)											
Source: 2A03038-01 Prepared: 01/08/22 Analyzed: 01/10/22											
Antimony, Total	51.7	0.089	0.50	ug/l	50.0	ND	103	70-130			
Arsenic, Total	48.4	0.074	0.40	ug/l	50.0	0.329	96	70-130			
Barium, Total	145	0.14	1.0	ug/l	50.0	84.7	120	70-130			
Beryllium, Total	47.5	0.062	0.10	ug/l	50.0	ND	95	70-130			
Cadmium, Total	47.1	0.042	0.20	ug/l	50.0	ND	94	70-130			
Chromium, Total	51.9	0.089	0.20	ug/l	50.0	1.55	101	70-130			
Copper, Total	399	0.23	0.50	ug/l	50.0	334	131	70-130			MS-02
Lead, Total	51.0	0.083	0.20	ug/l	50.0	0.298	101	70-130			
Selenium, Total	48.0	0.067	0.40	ug/l	50.0	0.566	95	70-130			
Thallium, Total	51.1	0.021	0.20	ug/l	50.0	ND	102	70-130			
Matrix Spike Dup (W2A0526-MSD1)											
Source: 2A03038-01 Prepared: 01/08/22 Analyzed: 01/10/22											
Antimony, Total	54.4	0.089	0.50	ug/l	50.0	ND	109	70-130	5	30	
Arsenic, Total	47.2	0.074	0.40	ug/l	50.0	0.329	94	70-130	2	30	
Barium, Total	152	0.14	1.0	ug/l	50.0	84.7	134	70-130	5	30	MS-02
Beryllium, Total	48.6	0.062	0.10	ug/l	50.0	ND	97	70-130	2	30	
Cadmium, Total	45.2	0.042	0.20	ug/l	50.0	ND	90	70-130	4	30	
Chromium, Total	49.5	0.089	0.20	ug/l	50.0	1.55	96	70-130	5	30	



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1001 Bishop Street Suite 1600
Honolulu, HI 96813

Certificate of Analysis

FINAL REPORT

Project Number: 60674414, COC # 01062022 DW-06

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01/12/2022 15:28

Project Manager: Margie Pascua

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: W2A0526 - EPA 200.8 (Continued)											
Matrix Spike Dup (W2A0526-MSD1)											
Copper, Total											
412 0.23 0.50 ug/l 50.0 334 156 70-130 3 30 MS-02											
Lead, Total											
53.3 0.083 0.20 ug/l 50.0 0.298 106 70-130 4 30											
Selenium, Total											
47.4 0.067 0.40 ug/l 50.0 0.566 94 70-130 1 30											
Thallium, Total											
53.4 0.021 0.20 ug/l 50.0 ND 107 70-130 4 30											
Batch: W2A0552 - EPA 245.1											
Blank (W2A0552-BLK1)											
Mercury, Total											
ND 0.017 0.050 ug/l Prepared & Analyzed: 01/10/22 U											
LCS (W2A0552-BS1)											
Mercury, Total											
1.08 0.017 0.050 ug/l Prepared & Analyzed: 01/10/22 85-115											
Matrix Spike (W2A0552-MS1)											
Mercury, Total											
1.07 0.017 0.050 ug/l Prepared & Analyzed: 01/10/22 70-130											
Matrix Spike Dup (W2A0552-MSD1)											
Mercury, Total											
1.08 0.017 0.050 ug/l Prepared & Analyzed: 01/10/22 108											
1.00 ND 107 70-130 0.5 20											



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1001 Bishop Street Suite 1600
Honolulu, HI 96813

Certificate of Analysis

FINAL REPORT

Project Number: 60674414, COC # 01062022 DW-06

Reported:

01/12/2022 15:28

Project Manager: Margie Pascua

(Continued)

Quality Control Results

Semivolatile Organic Compounds by GC/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0525 - EPA 525.2											
Blank (W2A0525-BLK1)											
Prepared: 01/08/22 Analyzed: 01/09/22											
1-Methylnaphthalene	ND	0.0080	0.050	ug/l							U
2-Methylnaphthalene	ND	0.0090	0.050	ug/l							U
Alachlor	ND	0.011	0.10	ug/l							U
Atrazine	ND	0.0073	0.10	ug/l							U
Benzo (a) pyrene	ND	0.012	0.050	ug/l							U
Bis(2-ethylhexyl)adipate	0.0358	0.0096	5.0	ug/l							J
Bis(2-ethylhexyl)phthalate	ND	0.44	3.0	ug/l							U
Endrin	ND	0.0099	0.20	ug/l							U
gamma-BHC (Lindane)	ND	0.0063	0.10	ug/l							U
Heptachlor	ND	0.0096	0.10	ug/l							U
Heptachlor epoxide	ND	0.012	0.10	ug/l							U
Hexachlorobenzene	ND	0.098	0.10	ug/l							U
Hexachlorocyclopentadiene	ND	0.0059	1.0	ug/l							U
Methoxychlor	ND	0.0086	0.20	ug/l							U
Naphthalene	ND	0.010	0.050	ug/l							U
Pentachlorophenol	ND	0.024	1.0	ug/l							U
Simazine	ND	0.0073	0.10	ug/l							U
<i>Surrogate(s)</i>											
1,3-Dimethyl-2-nitrobenzene	0.450			ug/l	0.500		90	70-130			
Perylene-d12	0.374			ug/l	0.500		75	70-130			
Triphenyl phosphate	0.432			ug/l	0.500		86	70-130			
LCS (W2A0525-BS1)											
Prepared: 01/08/22 Analyzed: 01/09/22											
1-Methylnaphthalene	0.229	0.0080	0.050	ug/l	0.250		92	70-130			
2-Methylnaphthalene	0.237	0.0090	0.050	ug/l	0.250		95	70-130			
Alachlor	0.522	0.011	0.10	ug/l	0.500		104	70-130			
Atrazine	0.231	0.0073	0.10	ug/l	0.250		92	70-130			
Benzo (a) pyrene	0.215	0.012	0.050	ug/l	0.250		86	60-130			
Bis(2-ethylhexyl)adipate	0.282	0.0096	5.0	ug/l	0.250		113	70-130			J
Bis(2-ethylhexyl)phthalate	0.358	0.0	3.0	ug/l	0.250		143	70-130			Q-08, J
Endrin	0.321	0.0099	0.20	ug/l	0.250		128	70-130			
gamma-BHC (Lindane)	0.271	0.0063	0.10	ug/l	0.250		108	70-130			
Heptachlor	0.203	0.0096	0.10	ug/l	0.250		81	70-130			
Heptachlor epoxide	0.267	0.012	0.10	ug/l	0.250		107	70-130			
Hexachlorobenzene	0.0389	0.0	0.10	ug/l	0.0500		78	70-130			J
Hexachlorocyclopentadiene	0.160	0.0059	1.0	ug/l	0.250		64	33-106			J
Methoxychlor	0.256	0.0086	0.20	ug/l	0.250		102	70-130			
Naphthalene	0.214	0.010	0.050	ug/l	0.250		86	70-130			
Pentachlorophenol	0.269	0.024	1.0	ug/l	0.250		108	40-120			J
Simazine	0.275	0.0073	0.10	ug/l	0.250		110	60-130			



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1001 Bishop Street Suite 1600
Honolulu, HI 96813

Certificate of Analysis

FINAL REPORT

Project Number: 60674414, COC # 01062022 DW-06

Reported:

01/12/2022 15:28

Project Manager: Margie Pascua

(Continued)

Quality Control Results

Semivolatile Organic Compounds by GC/MS (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2A0525 - EPA 525.2 (Continued)											
LCS (W2A0525-BS1)											
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	0.457			ug/l	0.500	91	70-130				
Perylene-d12	0.507			ug/l	0.500	101	70-130				
Triphenyl phosphate	0.627			ug/l	0.500	125	70-130				
LCS Dup (W2A0525-BSD1)											
1-Methylnaphthalene	0.217	0.0080	0.050	ug/l	0.250	87	70-130	6	30		
2-Methylnaphthalene	0.230	0.0090	0.050	ug/l	0.250	92	70-130	3	30		
Alachlor	0.486	0.011	0.10	ug/l	0.500	97	70-130	7	30		
Atrazine	0.225	0.0073	0.10	ug/l	0.250	90	70-130	2	30		
Benzo (a) pyrene	0.199	0.012	0.050	ug/l	0.250	79	60-130	8	30		
Bis(2-ethylhexyl)adipate	0.281	0.0096	5.0	ug/l	0.250	113	70-130	0.2	30	J	
Bis(2-ethylhexyl)phthalate	0.372	0.0	3.0	ug/l	0.250	149	70-130	4	30	Q-08, J	
Endrin	0.277	0.0099	0.20	ug/l	0.250	111	70-130	15	30		
gamma-BHC (Lindane)	0.246	0.0063	0.10	ug/l	0.250	98	70-130	10	30		
Heptachlor	0.192	0.0096	0.10	ug/l	0.250	77	70-130	5	30		
Heptachlor epoxide	0.260	0.012	0.10	ug/l	0.250	104	70-130	3	30		
Hexachlorobenzene	0.0350	0.0	0.10	ug/l	0.0500	70	70-130	11	30	J	
Hexachlorocyclopentadiene	0.150	0.0059	1.0	ug/l	0.250	60	33-106	6	30	J	
Methoxychlor	0.257	0.0086	0.20	ug/l	0.250	103	70-130	0.5	30		
Naphthalene	0.216	0.010	0.050	ug/l	0.250	86	70-130	0.6	30		
Pentachlorophenol	0.285	0.024	1.0	ug/l	0.250	114	50-120	6	30	J	
Simazine	0.274	0.0073	0.10	ug/l	0.250	109	60-130	0.5	30		
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	0.506			ug/l	0.500	101	70-130				
Perylene-d12	0.547			ug/l	0.500	109	70-130				
Triphenyl phosphate	0.713			ug/l	0.500	143	70-130				S-11

AECOM - Honolulu
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Project Number: 60674414, COC # 01062022 DW-06

FINAL REPORT

Reported:

01/12/2022 15:28

Project Manager: Margie Pascua

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: W2A0422 - EPA 524.2											
Blank (W2A0422-BLK1)						Prepared: 01/06/22 Analyzed: 01/09/22					
1,1,1-Trichloroethane	ND	0.26	0.50	ug/l							U
1,1,2-Trichloroethane	ND	0.19	0.50	ug/l							U
1,1-Dichloroethene	ND	0.16	0.50	ug/l							U
1,2,4-Trichlorobenzene	ND	0.17	0.50	ug/l							U
1,2-Dichloroethane	ND	0.24	0.50	ug/l							U
1,2-Dichloropropane	ND	0.13	0.50	ug/l							U
Benzene	ND	0.15	0.50	ug/l							U
Carbon tetrachloride	ND	0.27	0.50	ug/l							U
Chlorobenzene	ND	0.15	0.50	ug/l							U
cis-1,2-Dichloroethene	ND	0.25	0.50	ug/l							U
Ethylbenzene	ND	0.21	0.50	ug/l							U
m,p-Xylene	ND	0.33	0.50	ug/l							U
Methylene chloride	ND	0.30	0.50	ug/l							U
o-Dichlorobenzene	ND	0.19	0.50	ug/l							U
o-Xylene	ND	0.20	0.50	ug/l							U
p-Dichlorobenzene	ND	0.18	0.50	ug/l							U
Styrene	ND	0.19	0.50	ug/l							U
Tetrachloroethene	ND	0.18	0.50	ug/l							U
THMs, Total	ND		0.50	ug/l							U
Toluene	ND	0.29	0.50	ug/l							U
trans-1,2-Dichloroethene	ND	0.26	0.50	ug/l							U
Trichloroethene	ND	0.18	0.50	ug/l							U
Vinyl chloride	ND	0.18	0.50	ug/l							U
<i>Surrogate(s)</i>											
1,2-Dichlorobenzene-d4	9.35			ug/l	10.0		94	70-130			
4-Bromofluorobenzene	9.10			ug/l	10.0		91	70-130			
LCS (W2A0422-BS1)											
Prepared: 01/06/22 Analyzed: 01/09/22											
1,1,1-Trichloroethane	5.05	0.26	0.50	ug/l	5.00		101	70-130			
1,1,2-Trichloroethane	5.39	0.19	0.50	ug/l	5.00		108	70-130			
1,1-Dichloroethene	5.34	0.16	0.50	ug/l	5.00		107	70-130			
1,2,4-Trichlorobenzene	5.17	0.17	0.50	ug/l	5.00		103	70-130			
1,2-Dichloroethane	5.12	0.24	0.50	ug/l	5.00		102	70-130			
1,2-Dichloropropane	5.33	0.13	0.50	ug/l	5.00		107	70-130			
Benzene	5.33	0.15	0.50	ug/l	5.00		107	70-130			
Carbon tetrachloride	5.05	0.27	0.50	ug/l	5.00		101	70-130			
Chlorobenzene	5.23	0.15	0.50	ug/l	5.00		105	70-130			
cis-1,2-Dichloroethene	5.42	0.25	0.50	ug/l	5.00		108	70-130			
Ethylbenzene	5.82	0.21	0.50	ug/l	5.00		116	70-130			
m,p-Xylene	5.58	0.33	0.50	ug/l	5.00		112	70-130			



Certificate of Analysis

FINAL REPORT

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

Project Number: 60674414, COC # 01062022 DW-06

Reported:
01/12/2022 15:28

Project Manager: Margie Pascua

(Continued)

Quality Control Results

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: W2A0422 - EPA 524.2 (Continued)											
LCS (W2A0422-BS1)					Prepared: 01/06/22 Analyzed: 01/09/22						
Methylene chloride	5.23	0.30	0.50	ug/l	5.00		105	70-130			
o-Dichlorobenzene	5.39	0.19	0.50	ug/l	5.00		108	70-130			
o-Xylene	5.74	0.20	0.50	ug/l	5.00		115	70-130			
p-Dichlorobenzene	5.41	0.18	0.50	ug/l	5.00		108	70-130			
Styrene	5.81	0.19	0.50	ug/l	5.00		116	70-130			
Tetrachloroethene	5.08	0.18	0.50	ug/l	5.00		102	70-130			
Toluene	5.40	0.29	0.50	ug/l	5.00		108	70-130			
trans-1,2-Dichloroethene	5.38	0.26	0.50	ug/l	5.00		108	70-130			
Trichloroethene	5.84	0.18	0.50	ug/l	5.00		117	70-130			
Vinyl chloride	4.94	0.18	0.50	ug/l	5.00		99	70-130			
<i>Surrogate(s)</i>											
1,2-Dichlorobenzene-d4	11.8			ug/l	10.0		118	70-130			
4-Bromofluorobenzene	11.8			ug/l	10.0		118	70-130			
LCS Dup (W2A0422-BSD1)					Prepared: 01/06/22 Analyzed: 01/09/22						
1,1,1-Trichloroethane	4.76	0.26	0.50	ug/l	5.00		95	70-130	6	30	
1,1,2-Trichloroethane	4.98	0.19	0.50	ug/l	5.00		100	70-130	8	30	
1,1-Dichloroethene	5.11	0.16	0.50	ug/l	5.00		102	70-130	4	30	
1,2,4-Trichlorobenzene	4.88	0.17	0.50	ug/l	5.00		98	70-130	6	30	
1,2-Dichloroethane	4.79	0.24	0.50	ug/l	5.00		96	70-130	7	30	
1,2-Dichloropropane	4.89	0.13	0.50	ug/l	5.00		98	70-130	9	30	
Benzene	4.99	0.15	0.50	ug/l	5.00		100	70-130	7	30	
Carbon tetrachloride	4.68	0.27	0.50	ug/l	5.00		94	70-130	8	30	
Chlorobenzene	4.86	0.15	0.50	ug/l	5.00		97	70-130	7	30	
cis-1,2-Dichloroethene	5.01	0.25	0.50	ug/l	5.00		100	70-130	8	30	
Ethylbenzene	5.43	0.21	0.50	ug/l	5.00		109	70-130	7	30	
m,p-Xylene	5.13	0.33	0.50	ug/l	5.00		103	70-130	8	30	
Methylene chloride	4.97	0.30	0.50	ug/l	5.00		99	70-130	5	30	
o-Dichlorobenzene	4.93	0.19	0.50	ug/l	5.00		99	70-130	9	30	
o-Xylene	5.19	0.20	0.50	ug/l	5.00		104	70-130	10	30	
p-Dichlorobenzene	4.91	0.18	0.50	ug/l	5.00		98	70-130	10	30	
Styrene	5.27	0.19	0.50	ug/l	5.00		105	70-130	10	30	
Tetrachloroethene	4.75	0.18	0.50	ug/l	5.00		95	70-130	7	30	
Toluene	5.02	0.29	0.50	ug/l	5.00		100	70-130	7	30	
trans-1,2-Dichloroethene	5.13	0.26	0.50	ug/l	5.00		103	70-130	5	30	
Trichloroethene	4.96	0.18	0.50	ug/l	5.00		99	70-130	16	30	
Vinyl chloride	5.10	0.18	0.50	ug/l	5.00		102	70-130	3	30	
<i>Surrogate(s)</i>											
1,2-Dichlorobenzene-d4	11.7			ug/l	10.0		117	70-130			
4-Bromofluorobenzene	11.7			ug/l	10.0		117	70-130			



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

Certificate of Analysis

FINAL REPORT

Project Number: 60674414, COC # 01062022 DW-06

Reported:

01/12/2022 15:28

Project Manager: Margie Pascua

Notes and Definitions

Item	Definition
J	Estimated conc. detected <MRL and >MDL.
MS-02	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
Q-08	High bias in the QC sample does not affect sample result since analyte was not detected or below the reporting limit.
S-03	High surrogate recovery for this sample is possibly due to a sample matrix effect. The data was accepted since all target analytes were not detected.
S-11	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
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.



Weck Laboratories, Inc.
Analytical Laboratory Services - Since 1964

14859 Clark Avenue : Industry : CA 91745

Tel 626-336-2139 ♦ Fax 626-336-2634 ♦ www.wecklabs.com

Standard CHAIN OF CUSTODY RECORD

COC# 0107 2022 Div - 02

CLIENT NAME: AECOM		PROJECT: 30 60674414.00_6.01		ANALYSES REQUESTED				SPECIAL HANDLING		
ADDRESS: 1001 Bishop St., Ste. 1600 Honolulu, HI 96813		PHONE: 808-364-8050 FAX: EMAIL: margie.pascua@aecom.com		VOCs by 524.2	SOCs by 525.2	TOC by 5310B	Metals/Mercury by 200.8	<input type="checkbox"/> Same Day Rush 150% <input type="checkbox"/> 24 Hour Rush 100% <input checked="" type="checkbox"/> 48-72 Hour Rush 75% <input type="checkbox"/> 4 - 5 Day Rush 30% <input type="checkbox"/> Rush Extractions 50% <input type="checkbox"/> 10 - 15 Business Days <input type="checkbox"/> QA/QC Data Package		
PROJECT MANAGER Margie Pascua		SAMPLER AECOM								
ID# (Lab Use Only)	DATE SAMPLED	TIME SAMPLED	SMPLE TYPE	C _b Y/N	SAMPLE IDENTIFICATION/SITE LOCATION			# OF CONT.		
01/06/22	3:25 PM	DW	20220106-D3-ZT04	20220106-C1-ZT04	2	X				
01/06/22	3:30 PM	DW	20220106-D3-ZT06	20220106-C1-ZT06	8	X	X	X		
<i>Revised by Brian Rothmeyer 01/11/2022</i> <i>01/06/22</i>										
RELINQUISHED BY <i>Thomas Aquino Aguila</i>		DATE / TIME <i>01/06/22</i>		RECEIVED BY <i>Conner Roth</i>		DATE / TIME <i>1/6/22</i>		SAMPLE CONDITION:		SAMPLE TYPE CODE:
RELINQUISHED BY <i>Conner Roth</i>		DATE / TIME <i>1/7/22</i>		RECEIVED BY		DATE / TIME		Actual Temperature: <input type="checkbox"/> Received On Ice: <input type="checkbox"/> Samples Preserved: <input type="checkbox"/> Evidence Seals Present: <input type="checkbox"/> Container Attacked: <input type="checkbox"/>		Thermometer #: <input type="checkbox"/> DW = Drinking Water WW = Waste Water GW = Ground Water SF = Surface Water SW = Sea Water SO = Solid/Soil SL = Sludge OL = Oil OT = Other Matrix
RELINQUISHED BY		DATE / TIME		RECEIVED BY		DATE / TIME				
PRESCHEDULED RUSH ANALYSES WILL TAKE PRIORITY OVER UNSCHEDULED RUSH REQUESTS Client agrees to Terms & Conditions at: www.wecklabs.com				SPECIAL REQUIREMENTS / BILLING INFORMATION						

2A08002



Weck Laboratories, Inc.

Analytical Laboratory Services - Since 1964

14859 Clark Avenue : Industry : CA 91745

Tel 626-336-2139 ♦ Fax 626-336-2634 ♦ www.wecklabs.com

Standard CHAIN OF CUSTODY RECORD

COC# 01062022DW-06

CLIENT NAME: AECOM		PROJECT: 30 60674414.00.46.01		ANALYSES REQUESTED						SPECIAL HANDLING			
ADDRESS: 1001 Bishop St., Ste. 1600 Honolulu, HI 96813		PHONE: 808-364-8050 FAX: EMAIL: margie.pascua@aecom.com		VOCs by 524.2	SOCs by 525.2	TOC by 5310B	Mercury by 200.8					<input type="checkbox"/> Same Day Rush 150%	
PROJECT MANAGER: Margie Pascua		SAMPLER: AECOM										<input checked="" type="checkbox"/> 24 Hour Rush 100%	
ID# (Lab Use Only)	DATE SAMPLED	TIME SAMPLED	SMPL TYPE	C _l Y/N	SAMPLE IDENTIFICATION/SITE LOCATION				# OF CONT.				<input type="checkbox"/> 48-72 Hour Rush 75%
01/06/22	1:10 PM	DW			20220106-D3-ZT01				2	X			<input type="checkbox"/> 4 - 5 Day Rush 30%
01/06/22	1:15 PM	DW			20220106-D3-ZT03				8	X	X	X	<input type="checkbox"/> Rush Extractions 50%
													<input type="checkbox"/> 10 - 15 Business Days
													<input type="checkbox"/> QA/QC Data Package
												Charges will apply for weekends/holidays	
												Method of Shipment: FedEx	
												COMMENTS	
												<i>Hydrant compliance</i>	
												<i>for 01/06/22</i>	
RELINQUISHED BY: <i>Thomas Aguilo Aguil</i>		DATE / TIME: 01/06/22		RECEIVED BY: <i>Conner Rothe</i>		DATE / TIME: 1/6/22		SAMPLE CONDITION:		SAMPLE TYPE CODE:			
RELINQUISHED BY: <i>Conner Rothe</i>		DATE / TIME: 1500 01/07/22		RECEIVED BY: VAT 61/68/2022 11:34		DATE / TIME: 3.1 T-0254		Actual Temperature: 3.1 °C	Thermometer #: T-0254	DW = Drinking Water WW = Waste Water GW = Ground Water SF = Surface Water SW = Sea Water SO = Solid/Soil SL = Sludge OL = Oil OT = Other Matrix			
RELINQUISHED BY		DATE / TIME		RECEIVED BY		DATE / TIME		Received On Ice	<input checked="" type="radio"/> Y / N	Samples Preserved			
								Evidence Seals Present	<input type="radio"/> Y / N	Container Attacked			
PRESCHEDULED RUSH ANALYSES WILL TAKE PRIORITY OVER UNSCHEDULED RUSH REQUESTS Client agrees to Terms & Conditions at: www.wecklabs.com				SPECIAL REQUIREMENTS / BILLING INFORMATION									

COC Version 210806

Memorandum

\			
To	Karen Mixon, Data Validation Manager	Info	Complete
Subject	Summary Data Quality Review Joint Base Pearl Harbor-Hickam, Hawaii Red Hill Bulk Fuel Storage Facility		
From	Jennifer B. Garner, Chemist		
Date	January 13, 2022		

The summary data quality review of 4 water samples and 1 trip blank collected on January 5 and January 6, 2022, has been completed. The samples were collected by AECOM personnel and were analyzed at Eurofins TestAmerica, in Seattle, Washington, for volatile organic compounds (VOCs) by EPA Method 8260D, semivolatile organic compounds (SVOCs) by EPA Method 8270E, and/or total petroleum hydrocarbons (TPHs) by EPA Method 8260/CALUFT (gasoline-range, C6-C12 hydrocarbons) and EPA Method 8015D (diesel range, C9-C25 hydrocarbons, and motor oil range, C24-C40 hydrocarbons). The analyses were performed in general accordance with the methods specified in EPA's *Test Methods for Evaluating Solid Waste (SW-846)*. The laboratory provided summary reports containing sample results and associated quality assurance (QA) and quality control (QC) data. The following samples are associated with Eurofins TestAmerica-Seattle laboratory groups 580-109011-1 and 580-109054-1:

Sample ID	Laboratory ID	Requested Analyses
20220105-D3-ZT01	580-109011-1	VOCs, SVOCs, TPH
20220105-F1-ZT02	580-109011-2	TPH
20220105-C1-ZT03	580-109054-1	VOCs, SVOCs, TPH
20220105-D3-ZT02 (trip blank)	580-109054-2	TPH (gasoline range)
20220105-D3-ZT03	580-109054-3	TPH

Upon receipt by Eurofins TestAmerica-Seattle, the sample jar information was compared to the associated chain-of-custody (COC) and the cooler temperatures were recorded. No discrepancies relating to sample identification were noted by the laboratory. Two coolers submitted in association with laboratory group 580-109054-1 were received at temperatures below the EPA-recommended limits of greater than 0°C and less than or equal to 6°C at -0.7°C and -0.2°C. No sample containers were received frozen; therefore, no data were qualified based on the cooler temperatures.

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:

- The percent recovery for the VOC surrogate toluene-d8 was below the laboratory control limits of 89-112% in 20220105-D3-ZT01 (6%). The toluene-d8 recovery was below 10% in this sample; therefore, all VOC results were rejected.

Summary Data Quality Review
Joint Base Pearl Harbor-Hickam, Hawaii
Red Hill Bulk Fuel Storage Facility

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

Sample ID	2-Fluorophenol (19-119%)	Phenol-d5 (10-120%)	2,4,6-Tribromophenol (43-140%)
20220105-D3-ZT01	1%	0.5%	151%
20220105-C1-ZT03	6%	0.3%	acceptable

Two or more acid-fraction SVOC surrogate recoveries were below 10% in each of the samples noted above; therefore, the results for all acid-fraction SVOCs reported as not detected in 20220105-D3-ZT01 and 20220105-C1-ZT03 were rejected. The results for bis(2-chloroethoxy)ether and 3&4-methylphenol in 20220105-C1-ZT03 were qualified as estimated and flagged ‘J-.’

- The laboratory noted that the minimum response factors (RFs) for bis-(2-chloroethyl)ether and n-nitroso-di-n-propylamine were outside the method control criteria in the continuing calibration verification (CCV) associated with analysis batch 580-377665. The results for bis-(2-chloroethyl)ether and n-nitroso-di-n-propylamine in 20220105-D3-ZT01 were qualified as estimated and flagged ‘J.’
- The laboratory noted that the minimum RF for n-nitroso-di-n-propylamine was outside the method control criteria in the continuing calibration verification (CCV) associated with analysis batch 580-377805. The result for n-nitroso-di-n-propylamine in 20220105-C1-ZT03 was qualified as estimated and flagged ‘J.’

Memorandum

To	Karen Mixon, Data Validation Manager	Info	Complete
Subject	Summary Data Quality Review Joint Base Pearl Harbor-Hickam, Hawaii Red Hill Bulk Fuel Storage Facility		
From	Jennifer B. Garner, Chemist		
Date	January 13, 2022		

The summary data quality review of 2 water samples collected on January 6, 2022, has been completed. The samples were collected by AECOM personnel and were analyzed at Weck Laboratories, Inc. (Weck), in City of Industries, California, for volatile organic compounds (VOCs) by EPA Drinking Water Method 524.2, semivolatile organic compounds (SVOCs) by EPA Drinking Water Method 525.2, polychlorinated biphenyls (PCBs) by EPA Drinking Water Method 508.1, total metals (antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, selenium, and thallium) by EPA Method 200.8, total mercury by EPA Drinking Water method 245.1, and/or total organic carbon by Standard Method (SM) 5310B as indicated in the cross-reference below. The analyses were performed in general accordance with the methods specified in EPA drinking water program and Standard Methods for the Examination of Water and Wastewater. 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 Weck laboratory group 2A08001:

Sample ID	Laboratory ID	Requested Analyses
20220106-C1-ZT04	2A08001-01	VOCs
20220106-C1-ZT06	2A08001-02	VOCs, SVOCs, PCBs, Metals, Mercury, TOC

Upon receipt by Weck, the sample jar information was compared to the associated chain-of-custody (COC) and the cooler temperatures were recorded. No discrepancies relating to sample identification were noted by the laboratory and the coolers were 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:

- bis(2-Ethylhexyl)adipate (0.0358 ug/L) was detected in the SVOC method blank at a concentration between the method detection limit (MDL) and the laboratory reporting limit. The result for bis(2-ethylhexyl)adipate in 20220106-C1-ZT06 was reported at a concentration between the MDL and the laboratory reporting limit; therefore, the result for bis(2-ethylhexyl)adipate was qualified as not detected and flagged 'U' at the reporting limit.

Memorandum

To	Karen Mixon, Data Validation Manager	Info	Complete
Subject	Summary Data Quality Review Joint Base Pearl Harbor-Hickam, Hawaii Red Hill Bulk Fuel Storage Facility		
From	Jennifer B. Garner, Chemist		
Date	January 13, 2022		

The summary data quality review of 2 water samples collected on January 6, 2022, has been completed. The samples were collected by AECOM personnel and were analyzed at Weck Laboratories, Inc. (Weck), in City of Industries, California, for volatile organic compounds (VOCs) by EPA Drinking Water Method 524.2, semivolatile organic compounds (SVOCs) by EPA Drinking Water Method 525.2, polychlorinated biphenyls (PCBs) by EPA Drinking Water Method 508.1, total metals (antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, selenium, and thallium) by EPA Method 200.8, total mercury by EPA Drinking Water Method 245.1, and/or total organic carbon by Standard Method (SM) 5310B as indicated in the cross-reference below. The analyses were performed in general accordance with the methods specified in EPA's drinking water program and Standard Methods for the Examination of Water and Wastewater. 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 Weck laboratory group 2A08002:

Sample ID	Laboratory ID	Requested Analyses
20220106-D3-ZT04	2A08002-01	VOCs
20220106-D3-ZT06	2A08002-02	VOCs, SVOCs, PCBs, Metals, Mercury, TOC

Upon receipt by Weck, the sample jar information was compared to the associated chain-of-custody (COC) and the cooler temperatures were recorded. No discrepancies relating to sample identification were noted by the laboratory and the coolers were 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:

- bis(2-Ethylhexyl)adipate (0.0358 ug/L) was detected in the SVOC method blank at a concentration between the method detection limit (MDL) and the laboratory reporting limit. The result for bis(2-ethylhexyl)adipate in 20220106-D3-ZT06 was reported at a concentration between the MDL and the laboratory reporting limit; therefore, the result for bis(2-ethylhexyl)adipate was qualified as not detected and flagged 'U' at the reporting limit.