

ANALYTICAL REPORT

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

Laboratory Job ID: 580-109263-1
Client Project/Site: CV22F0106

For:
AECOM
1001 Bishop Street
Honolulu, Hawaii 96813

Attn: Margie F Pascua



Authorized for release by:
1/14/2022 4:33:27 PM
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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.



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Case Narrative

Client: AECOM
Project/Site: CV22F0106

Job ID: 580-109263-1

Job ID: 580-109263-1

Laboratory: Eurofins Seattle

Narrative

**Job Narrative
580-109263-1**

Comments

No additional comments.

Receipt

The sample was received on 1/13/2022 10:15 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.7° C.

GC/MS VOA

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

GC Semi VOA

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

Organic Prep

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

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

VOA Prep

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

Definitions/Glossary

Client: AECOM
Project/Site: CV22F0106

Job ID: 580-109263-1

Qualifiers

GC/MS VOA

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

GC Semi VOA

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

Glossary

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

Client Sample Results

Client: AECOM
Project/Site: CV22F0106

Job ID: 580-109263-1

Client Sample ID: 20220111-H2-YT07

Lab Sample ID: 580-109263-1

Date Collected: 01/11/22 13:05

Matrix: Water

Date Received: 01/13/22 10:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	31	U	100	31	ug/L			01/14/22 12:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		78 - 120					01/14/22 12:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	94	U	120	94	ug/L		01/13/22 17:57	01/14/22 03:44	1
C24-C40	190	U	210	190	ug/L		01/13/22 17:57	01/14/22 03:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	73		53 - 120				01/13/22 17:57	01/14/22 03:44	1

QC Sample Results

Client: AECOM
Project/Site: CV22F0106

Job ID: 580-109263-1

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

Lab Sample ID: MB 580-378348/4
Matrix: Water
Analysis Batch: 378348

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	31	U	100	31	ug/L			01/14/22 11:20	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		78 - 120					01/14/22 11:20	1

Lab Sample ID: LCS 580-378348/5
Matrix: Water
Analysis Batch: 378348

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (C6-C12)	1000	1020		ug/L		102	75 - 127
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	101		78 - 120				

Lab Sample ID: LCSD 580-378348/6
Matrix: Water
Analysis Batch: 378348

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (C6-C12)	1000	1080		ug/L		108	75 - 127	5	13
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	101		78 - 120						

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

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

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	90	U	110	90	ug/L		01/13/22 17:57	01/14/22 00:43	1
C24-C40	180	U	200	180	ug/L		01/13/22 17:57	01/14/22 00:43	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	88		53 - 120				01/13/22 17:57	01/14/22 00:43	1

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

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

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

QC Sample Results

Client: AECOM
Project/Site: CV22F0106

Job ID: 580-109263-1

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

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

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

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	86		53 - 120

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

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

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

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	90		53 - 120

Lab Chronicle

Client: AECOM
Project/Site: CV22F0106

Job ID: 580-109263-1

Client Sample ID: 20220111-H2-YT07

Lab Sample ID: 580-109263-1

Date Collected: 01/11/22 13:05

Matrix: Water

Date Received: 01/13/22 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	378348	01/14/22 12:32	JSM	FGS SEA
Total/NA	Prep	3510C			378269	01/13/22 17:57	JHR	FGS SEA
Total/NA	Analysis	8015D		1	378249	01/14/22 03:44	JAE	FGS SEA

Laboratory References:

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



Accreditation/Certification Summary

Client: AECOM
Project/Site: CV22F0106

Job ID: 580-109263-1

Laboratory: Eurofins Seattle

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

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

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Sample Summary

Client: AECOM
Project/Site: CV22F0106

Job ID: 580-109263-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-109263-1	20220111-H2-YT07	Water	01/11/22 13:05	01/13/22 10:15

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Eurofins FGS, Seattle5755 8th Street East
Tacoma, WA 98424**Chain of Custody Record**Environment Testing
America

1L

Client Information		Sampler: AECOM		Lab PM: Elaine Walker		Carrier Tracking No(s): FedEx		COC No: 6112022DW-63 CR				
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 #: 109263			
Address: 1001 Bishop St. Suite 1600		Due Date Requested: see subcontract		<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Field Filtered Sample (Yes or No)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Perform MSMSD (Yes or No)</div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">EPA 8260 TPH-g (HC1)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">EPA 8015 TPH-d10</div> </div>					Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify)		Other:	
City: Honolulu		TAT Requested (days): 48 hrs, 2 days										
State, Zip: Hawaii 96813		Compliance Project: <input 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							Special Instructions/Note:			
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 MSMSD (Yes or No)		Total Number of Containers		
20220111-AZ-4107		1/11/22	1305	G	W	X	X	A	I	5		
 580-109263 Chain of Custody		1/11/22 SA		Therm. ID: <u>AS</u> Cor: <u>1.7</u> ° Unc: <u>1.7</u> ° Cooler Dsc: <u>63</u> Packing: <u>Bubble</u> FedEx: <u>PO</u> Cust. Seal: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> UPS: Blue Ice, Wet, Dry, None Lab Cour: Other:								
		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. AECOM EquiS EDD.		Special Instructions/QC Requirements: DOD QSM project.								
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:						
Relinquished by:		Date/Time: 1/11/22 @ 1930		Company: AECOM		Received by:		Date/Time: 1/11/22 1930		Company: Aecom		
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time: 1/13/22 1015		Company: Eurofins		
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:		
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:								

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-109263-1

Login Number: 109263

List Number: 1

Creator: Blankinship, Tom X

List Source: Eurofins Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
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	




ANALYTICAL REPORT

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

Laboratory Job ID: 580-109243-1
Client Project/Site: Red Hill Drinking WaterCV22F0106

For:
AECOM
1001 Bishop Street
Honolulu, Hawaii 96813

Attn: Margie F Pascua



Authorized for release by:
1/14/2022 4:58:35 PM
Kristine Allen, Client Service Manager
(253)248-4970
Kristine.Allen@Eurofinset.com

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

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



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Case Narrative

Client: AECOM
Project/Site: Red Hill Drinking WaterCV22F0106

Job ID: 580-109243-1

Job ID: 580-109243-1

Laboratory: Eurofins Seattle

Narrative

Job Narrative 580-109243-1

Comments

No additional comments.

Receipt

The samples were received on 1/13/2022 10:15 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.1° C and 0.5° C.

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-378318 recovered above the upper control limit for Chloromethane, Bromomethane, Ethyl Chloride and Vinyl chloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: 20220111-H2-YT02 (580-109243-1), 20220111-H2-YT02 (580-109243-1[MS]), 20220111-H2-YT01 (580-109243-2), 20220111-H2-YT04 (580-109243-3), 20220111-H2-YT06 (580-109243-4) and (CCVIS 580-378318/3).

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

Method 8260D: Surrogate Toluene-d8 (Surr) recovery for the following samples were outside control limits: 20220111-H2-YT02 (580-109243-1), 20220111-H2-YT02 (580-109243-1[MS]), 20220111-H2-YT04 (580-109243-3) and 20220111-H2-YT06 (580-109243-4). Evidence of matrix interference is present; therefore, re-analysis was not performed.

Method 8260D: The matrix spike (MS) recoveries for analytical batch 580-378318 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

GC/MS Semi VOA

Methods 8270E: Surrogate recovery for the following samples was outside control limits: 20220111-H2-YT02 (580-109243-1), 20220111-H2-YT02 (580-109243-1[MS]), 20220111-H2-YT04 (580-109243-3) and 20220111-H2-YT06 (580-109243-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

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

Methods 8270E: The continuing calibration verification (CCV) associated with batch 580-378282 recovered above the upper control limit for Nitrobenzene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: 20220111-H2-YT02 (580-109243-1), 20220111-H2-YT02 (580-109243-1[MS]), 20220111-H2-YT04 (580-109243-3), 20220111-H2-YT06 (580-109243-4) and (CCVIS 580-378282/3).

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

GC Semi VOA

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

Organic Prep

Methods 3510C, CWA_Prep: Insufficient sample volume was available to perform a matrix spike duplicate/sample duplicate (MSD/DUP)

Case Narrative

Client: AECOM
Project/Site: Red Hill Drinking WaterCV22F0106

Job ID: 580-109243-1

Job ID: 580-109243-1 (Continued)

Laboratory: Eurofins Seattle (Continued)

associated with preparation batch 580-378233 and 580-378233. Laboratory control sample/laboratory control sample duplicate were created and substituted for MSD/DUP.

Method 3510C: A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows: per request from client a 250 milliliter (mL) reference and top-loading balance were utilized to accrue a 250 mL sample to be spiked and solvent rinsed. This was necessary in the removal of excess volume from 500 mL client provided sample ambers, otherwise samples were prepared for extraction/digestion.

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

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

VOA Prep

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



Definitions/Glossary

Client: AECOM

Job ID: 580-109243-1

Project/Site: Red Hill Drinking WaterCV22F0106

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
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
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
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.
α	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)

Definitions/Glossary

Client: AECOM

Job ID: 580-109243-1

Project/Site: Red Hill Drinking WaterCV22F0106

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

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Client Sample Results

Client: AECOM
 Project/Site: Red Hill Drinking WaterCV22F0106

Job ID: 580-109243-1

Client Sample ID: 20220111-H2-YT02

Lab Sample ID: 580-109243-1

Date Collected: 01/11/22 09:20

Matrix: Water

Date Received: 01/13/22 10:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	31	U	100	31	ug/L			01/14/22 03:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		78 - 120					01/14/22 03:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.2	U	15	3.2	ug/L			01/14/22 03:39	1
Benzene	0.24	U	1.0	0.24	ug/L			01/14/22 03:39	1
Bromodichloromethane	0.29	U	1.0	0.29	ug/L			01/14/22 03:39	1
Bromoform	0.54	J	1.0	0.51	ug/L			01/14/22 03:39	1
Bromomethane	0.21	U	1.0	0.21	ug/L			01/14/22 03:39	1
Carbon disulfide	0.53	U	1.0	0.53	ug/L			01/14/22 03:39	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			01/14/22 03:39	1
Chlorobenzene	0.44	U	1.0	0.44	ug/L			01/14/22 03:39	1
Chloroform	0.26	U	1.0	0.26	ug/L			01/14/22 03:39	1
Chloromethane	0.28	U *+ F1	1.0	0.28	ug/L			01/14/22 03:39	1
cis-1,2-Dichloroethene	0.35	U	1.0	0.35	ug/L			01/14/22 03:39	1
cis-1,3-Dichloropropene	0.20	U F1	1.0	0.20	ug/L			01/14/22 03:39	1
Dibromochloromethane	0.43	U	1.0	0.43	ug/L			01/14/22 03:39	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/14/22 03:39	1
1,2-Dichloroethane	0.42	U	1.0	0.42	ug/L			01/14/22 03:39	1
1,1-Dichloroethene	0.28	U	1.0	0.28	ug/L			01/14/22 03:39	1
1,2-Dichloroethene, Total	0.39	U	1.0	0.39	ug/L			01/14/22 03:39	1
Dichloromethane	1.4	U *1	3.0	1.4	ug/L			01/14/22 03:39	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			01/14/22 03:39	1
Ethylbenzene	0.50	U F1	1.0	0.50	ug/L			01/14/22 03:39	1
Ethyl Chloride	0.35	U	1.0	0.35	ug/L			01/14/22 03:39	1
2-Hexanone	4.0	U	15	4.0	ug/L			01/14/22 03:39	1
Methyl Ethyl Ketone	4.7	U	15	4.7	ug/L			01/14/22 03:39	1
Methyl isobutyl ketone (MIBK)	2.5	U	5.0	2.5	ug/L			01/14/22 03:39	1
m-Xylene & p-Xylene	0.53	U F1	2.0	0.53	ug/L			01/14/22 03:39	1
o-Xylene	0.39	U F1	1.0	0.39	ug/L			01/14/22 03:39	1
Styrene	0.53	U F1	1.0	0.53	ug/L			01/14/22 03:39	1
1,1,2,2-Tetrachloroethane	0.52	U	1.0	0.52	ug/L			01/14/22 03:39	1
Tetrachloroethene	0.41	U	1.0	0.41	ug/L			01/14/22 03:39	1
Toluene	0.39	U F1	1.0	0.39	ug/L			01/14/22 03:39	1
trans-1,2-Dichloroethene	0.39	U	1.0	0.39	ug/L			01/14/22 03:39	1
trans-1,3-Dichloropropene	0.41	U F1	1.0	0.41	ug/L			01/14/22 03:39	1
1,1,1-Trichloroethane	0.39	U	1.0	0.39	ug/L			01/14/22 03:39	1
1,1,2-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/14/22 03:39	1
Trichloroethene	0.26	U	1.0	0.26	ug/L			01/14/22 03:39	1
Vinyl chloride	0.22	U *+ F1	1.0	0.22	ug/L			01/14/22 03:39	1
Xylenes, Total	0.53	U F1	2.0	0.53	ug/L			01/14/22 03:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		80 - 120					01/14/22 03:39	1
Dibromofluoromethane (Surr)	109		80 - 120					01/14/22 03:39	1
1,2-Dichloroethane-d4 (Surr)	106		80 - 120					01/14/22 03:39	1
Toluene-d8 (Surr)	0.3	S1-	80 - 120					01/14/22 03:39	1

Client Sample Results

Client: AECOM

Job ID: 580-109243-1

Project/Site: Red Hill Drinking WaterCV22F0106

Client Sample ID: 20220111-H2-YT02

Lab Sample ID: 580-109243-1

Date Collected: 01/11/22 09:20

Matrix: Water

Date Received: 01/13/22 10:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.054	U	0.43	0.054	ug/L		01/13/22 14:38	01/14/22 00:12	1
Acenaphthylene	0.064	U F1	1.1	0.064	ug/L		01/13/22 14:38	01/14/22 00:12	1
Anthracene	0.054	U	1.1	0.054	ug/L		01/13/22 14:38	01/14/22 00:12	1
Benzo[a]anthracene	0.054	U	0.27	0.054	ug/L		01/13/22 14:38	01/14/22 00:12	1
Benzo[a]pyrene	0.043	U	0.27	0.043	ug/L		01/13/22 14:38	01/14/22 00:12	1
Benzo[b]fluoranthene	0.043	U	0.27	0.043	ug/L		01/13/22 14:38	01/14/22 00:12	1
Benzo[g,h,i]perylene	0.043	U	0.27	0.043	ug/L		01/13/22 14:38	01/14/22 00:12	1
Benzo[k]fluoranthene	0.054	U	0.27	0.054	ug/L		01/13/22 14:38	01/14/22 00:12	1
Bis(2-chloroethoxy)methane	0.054	U	0.64	0.054	ug/L		01/13/22 14:38	01/14/22 00:12	1
Bis(2-chloroethyl)ether	1.2	F1	0.11	0.032	ug/L		01/13/22 14:38	01/14/22 00:12	1
Bis(2-ethylhexyl) phthalate	0.79	U	3.2	0.79	ug/L		01/13/22 14:38	01/14/22 00:12	1
4-Bromophenyl phenyl ether	0.064	U	0.64	0.064	ug/L		01/13/22 14:38	01/14/22 00:12	1
Butyl benzyl phthalate	0.29	U	4.3	0.29	ug/L		01/13/22 14:38	01/14/22 00:12	1
Carbazole	0.11	U F1	0.64	0.11	ug/L		01/13/22 14:38	01/14/22 00:12	1
4-Chloroaniline	0.63	U F1	2.1	0.63	ug/L		01/13/22 14:38	01/14/22 00:12	1
4-Chloro-3-methylphenol	0.14	U F1	0.64	0.14	ug/L		01/13/22 14:38	01/14/22 00:12	1
2-Chloronaphthalene	0.075	U	1.1	0.075	ug/L		01/13/22 14:38	01/14/22 00:12	1
2-Chlorophenol	0.054	U F1	1.1	0.054	ug/L		01/13/22 14:38	01/14/22 00:12	1
4-Chlorophenyl phenyl ether	0.054	U	0.64	0.054	ug/L		01/13/22 14:38	01/14/22 00:12	1
Chrysene	0.043	U	0.27	0.043	ug/L		01/13/22 14:38	01/14/22 00:12	1
Dibenz(a,h)anthracene	0.075	U	0.27	0.075	ug/L		01/13/22 14:38	01/14/22 00:12	1
Dibenzofuran	0.11	U	0.43	0.11	ug/L		01/13/22 14:38	01/14/22 00:12	1
1,2-Dichlorobenzene	0.054	U	0.43	0.054	ug/L		01/13/22 14:38	01/14/22 00:12	1
1,3-Dichlorobenzene	0.043	U	0.43	0.043	ug/L		01/13/22 14:38	01/14/22 00:12	1
1,4-Dichlorobenzene	0.043	U	0.43	0.043	ug/L		01/13/22 14:38	01/14/22 00:12	1
3,3'-Dichlorobenzidine	0.28	U F1	1.1	0.28	ug/L		01/13/22 14:38	01/14/22 00:12	1
2,4-Dichlorophenol	0.21	U F1	1.1	0.21	ug/L		01/13/22 14:38	01/14/22 00:12	1
Diethyl phthalate	0.16	U	1.1	0.16	ug/L		01/13/22 14:38	01/14/22 00:12	1
2,4-Dimethylphenol	0.17	U F1	4.3	0.17	ug/L		01/13/22 14:38	01/14/22 00:12	1
Dimethyl phthalate	0.064	U	0.64	0.064	ug/L		01/13/22 14:38	01/14/22 00:12	1
Di-n-butyl phthalate	0.20	U	3.2	0.20	ug/L		01/13/22 14:38	01/14/22 00:12	1
4,6-Dinitro-2-methylphenol	0.59	U	2.1	0.59	ug/L		01/13/22 14:38	01/14/22 00:12	1
2,4-Dinitrophenol	1.7	U	5.4	1.7	ug/L		01/13/22 14:38	01/14/22 00:12	1
2,4-Dinitrotoluene	0.11	U	1.1	0.11	ug/L		01/13/22 14:38	01/14/22 00:12	1
2,6-Dinitrotoluene	0.11	U	0.43	0.11	ug/L		01/13/22 14:38	01/14/22 00:12	1
Di-n-octyl phthalate	0.14	U	1.1	0.14	ug/L		01/13/22 14:38	01/14/22 00:12	1
Fluoranthene	0.064	U	0.27	0.064	ug/L		01/13/22 14:38	01/14/22 00:12	1
Fluorene	0.054	U	0.27	0.054	ug/L		01/13/22 14:38	01/14/22 00:12	1
Hexachlorobenzene	0.043	U	0.64	0.043	ug/L		01/13/22 14:38	01/14/22 00:12	1
Hexachlorobutadiene	0.064	U	1.1	0.064	ug/L		01/13/22 14:38	01/14/22 00:12	1
Hexachlorocyclopentadiene	0.15	U	1.1	0.15	ug/L		01/13/22 14:38	01/14/22 00:12	1
Hexachloroethane	0.054	U	1.1	0.054	ug/L		01/13/22 14:38	01/14/22 00:12	1
Indeno[1,2,3-cd]pyrene	0.14	U	0.43	0.14	ug/L		01/13/22 14:38	01/14/22 00:12	1
Isophorone	0.11	U	0.43	0.11	ug/L		01/13/22 14:38	01/14/22 00:12	1
2-Methylphenol	0.054	U F1	0.64	0.054	ug/L		01/13/22 14:38	01/14/22 00:12	1
3 & 4 Methylphenol	0.11	U F1	0.64	0.11	ug/L		01/13/22 14:38	01/14/22 00:12	1
Naphthalene	0.17	U F1	0.43	0.17	ug/L		01/13/22 14:38	01/14/22 00:12	1
2-Nitroaniline	0.11	U	1.1	0.11	ug/L		01/13/22 14:38	01/14/22 00:12	1
3-Nitroaniline	0.17	U	3.2	0.17	ug/L		01/13/22 14:38	01/14/22 00:12	1

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Client Sample Results

Client: AECOM
Project/Site: Red Hill Drinking WaterCV22F0106

Job ID: 580-109243-1

Client Sample ID: 20220111-H2-YT02

Lab Sample ID: 580-109243-1

Date Collected: 01/11/22 09:20

Matrix: Water

Date Received: 01/13/22 10:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitroaniline	0.23	U F1	2.1	0.23	ug/L		01/13/22 14:38	01/14/22 00:12	1
Nitrobenzene	0.043	U	1.1	0.043	ug/L		01/13/22 14:38	01/14/22 00:12	1
4-Nitrophenol	1.8	U F1	11	1.8	ug/L		01/13/22 14:38	01/14/22 00:12	1
N-Nitrosodi-n-propylamine	0.064	U	0.43	0.064	ug/L		01/13/22 14:38	01/14/22 00:12	1
N-Nitrosodiphenylamine	0.075	U F1	1.1	0.075	ug/L		01/13/22 14:38	01/14/22 00:12	1
Pentachlorophenol	0.55	U	11	0.55	ug/L		01/13/22 14:38	01/14/22 00:12	1
Phenanthrene	0.13	U	1.1	0.13	ug/L		01/13/22 14:38	01/14/22 00:12	1
Phenol	0.39	U F1	1.1	0.39	ug/L		01/13/22 14:38	01/14/22 00:12	1
Pyrene	0.043	U	1.1	0.043	ug/L		01/13/22 14:38	01/14/22 00:12	1
1,2,4-Trichlorobenzene	0.097	U	0.43	0.097	ug/L		01/13/22 14:38	01/14/22 00:12	1
2,4,5-Trichlorophenol	0.11	U F1	0.43	0.11	ug/L		01/13/22 14:38	01/14/22 00:12	1
2,4,6-Trichlorophenol	0.11	U	0.64	0.11	ug/L		01/13/22 14:38	01/14/22 00:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	50		35 - 120				01/13/22 14:38	01/14/22 00:12	1
2-Fluorophenol (Surr)	0.8	S1-	21 - 120				01/13/22 14:38	01/14/22 00:12	1
Nitrobenzene-d5 (Surr)	70		39 - 120				01/13/22 14:38	01/14/22 00:12	1
Phenol-d5 (Surr)	0	S1-	10 - 120				01/13/22 14:38	01/14/22 00:12	1
Terphenyl-d14	96		63 - 137				01/13/22 14:38	01/14/22 00:12	1
2,4,6-Tribromophenol	111		50 - 130				01/13/22 14:38	01/14/22 00:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	90	U	110	90	ug/L		01/13/22 15:08	01/13/22 23:22	1
C24-C40	180	U	200	180	ug/L		01/13/22 15:08	01/13/22 23:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	91		53 - 120				01/13/22 15:08	01/13/22 23:22	1

Client Sample Results

Client: AECOM
 Project/Site: Red Hill Drinking WaterCV22F0106

Job ID: 580-109243-1

Client Sample ID: 20220111-H2-YT01

Lab Sample ID: 580-109243-2

Date Collected: 01/11/22 08:00

Matrix: Water

Date Received: 01/13/22 10:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.2	U	15	3.2	ug/L			01/14/22 02:27	1
Benzene	0.24	U	1.0	0.24	ug/L			01/14/22 02:27	1
Bromodichloromethane	0.29	U	1.0	0.29	ug/L			01/14/22 02:27	1
Bromoform	0.51	U	1.0	0.51	ug/L			01/14/22 02:27	1
Bromomethane	0.21	U	1.0	0.21	ug/L			01/14/22 02:27	1
Carbon disulfide	0.53	U	1.0	0.53	ug/L			01/14/22 02:27	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			01/14/22 02:27	1
Chlorobenzene	0.44	U	1.0	0.44	ug/L			01/14/22 02:27	1
Chloroform	0.26	U	1.0	0.26	ug/L			01/14/22 02:27	1
Chloromethane	0.28	U **	1.0	0.28	ug/L			01/14/22 02:27	1
cis-1,2-Dichloroethene	0.35	U	1.0	0.35	ug/L			01/14/22 02:27	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.20	ug/L			01/14/22 02:27	1
Dibromochloromethane	0.43	U	1.0	0.43	ug/L			01/14/22 02:27	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/14/22 02:27	1
1,2-Dichloroethane	0.42	U	1.0	0.42	ug/L			01/14/22 02:27	1
1,1-Dichloroethene	0.28	U	1.0	0.28	ug/L			01/14/22 02:27	1
1,2-Dichloroethene, Total	0.39	U	1.0	0.39	ug/L			01/14/22 02:27	1
Dichloromethane	1.4	U *1	3.0	1.4	ug/L			01/14/22 02:27	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			01/14/22 02:27	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			01/14/22 02:27	1
Ethyl Chloride	0.35	U	1.0	0.35	ug/L			01/14/22 02:27	1
2-Hexanone	4.0	U	15	4.0	ug/L			01/14/22 02:27	1
Methyl Ethyl Ketone	4.7	U	15	4.7	ug/L			01/14/22 02:27	1
Methyl isobutyl ketone (MIBK)	2.5	U	5.0	2.5	ug/L			01/14/22 02:27	1
m-Xylene & p-Xylene	0.53	U	2.0	0.53	ug/L			01/14/22 02:27	1
o-Xylene	0.39	U	1.0	0.39	ug/L			01/14/22 02:27	1
Styrene	0.53	U	1.0	0.53	ug/L			01/14/22 02:27	1
1,1,2,2-Tetrachloroethane	0.52	U	1.0	0.52	ug/L			01/14/22 02:27	1
Tetrachloroethene	0.41	U	1.0	0.41	ug/L			01/14/22 02:27	1
Toluene	0.39	U	1.0	0.39	ug/L			01/14/22 02:27	1
trans-1,2-Dichloroethene	0.39	U	1.0	0.39	ug/L			01/14/22 02:27	1
trans-1,3-Dichloropropene	0.41	U	1.0	0.41	ug/L			01/14/22 02:27	1
1,1,1-Trichloroethane	0.39	U	1.0	0.39	ug/L			01/14/22 02:27	1
1,1,2-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/14/22 02:27	1
Trichloroethene	0.26	U	1.0	0.26	ug/L			01/14/22 02:27	1
Vinyl chloride	0.22	U **	1.0	0.22	ug/L			01/14/22 02:27	1
Xylenes, Total	0.53	U	2.0	0.53	ug/L			01/14/22 02:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		80 - 120		01/14/22 02:27	1
Dibromofluoromethane (Surr)	100		80 - 120		01/14/22 02:27	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		01/14/22 02:27	1
Toluene-d8 (Surr)	97		80 - 120		01/14/22 02:27	1

Client Sample Results

Client: AECOM
 Project/Site: Red Hill Drinking WaterCV22F0106

Job ID: 580-109243-1

Client Sample ID: 20220111-H2-YT04

Lab Sample ID: 580-109243-3

Date Collected: 01/11/22 10:55

Matrix: Water

Date Received: 01/13/22 10:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	31	U	100	31	ug/L			01/14/22 04:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		78 - 120					01/14/22 04:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.2	U	15	3.2	ug/L			01/14/22 04:50	1
Benzene	0.24	U	1.0	0.24	ug/L			01/14/22 04:50	1
Bromodichloromethane	0.29	U	1.0	0.29	ug/L			01/14/22 04:50	1
Bromoform	0.51	U	1.0	0.51	ug/L			01/14/22 04:50	1
Bromomethane	0.21	U	1.0	0.21	ug/L			01/14/22 04:50	1
Carbon disulfide	0.53	U	1.0	0.53	ug/L			01/14/22 04:50	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			01/14/22 04:50	1
Chlorobenzene	0.44	U	1.0	0.44	ug/L			01/14/22 04:50	1
Chloroform	0.26	U	1.0	0.26	ug/L			01/14/22 04:50	1
Chloromethane	0.28	U*	1.0	0.28	ug/L			01/14/22 04:50	1
cis-1,2-Dichloroethene	0.35	U	1.0	0.35	ug/L			01/14/22 04:50	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.20	ug/L			01/14/22 04:50	1
Dibromochloromethane	0.43	U	1.0	0.43	ug/L			01/14/22 04:50	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/14/22 04:50	1
1,2-Dichloroethane	0.42	U	1.0	0.42	ug/L			01/14/22 04:50	1
1,1-Dichloroethene	0.28	U	1.0	0.28	ug/L			01/14/22 04:50	1
1,2-Dichloroethene, Total	0.39	U	1.0	0.39	ug/L			01/14/22 04:50	1
Dichloromethane	1.4	U*1	3.0	1.4	ug/L			01/14/22 04:50	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			01/14/22 04:50	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			01/14/22 04:50	1
Ethyl Chloride	0.35	U	1.0	0.35	ug/L			01/14/22 04:50	1
2-Hexanone	4.0	U	15	4.0	ug/L			01/14/22 04:50	1
Methyl Ethyl Ketone	4.7	U	15	4.7	ug/L			01/14/22 04:50	1
Methyl isobutyl ketone (MIBK)	2.5	U	5.0	2.5	ug/L			01/14/22 04:50	1
m-Xylene & p-Xylene	0.53	U	2.0	0.53	ug/L			01/14/22 04:50	1
o-Xylene	0.39	U	1.0	0.39	ug/L			01/14/22 04:50	1
Styrene	0.53	U	1.0	0.53	ug/L			01/14/22 04:50	1
1,1,2,2-Tetrachloroethane	0.52	U	1.0	0.52	ug/L			01/14/22 04:50	1
Tetrachloroethene	0.41	U	1.0	0.41	ug/L			01/14/22 04:50	1
Toluene	0.39	U	1.0	0.39	ug/L			01/14/22 04:50	1
trans-1,2-Dichloroethene	0.39	U	1.0	0.39	ug/L			01/14/22 04:50	1
trans-1,3-Dichloropropene	0.41	U	1.0	0.41	ug/L			01/14/22 04:50	1
1,1,1-Trichloroethane	0.39	U	1.0	0.39	ug/L			01/14/22 04:50	1
1,1,2-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/14/22 04:50	1
Trichloroethene	0.26	U	1.0	0.26	ug/L			01/14/22 04:50	1
Vinyl chloride	0.22	U*	1.0	0.22	ug/L			01/14/22 04:50	1
Xylenes, Total	0.53	U	2.0	0.53	ug/L			01/14/22 04:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		80 - 120					01/14/22 04:50	1
Dibromofluoromethane (Surr)	107		80 - 120					01/14/22 04:50	1
1,2-Dichloroethane-d4 (Surr)	106		80 - 120					01/14/22 04:50	1
Toluene-d8 (Surr)	0.5	S1-	80 - 120					01/14/22 04:50	1

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Client Sample Results

Client: AECOM
 Project/Site: Red Hill Drinking WaterCV22F0106

Job ID: 580-109243-1

Client Sample ID: 20220111-H2-YT04

Lab Sample ID: 580-109243-3

Date Collected: 01/11/22 10:55

Matrix: Water

Date Received: 01/13/22 10:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.053	U	0.43	0.053	ug/L		01/13/22 14:57	01/14/22 00:57	1
Acenaphthylene	0.064	U	1.1	0.064	ug/L		01/13/22 14:57	01/14/22 00:57	1
Anthracene	0.053	U	1.1	0.053	ug/L		01/13/22 14:57	01/14/22 00:57	1
Benzo[a]anthracene	0.053	U	0.27	0.053	ug/L		01/13/22 14:57	01/14/22 00:57	1
Benzo[a]pyrene	0.043	U	0.27	0.043	ug/L		01/13/22 14:57	01/14/22 00:57	1
Benzo[b]fluoranthene	0.043	U	0.27	0.043	ug/L		01/13/22 14:57	01/14/22 00:57	1
Benzo[g,h,i]perylene	0.043	U	0.27	0.043	ug/L		01/13/22 14:57	01/14/22 00:57	1
Benzo[k]fluoranthene	0.053	U	0.27	0.053	ug/L		01/13/22 14:57	01/14/22 00:57	1
Bis(2-chloroethoxy)methane	0.053	U	0.64	0.053	ug/L		01/13/22 14:57	01/14/22 00:57	1
Bis(2-chloroethyl)ether	1.7		0.11	0.032	ug/L		01/13/22 14:57	01/14/22 00:57	1
Bis(2-ethylhexyl) phthalate	0.79	U	3.2	0.79	ug/L		01/13/22 14:57	01/14/22 00:57	1
4-Bromophenyl phenyl ether	0.064	U	0.64	0.064	ug/L		01/13/22 14:57	01/14/22 00:57	1
Butyl benzyl phthalate	0.29	U	4.3	0.29	ug/L		01/13/22 14:57	01/14/22 00:57	1
Carbazole	0.11	U	0.64	0.11	ug/L		01/13/22 14:57	01/14/22 00:57	1
4-Chloroaniline	0.63	U	2.1	0.63	ug/L		01/13/22 14:57	01/14/22 00:57	1
4-Chloro-3-methylphenol	0.14	U	0.64	0.14	ug/L		01/13/22 14:57	01/14/22 00:57	1
2-Chloronaphthalene	0.074	U	1.1	0.074	ug/L		01/13/22 14:57	01/14/22 00:57	1
2-Chlorophenol	0.053	U	1.1	0.053	ug/L		01/13/22 14:57	01/14/22 00:57	1
4-Chlorophenyl phenyl ether	0.053	U	0.64	0.053	ug/L		01/13/22 14:57	01/14/22 00:57	1
Chrysene	0.043	U	0.27	0.043	ug/L		01/13/22 14:57	01/14/22 00:57	1
Dibenz(a,h)anthracene	0.074	U	0.27	0.074	ug/L		01/13/22 14:57	01/14/22 00:57	1
Dibenzofuran	0.11	U	0.43	0.11	ug/L		01/13/22 14:57	01/14/22 00:57	1
1,2-Dichlorobenzene	0.053	U	0.43	0.053	ug/L		01/13/22 14:57	01/14/22 00:57	1
1,3-Dichlorobenzene	0.043	U	0.43	0.043	ug/L		01/13/22 14:57	01/14/22 00:57	1
1,4-Dichlorobenzene	0.043	U	0.43	0.043	ug/L		01/13/22 14:57	01/14/22 00:57	1
3,3'-Dichlorobenzidine	0.28	U	1.1	0.28	ug/L		01/13/22 14:57	01/14/22 00:57	1
2,4-Dichlorophenol	0.21	U	1.1	0.21	ug/L		01/13/22 14:57	01/14/22 00:57	1
Diethyl phthalate	0.16	U	1.1	0.16	ug/L		01/13/22 14:57	01/14/22 00:57	1
2,4-Dimethylphenol	0.17	U	4.3	0.17	ug/L		01/13/22 14:57	01/14/22 00:57	1
Dimethyl phthalate	0.064	U	0.64	0.064	ug/L		01/13/22 14:57	01/14/22 00:57	1
Di-n-butyl phthalate	0.20	U	3.2	0.20	ug/L		01/13/22 14:57	01/14/22 00:57	1
4,6-Dinitro-2-methylphenol	0.59	U	2.1	0.59	ug/L		01/13/22 14:57	01/14/22 00:57	1
2,4-Dinitrophenol	1.7	U	5.3	1.7	ug/L		01/13/22 14:57	01/14/22 00:57	1
2,4-Dinitrotoluene	0.11	U	1.1	0.11	ug/L		01/13/22 14:57	01/14/22 00:57	1
2,6-Dinitrotoluene	0.11	U	0.43	0.11	ug/L		01/13/22 14:57	01/14/22 00:57	1
Di-n-octyl phthalate	0.14	U	1.1	0.14	ug/L		01/13/22 14:57	01/14/22 00:57	1
Fluoranthene	0.064	U	0.27	0.064	ug/L		01/13/22 14:57	01/14/22 00:57	1
Fluorene	0.053	U	0.27	0.053	ug/L		01/13/22 14:57	01/14/22 00:57	1
Hexachlorobenzene	0.043	U	0.64	0.043	ug/L		01/13/22 14:57	01/14/22 00:57	1
Hexachlorobutadiene	0.064	U	1.1	0.064	ug/L		01/13/22 14:57	01/14/22 00:57	1
Hexachlorocyclopentadiene	0.15	U	1.1	0.15	ug/L		01/13/22 14:57	01/14/22 00:57	1
Hexachloroethane	0.053	U	1.1	0.053	ug/L		01/13/22 14:57	01/14/22 00:57	1
Indeno[1,2,3-cd]pyrene	0.14	U	0.43	0.14	ug/L		01/13/22 14:57	01/14/22 00:57	1
Isophorone	0.11	U	0.43	0.11	ug/L		01/13/22 14:57	01/14/22 00:57	1
2-Methylphenol	0.053	U	0.64	0.053	ug/L		01/13/22 14:57	01/14/22 00:57	1
3 & 4 Methylphenol	0.11	U	0.64	0.11	ug/L		01/13/22 14:57	01/14/22 00:57	1
Naphthalene	0.17	U	0.43	0.17	ug/L		01/13/22 14:57	01/14/22 00:57	1
2-Nitroaniline	0.11	U	1.1	0.11	ug/L		01/13/22 14:57	01/14/22 00:57	1
3-Nitroaniline	0.17	U	3.2	0.17	ug/L		01/13/22 14:57	01/14/22 00:57	1

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Client Sample Results

Client: AECOM
 Project/Site: Red Hill Drinking WaterCV22F0106

Job ID: 580-109243-1

Client Sample ID: 20220111-H2-YT04

Lab Sample ID: 580-109243-3

Date Collected: 01/11/22 10:55

Matrix: Water

Date Received: 01/13/22 10:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitroaniline	0.22	U	2.1	0.22	ug/L		01/13/22 14:57	01/14/22 00:57	1
Nitrobenzene	0.043	U	1.1	0.043	ug/L		01/13/22 14:57	01/14/22 00:57	1
4-Nitrophenol	1.8	U	11	1.8	ug/L		01/13/22 14:57	01/14/22 00:57	1
N-Nitrosodi-n-propylamine	0.064	U	0.43	0.064	ug/L		01/13/22 14:57	01/14/22 00:57	1
N-Nitrosodiphenylamine	0.074	U	1.1	0.074	ug/L		01/13/22 14:57	01/14/22 00:57	1
Pentachlorophenol	0.54	U	11	0.54	ug/L		01/13/22 14:57	01/14/22 00:57	1
Phenanthrene	0.13	U	1.1	0.13	ug/L		01/13/22 14:57	01/14/22 00:57	1
Phenol	0.38	U	1.1	0.38	ug/L		01/13/22 14:57	01/14/22 00:57	1
Pyrene	0.043	U	1.1	0.043	ug/L		01/13/22 14:57	01/14/22 00:57	1
1,2,4-Trichlorobenzene	0.096	U	0.43	0.096	ug/L		01/13/22 14:57	01/14/22 00:57	1
2,4,5-Trichlorophenol	0.11	U	0.43	0.11	ug/L		01/13/22 14:57	01/14/22 00:57	1
2,4,6-Trichlorophenol	0.11	U	0.64	0.11	ug/L		01/13/22 14:57	01/14/22 00:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	49		35 - 120	01/13/22 14:57	01/14/22 00:57	1
2-Fluorophenol (Surr)	0	S1-	21 - 120	01/13/22 14:57	01/14/22 00:57	1
Nitrobenzene-d5 (Surr)	66		39 - 120	01/13/22 14:57	01/14/22 00:57	1
Phenol-d5 (Surr)	0	S1-	10 - 120	01/13/22 14:57	01/14/22 00:57	1
Terphenyl-d14	96		63 - 137	01/13/22 14:57	01/14/22 00:57	1
2,4,6-Tribromophenol	88		50 - 130	01/13/22 14:57	01/14/22 00:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	89	U	110	89	ug/L		01/13/22 15:08	01/13/22 23:43	1
C24-C40	180	U	200	180	ug/L		01/13/22 15:08	01/13/22 23:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	94		53 - 120	01/13/22 15:08	01/13/22 23:43	1

Client Sample Results

Client: AECOM
 Project/Site: Red Hill Drinking WaterCV22F0106

Job ID: 580-109243-1

Client Sample ID: 20220111-H2-YT06

Lab Sample ID: 580-109243-4

Date Collected: 01/11/22 12:30

Matrix: Water

Date Received: 01/13/22 10:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	31	U	100	31	ug/L			01/14/22 05:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		78 - 120					01/14/22 05:14	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.2	U	15	3.2	ug/L			01/14/22 05:14	1
Benzene	0.24	U	1.0	0.24	ug/L			01/14/22 05:14	1
Bromodichloromethane	0.29	U	1.0	0.29	ug/L			01/14/22 05:14	1
Bromoform	0.51	U	1.0	0.51	ug/L			01/14/22 05:14	1
Bromomethane	0.21	U	1.0	0.21	ug/L			01/14/22 05:14	1
Carbon disulfide	0.53	U	1.0	0.53	ug/L			01/14/22 05:14	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			01/14/22 05:14	1
Chlorobenzene	0.44	U	1.0	0.44	ug/L			01/14/22 05:14	1
Chloroform	0.26	U	1.0	0.26	ug/L			01/14/22 05:14	1
Chloromethane	0.28	U*	1.0	0.28	ug/L			01/14/22 05:14	1
cis-1,2-Dichloroethene	0.35	U	1.0	0.35	ug/L			01/14/22 05:14	1
cis-1,3-Dichloropropene	0.20	U	1.0	0.20	ug/L			01/14/22 05:14	1
Dibromochloromethane	0.43	U	1.0	0.43	ug/L			01/14/22 05:14	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/14/22 05:14	1
1,2-Dichloroethane	0.42	U	1.0	0.42	ug/L			01/14/22 05:14	1
1,1-Dichloroethene	0.28	U	1.0	0.28	ug/L			01/14/22 05:14	1
1,2-Dichloroethene, Total	0.39	U	1.0	0.39	ug/L			01/14/22 05:14	1
Dichloromethane	1.4	U*1	3.0	1.4	ug/L			01/14/22 05:14	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			01/14/22 05:14	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			01/14/22 05:14	1
Ethyl Chloride	0.35	U	1.0	0.35	ug/L			01/14/22 05:14	1
2-Hexanone	4.0	U	15	4.0	ug/L			01/14/22 05:14	1
Methyl Ethyl Ketone	4.7	U	15	4.7	ug/L			01/14/22 05:14	1
Methyl isobutyl ketone (MIBK)	2.5	U	5.0	2.5	ug/L			01/14/22 05:14	1
m-Xylene & p-Xylene	0.53	U	2.0	0.53	ug/L			01/14/22 05:14	1
o-Xylene	0.39	U	1.0	0.39	ug/L			01/14/22 05:14	1
Styrene	0.53	U	1.0	0.53	ug/L			01/14/22 05:14	1
1,1,2,2-Tetrachloroethane	0.52	U	1.0	0.52	ug/L			01/14/22 05:14	1
Tetrachloroethene	0.41	U	1.0	0.41	ug/L			01/14/22 05:14	1
Toluene	0.39	U	1.0	0.39	ug/L			01/14/22 05:14	1
trans-1,2-Dichloroethene	0.39	U	1.0	0.39	ug/L			01/14/22 05:14	1
trans-1,3-Dichloropropene	0.41	U	1.0	0.41	ug/L			01/14/22 05:14	1
1,1,1-Trichloroethane	0.39	U	1.0	0.39	ug/L			01/14/22 05:14	1
1,1,2-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/14/22 05:14	1
Trichloroethene	0.26	U	1.0	0.26	ug/L			01/14/22 05:14	1
Vinyl chloride	0.22	U*	1.0	0.22	ug/L			01/14/22 05:14	1
Xylenes, Total	0.53	U	2.0	0.53	ug/L			01/14/22 05:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		80 - 120					01/14/22 05:14	1
Dibromofluoromethane (Surr)	109		80 - 120					01/14/22 05:14	1
1,2-Dichloroethane-d4 (Surr)	110		80 - 120					01/14/22 05:14	1
Toluene-d8 (Surr)	0.3	S1-	80 - 120					01/14/22 05:14	1

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Client Sample Results

Client: AECOM
 Project/Site: Red Hill Drinking WaterCV22F0106

Job ID: 580-109243-1

Client Sample ID: 20220111-H2-YT06

Lab Sample ID: 580-109243-4

Date Collected: 01/11/22 12:30

Matrix: Water

Date Received: 01/13/22 10:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.050	U	0.40	0.050	ug/L		01/13/22 14:57	01/14/22 01:20	1
Acenaphthylene	0.060	U	1.0	0.060	ug/L		01/13/22 14:57	01/14/22 01:20	1
Anthracene	0.050	U	1.0	0.050	ug/L		01/13/22 14:57	01/14/22 01:20	1
Benzo[a]anthracene	0.050	U	0.25	0.050	ug/L		01/13/22 14:57	01/14/22 01:20	1
Benzo[a]pyrene	0.040	U	0.25	0.040	ug/L		01/13/22 14:57	01/14/22 01:20	1
Benzo[b]fluoranthene	0.040	U	0.25	0.040	ug/L		01/13/22 14:57	01/14/22 01:20	1
Benzo[g,h,i]perylene	0.040	U	0.25	0.040	ug/L		01/13/22 14:57	01/14/22 01:20	1
Benzo[k]fluoranthene	0.050	U	0.25	0.050	ug/L		01/13/22 14:57	01/14/22 01:20	1
Bis(2-chloroethoxy)methane	0.050	U	0.60	0.050	ug/L		01/13/22 14:57	01/14/22 01:20	1
Bis(2-chloroethyl)ether	2.3		0.10	0.030	ug/L		01/13/22 14:57	01/14/22 01:20	1
Bis(2-ethylhexyl) phthalate	0.74	U	3.0	0.74	ug/L		01/13/22 14:57	01/14/22 01:20	1
4-Bromophenyl phenyl ether	0.060	U	0.60	0.060	ug/L		01/13/22 14:57	01/14/22 01:20	1
Butyl benzyl phthalate	0.27	U	4.0	0.27	ug/L		01/13/22 14:57	01/14/22 01:20	1
Carbazole	0.10	U	0.60	0.10	ug/L		01/13/22 14:57	01/14/22 01:20	1
4-Chloroaniline	0.59	U	2.0	0.59	ug/L		01/13/22 14:57	01/14/22 01:20	1
4-Chloro-3-methylphenol	0.13	U	0.60	0.13	ug/L		01/13/22 14:57	01/14/22 01:20	1
2-Chloronaphthalene	0.070	U	1.0	0.070	ug/L		01/13/22 14:57	01/14/22 01:20	1
2-Chlorophenol	0.050	U	1.0	0.050	ug/L		01/13/22 14:57	01/14/22 01:20	1
4-Chlorophenyl phenyl ether	0.050	U	0.60	0.050	ug/L		01/13/22 14:57	01/14/22 01:20	1
Chrysene	0.040	U	0.25	0.040	ug/L		01/13/22 14:57	01/14/22 01:20	1
Dibenz(a,h)anthracene	0.070	U	0.25	0.070	ug/L		01/13/22 14:57	01/14/22 01:20	1
Dibenzofuran	0.10	U	0.40	0.10	ug/L		01/13/22 14:57	01/14/22 01:20	1
1,2-Dichlorobenzene	0.050	U	0.40	0.050	ug/L		01/13/22 14:57	01/14/22 01:20	1
1,3-Dichlorobenzene	0.040	U	0.40	0.040	ug/L		01/13/22 14:57	01/14/22 01:20	1
1,4-Dichlorobenzene	0.040	U	0.40	0.040	ug/L		01/13/22 14:57	01/14/22 01:20	1
3,3'-Dichlorobenzidine	0.26	U	1.0	0.26	ug/L		01/13/22 14:57	01/14/22 01:20	1
2,4-Dichlorophenol	0.20	U	1.0	0.20	ug/L		01/13/22 14:57	01/14/22 01:20	1
Diethyl phthalate	0.15	U	1.0	0.15	ug/L		01/13/22 14:57	01/14/22 01:20	1
2,4-Dimethylphenol	0.16	U	4.0	0.16	ug/L		01/13/22 14:57	01/14/22 01:20	1
Dimethyl phthalate	0.060	U	0.60	0.060	ug/L		01/13/22 14:57	01/14/22 01:20	1
Di-n-butyl phthalate	0.19	U	3.0	0.19	ug/L		01/13/22 14:57	01/14/22 01:20	1
4,6-Dinitro-2-methylphenol	0.55	U	2.0	0.55	ug/L		01/13/22 14:57	01/14/22 01:20	1
2,4-Dinitrophenol	1.6	U	5.0	1.6	ug/L		01/13/22 14:57	01/14/22 01:20	1
2,4-Dinitrotoluene	0.10	U	1.0	0.10	ug/L		01/13/22 14:57	01/14/22 01:20	1
2,6-Dinitrotoluene	0.10	U	0.40	0.10	ug/L		01/13/22 14:57	01/14/22 01:20	1
Di-n-octyl phthalate	0.13	U	1.0	0.13	ug/L		01/13/22 14:57	01/14/22 01:20	1
Fluoranthene	0.060	U	0.25	0.060	ug/L		01/13/22 14:57	01/14/22 01:20	1
Fluorene	0.050	U	0.25	0.050	ug/L		01/13/22 14:57	01/14/22 01:20	1
Hexachlorobenzene	0.040	U	0.60	0.040	ug/L		01/13/22 14:57	01/14/22 01:20	1
Hexachlorobutadiene	0.060	U	1.0	0.060	ug/L		01/13/22 14:57	01/14/22 01:20	1
Hexachlorocyclopentadiene	0.14	U	1.0	0.14	ug/L		01/13/22 14:57	01/14/22 01:20	1
Hexachloroethane	0.050	U	1.0	0.050	ug/L		01/13/22 14:57	01/14/22 01:20	1
Indeno[1,2,3-cd]pyrene	0.13	U	0.40	0.13	ug/L		01/13/22 14:57	01/14/22 01:20	1
Isophorone	0.10	U	0.40	0.10	ug/L		01/13/22 14:57	01/14/22 01:20	1
2-Methylphenol	0.050	U	0.60	0.050	ug/L		01/13/22 14:57	01/14/22 01:20	1
3 & 4 Methylphenol	0.13	J	0.60	0.10	ug/L		01/13/22 14:57	01/14/22 01:20	1
Naphthalene	0.16	U	0.40	0.16	ug/L		01/13/22 14:57	01/14/22 01:20	1
2-Nitroaniline	0.10	U	1.0	0.10	ug/L		01/13/22 14:57	01/14/22 01:20	1
3-Nitroaniline	0.16	U	3.0	0.16	ug/L		01/13/22 14:57	01/14/22 01:20	1

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Client Sample Results

Client: AECOM
 Project/Site: Red Hill Drinking WaterCV22F0106

Job ID: 580-109243-1

Client Sample ID: 20220111-H2-YT06

Lab Sample ID: 580-109243-4

Date Collected: 01/11/22 12:30

Matrix: Water

Date Received: 01/13/22 10:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitroaniline	0.21	U	2.0	0.21	ug/L		01/13/22 14:57	01/14/22 01:20	1
Nitrobenzene	0.040	U	1.0	0.040	ug/L		01/13/22 14:57	01/14/22 01:20	1
4-Nitrophenol	1.7	U	10	1.7	ug/L		01/13/22 14:57	01/14/22 01:20	1
N-Nitrosodi-n-propylamine	0.060	U	0.40	0.060	ug/L		01/13/22 14:57	01/14/22 01:20	1
N-Nitrosodiphenylamine	0.070	U	1.0	0.070	ug/L		01/13/22 14:57	01/14/22 01:20	1
Pentachlorophenol	0.51	U	10	0.51	ug/L		01/13/22 14:57	01/14/22 01:20	1
Phenanthrene	0.12	U	1.0	0.12	ug/L		01/13/22 14:57	01/14/22 01:20	1
Phenol	0.36	U	1.0	0.36	ug/L		01/13/22 14:57	01/14/22 01:20	1
Pyrene	0.040	U	1.0	0.040	ug/L		01/13/22 14:57	01/14/22 01:20	1
1,2,4-Trichlorobenzene	0.090	U	0.40	0.090	ug/L		01/13/22 14:57	01/14/22 01:20	1
2,4,5-Trichlorophenol	0.10	U	0.40	0.10	ug/L		01/13/22 14:57	01/14/22 01:20	1
2,4,6-Trichlorophenol	0.10	U	0.60	0.10	ug/L		01/13/22 14:57	01/14/22 01:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	69		35 - 120	01/13/22 14:57	01/14/22 01:20	1
2-Fluorophenol (Surr)	0	S1-	21 - 120	01/13/22 14:57	01/14/22 01:20	1
Nitrobenzene-d5 (Surr)	80		39 - 120	01/13/22 14:57	01/14/22 01:20	1
Phenol-d5 (Surr)	0.4	S1-	10 - 120	01/13/22 14:57	01/14/22 01:20	1
Terphenyl-d14	102		63 - 137	01/13/22 14:57	01/14/22 01:20	1
2,4,6-Tribromophenol	102		50 - 130	01/13/22 14:57	01/14/22 01:20	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	92	U	110	92	ug/L		01/13/22 15:08	01/14/22 00:03	1
C24-C40	180	U	200	180	ug/L		01/13/22 15:08	01/14/22 00:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	94		53 - 120	01/13/22 15:08	01/14/22 00:03	1

QC Sample Results

Client: AECOM

Job ID: 580-109243-1

Project/Site: Red Hill Drinking WaterCV22F0106

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

Lab Sample ID: MB 580-378319/5

Matrix: Water

Analysis Batch: 378319

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	31	U	100	31	ug/L			01/14/22 00:28	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		78 - 120					01/14/22 00:28	1

Lab Sample ID: LCS 580-378319/8

Matrix: Water

Analysis Batch: 378319

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (C6-C12)	1000	1010		ug/L		101	75 - 127
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	101		78 - 120				

Lab Sample ID: LCSD 580-378319/9

Matrix: Water

Analysis Batch: 378319

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (C6-C12)	1000	1020		ug/L		102	75 - 127	1	13
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	103		78 - 120						

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

Lab Sample ID: MB 580-378318/5

Matrix: Water

Analysis Batch: 378318

Client Sample ID: Method Blank

Prep Type: Total/NA

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

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QC Sample Results

Client: AECOM

Job ID: 580-109243-1

Project/Site: Red Hill Drinking WaterCV22F0106

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

Lab Sample ID: MB 580-378318/5

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 378318

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

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

Lab Sample ID: LCS 580-378318/6

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 378318

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

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QC Sample Results

Client: AECOM
Project/Site: Red Hill Drinking WaterCV22F0106

Job ID: 580-109243-1

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

Lab Sample ID: LCS 580-378318/6

Matrix: Water

Analysis Batch: 378318

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

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

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

Lab Sample ID: LCSD 580-378318/7

Matrix: Water

Analysis Batch: 378318

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

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

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QC Sample Results

Client: AECOM

Job ID: 580-109243-1

Project/Site: Red Hill Drinking WaterCV22F0106

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

Lab Sample ID: LCSD 580-378318/7

Client Sample ID: Lab Control Sample Dup

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 378318

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

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

Lab Sample ID: 580-109243-1 MS

Client Sample ID: 20220111-H2-YT02

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 378318

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	3.2	U	50.0	40.5		ug/L		81	44 - 150
Benzene	0.24	U	10.0	10.9		ug/L		109	80 - 122
Bromodichloromethane	0.29	U	10.0	10.3		ug/L		103	75 - 124
Bromoform	0.54	J	10.0	10.2		ug/L		97	56 - 139
Bromomethane	0.21	U	10.0	13.5		ug/L		135	36 - 150
Carbon disulfide	0.53	U	10.0	10.7		ug/L		107	63 - 134
Carbon tetrachloride	0.30	U	10.0	11.2		ug/L		112	72 - 129
Chlorobenzene	0.44	U	10.0	10.3		ug/L		103	80 - 120
Chloroform	0.26	U	10.0	10.9		ug/L		109	78 - 127
Chloromethane	0.28	U ** F1	10.0	28.9	F1	ug/L		289	25 - 150
cis-1,2-Dichloroethene	0.35	U	10.0	10.7		ug/L		107	76 - 120

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QC Sample Results

Client: AECOM

Job ID: 580-109243-1

Project/Site: Red Hill Drinking WaterCV22F0106

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

Lab Sample ID: 580-109243-1 MS

Client Sample ID: 20220111-H2-YT02

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 378318

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
cis-1,3-Dichloropropene	0.20	U F1	10.0	5.99	F1	ug/L		60	77 - 120
Dibromochloromethane	0.43	U	10.0	10.4		ug/L		104	73 - 125
1,1-Dichloroethane	0.22	U	10.0	11.0		ug/L		110	80 - 120
1,2-Dichloroethane	0.42	U	10.0	10.3		ug/L		103	69 - 126
1,1-Dichloroethene	0.28	U	10.0	7.72		ug/L		77	70 - 129
1,2-Dichloroethene, Total	0.39	U	20.0	21.9		ug/L		110	76 - 129
Dichloromethane	1.4	U *1	10.0	10.3		ug/L		103	77 - 125
1,2-Dichloropropane	0.18	U	10.0	10.4		ug/L		104	80 - 120
Ethylbenzene	0.50	U F1	10.0	3.98	F1	ug/L		40	80 - 120
Ethyl Chloride	0.35	U	10.0	11.1		ug/L		111	38 - 150
2-Hexanone	4.0	U	50.0	36.1		ug/L		72	65 - 144
Methyl Ethyl Ketone	4.7	U	50.0	38.3		ug/L		77	65 - 137
Methyl isobutyl ketone (MIBK)	2.5	U	50.0	39.1		ug/L		78	59 - 141
m-Xylene & p-Xylene	0.53	U F1	10.0	0.53	U F1	ug/L		0	80 - 120
o-Xylene	0.39	U F1	10.0	0.39	U F1	ug/L		0	80 - 120
Styrene	0.53	U F1	10.0	0.53	U F1	ug/L		0	76 - 122
1,1,2,2-Tetrachloroethane	0.52	U	10.0	9.24		ug/L		92	74 - 124
Tetrachloroethene	0.41	U	10.0	11.1		ug/L		111	76 - 125
Toluene	0.39	U F1	10.0	3.00	F1	ug/L		30	80 - 120
trans-1,2-Dichloroethene	0.39	U	10.0	11.2		ug/L		112	75 - 120
trans-1,3-Dichloropropene	0.41	U F1	10.0	5.71	F1	ug/L		57	76 - 122
1,1,1-Trichloroethane	0.39	U	10.0	10.7		ug/L		107	74 - 130
1,1,2-Trichloroethane	0.24	U	10.0	9.95		ug/L		99	80 - 121
Trichloroethene	0.26	U	10.0	11.2		ug/L		112	80 - 125
Vinyl chloride	0.22	U *+ F1	10.0	0.697	J F1	ug/L		7	31 - 150
Xylenes, Total	0.53	U F1	20.0	0.53	U F1	ug/L		0	80 - 120

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	102		80 - 120
1,2-Dichloroethane-d4 (Surr)	96		80 - 120
Toluene-d8 (Surr)	31	S1-	80 - 120

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

Lab Sample ID: MB 580-378233/1-A

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 378282

Prep Batch: 378233

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

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QC Sample Results

Client: AECOM

Job ID: 580-109243-1

Project/Site: Red Hill Drinking WaterCV22F0106

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

Lab Sample ID: MB 580-378233/1-A

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 378282

Prep Batch: 378233

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Bis(2-chloroethyl)ether	0.030	U	0.10	0.030	ug/L		01/13/22 12:56	01/13/22 21:53	1
Bis(2-ethylhexyl) phthalate	0.74	U	3.0	0.74	ug/L		01/13/22 12:56	01/13/22 21:53	1
4-Bromophenyl phenyl ether	0.060	U	0.60	0.060	ug/L		01/13/22 12:56	01/13/22 21:53	1
Butyl benzyl phthalate	0.27	U	4.0	0.27	ug/L		01/13/22 12:56	01/13/22 21:53	1
Carbazole	0.10	U	0.60	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
4-Chloroaniline	0.59	U	2.0	0.59	ug/L		01/13/22 12:56	01/13/22 21:53	1
4-Chloro-3-methylphenol	0.13	U	0.60	0.13	ug/L		01/13/22 12:56	01/13/22 21:53	1
2-Chloronaphthalene	0.070	U	1.0	0.070	ug/L		01/13/22 12:56	01/13/22 21:53	1
2-Chlorophenol	0.050	U	1.0	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
4-Chlorophenyl phenyl ether	0.050	U	0.60	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Chrysene	0.040	U	0.25	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
Dibenz(a,h)anthracene	0.070	U	0.25	0.070	ug/L		01/13/22 12:56	01/13/22 21:53	1
Dibenzofuran	0.10	U	0.40	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
1,2-Dichlorobenzene	0.050	U	0.40	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
1,3-Dichlorobenzene	0.040	U	0.40	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
1,4-Dichlorobenzene	0.040	U	0.40	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
3,3'-Dichlorobenzidine	0.26	U	1.0	0.26	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,4-Dichlorophenol	0.20	U	1.0	0.20	ug/L		01/13/22 12:56	01/13/22 21:53	1
Diethyl phthalate	0.15	U	1.0	0.15	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,4-Dimethylphenol	0.16	U	4.0	0.16	ug/L		01/13/22 12:56	01/13/22 21:53	1
Dimethyl phthalate	0.060	U	0.60	0.060	ug/L		01/13/22 12:56	01/13/22 21:53	1
Di-n-butyl phthalate	0.19	U	3.0	0.19	ug/L		01/13/22 12:56	01/13/22 21:53	1
4,6-Dinitro-2-methylphenol	0.55	U	2.0	0.55	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,4-Dinitrophenol	1.6	U	5.0	1.6	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,4-Dinitrotoluene	0.10	U	1.0	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,6-Dinitrotoluene	0.10	U	0.40	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
Di-n-octyl phthalate	0.13	U	1.0	0.13	ug/L		01/13/22 12:56	01/13/22 21:53	1
Fluoranthene	0.060	U	0.25	0.060	ug/L		01/13/22 12:56	01/13/22 21:53	1
Fluorene	0.050	U	0.25	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Hexachlorobenzene	0.040	U	0.60	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
Hexachlorobutadiene	0.060	U	1.0	0.060	ug/L		01/13/22 12:56	01/13/22 21:53	1
Hexachlorocyclopentadiene	0.14	U	1.0	0.14	ug/L		01/13/22 12:56	01/13/22 21:53	1
Hexachloroethane	0.050	U	1.0	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
Indeno[1,2,3-cd]pyrene	0.13	U	0.40	0.13	ug/L		01/13/22 12:56	01/13/22 21:53	1
Isophorone	0.10	U	0.40	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
2-Methylphenol	0.050	U	0.60	0.050	ug/L		01/13/22 12:56	01/13/22 21:53	1
3 & 4 Methylphenol	0.10	U	0.60	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
Naphthalene	0.16	U	0.40	0.16	ug/L		01/13/22 12:56	01/13/22 21:53	1
2-Nitroaniline	0.10	U	1.0	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
3-Nitroaniline	0.16	U	3.0	0.16	ug/L		01/13/22 12:56	01/13/22 21:53	1
4-Nitroaniline	0.21	U	2.0	0.21	ug/L		01/13/22 12:56	01/13/22 21:53	1
Nitrobenzene	0.040	U	1.0	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1
4-Nitrophenol	1.7	U	10	1.7	ug/L		01/13/22 12:56	01/13/22 21:53	1
N-Nitrosodi-n-propylamine	0.060	U	0.40	0.060	ug/L		01/13/22 12:56	01/13/22 21:53	1
N-Nitrosodiphenylamine	0.070	U	1.0	0.070	ug/L		01/13/22 12:56	01/13/22 21:53	1
Pentachlorophenol	0.51	U	10	0.51	ug/L		01/13/22 12:56	01/13/22 21:53	1
Phenanthrene	0.12	U	1.0	0.12	ug/L		01/13/22 12:56	01/13/22 21:53	1
Phenol	0.36	U	1.0	0.36	ug/L		01/13/22 12:56	01/13/22 21:53	1
Pyrene	0.040	U	1.0	0.040	ug/L		01/13/22 12:56	01/13/22 21:53	1

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QC Sample Results

Client: AECOM

Job ID: 580-109243-1

Project/Site: Red Hill Drinking WaterCV22F0106

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

Lab Sample ID: MB 580-378233/1-A

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 378282

Prep Batch: 378233

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,4-Trichlorobenzene	0.090	U	0.40	0.090	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,4,5-Trichlorophenol	0.10	U	0.40	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1
2,4,6-Trichlorophenol	0.10	U	0.60	0.10	ug/L		01/13/22 12:56	01/13/22 21:53	1

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

Lab Sample ID: LCS 580-378233/2-A

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 378282

Prep Batch: 378233

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

QC Sample Results

Client: AECOM

Job ID: 580-109243-1

Project/Site: Red Hill Drinking WaterCV22F0106

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

Lab Sample ID: LCS 580-378233/2-A

Matrix: Water

Analysis Batch: 378282

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 378233

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-Dinitrophenol	4.00	1.76	J	ug/L		44	10 - 146
2,4-Dinitrotoluene	2.00	1.82		ug/L		91	51 - 120
2,6-Dinitrotoluene	2.00	1.60		ug/L		80	52 - 120
Di-n-octyl phthalate	2.00	2.20		ug/L		110	48 - 140
Fluoranthene	2.00	2.26		ug/L		113	60 - 121
Fluorene	2.00	1.52		ug/L		76	20 - 120
Hexachlorobenzene	2.00	1.69		ug/L		85	49 - 120
Hexachlorobutadiene	2.00	1.05		ug/L		53	10 - 130
Hexachlorocyclopentadiene	2.00	0.678	J	ug/L		34	10 - 125
Hexachloroethane	2.00	1.16		ug/L		58	10 - 130
Indeno[1,2,3-cd]pyrene	2.00	1.76		ug/L		88	39 - 124
Isophorone	2.00	1.40		ug/L		70	41 - 120
2-Methylphenol	2.00	1.25		ug/L		63	30 - 120
3 & 4 Methylphenol	2.00	1.09		ug/L		54	29 - 120
Naphthalene	2.00	1.28		ug/L		64	42 - 120
2-Nitroaniline	2.00	1.59		ug/L		79	43 - 120
3-Nitroaniline	2.00	1.73	J	ug/L		86	10 - 138
4-Nitroaniline	2.00	2.18		ug/L		109	38 - 133
Nitrobenzene	2.00	1.92		ug/L		96	38 - 120
4-Nitrophenol	4.00	1.7	U	ug/L		30	10 - 120
N-Nitrosodi-n-propylamine	2.00	1.59		ug/L		79	39 - 120
N-Nitrosodiphenylamine	2.00	1.74		ug/L		87	52 - 120
Pentachlorophenol	4.00	1.79	J	ug/L		45	18 - 135
Phenanthrene	2.00	1.89		ug/L		95	54 - 120
Phenol	2.00	0.613	J	ug/L		31	13 - 120
Pyrene	2.00	2.26		ug/L		113	57 - 120
1,2,4-Trichlorobenzene	2.00	1.24		ug/L		62	21 - 120
2,4,5-Trichlorophenol	2.00	1.28		ug/L		64	45 - 120
2,4,6-Trichlorophenol	2.00	1.33		ug/L		66	43 - 120

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

Lab Sample ID: LCSD 580-378233/3-A

Matrix: Water

Analysis Batch: 378282

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 378233

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

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QC Sample Results

Client: AECOM

Job ID: 580-109243-1

Project/Site: Red Hill Drinking WaterCV22F0106

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

Lab Sample ID: LCSD 580-378233/3-A

Client Sample ID: Lab Control Sample Dup

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 378282

Prep Batch: 378233

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	RPD Limit
							Limits	RPD		
Benzo[b]fluoranthene	2.00	2.14		ug/L		107	54 - 124	12	35	
Benzo[g,h,i]perylene	2.00	2.19		ug/L		109	46 - 124	12	35	
Benzo[k]fluoranthene	2.00	2.15		ug/L		108	52 - 132	8	35	
Bis(2-chloroethoxy)methane	2.00	1.59		ug/L		79	38 - 120	7	35	
Bis(2-ethylhexyl) phthalate	2.00	2.40	J	ug/L		120	41 - 150	10	35	
4-Bromophenyl phenyl ether	2.00	1.56		ug/L		78	53 - 120	0	35	
Butyl benzyl phthalate	2.00	2.48	J	ug/L		124	40 - 150	11	35	
Carbazole	2.00	2.35		ug/L		117	61 - 150	1	35	
4-Chloroaniline	2.00	1.05	J	ug/L		52	10 - 150	18	35	
4-Chloro-3-methylphenol	2.00	1.61		ug/L		81	36 - 120	8	35	
2-Chloronaphthalene	2.00	1.37		ug/L		68	35 - 120	6	35	
2-Chlorophenol	2.00	1.35		ug/L		68	44 - 120	1	35	
4-Chlorophenyl phenyl ether	2.00	1.49		ug/L		75	41 - 120	1	35	
Chrysene	2.00	2.32		ug/L		116	57 - 125	9	35	
Dibenz(a,h)anthracene	2.00	2.08		ug/L		104	48 - 126	11	35	
Dibenzofuran	2.00	1.54		ug/L		77	45 - 120	4	35	
1,2-Dichlorobenzene	2.00	1.19		ug/L		59	20 - 120	0	35	
1,3-Dichlorobenzene	2.00	1.16		ug/L		58	20 - 120	4	35	
1,4-Dichlorobenzene	2.00	1.18		ug/L		59	20 - 120	3	35	
3,3'-Dichlorobenzidine	4.00	4.26		ug/L		107	33 - 150	8	35	
2,4-Dichlorophenol	2.00	1.32		ug/L		66	45 - 120	8	35	
Diethyl phthalate	2.00	2.26		ug/L		113	60 - 121	9	35	
2,4-Dimethylphenol	2.00	1.53	J	ug/L		76	37 - 120	2	35	
Dimethyl phthalate	2.00	1.76		ug/L		88	54 - 120	3	35	
Di-n-butyl phthalate	2.00	2.33	J	ug/L		117	55 - 150	1	35	
4,6-Dinitro-2-methylphenol	4.00	2.65		ug/L		66	29 - 136	15	35	
2,4-Dinitrophenol	4.00	1.84	J	ug/L		46	10 - 146	4	35	
2,4-Dinitrotoluene	2.00	2.08		ug/L		104	51 - 120	13	35	
2,6-Dinitrotoluene	2.00	1.62		ug/L		81	52 - 120	1	35	
Di-n-octyl phthalate	2.00	2.40		ug/L		120	48 - 140	9	35	
Fluoranthene	2.00	2.28		ug/L		114	60 - 121	1	35	
Fluorene	2.00	1.60		ug/L		80	20 - 120	5	35	
Hexachlorobenzene	2.00	1.68		ug/L		84	49 - 120	1	35	
Hexachlorobutadiene	2.00	1.00		ug/L		50	10 - 130	5	35	
Hexachlorocyclopentadiene	2.00	0.664	J	ug/L		33	10 - 125	2	35	
Hexachloroethane	2.00	1.17		ug/L		58	10 - 130	1	35	
Indeno[1,2,3-cd]pyrene	2.00	2.16		ug/L		108	39 - 124	20	35	
Isophorone	2.00	1.51		ug/L		76	41 - 120	7	35	
2-Methylphenol	2.00	1.23		ug/L		61	30 - 120	2	35	
3 & 4 Methylphenol	2.00	1.20		ug/L		60	29 - 120	10	35	
Naphthalene	2.00	1.23		ug/L		61	42 - 120	4	35	
2-Nitroaniline	2.00	1.69		ug/L		85	43 - 120	7	35	
3-Nitroaniline	2.00	1.88	J	ug/L		94	10 - 138	9	35	
4-Nitroaniline	2.00	2.43		ug/L		121	38 - 133	11	35	
Nitrobenzene	2.00	2.02		ug/L		101	38 - 120	5	35	
4-Nitrophenol	4.00	1.7	U	ug/L		41	10 - 120	32	35	
N-Nitrosodi-n-propylamine	2.00	1.68		ug/L		84	39 - 120	6	35	
N-Nitrosodiphenylamine	2.00	1.74		ug/L		87	52 - 120	0	35	
Pentachlorophenol	4.00	1.37	J	ug/L		34	18 - 135	27	35	

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QC Sample Results

Client: AECOM

Job ID: 580-109243-1

Project/Site: Red Hill Drinking WaterCV22F0106

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

Lab Sample ID: LCSD 580-378233/3-A

Client Sample ID: Lab Control Sample Dup

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 378282

Prep Batch: 378233

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
Phenanthrene	2.00	1.93		ug/L		96	54 - 120	2	35	
Phenol	2.00	0.674	J	ug/L		34	13 - 120	10	35	
Pyrene	2.00	2.30		ug/L		115	57 - 120	2	35	
1,2,4-Trichlorobenzene	2.00	1.17		ug/L		58	21 - 120	6	35	
2,4,5-Trichlorophenol	2.00	1.68		ug/L		84	45 - 120	27	35	
2,4,6-Trichlorophenol	2.00	1.39		ug/L		70	43 - 120	5	35	

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

Lab Sample ID: 580-109243-1 MS

Client Sample ID: 20220111-H2-YT02

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 378282

Prep Batch: 378233

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec.	
				Result	Qualifier				Limits	RPD
Acenaphthene	0.054	U	2.09	0.852		ug/L		41	41 - 120	
Acenaphthylene	0.064	U F1	2.09	0.806	J F1	ug/L		39	43 - 120	
Anthracene	0.054	U	2.09	1.48		ug/L		71	58 - 120	
Benzo[a]anthracene	0.054	U	2.09	2.05		ug/L		98	48 - 131	
Benzo[a]pyrene	0.043	U	2.09	1.58		ug/L		76	55 - 125	
Benzo[b]fluoranthene	0.043	U	2.09	2.27		ug/L		108	54 - 124	
Benzo[g,h,i]perylene	0.043	U	2.09	1.39		ug/L		66	46 - 124	
Benzo[k]fluoranthene	0.054	U	2.09	1.96		ug/L		93	52 - 132	
Bis(2-chloroethoxy)methane	0.054	U	2.09	1.34		ug/L		64	38 - 120	
Bis(2-ethylhexyl) phthalate	0.79	U	2.09	2.33	J	ug/L		111	41 - 150	
4-Bromophenyl phenyl ether	0.064	U	2.09	1.62		ug/L		77	53 - 120	
Butyl benzyl phthalate	0.29	U	2.09	2.39	J	ug/L		114	40 - 150	
Carbazole	0.11	U F1	2.09	1.18	F1	ug/L		56	61 - 150	
4-Chloroaniline	0.63	U F1	2.09	0.62	U F1	ug/L		0	10 - 150	
4-Chloro-3-methylphenol	0.14	U F1	2.09	0.220	J F1	ug/L		10	36 - 120	
2-Chloronaphthalene	0.075	U	2.09	1.06		ug/L		50	35 - 120	
2-Chlorophenol	0.054	U F1	2.09	0.213	J F1	ug/L		10	44 - 120	
4-Chlorophenyl phenyl ether	0.054	U	2.09	1.47		ug/L		70	41 - 120	
Chrysene	0.043	U	2.09	2.17		ug/L		104	57 - 125	
Dibenz(a,h)anthracene	0.075	U	2.09	1.53		ug/L		73	48 - 126	
Dibenzofuran	0.11	U	2.09	1.33		ug/L		63	45 - 120	
1,2-Dichlorobenzene	0.054	U	2.09	0.946		ug/L		45	20 - 120	
1,3-Dichlorobenzene	0.043	U	2.09	0.914		ug/L		44	20 - 120	
1,4-Dichlorobenzene	0.043	U	2.09	0.894		ug/L		43	20 - 120	
3,3'-Dichlorobenzidine	0.28	U F1	4.18	0.556	J F1	ug/L		13	33 - 150	
2,4-Dichlorophenol	0.21	U F1	2.09	0.472	J F1	ug/L		23	45 - 120	
Diethyl phthalate	0.16	U	2.09	2.40		ug/L		115	60 - 121	
2,4-Dimethylphenol	0.17	U F1	2.09	0.232	J F1	ug/L		11	37 - 120	

QC Sample Results

Client: AECOM
Project/Site: Red Hill Drinking WaterCV22F0106

Job ID: 580-109243-1

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

Lab Sample ID: 580-109243-1 MS

Matrix: Water

Analysis Batch: 378282

Client Sample ID: 20220111-H2-YT02

Prep Type: Total/NA

Prep Batch: 378233

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
Dimethyl phthalate	0.064	U	2.09	2.03		ug/L		97	54 - 120
Di-n-butyl phthalate	0.20	U	2.09	2.22	J	ug/L		106	55 - 150
4,6-Dinitro-2-methylphenol	0.59	U	4.18	3.64		ug/L		87	29 - 136
2,4-Dinitrophenol	1.7	U	4.18	3.62	J	ug/L		86	10 - 146
2,4-Dinitrotoluene	0.11	U	2.09	2.08		ug/L		99	51 - 120
2,6-Dinitrotoluene	0.11	U	2.09	1.78		ug/L		85	52 - 120
Di-n-octyl phthalate	0.14	U	2.09	2.24		ug/L		107	48 - 140
Fluoranthene	0.064	U	2.09	2.13		ug/L		102	60 - 121
Fluorene	0.054	U	2.09	1.53		ug/L		73	20 - 120
Hexachlorobenzene	0.043	U	2.09	1.72		ug/L		82	49 - 120
Hexachlorobutadiene	0.064	U	2.09	0.901	J	ug/L		43	10 - 130
Hexachlorocyclopentadiene	0.15	U	2.09	0.689	J	ug/L		33	10 - 125
Hexachloroethane	0.054	U	2.09	0.929	J	ug/L		44	10 - 130
Indeno[1,2,3-cd]pyrene	0.14	U	2.09	1.98		ug/L		95	39 - 124
Isophorone	0.11	U	2.09	1.35		ug/L		65	41 - 120
2-Methylphenol	0.054	U F1	2.09	0.052	U F1	ug/L		0	30 - 120
3 & 4 Methylphenol	0.11	U F1	2.09	0.10	U F1	ug/L		0	29 - 120
Naphthalene	0.17	U F1	2.09	0.859	F1	ug/L		41	42 - 120
2-Nitroaniline	0.11	U	2.09	1.14		ug/L		54	43 - 120
3-Nitroaniline	0.17	U	2.09	0.206	J	ug/L		10	10 - 138
4-Nitroaniline	0.23	U F1	2.09	0.402	J F1	ug/L		19	38 - 133
Nitrobenzene	0.043	U	2.09	1.33		ug/L		64	38 - 120
4-Nitrophenol	1.8	U F1	4.18	1.8	U F1	ug/L		0	10 - 120
N-Nitrosodi-n-propylamine	0.064	U	2.09	1.45		ug/L		69	39 - 120
N-Nitrosodiphenylamine	0.075	U F1	2.09	0.129	J F1	ug/L		6	52 - 120
Pentachlorophenol	0.55	U	4.18	3.02	J	ug/L		72	18 - 135
Phenanthrene	0.13	U	2.09	1.79		ug/L		86	54 - 120
Phenol	0.39	U F1	2.09	0.38	U F1	ug/L		0	13 - 120
Pyrene	0.043	U	2.09	2.03		ug/L		97	57 - 120
1,2,4-Trichlorobenzene	0.097	U	2.09	0.922		ug/L		44	21 - 120
2,4,5-Trichlorophenol	0.11	U F1	2.09	0.739	F1	ug/L		35	45 - 120
2,4,6-Trichlorophenol	0.11	U	2.09	1.30		ug/L		62	43 - 120

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	41		35 - 120
2-Fluorophenol (Surr)	0.8	S1-	21 - 120
Nitrobenzene-d5 (Surr)	56		39 - 120
Phenol-d5 (Surr)	0.6	S1-	10 - 120
Terphenyl-d14	98		63 - 137
2,4,6-Tribromophenol	370	S1+	50 - 130

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

Lab Sample ID: MB 580-378234/1-A

Matrix: Water

Analysis Batch: 378249

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 378234

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

Eurofins Seattle

QC Sample Results

Client: AECOM

Job ID: 580-109243-1

Project/Site: Red Hill Drinking WaterCV22F0106

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

Lab Sample ID: MB 580-378234/1-A

Matrix: Water

Analysis Batch: 378249

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 378234

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C24-C40	180	U	200	180	ug/L		01/13/22 13:00	01/13/22 19:01	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	73		53 - 120				01/13/22 13:00	01/13/22 19:01	1

Lab Sample ID: LCS 580-378234/2-A

Matrix: Water

Analysis Batch: 378249

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 378234

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C9-C25	4000	3210		ug/L		80	55 - 134
C24-C40	4000	3600		ug/L		90	36 - 143
Surrogate	%Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	80		53 - 120				

Lab Sample ID: LCSD 580-378234/3-A

Matrix: Water

Analysis Batch: 378249

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 378234

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
C9-C25	4000	3240		ug/L		81	55 - 134	1	26
C24-C40	4000	3630		ug/L		91	36 - 143	1	24
Surrogate	%Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	77		53 - 120						

Lab Chronicle

Client: AECOM

Job ID: 580-109243-1

Project/Site: Red Hill Drinking WaterCV22F0106

Client Sample ID: 20220111-H2-YT02

Lab Sample ID: 580-109243-1

Date Collected: 01/11/22 09:20

Matrix: Water

Date Received: 01/13/22 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	378319	01/14/22 03:39	JSM	FGS SEA
Total/NA	Analysis	8260D		1	378318	01/14/22 03:39	B1M	FGS SEA
Total/NA	Prep	3510C			378233	01/13/22 14:38	M1E	FGS SEA
Total/NA	Analysis	8270E		1	378282	01/14/22 00:12	T1L	FGS SEA
Total/NA	Prep	3510C			378234	01/13/22 15:08	M1E	FGS SEA
Total/NA	Analysis	8015D		1	378249	01/13/22 23:22	JAE	FGS SEA

Client Sample ID: 20220111-H2-YT01

Lab Sample ID: 580-109243-2

Date Collected: 01/11/22 08:00

Matrix: Water

Date Received: 01/13/22 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	378318	01/14/22 02:27	B1M	FGS SEA

Client Sample ID: 20220111-H2-YT04

Lab Sample ID: 580-109243-3

Date Collected: 01/11/22 10:55

Matrix: Water

Date Received: 01/13/22 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	378319	01/14/22 04:50	JSM	FGS SEA
Total/NA	Analysis	8260D		1	378318	01/14/22 04:50	B1M	FGS SEA
Total/NA	Prep	3510C			378233	01/13/22 14:57	M1E	FGS SEA
Total/NA	Analysis	8270E		1	378282	01/14/22 00:57	T1L	FGS SEA
Total/NA	Prep	3510C			378234	01/13/22 15:08	M1E	FGS SEA
Total/NA	Analysis	8015D		1	378249	01/13/22 23:43	JAE	FGS SEA

Client Sample ID: 20220111-H2-YT06

Lab Sample ID: 580-109243-4

Date Collected: 01/11/22 12:30

Matrix: Water

Date Received: 01/13/22 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	378319	01/14/22 05:14	JSM	FGS SEA
Total/NA	Analysis	8260D		1	378318	01/14/22 05:14	B1M	FGS SEA
Total/NA	Prep	3510C			378233	01/13/22 14:57	M1E	FGS SEA
Total/NA	Analysis	8270E		1	378282	01/14/22 01:20	T1L	FGS SEA
Total/NA	Prep	3510C			378234	01/13/22 15:08	M1E	FGS SEA
Total/NA	Analysis	8015D		1	378249	01/14/22 00:03	JAE	FGS SEA

Laboratory References:

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

Accreditation/Certification Summary

Client: AECOM

Job ID: 580-109243-1

Project/Site: Red Hill Drinking WaterCV22F0106

Laboratory: Eurofins Seattle

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

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

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

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



Sample Summary

Client: AECOM

Job ID: 580-109243-1

Project/Site: Red Hill Drinking WaterCV22F0106

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-109243-1	20220111-H2-YT02	Water	01/11/22 09:20	01/13/22 10:15
580-109243-2	20220111-H2-YT01	Water	01/11/22 08:00	01/13/22 10:15
580-109243-3	20220111-H2-YT04	Water	01/11/22 10:55	01/13/22 10:15
580-109243-4	20220111-H2-YT06	Water	01/11/22 12:30	01/13/22 10:15

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Chain of Custody Record

Client Information		Sampler: AECOM	Lab PM: Elaine Walker	Carrier Tracking No(s): FedEx	COC No: 01112022DW-73						
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								
Address: 1001 Bishop St. Suite 1600		Due Date Requested: see subcontract	<table border="1"> <tr> <th>Field Filtered Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>Total Number of Containers</th> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>			Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of Containers			
Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of Containers									
City: Honolulu		TAT Requested (days): 48 hrs, 2 days									
State, Zip: Hawaii 96813		Compliance Project: <input 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	Job #: 109243								
Site: RHSF		SSOW#:	Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify)								
Other:											
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of Containers	Special Instructions/Note:		
20220111-H2-VT02		1/11/22	0920	G	W	X	X	7			
20220111-H2-YF01		1/11/22	0800	G	W	X	X	2	Trip Blank CR		
1/11/22 added trip blank that was not on COC											
Therm. ID: A2 Cor: 0.1 ° Unc: 0.2 °											
Cooler Desc: Ice											
Packing: Bubble							FedEx: PC				
Cust. Seal: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>							UPS:				
Blue Ice, <input checked="" type="checkbox"/> Wet, <input type="checkbox"/> Dry, None <input type="checkbox"/>							Lab Cour:				
Other:											
Possible Hazard Identification		580-109243 Chain of Custody			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"/>					<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 EQUIS EDD.			Special Instructions/QC Requirements: DOD QSM project.						
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:							
Relinquished by: <i>[Signature]</i>		Date/Time: 1/11/22 @ 1930	Company: AECOM	Received by: <i>[Signature]</i>		Date/Time: 1/11/22 1930	Company: AECOM				
Relinquished by: <i>[Signature]</i>		Date/Time: 1/12/22 1500	Company: AECOM	Received by: <i>[Signature]</i>		Date/Time: 1/12/22 1065	Company: FGS				
Relinquished by:		Date/Time:	Company:	Received by:		Date/Time:	Company:				
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks:						

Chain of Custody Record

Client Information			Sampler: AECOM		Lab PM: Elaine Walker		Carrier Tracking No(s): FedEx		COC No: 6112022DW-74					
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 #: 109243			
Address: 1001 Bishop St. Suite 1600			Due Date Requested: see subcontract		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) EPA 8260 TPH-g (HC1) EPA 8015 TPH-d10 8270 SVOCs 8260 VOCs Full Suite						Total Number of containers		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify) Other:	
City: Honolulu			TAT Requested (days): 2											
State, Zip: Hawaii 96813			Compliance Project: <input 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)			WFO #:											
Project Name: CV22F0106			Project #: 60674414		Preservation Code: X X A I						Special Instructions/Note:			
Site: RHSF			SSOW#:											
Sample Identification			Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)		Special Instructions/Note:			
20220111-H2-VT04			1/11/22		1055		G		W					
1/11/22 SA														
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 EQUIS EDD.								
Special Instructions/QC Requirements: DOD QSM project.														
Empty Kit Relinquished by:			Date:			Time:			Method of Shipment:					
Relinquished by:			Date/Time: 1/11/22 @ 1930			Company: AECOM			Received by:					
Relinquished by:			Date/Time: 1/12/22 1500			Company: AECOM			Received by:					
Relinquished by:			Date/Time:			Company:			Received by:					
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No			Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks:								

Chain of Custody Record

Client Information		Sampler: AECOM		Lab PM: Elaine Walker		Carrier Tracking No(s): FedEx		COC No: 01112022 DW-77	
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 #: 109243	
Address: 1001 Bishop St. Suite 1600		Due Date Requested: see subcontract						Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) EPA 8260 TPH-g (HCl) EPA 8015 TPH-d/o 8270ADES 8260 VOCs (full suite)	
City: Honolulu		TAT Requested (days): 48 hr., 2 days							
State, Zip: Hawaii 96813		Compliance Project: <input 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, BT=Tissue, A=Air)			Special Instructions/Note:	
20220111-HZ-YT06		7/11/22	1230	G	W				
1/10/22 SA									
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 EQUIS EDD.		Special Instructions/QC Requirements: DOD QSM project.					
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:			
Relinquished by: <i>[Signature]</i>		Date/Time: 7/11/22 @ 1930		Company: AECOM		Received by: <i>[Signature]</i>		Date/Time: 7/11/22 1930	
Relinquished by: <i>[Signature]</i>		Date/Time: 7/12/22 1500		Company: AECOM		Received by: <i>[Signature]</i>		Date/Time: 7/12/22 1015	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:			

Therm. ID: **A2** Cor: **0.5** ° Unc: **1.2** °
 Cooler Dsc: **LB**
 Packing: **GDH** FedEx: **PO**
 Cust. Seal: Yes No
 Blue Ice: **Yes** Dry, None Other:

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-109243-1

Login Number: 109243

List Source: Eurofins Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	Refer to Job Narrative for details.
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

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

Laboratory Job ID: 580-109257-1

Client Project/Site: Red Hill Drinking Water CV22F0106

For:

AECOM
1001 Bishop Street
Honolulu, Hawaii 96813

Attn: Margie F Pascua



*Authorized for release by:
1/14/2022 4:44:11 PM*

Kristine Allen, Client Service Manager
(253)248-4970
Kristine.Allen@Eurofinset.com

Designee for

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

LINKS

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www.eurofinsus.com/Env

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.



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Sample Summary	11
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Case Narrative

Client: AECOM
Project/Site: Red Hill Drinking Water CV22F0106

Job ID: 580-109257-1

Job ID: 580-109257-1

Laboratory: Eurofins Seattle

Narrative

**Job Narrative
580-109257-1**

Comments

No additional comments.

Receipt

The samples were received on 1/13/2022 10:15 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was -0.3° C.

GC/MS VOA

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

GC Semi VOA

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

Organic Prep

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

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

VOA Prep

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



Definitions/Glossary

Client: AECOM

Job ID: 580-109257-1

Project/Site: Red Hill Drinking Water CV22F0106

Qualifiers

GC/MS VOA

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

GC Semi VOA

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

Glossary

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

Client Sample Results

Client: AECOM
 Project/Site: Red Hill Drinking Water CV22F0106

Job ID: 580-109257-1

Client Sample ID: 20220111-H2-YT03

Lab Sample ID: 580-109257-1

Date Collected: 01/11/22 09:45

Matrix: Water

Date Received: 01/13/22 10:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	31	U	100	31	ug/L			01/13/22 17:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		78 - 120					01/13/22 17:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	94	U	120	94	ug/L		01/13/22 17:57	01/14/22 04:04	1
C24-C40	190	U	210	190	ug/L		01/13/22 17:57	01/14/22 04:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	96		53 - 120				01/13/22 17:57	01/14/22 04:04	1

Client Sample Results

Client: AECOM
 Project/Site: Red Hill Drinking Water CV22F0106

Job ID: 580-109257-1

Client Sample ID: 20220111-H2-YT05

Lab Sample ID: 580-109257-2

Date Collected: 01/11/22 11:10

Matrix: Water

Date Received: 01/13/22 10:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	31	U	100	31	ug/L			01/13/22 18:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		78 - 120					01/13/22 18:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	95	U	120	95	ug/L		01/13/22 17:58	01/14/22 04:24	1
C24-C40	190	U	210	190	ug/L		01/13/22 17:58	01/14/22 04:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	96		53 - 120				01/13/22 17:58	01/14/22 04:24	1

QC Sample Results

Client: AECOM
Project/Site: Red Hill Drinking Water CV22F0106

Job ID: 580-109257-1

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

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

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	31	U	100	31	ug/L			01/13/22 11:27	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		78 - 120					01/13/22 11:27	1

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

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (C6-C12)	1000	1100		ug/L		110	75 - 127
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	102		78 - 120				

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

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (C6-C12)	1000	1140		ug/L		114	75 - 127	3	13
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	102		78 - 120						

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

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

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C9-C25	90	U	110	90	ug/L		01/13/22 17:57	01/14/22 00:43	1
C24-C40	180	U	200	180	ug/L		01/13/22 17:57	01/14/22 00:43	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	88		53 - 120				01/13/22 17:57	01/14/22 00:43	1

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

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

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

QC Sample Results

Client: AECOM

Job ID: 580-109257-1

Project/Site: Red Hill Drinking Water CV22F0106

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

Lab Sample ID: LCS 580-378269/2-A

Matrix: Water

Analysis Batch: 378249

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 378269

	LCS	LCS	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>o-Terphenyl</i>	86		53 - 120

Lab Sample ID: LCSD 580-378269/3-A

Matrix: Water

Analysis Batch: 378249

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 378269

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

	LCSD	LCSD	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>o-Terphenyl</i>	90		53 - 120

Lab Chronicle

Client: AECOM
 Project/Site: Red Hill Drinking Water CV22F0106

Job ID: 580-109257-1

Client Sample ID: 20220111-H2-YT03

Lab Sample ID: 580-109257-1

Date Collected: 01/11/22 09:45

Matrix: Water

Date Received: 01/13/22 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	378228	01/13/22 17:42	JSM	FGS SEA
Total/NA	Prep	3510C			378269	01/13/22 17:57	JHR	FGS SEA
Total/NA	Analysis	8015D		1	378249	01/14/22 04:04	JAE	FGS SEA

Client Sample ID: 20220111-H2-YT05

Lab Sample ID: 580-109257-2

Date Collected: 01/11/22 11:10

Matrix: Water

Date Received: 01/13/22 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	378228	01/13/22 18:06	JSM	FGS SEA
Total/NA	Prep	3510C			378269	01/13/22 17:58	JHR	FGS SEA
Total/NA	Analysis	8015D		1	378249	01/14/22 04:24	JAE	FGS SEA

Laboratory References:

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

Accreditation/Certification Summary

Client: AECOM

Job ID: 580-109257-1

Project/Site: Red Hill Drinking Water CV22F0106

Laboratory: Eurofins Seattle

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

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

1

2

3

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Sample Summary

Client: AECOM

Project/Site: Red Hill Drinking Water CV22F0106

Job ID: 580-109257-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-109257-1	20220111-H2-YT03	Water	01/11/22 09:45	01/13/22 10:15
580-109257-2	20220111-H2-YT05	Water	01/11/22 11:10	01/13/22 10:15

1

2

3

4

5

6

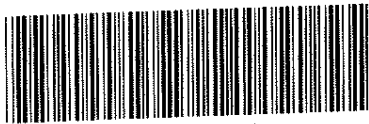
7

8

9

10

11



Chain of Custody Record

580-109257 Chain of Custody

Sampler: AECOM	Lab PM: Elaine Walker	Carrier Tracking No(s): FedEx	COC No: 01112022DW-68
Phone:	E-Mail: M.Elaine.Walker@EurofinsET.com	State of Origin: Hawaii	Page: Page 1 of 1

Client Contact: Alethea Ramos (alternate: Margie Pascua)	Company: AECOM	PWSID:	Analysis Requested	Job #:																								
Address: 1001 Bishop St. Suite 1600	Due Date Requested: see subcontract		<table border="1"> <tr><td>Field Filtered Sample (Yes or No)</td></tr> <tr><td>Perform MS/MSD (Yes or No)</td></tr> <tr><td>EPA 8260 TPH-g (HC)</td></tr> <tr><td>EPA 8015 TPH-d/o</td></tr> </table>	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	EPA 8260 TPH-g (HC)	EPA 8015 TPH-d/o	<table border="1"> <tr><td>Total Number of Containers</td></tr> <tr><td>5</td></tr> </table>	Total Number of Containers	5																		
Field Filtered Sample (Yes or No)																												
Perform MS/MSD (Yes or No)																												
EPA 8260 TPH-g (HC)																												
EPA 8015 TPH-d/o																												
Total Number of Containers																												
5																												
City: Honolulu	TAT Requested (days): 2																											
State, Zip: Hawaii 96813	Compliance Project: <input 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		Preservation Codes:																									
Site: RHSF	SSOW#:		<table border="0"> <tr><td>A - HCL</td><td>M - Hexane</td></tr> <tr><td>B - NaOH</td><td>N - None</td></tr> <tr><td>C - Zn Acetate</td><td>O - AsNaO2</td></tr> <tr><td>D - Nitric Acid</td><td>P - Na2O4S</td></tr> <tr><td>E - NaHSO4</td><td>Q - Na2SO3</td></tr> <tr><td>F - MeOH</td><td>R - Na2S2O3</td></tr> <tr><td>G - Amchlor</td><td>S - H2SO4</td></tr> <tr><td>H - Ascorbic Acid</td><td>T - TSP Dodecahydrate</td></tr> <tr><td>I - Ice</td><td>U - Acetone</td></tr> <tr><td>J - DI Water</td><td>V - MCAA</td></tr> <tr><td>K - EDTA</td><td>W - pH 4-5</td></tr> <tr><td>L - EDA</td><td>Z - other (specify)</td></tr> </table>	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:
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)																											

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	EPA 8260 TPH-g (HC)	EPA 8015 TPH-d/o	Total Number of Containers	Special Instructions/Note:
20220111-HZ-VT03	1/11/22	0945	G	W	X	X			5	
<p>1/11/22 [Signature]</p> <p>Therm. ID: HZ Cor: 03 ° Unc: 0.4 ° Cooler Dsc: LB Packing: bubble FedEx: PO Cust. Seal: Yes X No UPS: Blue Ice: (W) Dry, None Lab Cour:</p>										

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. AECOM EQUIS EDD.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: [Signature]	Date/Time: 1/11/22 @ 1930	Company: AECOM	Received by: Cameron Kottus
Relinquished by:	Date/Time:	Company:	Date/Time: 1/11/22 1930
Relinquished by:	Date/Time:	Company:	Received by: [Signature]
Relinquished by:	Date/Time:	Company:	Date/Time: 1/13/22 1015
Relinquished by:	Date/Time:	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Date/Time:

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
---	-------------------	---

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-109257-1

Login Number: 109257

List Number: 1

Creator: Greene, Ashton R

List Source: Eurofins Seattle

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	



Work Orders: 2A12050

Project: 60674414, COC # 01112022DW-64

Attn: Margie Pascua

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

Report Date: 1/15/2022

Received Date: 1/12/2022

Turnaround Time: 3 workdays

Phones: (808) 529-7277

Fax: (808) 524-0246

P.O. #: reference number
60571032.02.46.01

Billing Code:

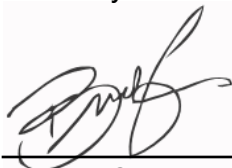
ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH #4047 • LACSD #10143 • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

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

Dear Margie Pascua,

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

Reviewed by:



Brandon Gee For Kim G. Tu
Project Manager





WECK LABORATORIES, INC.

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

Certificate of Analysis

FINAL REPORT

Project Number: 60674414, COC # 01112022DW-64

Reported:
01/15/2022 17:24

Project Manager: Margie Pascua

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
20220111-H2-YT07	AECOM	2A12050-01	Water	01/11/22 13:05	

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

Project Number: 60674414, COC # 01112022DW-64

Reported:
01/15/2022 17:24

Project Manager: Margie Pascua

Sample Results

Sample: 20220111-H2-YT07
2A12050-01 (Water)

Sampled: 01/11/22 13:05 by AECOM

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Chlorinated Pesticides and/or PCBs by GC/ECD							
Method: EPA 508.1			Instr: GC08				
Batch ID: W2A0878		Preparation: Method (SPE)		Prepared: 01/13/22 10:12		Analyst: rjg	
Aroclor 1016	ND	0.0157	0.100	ug/l	1	01/14/22	U
Aroclor 1221	ND	0.0436	0.100	ug/l	1	01/14/22	U
Aroclor 1232	ND	0.0102	0.100	ug/l	1	01/14/22	U
Aroclor 1242	ND	0.0737	0.100	ug/l	1	01/14/22	U
Aroclor 1248	ND	0.0941	0.100	ug/l	1	01/14/22	U
Aroclor 1254	ND	0.0869	0.100	ug/l	1	01/14/22	U
Aroclor 1260	ND	0.0379	0.100	ug/l	1	01/14/22	U
Chlordane (tech)	ND	0.0669	0.100	ug/l	1	01/14/22	U
PCBs, Total	ND		0.500	ug/l	1	01/14/22	U
<i>Surrogate(s)</i>							
4,4-Dibromobiphenyl	92%	Conc: 0.0954	70-130			01/14/22	

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

Method: SM 5310B			Instr: TOC02				
Batch ID: W2A0833		Preparation: _NONE (TOC/TOX)		Prepared: 01/13/22 09:58		Analyst: ajc	
Total Organic Carbon (TOC)	ND	0.190	0.300	mg/l	1	01/13/22	U

Metals by EPA 200 Series Methods

Method: EPA 200.8			Instr: ICPMS04				
Batch ID: W2A0825		Preparation: EPA 200.2		Prepared: 01/12/22 16:06		Analyst: mpn	
Antimony, Total	ND	0.0889	0.500	ug/l	1	01/13/22	U
Arsenic, Total	0.244	0.0741	0.400	ug/l	1	01/13/22	J
Barium, Total	3.06	0.142	1.00	ug/l	1	01/13/22	
Beryllium, Total	ND	0.0624	0.100	ug/l	1	01/13/22	U
Cadmium, Total	ND	0.0416	0.200	ug/l	1	01/13/22	U
Chromium, Total	1.50	0.0887	0.200	ug/l	1	01/13/22	
Copper, Total	4.67	0.225	0.500	ug/l	1	01/13/22	
Lead, Total	0.604	0.0827	0.200	ug/l	1	01/13/22	
Selenium, Total	1.20	0.0666	0.400	ug/l	1	01/13/22	
Thallium, Total	ND	0.0210	0.200	ug/l	1	01/13/22	U

Method: EPA 245.1			Instr: HG03				
Batch ID: W2A0821		Preparation: EPA 245.1		Prepared: 01/12/22 15:39		Analyst: kvm	
Mercury, Total	ND	0.0170	0.0500	ug/l	1	01/14/22	U

Semivolatile Organic Compounds by GC/MS

Method: EPA 525.2			Instr: GCMS16				
Batch ID: W2A0884		Preparation: Method (SPE)		Prepared: 01/13/22 11:40		Analyst: rmr	
1-Methylnaphthalene	ND	0.00801	0.0500	ug/l	1	01/13/22	U
2-Methylnaphthalene	ND	0.00904	0.0500	ug/l	1	01/13/22	U

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Project Number: 60674414, COC # 01112022DW-64

Reported:
01/15/2022 17:24

Project Manager: Margie Pascua

Sample Results

(Continued)

Sample: 20220111-H2-YT07
2A12050-01 (Water)

Sampled: 01/11/22 13:05 by AECOM

(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: W2A0884

Preparation: Method (SPE)

Prepared: 01/13/22 11:40

Analyst: rmr

Alachlor	ND	0.0110	0.100	ug/l	1	01/13/22	U
Atrazine	ND	0.00734	0.100	ug/l	1	01/13/22	U
Benzo (a) pyrene	ND	0.0117	0.100	ug/l	1	01/13/22	Q-02, U
Bis(2-ethylhexyl)adipate	0.0570	0.00962	5.00	ug/l	1	01/13/22	J
Bis(2-ethylhexyl)phthalate	ND	0.437	3.00	ug/l	1	01/13/22	U
Endrin	ND	0.00991	0.200	ug/l	1	01/13/22	U
gamma-BHC (Lindane)	ND	0.00633	0.100	ug/l	1	01/13/22	U
Heptachlor	ND	0.00965	0.100	ug/l	1	01/13/22	U
Heptachlor epoxide	ND	0.0122	0.100	ug/l	1	01/13/22	U
Hexachlorobenzene	ND	0.0980	0.100	ug/l	1	01/13/22	U
Hexachlorocyclopentadiene	ND	0.00594	1.00	ug/l	1	01/13/22	U
Methoxychlor	ND	0.00863	0.200	ug/l	1	01/13/22	U
Naphthalene	0.0121	0.0103	0.0500	ug/l	1	01/13/22	J
Pentachlorophenol	ND	0.0242	1.00	ug/l	1	01/13/22	U
Simazine	ND	0.00734	0.100	ug/l	1	01/13/22	U

Surrogate(s)

1,3-Dimethyl-2-nitrobenzene	101%	Conc: 5.22	70-130	01/13/22
Perylene-d12	98%	Conc: 5.04	70-130	01/13/22
Triphenyl phosphate	112%	Conc: 5.76	70-130	01/13/22

Volatile Organic Compounds by P&T and GC/MS

Method: EPA 524.2

Instr: GCMS14

Batch ID: W2A0744

Preparation: EPA 5030

Prepared: 01/13/22 00:00

Analyst: cam

1,1,1-Trichloroethane	ND	0.256	0.500	ug/l	1	01/13/22	U
1,1,2-Trichloroethane	ND	0.190	0.500	ug/l	1	01/13/22	U
1,1-Dichloroethene	ND	0.160	0.500	ug/l	1	01/13/22	U
1,2,4-Trichlorobenzene	ND	0.170	0.500	ug/l	1	01/13/22	U
1,2-Dichloroethane	ND	0.243	0.500	ug/l	1	01/13/22	U
1,2-Dichloropropane	ND	0.130	0.500	ug/l	1	01/13/22	U
Benzene	ND	0.150	0.500	ug/l	1	01/13/22	U
Carbon tetrachloride	ND	0.270	0.500	ug/l	1	01/13/22	U
Chlorobenzene	ND	0.150	0.500	ug/l	1	01/13/22	U
cis-1,2-Dichloroethene	ND	0.250	0.500	ug/l	1	01/13/22	U
Ethylbenzene	ND	0.210	0.500	ug/l	1	01/13/22	U
m,p-Xylene	ND	0.330	0.500	ug/l	1	01/13/22	U
Methylene chloride	ND	0.303	0.500	ug/l	1	01/13/22	U
o-Dichlorobenzene	ND	0.190	0.500	ug/l	1	01/13/22	U

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Project Number: 60674414, COC # 01112022DW-64

Reported:
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Project Manager: Margie Pascua

Sample Results

(Continued)

Sample: 20220111-H2-YT07
 2A12050-01 (Water) Sampled: 01/11/22 13:05 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: W2A0744		Preparation: EPA 5030		Prepared: 01/13/22 00:00		Analyst: cam	
o-Xylene	ND	0.200	0.500	ug/l	1	01/13/22	U
p-Dichlorobenzene	ND	0.180	0.500	ug/l	1	01/13/22	U
Styrene	ND	0.190	0.500	ug/l	1	01/13/22	U
Tetrachloroethene	ND	0.180	0.500	ug/l	1	01/13/22	U
THMs, Total	ND		0.500	ug/l	1	01/13/22	U
Toluene	ND	0.294	0.500	ug/l	1	01/13/22	U
trans-1,2-Dichloroethene	ND	0.259	0.500	ug/l	1	01/13/22	U
Trichloroethene	ND	0.180	0.500	ug/l	1	01/13/22	U
Vinyl chloride	ND	0.180	0.500	ug/l	1	01/13/22	U
<i>Surrogate(s)</i>							
1,2-Dichlorobenzene-d4	88%	Conc: 8.83	70-130			01/13/22	
4-Bromofluorobenzene	88%	Conc: 8.82	70-130			01/13/22	

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

Quality Control Results

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

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

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Project Number: 60674414, COC # 01112022DW-64

Reported:
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Project Manager: Margie Pascua

Quality Control Results

(Continued)

Metals by EPA 200 Series Methods

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

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Project Number: 60674414, COC # 01112022DW-64

Reported:
 01/15/2022 17:24

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

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01/15/2022 17:24

Project Manager: Margie Pascua

Quality Control Results

(Continued)

Semivolatile Organic Compounds by GC/MS

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

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Project Number: 60674414, COC # 01112022DW-64

Reported:
01/15/2022 17:24

Project Manager: Margie Pascua

Quality Control Results

(Continued)

Semivolatle Organic Compounds by GC/MS (Continued)

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

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Project Number: 60674414, COC # 01112022DW-64

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

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Project Number: 60674414, COC # 01112022DW-64

Reported:
01/15/2022 17:24

Project Manager: Margie Pascua

Quality Control Results

(Continued)

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

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

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 Honolulu, HI 96813

Project Number: 60674414, COC # 01112022DW-64

Reported:
 01/15/2022 17:24

Project Manager: Margie Pascua

Notes and Definitions

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

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

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

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

Work Orders: 2A12051

Project: 60674414, COC # 01112022DW-66

Attn: Margie Pascua

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

Report Date: 1/15/2022

Received Date: 1/12/2022

Turnaround Time: 3 workdays

Phones: (808) 529-7277

Fax: (808) 524-0246

P.O. #: reference number
60571032.02.46.01

Billing Code:

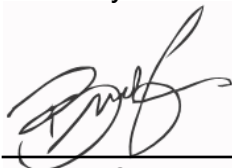
ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH #4047 • LACSD #10143 • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

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

Dear Margie Pascua,

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

Reviewed by:



Brandon Gee For Kim G. Tu
Project Manager



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

Project Number: 60674414, COC # 01112022DW-66

Reported:
01/15/2022 17:30

Project Manager: Margie Pascua

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
20220111-H2-YT03	AECOM	2A12051-01	Water	01/11/22 09:45	

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Honolulu, HI 96813

Project Number: 60674414, COC # 01112022DW-66

Reported:
01/15/2022 17:30

Project Manager: Margie Pascua

Sample Results

Sample: 20220111-H2-YT03
2A12051-01 (Water) Sampled: 01/11/22 9:45 by AECOM

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Chlorinated Pesticides and/or PCBs by GC/ECD							
Method: EPA 508.1			Instr: GC08				
Batch ID: W2A0878		Preparation: Method (SPE)			Prepared: 01/13/22 10:12		Analyst: rjg
Aroclor 1016	ND	0.0157	0.100	ug/l	1	01/14/22	U
Aroclor 1221	ND	0.0436	0.100	ug/l	1	01/14/22	U
Aroclor 1232	ND	0.0102	0.100	ug/l	1	01/14/22	U
Aroclor 1242	ND	0.0737	0.100	ug/l	1	01/14/22	U
Aroclor 1248	ND	0.0941	0.100	ug/l	1	01/14/22	U
Aroclor 1254	ND	0.0869	0.100	ug/l	1	01/14/22	U
Aroclor 1260	ND	0.0379	0.100	ug/l	1	01/14/22	U
Chlordane (tech)	ND	0.0669	0.100	ug/l	1	01/14/22	U
PCBs, Total	ND		0.500	ug/l	1	01/14/22	U
<i>Surrogate(s)</i>							
4,4-Dibromobiphenyl	96%	Conc: 0.0987	70-130			01/14/22	

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

Method: SM 5310B			Instr: TOC02				
Batch ID: W2A0833		Preparation: _NONE (TOC/TOX)			Prepared: 01/13/22 09:58		Analyst: ajc
Total Organic Carbon (TOC)	ND	0.190	0.300	mg/l	1	01/13/22	U

Metals by EPA 200 Series Methods

Method: EPA 200.8			Instr: ICPMS04				
Batch ID: W2A0825		Preparation: EPA 200.2			Prepared: 01/12/22 16:06		Analyst: mpn
Antimony, Total	ND	0.0889	0.500	ug/l	1	01/13/22	U
Arsenic, Total	0.207	0.0741	0.400	ug/l	1	01/13/22	J
Barium, Total	2.50	0.142	1.00	ug/l	1	01/13/22	
Beryllium, Total	ND	0.0624	0.100	ug/l	1	01/13/22	U
Cadmium, Total	ND	0.0416	0.200	ug/l	1	01/13/22	U
Chromium, Total	1.48	0.0887	0.200	ug/l	1	01/13/22	
Copper, Total	5.55	0.225	0.500	ug/l	1	01/13/22	
Lead, Total	0.631	0.0827	0.200	ug/l	1	01/13/22	
Selenium, Total	0.859	0.0666	0.400	ug/l	1	01/13/22	
Thallium, Total	ND	0.0210	0.200	ug/l	1	01/13/22	U

Method: EPA 245.1			Instr: HG03				
Batch ID: W2A0821		Preparation: EPA 245.1			Prepared: 01/12/22 15:39		Analyst: kvm
Mercury, Total	ND	0.0170	0.0500	ug/l	1	01/14/22	U

Semivolatile Organic Compounds by GC/MS

Method: EPA 525.2			Instr: GCMS16				
Batch ID: W2A0884		Preparation: Method (SPE)			Prepared: 01/13/22 11:40		Analyst: rmr
1-Methylnaphthalene	ND	0.00801	0.0500	ug/l	1	01/13/22	U
2-Methylnaphthalene	ND	0.00904	0.0500	ug/l	1	01/13/22	U

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Honolulu, HI 96813

Project Number: 60674414, COC # 01112022DW-66

Reported:
01/15/2022 17:30

Project Manager: Margie Pascua

Sample Results

(Continued)

Sample: 20220111-H2-YT03
2A12051-01 (Water) Sampled: 01/11/22 9:45 by AECOM
(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: W2A0884	Preparation: Method (SPE)	Prepared: 01/13/22 11:40					Analyst: rmr
Alachlor	ND	0.0110	0.100	ug/l	1	01/13/22	U
Atrazine	ND	0.00734	0.100	ug/l	1	01/13/22	U
Benzo (a) pyrene	ND	0.0117	0.100	ug/l	1	01/13/22	Q-02, U
Bis(2-ethylhexyl)adipate	0.0552	0.00962	5.00	ug/l	1	01/13/22	J
Bis(2-ethylhexyl)phthalate	ND	0.437	3.00	ug/l	1	01/13/22	U
Endrin	ND	0.00991	0.200	ug/l	1	01/13/22	U
gamma-BHC (Lindane)	ND	0.00633	0.100	ug/l	1	01/13/22	U
Heptachlor	ND	0.00965	0.100	ug/l	1	01/13/22	U
Heptachlor epoxide	ND	0.0122	0.100	ug/l	1	01/13/22	U
Hexachlorobenzene	ND	0.0980	0.100	ug/l	1	01/13/22	U
Hexachlorocyclopentadiene	ND	0.00594	1.00	ug/l	1	01/13/22	U
Methoxychlor	ND	0.00863	0.200	ug/l	1	01/13/22	U
Naphthalene	ND	0.0103	0.0500	ug/l	1	01/13/22	U
Pentachlorophenol	ND	0.0242	1.00	ug/l	1	01/13/22	U
Simazine	ND	0.00734	0.100	ug/l	1	01/13/22	U

Surrogate(s)

1,3-Dimethyl-2-nitrobenzene	100%	Conc: 5.15	70-130	01/13/22
Perylene-d12	96%	Conc: 4.97	70-130	01/13/22
Triphenyl phosphate	107%	Conc: 5.52	70-130	01/13/22

Volatile Organic Compounds by P&T and GC/MS

Method: EPA 524.2		Instr: GCMS14					
Batch ID: W2A0744	Preparation: EPA 5030	Prepared: 01/13/22 00:00					Analyst: cam
1,1,1-Trichloroethane	ND	0.256	0.500	ug/l	1	01/13/22	U
1,1,2-Trichloroethane	ND	0.190	0.500	ug/l	1	01/13/22	U
1,1-Dichloroethene	ND	0.160	0.500	ug/l	1	01/13/22	U
1,2,4-Trichlorobenzene	ND	0.170	0.500	ug/l	1	01/13/22	U
1,2-Dichloroethane	ND	0.243	0.500	ug/l	1	01/13/22	U
1,2-Dichloropropane	ND	0.130	0.500	ug/l	1	01/13/22	U
Benzene	ND	0.150	0.500	ug/l	1	01/13/22	U
Carbon tetrachloride	ND	0.270	0.500	ug/l	1	01/13/22	U
Chlorobenzene	ND	0.150	0.500	ug/l	1	01/13/22	U
cis-1,2-Dichloroethene	ND	0.250	0.500	ug/l	1	01/13/22	U
Ethylbenzene	ND	0.210	0.500	ug/l	1	01/13/22	U
m,p-Xylene	ND	0.330	0.500	ug/l	1	01/13/22	U
Methylene chloride	ND	0.303	0.500	ug/l	1	01/13/22	U
o-Dichlorobenzene	ND	0.190	0.500	ug/l	1	01/13/22	U

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Sample Results

(Continued)

Sample: 20220111-H2-YT03
 2A12051-01 (Water) Sampled: 01/11/22 9:45 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: W2A0744		Preparation: EPA 5030		Prepared: 01/13/22 00:00		Analyst: cam	
o-Xylene	ND	0.200	0.500	ug/l	1	01/13/22	U
p-Dichlorobenzene	ND	0.180	0.500	ug/l	1	01/13/22	U
Styrene	ND	0.190	0.500	ug/l	1	01/13/22	U
Tetrachloroethene	ND	0.180	0.500	ug/l	1	01/13/22	U
THMs, Total	ND		0.500	ug/l	1	01/13/22	U
Toluene	ND	0.294	0.500	ug/l	1	01/13/22	U
trans-1,2-Dichloroethene	ND	0.259	0.500	ug/l	1	01/13/22	U
Trichloroethene	ND	0.180	0.500	ug/l	1	01/13/22	U
Vinyl chloride	ND	0.180	0.500	ug/l	1	01/13/22	U
<i>Surrogate(s)</i>							
1,2-Dichlorobenzene-d4	87%	Conc: 8.67	70-130			01/13/22	
4-Bromofluorobenzene	86%	Conc: 8.60	70-130			01/13/22	

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Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

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

Quality Control Results

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

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

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods

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

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

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

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Quality Control Results

(Continued)

Semivolatile Organic Compounds by GC/MS

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

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Quality Control Results

(Continued)

Semivolatle Organic Compounds by GC/MS (Continued)

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

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Quality Control Results

(Continued)

Volatile Organic Compounds by P&T and GC/MS

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

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1001 Bishop Street Suite 1600
Honolulu, HI 96813

Project Number: 60674414, COC # 01112022DW-66

Reported:
01/15/2022 17:30

Project Manager: Margie Pascua

Quality Control Results

(Continued)

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

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

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 Honolulu, HI 96813

Project Number: 60674414, COC # 01112022DW-66

Reported:
 01/15/2022 17:30

Project Manager: Margie Pascua

Notes and Definitions

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

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

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

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

Work Orders: 2A12052

Project: 60674414, COC # 01112022DW-67

Attn: Margie Pascua

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

Report Date: 1/15/2022

Received Date: 1/12/2022

Turnaround Time: 3 workdays

Phones: (808) 529-7277

Fax: (808) 524-0246

P.O. #: reference number
60571032.02.46.01

Billing Code:

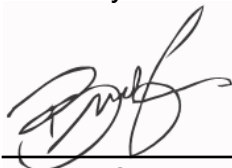
ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH #4047 • LACSD #10143 • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

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

Dear Margie Pascua,

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

Reviewed by:



Brandon Gee For Kim G. Tu
Project Manager



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

Project Number: 60674414, COC # 01112022DW-67

Reported:
01/15/2022 17:34

Project Manager: Margie Pascua

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
20220111-H2-YT05	AECOM	2A12052-01	Water	01/11/22 11:10	

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Honolulu, HI 96813

Project Number: 60674414, COC # 01112022DW-67

Reported:
01/15/2022 17:34

Project Manager: Margie Pascua

Sample Results

Sample: 20220111-H2-YT05
2A12052-01 (Water)

Sampled: 01/11/22 11:10 by AECOM

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Chlorinated Pesticides and/or PCBs by GC/ECD							
Method: EPA 508.1			Instr: GC08				
Batch ID: W2A0878		Preparation: Method (SPE)			Prepared: 01/13/22 10:12		Analyst: rjg
Aroclor 1016	ND	0.0157	0.100	ug/l	1	01/14/22	U
Aroclor 1221	ND	0.0436	0.100	ug/l	1	01/14/22	U
Aroclor 1232	ND	0.0102	0.100	ug/l	1	01/14/22	U
Aroclor 1242	ND	0.0737	0.100	ug/l	1	01/14/22	U
Aroclor 1248	ND	0.0941	0.100	ug/l	1	01/14/22	U
Aroclor 1254	ND	0.0869	0.100	ug/l	1	01/14/22	U
Aroclor 1260	ND	0.0379	0.100	ug/l	1	01/14/22	U
Chlordane (tech)	ND	0.0669	0.100	ug/l	1	01/14/22	U
PCBs, Total	ND		0.500	ug/l	1	01/14/22	U
<i>Surrogate(s)</i>							
4,4-Dibromobiphenyl	91%	Conc: 0.0928	70-130			01/14/22	

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

Method: SM 5310B			Instr: TOC02				
Batch ID: W2A0833		Preparation: _NONE (TOC/TOX)			Prepared: 01/13/22 09:58		Analyst: ajc
Total Organic Carbon (TOC)	ND	0.190	0.300	mg/l	1	01/13/22	U

Metals by EPA 200 Series Methods

Method: EPA 200.8			Instr: ICPMS04				
Batch ID: W2A0825		Preparation: EPA 200.2			Prepared: 01/12/22 16:06		Analyst: mpn
Antimony, Total	ND	0.0889	0.500	ug/l	1	01/13/22	U
Arsenic, Total	0.234	0.0741	0.400	ug/l	1	01/13/22	J
Barium, Total	2.45	0.142	1.00	ug/l	1	01/13/22	
Beryllium, Total	ND	0.0624	0.100	ug/l	1	01/13/22	U
Cadmium, Total	ND	0.0416	0.200	ug/l	1	01/13/22	U
Chromium, Total	1.51	0.0887	0.200	ug/l	1	01/13/22	
Copper, Total	19.8	0.225	0.500	ug/l	1	01/13/22	
Lead, Total	1.88	0.0827	0.200	ug/l	1	01/13/22	
Selenium, Total	1.06	0.0666	0.400	ug/l	1	01/13/22	
Thallium, Total	ND	0.0210	0.200	ug/l	1	01/13/22	U

Method: EPA 245.1			Instr: HG03				
Batch ID: W2A0821		Preparation: EPA 245.1			Prepared: 01/12/22 15:39		Analyst: kvm
Mercury, Total	ND	0.0170	0.0500	ug/l	1	01/14/22	U

Semivolatile Organic Compounds by GC/MS

Method: EPA 525.2			Instr: GCMS16				
Batch ID: W2A0884		Preparation: Method (SPE)			Prepared: 01/13/22 11:40		Analyst: rmr
1-Methylnaphthalene	ND	0.00801	0.0500	ug/l	1	01/13/22	U
2-Methylnaphthalene	ND	0.00904	0.0500	ug/l	1	01/13/22	U

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Project Number: 60674414, COC # 01112022DW-67

Reported:
01/15/2022 17:34

Project Manager: Margie Pascua

Sample Results

(Continued)

Sample: 20220111-H2-YT05
2A12052-01 (Water)

Sampled: 01/11/22 11:10 by AECOM

(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: W2A0884

Preparation: Method (SPE)

Prepared: 01/13/22 11:40

Analyst: rmr

Alachlor	ND	0.0110	0.100	ug/l	1	01/13/22	U
Atrazine	ND	0.00734	0.100	ug/l	1	01/13/22	U
Benzo (a) pyrene	ND	0.0117	0.100	ug/l	1	01/13/22	Q-02, U
Bis(2-ethylhexyl)adipate	ND	0.00962	5.00	ug/l	1	01/13/22	U
Bis(2-ethylhexyl)phthalate	ND	0.437	3.00	ug/l	1	01/13/22	U
Endrin	ND	0.00991	0.200	ug/l	1	01/13/22	U
gamma-BHC (Lindane)	ND	0.00633	0.100	ug/l	1	01/13/22	U
Heptachlor	ND	0.00965	0.100	ug/l	1	01/13/22	U
Heptachlor epoxide	ND	0.0122	0.100	ug/l	1	01/13/22	U
Hexachlorobenzene	ND	0.0980	0.100	ug/l	1	01/13/22	U
Hexachlorocyclopentadiene	ND	0.00594	1.00	ug/l	1	01/13/22	U
Methoxychlor	ND	0.00863	0.200	ug/l	1	01/13/22	U
Naphthalene	ND	0.0103	0.0500	ug/l	1	01/13/22	U
Pentachlorophenol	ND	0.0242	1.00	ug/l	1	01/13/22	U
Simazine	ND	0.00734	0.100	ug/l	1	01/13/22	U

Surrogate(s)

1,3-Dimethyl-2-nitrobenzene	101%	Conc: 5.16	70-130			01/13/22	
Perylene-d12	101%	Conc: 5.19	70-130			01/13/22	
Triphenyl phosphate	113%	Conc: 5.78	70-130			01/13/22	

Volatile Organic Compounds by P&T and GC/MS

Method: EPA 524.2

Instr: GCMS14

Batch ID: W2A0744

Preparation: EPA 5030

Prepared: 01/13/22 00:00

Analyst: cam

1,1,1-Trichloroethane	ND	0.256	0.500	ug/l	1	01/13/22	U
1,1,2-Trichloroethane	ND	0.190	0.500	ug/l	1	01/13/22	U
1,1-Dichloroethene	ND	0.160	0.500	ug/l	1	01/13/22	U
1,2,4-Trichlorobenzene	ND	0.170	0.500	ug/l	1	01/13/22	U
1,2-Dichloroethane	ND	0.243	0.500	ug/l	1	01/13/22	U
1,2-Dichloropropane	ND	0.130	0.500	ug/l	1	01/13/22	U
Benzene	ND	0.150	0.500	ug/l	1	01/13/22	U
Carbon tetrachloride	ND	0.270	0.500	ug/l	1	01/13/22	U
Chlorobenzene	ND	0.150	0.500	ug/l	1	01/13/22	U
cis-1,2-Dichloroethene	ND	0.250	0.500	ug/l	1	01/13/22	U
Ethylbenzene	ND	0.210	0.500	ug/l	1	01/13/22	U
m,p-Xylene	ND	0.330	0.500	ug/l	1	01/13/22	U
Methylene chloride	ND	0.303	0.500	ug/l	1	01/13/22	U
o-Dichlorobenzene	ND	0.190	0.500	ug/l	1	01/13/22	U

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Project Number: 60674414, COC # 01112022DW-67

Reported:
 01/15/2022 17:34

Project Manager: Margie Pascua

Sample Results

(Continued)

Sample: 20220111-H2-YT05
 2A12052-01 (Water) Sampled: 01/11/22 11:10 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: W2A0744		Preparation: EPA 5030		Prepared: 01/13/22 00:00		Analyst: cam	
o-Xylene	ND	0.200	0.500	ug/l	1	01/13/22	U
p-Dichlorobenzene	ND	0.180	0.500	ug/l	1	01/13/22	U
Styrene	ND	0.190	0.500	ug/l	1	01/13/22	U
Tetrachloroethene	ND	0.180	0.500	ug/l	1	01/13/22	U
THMs, Total	ND		0.500	ug/l	1	01/13/22	U
Toluene	ND	0.294	0.500	ug/l	1	01/13/22	U
trans-1,2-Dichloroethene	ND	0.259	0.500	ug/l	1	01/13/22	U
Trichloroethene	ND	0.180	0.500	ug/l	1	01/13/22	U
Vinyl chloride	ND	0.180	0.500	ug/l	1	01/13/22	U
<i>Surrogate(s)</i>							
1,2-Dichlorobenzene-d4	90%	Conc: 8.99	70-130			01/13/22	
4-Bromofluorobenzene	88%	Conc: 8.75	70-130			01/13/22	

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Project Number: 60674414, COC # 01112022DW-67

Reported:
01/15/2022 17:34

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

Quality Control Results

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

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

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Project Number: 60674414, COC # 01112022DW-67

Reported:
 01/15/2022 17:34

Project Manager: Margie Pascua

Quality Control Results

(Continued)

Metals by EPA 200 Series Methods

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

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Quality Control Results

(Continued)

Metals by EPA 200 Series Methods (Continued)

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

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Quality Control Results

(Continued)

Semivolatile Organic Compounds by GC/MS

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

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Quality Control Results

(Continued)

Semivolatle Organic Compounds by GC/MS (Continued)

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

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Quality Control Results

(Continued)

Volatile Organic Compounds by P&T and GC/MS

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

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Quality Control Results

(Continued)

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

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

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Notes and Definitions

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

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

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

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

Memorandum

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

The summary data quality review of six water samples and one trip blank collected on January 11, 2022, has been completed. The samples were collected by AECOM personnel and were analyzed at Eurofins TestAmerica, in Seattle, Washington for total petroleum hydrocarbons (TPHs) by EPA Method 8260/CALUFT (gasoline-range, C6-C12 hydrocarbons); EPA Method 8015D (diesel range, C9-C25 hydrocarbons, and motor oil range, C24-C40 hydrocarbons); volatile organic compounds (VOCs) by EPA Method 8260D; and semivolatile organic compounds (SVOCs) by EPA Method 8270E. The analyses were performed in general accordance with the specified TPH methods and/or with methods specified in EPA's *Test Methods for Evaluating Solid Waste (SW-846)*. The laboratory provided a summary report containing sample results and associated quality assurance (QA) and quality control (QC) data. The following samples are associated with Eurofins TestAmerica-Seattle laboratory groups: 580-109243-1, 580-109257-1, and 580-109263-1.

Sample ID	Laboratory IDs	Requested Analyses
20220111-H2-YT02	580-109243-1	TPH, VOCs, SVOCs
20220111-H2-YT01 (Trip blank)	580-109243-2	VOCs
20220111-H2-YT04	580-109243-3	TPH, VOCs, SVOCs
20220111-H2-YT06	580-109243-4	TPH, VOCs, SVOCs
20220111-H2-YT03	580-109257-1	TPH
20220111-H2-YT05	580-109257-2	TPH
20220111-H2-YT07	580-109263-1	TPH

Upon receipt by the laboratory, the sample jar information was compared to the associated chain-of-custody (COC) and the cooler temperatures were recorded. The cooler temperatures were received within the EPA-recommended limits of greater than 0°C and less than or equal to 6°C except for the cooler containing samples 20220111-H2-YT03 and 20220111-H2-YT05 which was received at -0.3°C. Based on professional judgment, no qualifications were made since the samples were received at the laboratory in good condition on ice the same day they were collected.

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

- No TPH data were qualified in association with these laboratory groups.
- The following percent recoveries for the VOC surrogates were below the laboratory control limits:

**Summary Data Quality Review
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Red Hill Bulk Fuel Storage Facility**

Sample	Surrogate	%Recovery	Control Limits
20220111-H2-YT02	Toluene-d8	0.3%	80-120%
20220111-H2-YT04	Toluene-d8	0.5%	80-120%
20220111-H2-YT06	Toluene-d8	0.3%	80-120%

The nondetect results for all VOC target compounds in samples 20220111-H2-YT02, 20220111-H2-YT04 and 20220111-H2-YT06 noted in the table above were rejected and flagged 'R', and the positive bromoform result in sample 20220111-H2-YT02 was qualified as estimated and flagged 'J' based on the very low (<10%) surrogate recoveries.

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

Sample	Surrogate	%Recovery	Control Limits
20220111-H2-YT02	2-Fluorophenol	0.8%	21-120%
	Phenol-d5	0%	10-120%
20220111-H2-YT04	2-Fluorophenol	0%	21-120%
	Phenol-d5	0%	10-120%
20220111-H2-YT06	2-Fluorophenol	0%	21-120%
	Phenol-d5	0.4%	10-120%

The results for the nondetect acid compounds in samples 20220111-H2-YT02, 20220111-H2-YT04 and 20220111-H2-YT06 noted in the table above were rejected and flagged 'R'; and the positive result for 3 & 4-methylphenol in sample 20220111-H2-YT06 was qualified as estimated and flagged 'J' based on the very low (<10%) acid surrogate recoveries. The compounds are listed below:

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

- The following VOC matrix spike (MS) recoveries were outside the laboratory control limits:

Parent Sample ID	Compound	MS %Recovery	Control Limits
20220111-H2-YT02	cis-1,3-Dichloropropene	60%	77 – 120%

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Parent Sample ID	Compound	MS %Recovery	Control Limits
	Ethylbenzene	40%	80 – 120%
	m-Xylene & p-Xylene	0%	80 – 120%
	o-Xylene	0%	80 – 120%
	Styrene	0%	76 – 122%
	Toluene	30%	80 – 120%
	trans-1,3-Dichloropropene	57%	76 – 122%
	Vinyl chloride	7%	31 – 150%
	Xylenes, Total	0%	80 – 120%

The results for these compounds in 20220111-H2-YT02 were previously rejected due to surrogate nonconformances and were not qualified further.

- The following SVOC MS recoveries were outside the laboratory control limits:

Parent Sample ID	Compound	MS %Recovery	Control Limits
20220111-H2-YT02	Acenaphthylene	39%	43 – 120%
	Carbazole	56%	61 – 150%
	4-Chloroaniline	0%	10 – 150%
	4-Chloro-3-methylphenol	10%	36 – 120%
	2-Chlorophenol	10%	44 – 120%
	3,3'-Dichlorobenzidine	13%	33 – 150%
	2,4-Dichlorophenol	23%	45 – 120%
	2,4-Dimethylphenol	11%	37 – 120%
	2-Methylphenol	0%	30 – 120%
	3 & 4 Methylphenol	0%	29 – 120%
	Naphthalene	41%	42 – 120%
	3-Nitroaniline	10%	10 – 138%
	4-Nitroaniline	19%	38 – 133%
	4-Nitrophenol	0%	10 – 120%
	N-Nitrosodiphenylamine	6%	52 – 120%
	Phenol	0%	13 – 120%
2,4,5-Trichlorophenol	35%	45 – 120%	

The nondetect results for acenaphthylene, carbazole, 3,3'-dichlorobenzidine, naphthalene, 3-nitroaniline and 4-nitroaniline in sample 20220111-H2-YT02 were qualified as estimated and flagged 'UJ' based on low recoveries in the MS.

The nondetect results for 4-chloroaniline and n-nitrosodiphenylamine in sample 20220111-H2-YT02 were rejected and flagged 'R' based on very low recoveries (<10%) in the MS.

The nondetect results for all acid compounds in sample 20220111-H2-YT02 were previously rejected due to surrogate nonconformances and were not qualified further.

- Project screening levels were met for all non-detect SVOC results, with the exception of hexachlorobenzene in samples 20220111-H2-YT02 (0.043 ug/L), 20220111-H2-YT04 (0.043 ug/L) and 20220111-H2-YT06 (0.040



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ug/L) that had method detection limits noted in parentheses, which exceeded the project screening level of 0.0003 ug/L.

- The laboratory noted that the minimum response factors (RF) for n-nitroso-di-n-propylamine was outside the method control criteria in the continuing calibration verification (CCV) associated with samples 20220111-H2-YT02, 20220111-H2-YT04 and 20220111-H2-YT06. The results for these compounds in these samples were qualified as estimated and flagged 'J.'

Memorandum

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

The summary data quality review of six water samples and one trip blank collected on January 11, 2022, has been completed. The samples were collected by AECOM personnel and were analyzed at Eurofins TestAmerica, in Seattle, Washington for total petroleum hydrocarbons (TPHs) by EPA Method 8260/CALUFT (gasoline-range, C6-C12 hydrocarbons); EPA Method 8015D (diesel range, C9-C25 hydrocarbons, and motor oil range, C24-C40 hydrocarbons); volatile organic compounds (VOCs) by EPA Method 8260D; and semivolatile organic compounds (SVOCs) by EPA Method 8270E. The analyses were performed in general accordance with the specified TPH methods and/or with methods specified in EPA's *Test Methods for Evaluating Solid Waste (SW-846)*. The laboratory provided a summary report containing sample results and associated quality assurance (QA) and quality control (QC) data. The following samples are associated with Eurofins TestAmerica-Seattle laboratory groups: 580-109243-1, 580-109257-1, and 580-109263-1.

Sample ID	Laboratory IDs	Requested Analyses
20220111-H2-YT02	580-109243-1	TPH, VOCs, SVOCs
20220111-H2-YT01 (Trip blank)	580-109243-2	VOCs
20220111-H2-YT04	580-109243-3	TPH, VOCs, SVOCs
20220111-H2-YT06	580-109243-4	TPH, VOCs, SVOCs
20220111-H2-YT03	580-109257-1	TPH
20220111-H2-YT05	580-109257-2	TPH
20220111-H2-YT07	580-109263-1	TPH

Upon receipt by the laboratory, the sample jar information was compared to the associated chain-of-custody (COC) and the cooler temperatures were recorded. The cooler temperatures were received within the EPA-recommended limits of greater than 0°C and less than or equal to 6°C except for the cooler containing samples 20220111-H2-YT03 and 20220111-H2-YT05 which was received at -0.3°C. Based on professional judgment, no qualifications were made since the samples were received at the laboratory in good condition on ice the same day they were collected.

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

- No TPH data were qualified in association with these laboratory groups.
- The following percent recoveries for the VOC surrogates were below the laboratory control limits:

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Sample	Surrogate	%Recovery	Control Limits
20220111-H2-YT02	Toluene-d8	0.3%	80-120%
20220111-H2-YT04	Toluene-d8	0.5%	80-120%
20220111-H2-YT06	Toluene-d8	0.3%	80-120%

The nondetect results for all VOC target compounds in samples 20220111-H2-YT02, 20220111-H2-YT04 and 20220111-H2-YT06 noted in the table above were rejected and flagged 'R', and the positive bromoform result in sample 20220111-H2-YT02 was qualified as estimated and flagged 'J' based on the very low (<10%) surrogate recoveries.

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

Sample	Surrogate	%Recovery	Control Limits
20220111-H2-YT02	2-Fluorophenol	0.8%	21-120%
	Phenol-d5	0%	10-120%
20220111-H2-YT04	2-Fluorophenol	0%	21-120%
	Phenol-d5	0%	10-120%
20220111-H2-YT06	2-Fluorophenol	0%	21-120%
	Phenol-d5	0.4%	10-120%

The results for the nondetect acid compounds in samples 20220111-H2-YT02, 20220111-H2-YT04 and 20220111-H2-YT06 noted in the table above were rejected and flagged 'R'; and the positive result for 3 & 4-methylphenol in sample 20220111-H2-YT06 was qualified as estimated and flagged 'J' based on the very low (<10%) acid surrogate recoveries. The compounds are listed below:

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

- The following VOC matrix spike (MS) recoveries were outside the laboratory control limits:

Parent Sample ID	Compound	MS %Recovery	Control Limits
20220111-H2-YT02	cis-1,3-Dichloropropene	60%	77 – 120%

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Joint Base Pearl Harbor-Hickam, Hawaii
Red Hill Bulk Fuel Storage Facility**

Parent Sample ID	Compound	MS %Recovery	Control Limits
	Ethylbenzene	40%	80 – 120%
	m-Xylene & p-Xylene	0%	80 – 120%
	o-Xylene	0%	80 – 120%
	Styrene	0%	76 – 122%
	Toluene	30%	80 – 120%
	trans-1,3-Dichloropropene	57%	76 – 122%
	Vinyl chloride	7%	31 – 150%
	Xylenes, Total	0%	80 – 120%

The results for these compounds in 20220111-H2-YT02 were previously rejected due to surrogate nonconformances and were not qualified further.

- The following SVOC MS recoveries were outside the laboratory control limits:

Parent Sample ID	Compound	MS %Recovery	Control Limits
20220111-H2-YT02	Acenaphthylene	39%	43 – 120%
	Carbazole	56%	61 – 150%
	4-Chloroaniline	0%	10 – 150%
	4-Chloro-3-methylphenol	10%	36 – 120%
	2-Chlorophenol	10%	44 – 120%
	3,3'-Dichlorobenzidine	13%	33 – 150%
	2,4-Dichlorophenol	23%	45 – 120%
	2,4-Dimethylphenol	11%	37 – 120%
	2-Methylphenol	0%	30 – 120%
	3 & 4 Methylphenol	0%	29 – 120%
	Naphthalene	41%	42 – 120%
	3-Nitroaniline	10%	10 – 138%
	4-Nitroaniline	19%	38 – 133%
	4-Nitrophenol	0%	10 – 120%
	N-Nitrosodiphenylamine	6%	52 – 120%
	Phenol	0%	13 – 120%
2,4,5-Trichlorophenol	35%	45 – 120%	

The nondetect results for acenaphthylene, carbazole, 3,3'-dichlorobenzidine, naphthalene, 3-nitroaniline and 4-nitroaniline in sample 20220111-H2-YT02 were qualified as estimated and flagged 'UJ' based on low recoveries in the MS.

The nondetect results for 4-chloroaniline and n-nitrosodiphenylamine in sample 20220111-H2-YT02 were rejected and flagged 'R' based on very low recoveries (<10%) in the MS.

The nondetect results for all acid compounds in sample 20220111-H2-YT02 were previously rejected due to surrogate nonconformances and were not qualified further.

- Project screening levels were met for all non-detect SVOC results, with the exception of hexachlorobenzene in samples 20220111-H2-YT02 (0.043 ug/L), 20220111-H2-YT04 (0.043 ug/L) and 20220111-H2-YT06 (0.040



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ug/L) that had method detection limits noted in parentheses, which exceeded the project screening level of 0.0003 ug/L.

- The laboratory noted that the minimum response factors (RF) for n-nitroso-di-n-propylamine was outside the method control criteria in the continuing calibration verification (CCV) associated with samples 20220111-H2-YT02, 20220111-H2-YT04 and 20220111-H2-YT06. The results for these compounds in these samples were qualified as estimated and flagged 'J.'

Memorandum

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

The summary data quality review of three water samples collected on January 11, 2022, has been completed. The samples were collected by AECOM personnel and were analyzed at WECK Laboratories, in City of Industry, California, for volatile organic compounds (VOCs) by EPA Method 524.2; semivolatile organic compounds (SVOCs) and organochlorine pesticides by EPA Method 525.2; total metals by EPA Method 200.8; total mercury by EPA Method 245.1; PCBs (Aroclors) by EPA Method 508.1; and total organic carbon (TOC) by Standard Methods 5310B. The analyses were performed in general accordance with the methods specified in EPA's drinking water program. The laboratory provided summary reports containing sample results and associated quality assurance (QA) and quality control (QC) data. The following samples are associated with WECK Laboratories groups 2A12050, 2A12051, and 2A12052:

Sample ID	Laboratory IDs	Requested Analyses
20220111-H2-YT07	2A12050-01	VOCs, SVOCs/Pest, Metals/Mercury, TOC, PCBs
20220111-H2-YT03	2A12051-01	VOCs, SVOCs/Pest, Metals/Mercury, TOC, PCBs
20220111-H2-YT05	2A12052-01	VOCs, SVOCs/Pest, Metals/Mercury, TOC, PCBs

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

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

- No data were qualified for VOCs, Metals/Mercury, TOC, or PCBs in association with laboratory groups 2A12050, 2A12051, and 2A12052.
- The following percent recoveries for the SVOC/Pesticide laboratory control sample (LCS) were below the laboratory control limits:

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



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

- The following analytes exceeded the Incident Specific Screening Criteria:

Sample Name	Analyte	Result	MDL	Incident Specific Screening Criteria	Units
20220111-H2-YT07	Endrin	ND	0.00991	0.0023	µg/L
20220111-H2-YT07	Heptachlor	ND	0.00965	0.0036	µg/L
20220111-H2-YT07	Heptachlor epoxide	ND	0.0122	0.0036	µg/L
20220111-H2-YT07	Hexachlorobenzene	ND	0.098	0.0003	µg/L
20220111-H2-YT03	Endrin	ND	0.00991	0.0023	µg/L
20220111-H2-YT03	Heptachlor	ND	0.00965	0.0036	µg/L
20220111-H2-YT03	Heptachlor epoxide	ND	0.0122	0.0036	µg/L
20220111-H2-YT03	Hexachlorobenzene	ND	0.098	0.0003	µg/L
20220111-H2-YT05	Endrin	ND	0.00991	0.0023	µg/L
20220111-H2-YT05	Heptachlor	ND	0.00965	0.0036	µg/L
20220111-H2-YT05	Heptachlor epoxide	ND	0.0122	0.0036	µg/L
20220111-H2-YT05	Hexachlorobenzene	ND	0.098	0.0003	µg/L