



CLIENT: AECOM - Honolulu
Project: CV18F0126, 60571032.02.46.01
Work Order: B22031080

Report Date: 3/24/2022

CASE NARRATIVE

General Comments:

For any question please contact your Project Manager at (406) 252-6325 or billingspm@energylab.com.

All analyses have been performed in accordance with DOD QSM Version 5.3 unless otherwise noted below. The specific methodologies used in obtaining the enclosed analytical results are indicated on the Analytical Summary Report and the Laboratory Analytical Report. The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted in the Work Order Receipt Checklist.

The tests listed below are accredited and meet the requirements of DoD QSM Version 5.3 as verified by ANSI-ASQ National Accreditation Board (ANAB) certificate number ADE-2588. Exceptions to this require client authorization and records documenting this approval are attached in the Sample Management Records. Accreditation may not be offered or required for all methods and analytes reported in this package. Refer to the certificate and scope of accreditation located at <https://www.energylab.com/whyus/certifications-quality-control/> or contact your project manager.

Tests for Total Organic Carbon by SW060A associated with analyst identified as ELI-CA were subcontracted to Energy Laboratories, PO Box 247, Casper, WY, EPA Number WY00002.

Project specific matrix quality control samples may not be reported if site specific samples were not submitted. Matrix quality control samples were performed on project samples where adequate volume was available. All quality control measures met criteria unless otherwise noted in the Analytical QC Exceptions report and in the Analysis Specific Comments below. Where available, sample management records are attached.

The Stage 4 Validation Package includes data reports for all analyses associated with the instrument calibration, quality control (QC) sample analysis, and sample analysis. All analytical data is within method specifications except as noted in the Analytical QC Exceptions report or the Analysis Specific Comments below. The analytical report identifies preparation batch and analytical run IDs associated with each result for a sample. Instances where manual integrations were performed including the technical justification are included in the Integration Summary Reports in the Stage 4 Validation Package. Only the raw data associated with the parameters listed on this report should be validated.

Analysis Specific Comments:

An Analytical QC Exceptions Report has been attached, summarizing all qualified QC results. All quality control measures met criteria; therefore there were no analytical QC exceptions on this report.



Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

COC # 202203-39NOI

www.energylab.com

DoD Samples Page 1 of 1

Account Information (Billing information)

Company/Name	AECOM	
Contact	Alethea Ramos / Margie Pascua	
Phone	808-529-7283 / 808-356-5373	
Mailing Address	1001 Bishop St., Suite 1600	
City, State, Zip	Honolulu, Hawaii 96813	
Email	alethea.ramos / margie.pascua@aecom.com	
Receive Invoice	<input type="checkbox"/> Hard Copy <input checked="" type="checkbox"/> Email	Receive Report <input type="checkbox"/> Hard Copy <input checked="" type="checkbox"/> Email
Purchase Order	Quote	Bottle Order
N/A	N/A	N/A

Report Information (if different than Account information)

Company/Name	AECOM	
Contact	see Account information	
Phone		
Mailing Address		
City, State, Zip		
Email	USAPimaging@aecom.com	
Receive Report	<input type="checkbox"/> Hard Copy <input checked="" type="checkbox"/> Email	
Special Report/Formats:	<input checked="" type="checkbox"/> LEVEL IV <input checked="" type="checkbox"/> NELAC <input checked="" type="checkbox"/> EDD/EDT (contact laboratory) <input type="checkbox"/> Other	

Comments

1. Project performed under DoD QSM
2. TPH-d/o needs 3520 extraction.
3. Preliminary data (or Level II) in 7 business days.
4. Note: NOI log is separate from other COC's.

Project Information

Project Name, PWSID, Permit, etc.	CV18F0126, 60571032 02.46.01		
Sampler Name	Cindy Branson	Sampler Phone	315-378-8084
Sample Origin State	Hawaii	EPA/State Compliance	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
The following tests will be subcontracted to other certified laboratories as shown. Signing this COC is acknowledgment of subcontracted test analysis at test site.			
Analysis	Subcontract Lab		
TOC	Energy Laboratories Inc., Copper		

Matrix Codes

- A - Air
- W - Water
- S - Solids/Solids
- V - Vegetation
- B - Biosessy
- O - Oil
- DW - Drinking Water

Analysis Requested

8260 VOC's (Full Suite) + DCA* (40ml VOA w/HCL)	8015 TPH-g (40ml VOA w/HCL)	RSK178 Methane (40ml VOA w/H2SO4)	8011 EDB (40ml VOA w/HCL)	EPA 3630/8015 TPH-d/o +SGC [1-L AG w/H2SO4]	EPA 8020 Diss. Lead (250ml HDPE w/HNO3) (field Filtered)	EPA 8060 TOC (250ml AG w/H3PO4)	EPA 8020 Total Lead (250ml HDPE w/HNO3)	See Attached
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
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All turnaround times are standard unless marked as RUSH

Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling - See Instructions Page

Sample Identification (Name, Location, Interval, etc.)	Collection		Number of Containers	Matrix (See Codes Above)	Analysis Requested								See Attached	ELI LAB ID Laboratory Use Only
	Date	Time			8260 VOC's (Full Suite) + DCA* (40ml VOA w/HCL)	8015 TPH-g (40ml VOA w/HCL)	RSK178 Methane (40ml VOA w/H2SO4)	8011 EDB (40ml VOA w/HCL)	EPA 3630/8015 TPH-d/o +SGC [1-L AG w/H2SO4]	EPA 8020 Diss. Lead (250ml HDPE w/HNO3) (field Filtered)	EPA 8060 TOC (250ml AG w/H3PO4)	EPA 8020 Total Lead (250ml HDPE w/HNO3)		
1 ERH2774 (RHMW15-05)	3/14/22	0945	17	GW	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	B-22031080-011
2 ERH2773 (Trip Blank)	3/14/22	0900	8	WQ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	062-05
4 TB 8260 14833			2											012
5 TB GLO 14894			2											013
6 TB 8011 14894			2											014
7 TB Methane 14895			2											015

ELI is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature			
	Cindy Branson	3/14/22 1530	Cindy B						
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature			
				1-16 1925W	3/16/22 0500	TA			
Shipped By	Cooler ID(s)	Custody Seals Y N C B	Intact Y N	Receipt Temp 06 °C	Temp Blank ON	On Ice ON	Payment Type CC Cash Check	Amount \$	Receipt Number (cash/check only)

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.



Work Order Receipt Checklist

AECOM - Honolulu

B22031080

Login completed by: Leslie S. Cadreau
Reviewed by: BL2000\tedwards
Reviewed Date: 3/20/2022

Date Received: 3/16/2022
Received by: tjg
Carrier name: FedEx

- Shipping container/cooler in good condition? Yes [checked] No [] Not Present []
Custody seals intact on all shipping container(s)/cooler(s)? Yes [checked] No [] Not Present []
Custody seals intact on all sample bottles? Yes [] No [] Not Present [checked]
Chain of custody present? Yes [checked] No []
Chain of custody signed when relinquished and received? Yes [checked] No []
Chain of custody agrees with sample labels? Yes [checked] No []
Samples in proper container/bottle? Yes [checked] No []
Sample containers intact? Yes [checked] No []
Sufficient sample volume for indicated test? Yes [checked] No []
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) Yes [checked] No []
Temp Blank received in all shipping container(s)/cooler(s)? Yes [checked] No [] Not Applicable []
Container/Temp Blank temperature: 0.6°C On Ice
Water - VOA vials have zero headspace? Yes [checked] No [] Not Applicable []
Water - pH acceptable upon receipt? Yes [checked] No [] Not Applicable []

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

The collection time indicated on the Chain of Custody for all samples is in Hawaii-Aleutian Standard Time. The collection time has been converted (+4 Hours) to Mountain Standard Time.

A custody seal was intact on all sample containers received for sample ERH2774 (RHMW15-05) except the 250mL Plastic Nitric preserved for both Total and Dissolved Lead analysis and two 1L Amber Glass Sulfuric preserved containers received for TPH-d/o+SGC analysis.

Qualifiers and Abbreviations

Qualifier	Qualifier Description
##	Limit of Quantitation (LOQ) for this analyte exceeds the Maximum Contaminant Level (MCL)
*	Result exceeds the Maximum Contaminant Level (MCL)
A	The analyte level was greater than four times the spike level - in accordance with the method, percent recovery is not calculated
B	Analyte detected in the method blank
C	Continuing calibration verification was outside of the quality control advisory limits
D	Limit of Quantitation (LOQ) increased due to sample matrix
E	Estimated value - result exceeds the instrument upper quantitation limit
H	Analysis performed past the method holding time
J	The reported result is an estimated value
L	Lowest Limit of Quantitation (LOQ) available for the analytical method used
N	Analyte concentration was not sufficiently high to calculate a Relative Percent Difference (RPD) for the serial dilution test
O	Diluted out
P	Poor method performance - method validations have shown no recoveries at low concentrations or method performance was erratic
Q	Values reported below the Limit of Quantitation (LOQ) are statistically invalid
R	Relative Percent Difference (RPD) exceeds advisory limit
S	Spike recovery outside of advisory limits
T	Analyte detected in the associated trip blank
U	Not detected at the Limit of Detection (LOD)
V	The RPD value for this duplicate represents the RER value and the RPD limit of 2 is the RER upper limit.

Qualifiers and Abbreviations

Abbreviation

Reporting	Explanation of Abbreviation
DF	Dilution Factor
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
MCL	Maximum Contaminant Level
MDC	Minimum Detectable Concentration
ND	Not detected at the Limit of Quantitation (LOQ)
RBSL	Risk-Based Screening Levels
REC	Recovery
RER	Relative Error Ratio
RPD	Relative Percent Difference
SPK	Spike

Sample Types	Explanation of Abbreviation
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification Standard
DUP	Sample Duplicate
ICSA	Interference Check Sample A
ICSAB	Interference Check Sample AB
ICV	Initial Calibration Verification Standard
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LFB	Laboratory Fortified Blank
LRB	Laboratory Reagent Blank
MBLK	Method Blank
MS	Sample Matrix Spike
MSD	Sample Matrix Spike Duplicate
PDS	Post Digestion/Distillation Spike
QCS	Quality Control Sample
SD	Serial Dilution
SRM	Standard Reference Material



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Lab ID: B22031080-011

Collection Date: 03/14/2022 13:45

Date Received: 03/16/2022

Report Date: 03/24/2022

Client: AECOM - Honolulu
Client Sample ID: ERH2774 (RHMW15-05)
Project: CV18F0126, 60571032.02.46.01
Matrix: Ground Water

Analyses	Result	Units	DF	Qual	LOQ	LOD	DL	MCL	Method	Analysis Date / By	RunID : Run Order	BatchID
AGGREGATE ORGANICS												
Organic Carbon, Total (TOC) - TOC Range is 0.3 to 0.3	0.27	mg/L	1	J	0.50	0.50	0.17		SW9060A	03/18/2022 16:27/eli-ca	SUB-C280653 : 4	C_R280653
METALS, DISSOLVED												
Lead	ND	mg/L	1	U	0.001	0.00005	0.00003		SW6020	03/17/2022 16:17/srh	ICPMS207-B_220317B : 30	R376422
METALS, TOTAL												
Lead	ND	mg/L	1	U	0.001	0.0001	0.00005		SW6020	03/17/2022 16:48/srh	ICPMS207-B_220317B : 35	164579
VOLATILE ORGANIC COMPOUNDS												
Benzene	ND	ug/L	1	U	1.0	0.20	0.091		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Bromobenzene	ND	ug/L	1	U	1.0	0.20	0.083		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Bromochloromethane	ND	ug/L	1	U	1.0	0.50	0.14		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Bromodichloromethane	ND	ug/L	1	U	1.0	0.25	0.12		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Bromoform	ND	ug/L	1	U	1.0	0.25	0.12		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Carbon tetrachloride	ND	ug/L	1	U	1.0	0.50	0.14		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Chlorobenzene	ND	ug/L	1	U	1.0	0.20	0.091		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Chlorodibromomethane	ND	ug/L	1	U	1.0	0.20	0.084		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Chloroethane	ND	ug/L	1	U	1.0	0.50	0.17		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Chloroform	ND	ug/L	1	U	1.0	0.20	0.079		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Chloromethane	ND	ug/L	1	U	1.0	0.50	0.16		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
1,2-Dibromoethane	ND	ug/L	1	U	1.0	0.20	0.092		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
2-Chlorotoluene	ND	ug/L	1	U	1.0	0.20	0.088		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
4-Chlorotoluene	ND	ug/L	1	U	1.0	0.20	0.073		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Dibromomethane	ND	ug/L	1	U	1.0	0.50	0.15		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
1,2-Dichlorobenzene	ND	ug/L	1	U	1.0	0.20	0.075		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
1,3-Dichlorobenzene	ND	ug/L	1	U	1.0	0.20	0.080		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
1,4-Dichlorobenzene	ND	ug/L	1	U	1.0	0.20	0.086		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Dichlorodifluoromethane	ND	ug/L	1	U	1.0	0.50	0.18		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
1,1-Dichloroethane	ND	ug/L	1	U	1.0	0.50	0.14		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
1,2-Dichloroethane	ND	ug/L	1	U	1.0	0.25	0.12		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
1,1-Dichloroethene	ND	ug/L	1	U	1.0	0.50	0.14		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
cis-1,2-Dichloroethene	ND	ug/L	1	U	1.0	0.25	0.11		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
trans-1,2-Dichloroethene	ND	ug/L	1	U	1.0	0.25	0.12		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
1,2-Dichloropropane	ND	ug/L	1	U	1.0	0.20	0.085		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
1,3-Dichloropropane	ND	ug/L	1	U	1.0	0.20	0.079		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
2,2-Dichloropropane	ND	ug/L	1	U	1.0	0.50	0.19		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
1,1-Dichloropropene	ND	ug/L	1	U	1.0	0.20	0.083		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
cis-1,3-Dichloropropene	ND	ug/L	1	U	1.0	0.20	0.073		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
trans-1,3-Dichloropropene	ND	ug/L	1	U	1.0	0.20	0.085		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Ethylbenzene	ND	ug/L	1	U	1.0	0.20	0.084		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Lab ID: B22031080-011

Collection Date: 03/14/2022 13:45

Date Received: 03/16/2022

Report Date: 03/24/2022

Client: AECOM - Honolulu
Client Sample ID: ERH2774 (RHMW15-05)
Project: CV18F0126, 60571032.02.46.01
Matrix: Ground Water

Analyses	Result	Units	DF	Qual	LOQ	LOD	DL	MCL	Method	Analysis Date / By	RunID : Run Order	BatchID
VOLATILE ORGANIC COMPOUNDS												
Methyl ethyl ketone	ND	ug/L	1	U	20	5.0	1.8		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Methyl tert-butyl ether (MTBE)	ND	ug/L	1	U	1.0	0.25	0.10		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Methylene chloride	ND	ug/L	1	U	1.0	0.50	0.34		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Styrene	ND	ug/L	1	U	1.0	0.20	0.067		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
1,1,1,2-Tetrachloroethane	ND	ug/L	1	U	1.0	0.25	0.10		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
1,1,2,2-Tetrachloroethane	ND	ug/L	1	U	1.0	0.20	0.087		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Tetrachloroethene	ND	ug/L	1	U	1.0	0.20	0.067		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Toluene	ND	ug/L	1	UT	1.0	0.20	0.068		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
1,1,1-Trichloroethane	ND	ug/L	1	U	1.0	0.50	0.13		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
1,1,2-Trichloroethane	ND	ug/L	1	U	1.0	0.25	0.11		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Trichloroethene	ND	ug/L	1	U	1.0	0.20	0.099		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Trichlorofluoromethane	ND	ug/L	1	U	1.0	0.50	0.13		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
1,2,3-Trichloropropane	ND	ug/L	1	U	1.0	0.50	0.24		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Vinyl chloride	ND	ug/L	1	U	1.0	0.50	0.15		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
m+p-Xylenes	ND	ug/L	1	U	1.0	0.50	0.15		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
o-Xylene	ND	ug/L	1	U	1.0	0.20	0.060		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Xylenes, Total	ND	ug/L	1	U	1.0	0.20	0.060		SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Surr: Dibromofluoromethane	99.0	%REC	1		80-119				SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Surr: 1,2-Dichloroethane-d4	115.0	%REC	1		81-118				SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Surr: Toluene-d8	97.0	%REC	1		89-112				SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
Surr: p-Bromofluorobenzene	114.0	%REC	1		85-114				SW8260B	03/17/2022 12:06/msc	VOA5975C.I_220317A : 5	R376378
VOCS BY MICROEXTRACTION-ECD												
1,2-Dibromoethane	ND	ug/L	1	U	0.010	0.0049	0.0025		SW8011	03/18/2022 19:25/clt	GECD.I_220318A : 20	164633
Surr: 1,1,1,2-Tetrachloroethane	87.0	%REC	1		70-130				SW8011	03/18/2022 19:25/clt	GECD.I_220318A : 20	164633
PETROLEUM HYDROCARBONS-VOLATILE												
C6 to C10	ND	ug/L	1	U	20	8.7	2.0		SW8015C	03/19/2022 12:59/jp	VARIAN1_220319A : 5	R376431
Total Purgeable Hydrocarbons	ND	ug/L	1	U	20	10	3.1		SW8015C	03/19/2022 12:59/jp	VARIAN1_220319A : 5	R376431
Surr: Trifluorotoluene	74.0	%REC	1		70-130				SW8015C	03/19/2022 12:59/jp	VARIAN1_220319A : 5	R376431
- Note 1: C6 to C10 is defined as all hydrocarbons eluting between 2-Methylpentane and 1,2,4-Trimethylbenzene.												
- Note 2: Total Purgeable Hydrocarbons are defined as the total hydrocarbon response regardless of elution time.												
PETROLEUM HYDROCARBONS-SEMI-VOLATILE												
Diesel Range Organics (C10 to C24)	ND	mg/L	1	U	0.30	0.14	0.037		SW8015C	03/17/2022 10:29/amn	GCFID-HP5-B_220316A : 17	164531
Oil Range Hydrocarbons (C24 to C40)	ND	mg/L	1	U	0.30	0.14	0.084		SW8015C	03/17/2022 10:29/amn	GCFID-HP5-B_220316A : 17	164531
Total Extractable Hydrocarbons	ND	mg/L	1	U	0.30	0.14	0.071		SW8015C	03/17/2022 10:29/amn	GCFID-HP5-B_220316A : 17	164531
Surr: o-Terphenyl	89.0	%REC	1		56-125				SW8015C	03/17/2022 10:29/amn	GCFID-HP5-B_220316A : 17	164531
Surr: n-Triacontane	83.0	%REC	1		50-150				SW8015C	03/17/2022 10:29/amn	GCFID-HP5-B_220316A : 17	164531
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.												
- Since there were no detectable hydrocarbons, Silica Gel Treatment (SGT) results are equivalent to non-SGT results.												



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Lab ID: B22031080-011

Collection Date: 03/14/2022 13:45

Date Received: 03/16/2022

Report Date: 03/24/2022

Client: AECOM - Honolulu
Client Sample ID: ERH2774 (RHMW15-05)
Project: CV18F0126, 60571032.02.46.01
Matrix: Ground Water

Analyses	Result	Units	DF	Qual	LOQ	LOD	DL	MCL	Method	Analysis Date / By	RunID : Run Order	BatchID
ORGANIC CHARACTERISTICS												
Methane	ND	mg/L	1	U	0.0020	0.0012	0.00070		SW8015M	03/21/2022 10:15/jdw	FID-HEADSPACE_220321A : 5	R376486



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Lab ID: B22031080-012

Collection Date: 03/14/2022 13:45

Date Received: 03/16/2022

Report Date: 03/24/2022

Client: AECOM - Honolulu
Client Sample ID: ERH2773 (Trip Blank)-14833
Project: CV18F0126, 60571032.02.46.01
Matrix: Trip Blank

Analyses	Result	Units	DF	Qual	LOQ	LOD	DL	MCL	Method	Analysis Date / By	RunID : Run Order	BatchID
VOLATILE ORGANIC COMPOUNDS												
Benzene	ND	ug/L	1	U	1.0	0.20	0.091		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Bromobenzene	ND	ug/L	1	U	1.0	0.20	0.083		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Bromochloromethane	ND	ug/L	1	U	1.0	0.50	0.14		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Bromodichloromethane	ND	ug/L	1	U	1.0	0.25	0.12		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Bromoform	ND	ug/L	1	U	1.0	0.25	0.12		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Carbon tetrachloride	ND	ug/L	1	U	1.0	0.50	0.14		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Chlorobenzene	ND	ug/L	1	U	1.0	0.20	0.091		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Chlorodibromomethane	ND	ug/L	1	U	1.0	0.20	0.084		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Chloroethane	ND	ug/L	1	U	1.0	0.50	0.17		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Chloroform	ND	ug/L	1	U	1.0	0.20	0.079		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Chloromethane	ND	ug/L	1	U	1.0	0.50	0.16		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
1,2-Dibromoethane	ND	ug/L	1	U	1.0	0.20	0.092		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
2-Chlorotoluene	ND	ug/L	1	U	1.0	0.20	0.088		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
4-Chlorotoluene	ND	ug/L	1	U	1.0	0.20	0.073		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Dibromomethane	ND	ug/L	1	U	1.0	0.50	0.15		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
1,2-Dichlorobenzene	ND	ug/L	1	U	1.0	0.20	0.075		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
1,3-Dichlorobenzene	ND	ug/L	1	U	1.0	0.20	0.080		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
1,4-Dichlorobenzene	ND	ug/L	1	U	1.0	0.20	0.086		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Dichlorodifluoromethane	ND	ug/L	1	U	1.0	0.50	0.18		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
1,1-Dichloroethane	ND	ug/L	1	U	1.0	0.50	0.14		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
1,2-Dichloroethane	ND	ug/L	1	U	1.0	0.25	0.12		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
1,1-Dichloroethene	ND	ug/L	1	U	1.0	0.50	0.14		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
cis-1,2-Dichloroethene	ND	ug/L	1	U	1.0	0.25	0.11		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
trans-1,2-Dichloroethene	ND	ug/L	1	U	1.0	0.25	0.12		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
1,2-Dichloropropane	ND	ug/L	1	U	1.0	0.20	0.085		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
1,3-Dichloropropane	ND	ug/L	1	U	1.0	0.20	0.079		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
2,2-Dichloropropane	ND	ug/L	1	U	1.0	0.50	0.19		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
1,1-Dichloropropene	ND	ug/L	1	U	1.0	0.20	0.083		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
cis-1,3-Dichloropropene	ND	ug/L	1	U	1.0	0.20	0.073		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
trans-1,3-Dichloropropene	ND	ug/L	1	U	1.0	0.20	0.085		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Ethylbenzene	ND	ug/L	1	U	1.0	0.20	0.084		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Methyl ethyl ketone	ND	ug/L	1	U	20	5.0	1.8		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Methyl tert-butyl ether (MTBE)	ND	ug/L	1	U	1.0	0.25	0.10		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Methylene chloride	ND	ug/L	1	U	1.0	0.50	0.34		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Styrene	ND	ug/L	1	U	1.0	0.20	0.067		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
1,1,1,2-Tetrachloroethane	ND	ug/L	1	U	1.0	0.25	0.10		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
1,1,2,2-Tetrachloroethane	ND	ug/L	1	U	1.0	0.20	0.087		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Tetrachloroethene	ND	ug/L	1	U	1.0	0.20	0.067		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Toluene	0.099	ug/L	1	J	1.0	0.20	0.068		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Lab ID: B22031080-012

Collection Date: 03/14/2022 13:45

Date Received: 03/16/2022

Report Date: 03/24/2022

Client: AECOM - Honolulu
Client Sample ID: ERH2773 (Trip Blank)-14833
Project: CV18F0126, 60571032.02.46.01
Matrix: Trip Blank

Analyses	Result	Units	DF	Qual	LOQ	LOD	DL	MCL	Method	Analysis Date / By	RunID : Run Order	BatchID
VOLATILE ORGANIC COMPOUNDS												
1,1,1-Trichloroethane	ND	ug/L	1	U	1.0	0.50	0.13		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
1,1,2-Trichloroethane	ND	ug/L	1	U	1.0	0.25	0.11		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Trichloroethene	ND	ug/L	1	U	1.0	0.20	0.099		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Trichlorofluoromethane	ND	ug/L	1	U	1.0	0.50	0.13		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
1,2,3-Trichloropropane	ND	ug/L	1	U	1.0	0.50	0.24		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Vinyl chloride	ND	ug/L	1	U	1.0	0.50	0.15		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
m+p-Xylenes	ND	ug/L	1	U	1.0	0.50	0.15		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
o-Xylene	ND	ug/L	1	U	1.0	0.20	0.060		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Xylenes, Total	ND	ug/L	1	U	1.0	0.20	0.060		SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Surr: Dibromofluoromethane	95.0	%REC	1		80-119				SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Surr: 1,2-Dichloroethane-d4	109.0	%REC	1		81-118				SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Surr: Toluene-d8	95.0	%REC	1		89-112				SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378
Surr: p-Bromofluorobenzene	107.0	%REC	1		85-114				SW8260B	03/17/2022 16:12/msc	VOA5975C.I_220317A : 14	R376378



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Client Sample ID: ERH2773 (Trip Blank)-14894
Project: CV18F0126, 60571032.02.46.01
Matrix: Trip Blank

Lab ID: B22031080-013
Collection Date: 03/14/2022 13:45
Date Received: 03/16/2022
Report Date: 03/24/2022

Analyses	Result	Units	DF	Qual	LOQ	LOD	DL	MCL	Method	Analysis Date / By	RunID : Run Order	BatchID
PETROLEUM HYDROCARBONS-VOLATILE												
C6 to C10	ND	ug/L	1	U	20	8.7	2.0		SW8015C	03/19/2022 14:07/jp	VARIAN1_220319A : 6	R376431
Total Purgeable Hydrocarbons	ND	ug/L	1	U	20	10	3.1		SW8015C	03/19/2022 14:07/jp	VARIAN1_220319A : 6	R376431
Surr: Trifluorotoluene	76.0	%REC	1		70-130				SW8015C	03/19/2022 14:07/jp	VARIAN1_220319A : 6	R376431
- Note 1: C6 to C10 is defined as all hydrocarbons eluting between 2-Methylpentane and 1,2,4-Trimethylbenzene.												
- Note 2: Total Purgeable Hydrocarbons are defined as the total hydrocarbon response regardless of elution time.												



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Client Sample ID: ERH2773 (Trip Blank)-14894
Project: CV18F0126, 60571032.02.46.01
Matrix: Trip Blank

Lab ID: B22031080-014
Collection Date: 03/14/2022 13:45
Date Received: 03/16/2022
Report Date: 03/24/2022

Analyses	Result	Units	DF	Qual	LOQ	LOD	DL	MCL	Method	Analysis Date / By	RunID : Run Order	BatchID
VOCS BY MICROEXTRACTION-ECD												
1,2-Dibromoethane	ND	ug/L	1	U	0.010	0.0049	0.0025		SW8011	03/18/2022 17:06/ct	GECD.I_220318A : 13	164633
Surr: 1,1,1,2-Tetrachloroethane	90.0	%REC	1		70-130				SW8011	03/18/2022 17:06/ct	GECD.I_220318A : 13	164633



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Client Sample ID: ERH2773 (Trip Blank)-14895
Project: CV18F0126, 60571032.02.46.01
Matrix: Trip Blank

Lab ID: B22031080-015
Collection Date: 03/14/2022 13:45
Date Received: 03/16/2022
Report Date: 03/24/2022

Analyses	Result	Units	DF	Qual	LOQ	LOD	DL	MCL	Method	Analysis Date / By	RunID : Run Order	BatchID
ORGANIC CHARACTERISTICS												
Methane	ND	mg/L	1	U	0.0020	0.0012	0.00070		SW8015M	03/21/2022 10:20/jdw	FID-HEADSPACE_220321A : 6	R376486



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: SUB-C280653: 2 **SampType:** Method Blank **Batch ID:** C_R280653
Method: SW9060A **Analysis Date:** 03/18/2022 15:08 **Prep Date:**
Lab ID: MBLK **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Organic Carbon, Total (TOC)	ND	0.20									

Associated Samples: **B22031080-011D**
- TOC Range is 0.0 to 0.1

Run ID: Run Order: SUB-C280653: 1 **SampType:** Laboratory Control Sample **Batch ID:** C_R280653
Method: SW9060A **Analysis Date:** 03/18/2022 14:28 **Prep Date:**
Lab ID: LCS **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Organic Carbon, Total (TOC)	5.0	0.50	5.0		101.0	91	111				

Associated Samples: **B22031080-011D**
- TOC Range is 5.0 to 5.1

Run ID: Run Order: SUB-C280653: 5 **SampType:** Sample Matrix Spike **Batch ID:** C_R280653
Method: SW9060A **Analysis Date:** 03/18/2022 17:46 **Prep Date:**
Lab ID: B22031229-001D **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Organic Carbon, Total (TOC)	5.3	0.50	5.0	0.40	98.0	91	111				

Associated Samples: **B22031080-011D**
- TOC Range is 5.2 to 5.3



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: SUB-C280653: 6 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** C_R280653
Method: SW9060A **Analysis Date:** 03/18/2022 18:27 **Prep Date:**
Lab ID: B22031229-001D **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Organic Carbon, Total (TOC)	5.3	0.50	5.0	0.40	99.0	91	111	5.3	0.8	10.0	

Associated Samples: **B22031080-011D**
- TOC Range is 5.3 to 5.3

Run ID: Run Order: SUB-C280653: 3 **SampType:** Continuing Calibration Verification Standard **Batch ID:** C_R280653
Method: SW9060A **Analysis Date:** 03/18/2022 15:47 **Prep Date:**
Lab ID: CCV **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Organic Carbon, Total (TOC)	4.8	0.50	5.0		97.0	90	110				

Associated Samples: **B22031080-011D**
- TOC Range is 4.8 to 4.9

Run ID: Run Order: SUB-C280653: 7 **SampType:** Continuing Calibration Verification Standard **Batch ID:** C_R280653
Method: SW9060A **Analysis Date:** 03/18/2022 22:27 **Prep Date:**
Lab ID: CCV **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Organic Carbon, Total (TOC)	4.9	0.50	5.0		99.0	90	110				

Associated Samples: **B22031080-011D**
- TOC Range is 4.9 to 5.0



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: ICPMS207-B_220317B: 20 **SampType:** Laboratory Fortified Blank **Batch ID:** R376422
Method: SW6020 **Analysis Date:** 03/17/2022 15:15 **Prep Date:**
Lab ID: LFB **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Lead	0.050	0.001	0.050		100.0	88	115				

Associated Samples: **B22031080-011A**

Run ID: Run Order: ICPMS207-B_220317B: 19 **SampType:** Method Blank **Batch ID:** R376422
Method: SW6020 **Analysis Date:** 03/17/2022 15:08 **Prep Date:**
Lab ID: LRB **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Lead	ND	0.0005									

Associated Samples: **B22031080-011A**

Run ID: Run Order: ICPMS207-B_220317B: 32 **SampType:** Sample Matrix Spike **Batch ID:** R376422
Method: SW6020 **Analysis Date:** 03/17/2022 16:30 **Prep Date:**
Lab ID: B22031080-011AMS **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Lead	0.048	0.001	0.050	0.00	97.0	88	115				

Associated Samples: **B22031080-011A**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: ICPMS207-B_220317B: 33 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** R376422
Method: SW6020 **Analysis Date:** 03/17/2022 16:36 **Prep Date:**
Lab ID: B22031080-011AMSD **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Lead	0.050	0.001	0.050	0.00	99.0	88	115	0.048	2.7	20.0	

Associated Samples: **B22031080-011A**

Run ID: Run Order: ICPMS207-B_220317B: 31 **SampType:** Serial Dilution **Batch ID:** R376422
Method: SW6020 **Analysis Date:** 03/17/2022 16:23 **Prep Date:**
Lab ID: B22031080-011ADIL **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Lead	ND	0.001						0.00		10.0	

Associated Samples: **B22031080-011A**

Run ID: Run Order: ICPMS207-B_220317B: 28 **SampType:** Laboratory Control Sample **Batch ID:** 164579
Method: SW6020 **Analysis Date:** 03/17/2022 16:05 **Prep Date:** 03/16/2022 15:39
Lab ID: LCS4-164579 **Units:** mg/L **Prep Method:** SW3010A

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Lead	0.097	0.001	0.100		97.0	88	115				

Associated Samples: **B22031080-011B**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: ICPMS207-B_220317B: 37 **SampType:** Post Digestion/Distillation Spike **Batch ID:** 164579
Method: SW6020 **Analysis Date:** 03/17/2022 17:01 **Prep Date:** 03/16/2022 16:01
Lab ID: B22031080-011BPDS1 **Units:** mg/L **Prep Method:** SW3010A

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Lead	0.048	0.001	0.052	0.00	92.0	80	120				

Associated Samples: **B22031080-011B**

Run ID: Run Order: ICPMS207-B_220317B: 38 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** 164579
Method: SW6020 **Analysis Date:** 03/17/2022 17:07 **Prep Date:** 03/16/2022 16:01
Lab ID: B22031080-011BMSD4 **Units:** mg/L **Prep Method:** SW3010A

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Lead	0.100	0.001	0.100	0.00	100.0	88	115	0.098	1.9	20.0	

Associated Samples: **B22031080-011B**

Run ID: Run Order: ICPMS207-B_220317B: 41 **SampType:** Matrix Spike **Batch ID:** 164579
Method: SW6020 **Analysis Date:** 03/17/2022 17:26 **Prep Date:** 03/16/2022 16:01
Lab ID: B22031080-011BMS4 **Units:** mg/L **Prep Method:** SW3010A

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Lead	0.098	0.001	0.100	0.00	98.0	88	115				

Associated Samples: **B22031080-011B**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: ICPMS207-B_220317B: 27 **SampType:** Method Blank **Batch ID:** 164579
Method: SW6020 **Analysis Date:** 03/17/2022 15:58 **Prep Date:** 03/16/2022 15:39
Lab ID: MB-164579 **Units:** mg/L **Prep Method:** SW3010A

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Lead	ND	0.0005									

Associated Samples: **B22031080-011B**

Run ID: Run Order: ICPMS207-B_220317B: 36 **SampType:** Serial Dilution **Batch ID:** 164579
Method: SW6020 **Analysis Date:** 03/17/2022 16:54 **Prep Date:** 03/16/2022 16:01
Lab ID: B22031080-011BDIL **Units:** mg/L **Prep Method:** SW3010A

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Lead	ND	0.001						0.00		10.0	

Associated Samples: **B22031080-011B**

Run ID: Run Order: ICPMS207-B_220317B: 25 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R376422
Method: SW6020 **Analysis Date:** 03/17/2022 15:46 **Prep Date:**
Lab ID: CCV **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Lead	0.048	0.001	0.050		96.0	90	110				

Associated Samples: **B22031080-011A, B22031080-011B**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: ICPMS207-B_220317B: 39
Method: SW6020
Lab ID: CCV

SampType: Continuing Calibration Verification Standard
Analysis Date: 03/17/2022 17:13
Units: mg/L

Batch ID: R376422
Prep Date:
Prep Method:

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Lead	0.048	0.001	0.050		97.0	90	110				

Associated Samples: **B22031080-011A, B22031080-011B**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: VOA5975C.I_220317A: 4 **SampType:** Method Blank **Batch ID:** R376378
Method: SW8260B **Analysis Date:** 03/17/2022 11:35 **Prep Date:**
Lab ID: MBLK031722_ **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	ND	0.50									
Bromobenzene	ND	0.50									
Bromochloromethane	ND	0.50									
Bromodichloromethane	ND	0.50									
Bromoform	ND	0.50									
Carbon tetrachloride	ND	0.50									
Chlorobenzene	ND	0.50									
Chlorodibromomethane	ND	0.50									
Chloroethane	ND	0.50									
Chloroform	ND	0.50									
Chloromethane	ND	0.50									
1,2-Dibromoethane	ND	0.50									
2-Chlorotoluene	ND	0.50									
Dibromomethane	ND	0.50									
1,2-Dichlorobenzene	ND	0.50									
4-Chlorotoluene	ND	0.50									
1,3-Dichlorobenzene	ND	0.50									
1,4-Dichlorobenzene	ND	0.50									
Dichlorodifluoromethane	ND	0.50									
1,1-Dichloroethane	ND	0.50									
1,2-Dichloroethane	ND	0.50									
1,1-Dichloroethene	ND	0.50									
cis-1,2-Dichloroethene	ND	0.50									
trans-1,2-Dichloroethene	ND	0.50									
1,2-Dichloropropane	ND	0.50									
1,3-Dichloropropane	ND	0.50									
2,2-Dichloropropane	ND	0.50									



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: VOA5975C.I._220317A: 4 **SampType:** Method Blank **Batch ID:** R376378
Method: SW8260B **Analysis Date:** 03/17/2022 11:35 **Prep Date:**
Lab ID: MBLK031722_ **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.50									
cis-1,3-Dichloropropene	ND	0.50									
trans-1,3-Dichloropropene	ND	0.50									
Ethylbenzene	ND	0.50									
Methyl tert-butyl ether (MTBE)	ND	0.50									
Methyl ethyl ketone	ND	10									
Methylene chloride	ND	0.50									
Styrene	ND	0.50									
1,1,1,2-Tetrachloroethane	ND	0.50									
1,1,2,2-Tetrachloroethane	ND	0.50									
Tetrachloroethene	ND	0.50									
Toluene	ND	0.50									
1,1,1-Trichloroethane	ND	0.50									
1,1,2-Trichloroethane	ND	0.50									
Trichloroethene	ND	0.50									
Trichlorofluoromethane	ND	0.50									
1,2,3-Trichloropropane	ND	0.50									
Vinyl chloride	ND	0.50									
m+p-Xylenes	ND	0.50									
o-Xylene	ND	0.50									
Xylenes, Total	ND	0.50									
Surr: 1,2-Dichloroethane-d4	11	0.50	10		108.0	81	118				
Surr: Dibromofluoromethane	9.4	0.50	10		94.0	80	119				
Surr: p-Bromofluorobenzene	11	0.50	10		108.0	85	114				
Surr: Toluene-d8	9.6	0.50	10		96.0	89	112				

Associated Samples: **B22031080-011E, B22031080-012A**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: VOA5975C.I_220317A: 3 **SampType:** Laboratory Control Sample **Batch ID:** R376378
Method: SW8260B **Analysis Date:** 03/17/2022 10:41 **Prep Date:**
Lab ID: LCS031722_ **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	5.1	0.50	5.0		102.0	79	120				
Bromobenzene	4.9	0.50	5.0		99.0	80	120				
Bromochloromethane	5.3	0.50	5.0		106.0	78	123				
Bromodichloromethane	5.2	0.50	5.0		104.0	79	125				
Bromoform	5.1	0.50	5.0		102.0	66	130				
Carbon tetrachloride	4.7	0.50	5.0		94.0	72	136				
Chlorobenzene	4.9	0.50	5.0		97.0	82	118				
Chlorodibromomethane	4.8	0.50	5.0		96.0	74	126				
Chloroethane	4.6	0.50	5.0		92.0	60	138				
Chloroform	4.9	0.50	5.0		98.0	79	124				
Chloromethane	4.2	0.50	5.0		85.0	50	139				
1,2-Dibromoethane	4.9	0.50	5.0		98.0	78	122				
2-Chlorotoluene	4.9	0.50	5.0		99.0	79	122				
Dibromomethane	5.3	0.50	5.0		106.0	79	123				
1,2-Dichlorobenzene	4.9	0.50	5.0		98.0	80	119				
4-Chlorotoluene	5.2	0.50	5.0		103.0	78	122				
1,3-Dichlorobenzene	5.1	0.50	5.0		101.0	80	119				
1,4-Dichlorobenzene	4.9	0.50	5.0		98.0	79	118				
Dichlorodifluoromethane	4.0	0.50	5.0		80.0	32	152				
1,1-Dichloroethane	5.2	0.50	5.0		104.0	77	125				
1,2-Dichloroethane	5.1	0.50	5.0		102.0	73	128				
1,1-Dichloroethene	5.1	0.50	5.0		103.0	71	131				
cis-1,2-Dichloroethene	5.0	0.50	5.0		100.0	78	123				
trans-1,2-Dichloroethene	5.1	0.50	5.0		101.0	75	124				
1,2-Dichloropropane	4.9	0.50	5.0		98.0	78	122				
1,3-Dichloropropane	4.8	0.50	5.0		96.0	80	119				
2,2-Dichloropropane	5.0	0.50	5.0		100.0	60	139				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: VOA5975C.I_220317A: 3 **SampType:** Laboratory Control Sample **Batch ID:** R376378
Method: SW8260B **Analysis Date:** 03/17/2022 10:41 **Prep Date:**
Lab ID: LCS031722_ **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1,1-Dichloropropene	4.7	0.50	5.0		94.0	79	125				
cis-1,3-Dichloropropene	4.6	0.50	5.0		92.0	75	124				
trans-1,3-Dichloropropene	5.1	0.50	5.0		101.0	73	127				
Ethylbenzene	4.6	0.50	5.0		92.0	79	121				
Methyl tert-butyl ether (MTBE)	5.0	0.50	5.0		99.0	71	124				
Methyl ethyl ketone	59	10	50		118.0	56	143				
Methylene chloride	5.1	0.50	5.0		102.0	74	124				
Styrene	4.7	0.50	5.0		94.0	78	123				
1,1,1,2-Tetrachloroethane	4.8	0.50	5.0		96.0	78	124				
1,1,2,2-Tetrachloroethane	5.5	0.50	5.0		110.0	71	121				
Tetrachloroethene	4.4	0.50	5.0		88.0	74	129				
Toluene	5.1	0.50	5.0		102.0	80	121				
1,1,1-Trichloroethane	4.7	0.50	5.0		94.0	74	131				
1,1,2-Trichloroethane	5.1	0.50	5.0		102.0	80	119				
Trichloroethene	4.9	0.50	5.0		99.0	79	123				
Trichlorofluoromethane	4.3	0.50	5.0		86.0	65	141				
1,2,3-Trichloropropane	4.9	0.50	5.0		97.0	73	125				
Vinyl chloride	4.5	0.50	5.0		90.0	58	137				
m+p-Xylenes	9.0	0.50	10		90.0	80	121				
o-Xylene	4.6	0.50	5.0		93.0	78	122				
Xylenes, Total	14	0.50	15		91.0	79	121				
Surr: 1,2-Dichloroethane-d4	11	0.50	10		106.0	81	118				
Surr: Dibromofluoromethane	9.1	0.50	10		91.0	80	119				
Surr: p-Bromofluorobenzene	11	0.50	10		107.0	85	114				
Surr: Toluene-d8	9.9	0.50	10		99.0	89	112				

Associated Samples: **B22031080-011E, B22031080-012A**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: VOA5975C.I_220317A: 21 **SampType:** Sample Matrix Spike **Batch ID:** R376378
Method: SW8260B **Analysis Date:** 03/17/2022 19:23 **Prep Date:**
Lab ID: B22031229-006EMS **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	5.6	0.50	5.0	0.0	111.0	79	120				
Bromobenzene	5.4	0.50	5.0	0.0	108.0	80	120				
Bromochloromethane	5.4	0.50	5.0	0.0	109.0	78	123				
Bromodichloromethane	5.8	0.50	5.0	0.0	115.0	79	125				
Bromoform	5.5	0.50	5.0	0.0	110.0	66	130				
Carbon tetrachloride	5.4	0.50	5.0	0.0	108.0	72	136				
Chlorobenzene	5.3	0.50	5.0	0.0	107.0	82	118				
Chlorodibromomethane	5.4	0.50	5.0	0.0	109.0	74	126				
Chloroethane	4.9	0.50	5.0	0.0	98.0	60	138				
Chloroform	5.2	0.50	5.0	0.0	105.0	79	124				
Chloromethane	4.4	0.50	5.0	0.0	88.0	50	139				
1,2-Dibromoethane	5.3	0.50	5.0	0.0	105.0	78	122				
2-Chlorotoluene	5.4	0.50	5.0	0.0	108.0	79	122				
Dibromomethane	5.6	0.50	5.0	0.0	113.0	79	123				
1,2-Dichlorobenzene	5.3	0.50	5.0	0.0	106.0	80	119				
4-Chlorotoluene	5.7	0.50	5.0	0.0	113.0	78	122				
1,3-Dichlorobenzene	5.5	0.50	5.0	0.0	110.0	80	119				
1,4-Dichlorobenzene	5.3	0.50	5.0	0.0	107.0	79	118				
Dichlorodifluoromethane	4.4	0.50	5.0	0.0	87.0	32	152				
1,1-Dichloroethane	5.7	0.50	5.0	0.0	114.0	77	125				
1,2-Dichloroethane	5.4	0.50	5.0	0.0	108.0	73	128				
1,1-Dichloroethene	5.7	0.50	5.0	0.0	114.0	71	131				
cis-1,2-Dichloroethene	5.3	0.50	5.0	0.0	106.0	78	123				
trans-1,2-Dichloroethene	5.4	0.50	5.0	0.0	107.0	75	124				
1,2-Dichloropropane	5.6	0.50	5.0	0.0	111.0	78	122				
1,3-Dichloropropane	5.2	0.50	5.0	0.0	103.0	80	119				
2,2-Dichloropropane	5.2	0.50	5.0	0.0	105.0	60	139				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: VOA5975C.I_220317A: 21 **SampType:** Sample Matrix Spike **Batch ID:** R376378
Method: SW8260B **Analysis Date:** 03/17/2022 19:23 **Prep Date:**
Lab ID: B22031229-006EMS **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1,1-Dichloropropene	5.2	0.50	5.0	0.0	104.0	79	125				
cis-1,3-Dichloropropene	4.9	0.50	5.0	0.0	98.0	75	124				
trans-1,3-Dichloropropene	5.5	0.50	5.0	0.0	110.0	73	127				
Ethylbenzene	5.2	0.50	5.0	0.0	104.0	79	121				
Methyl tert-butyl ether (MTBE)	4.8	0.50	5.0	0.0	96.0	71	124				
Methyl ethyl ketone	55	10	50	0.0	111.0	56	143				
Methylene chloride	5.4	0.50	5.0	0.0	108.0	74	124				
Styrene	5.3	0.50	5.0	0.0	106.0	78	123				
1,1,1,2-Tetrachloroethane	5.3	0.50	5.0	0.0	107.0	78	124				
1,1,2,2-Tetrachloroethane	5.7	0.50	5.0	0.0	114.0	71	121				
Tetrachloroethene	5.1	0.50	5.0	0.0	102.0	74	129				
Toluene	5.8	0.50	5.0	0.0	115.0	80	121				
1,1,1-Trichloroethane	5.3	0.50	5.0	0.0	106.0	74	131				
1,1,2-Trichloroethane	5.5	0.50	5.0	0.0	109.0	80	119				
Trichloroethene	5.3	0.50	5.0	0.0	107.0	79	123				
Trichlorofluoromethane	5.1	0.50	5.0	0.0	101.0	65	141				
1,2,3-Trichloropropane	5.3	0.50	5.0	0.0	106.0	73	125				
Vinyl chloride	4.7	0.50	5.0	0.0	94.0	58	137				
m+p-Xylenes	10	0.50	10	0.0	103.0	80	121				
o-Xylene	5.2	0.50	5.0	0.0	104.0	78	122				
Xylenes, Total	15	0.50	15	0.0	103.0	79	121				
Surr: 1,2-Dichloroethane-d4	10	0.50	10	0.0	105.0	81	118				
Surr: Dibromofluoromethane	9.1	0.50	10	0.0	91.0	80	119				
Surr: p-Bromofluorobenzene	11	0.50	10	0.0	108.0	85	114				
Surr: Toluene-d8	10	0.50	10	0.0	102.0	89	112				

Associated Samples: B22031080-011E, B22031080-012A



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: VOA5975C.I_220317A: 22 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** R376378
Method: SW8260B **Analysis Date:** 03/17/2022 19:50 **Prep Date:**
Lab ID: B22031229-006EMSD **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	5.3	0.50	5.0	0.0	106.0	79	120	5.6	4.8	20.0	
Bromobenzene	5.2	0.50	5.0	0.0	104.0	80	120	5.4	3.0	20.0	
Bromochloromethane	5.2	0.50	5.0	0.0	103.0	78	123	5.4	5.5	20.0	
Bromodichloromethane	5.4	0.50	5.0	0.0	109.0	79	125	5.8	5.8	20.0	
Bromoform	5.4	0.50	5.0	0.0	108.0	66	130	5.5	2.6	20.0	
Carbon tetrachloride	5.0	0.50	5.0	0.0	101.0	72	136	5.4	6.8	20.0	
Chlorobenzene	5.2	0.50	5.0	0.0	104.0	82	118	5.3	2.8	20.0	
Chlorodibromomethane	5.1	0.50	5.0	0.0	102.0	74	126	5.4	6.3	20.0	
Chloroethane	4.8	0.50	5.0	0.0	96.0	60	138	4.9	2.3	20.0	
Chloroform	5.0	0.50	5.0	0.0	99.0	79	124	5.2	5.2	20.0	
Chloromethane	4.7	0.50	5.0	0.0	93.0	50	139	4.4	6.0	20.0	
1,2-Dibromoethane	5.2	0.50	5.0	0.0	103.0	78	122	5.3	2.1	20.0	
2-Chlorotoluene	5.4	0.50	5.0	0.0	108.0	79	122	5.4	0.6	20.0	
Dibromomethane	5.5	0.50	5.0	0.0	110.0	79	123	5.6	2.8	20.0	
1,2-Dichlorobenzene	5.2	0.50	5.0	0.0	104.0	80	119	5.3	2.4	20.0	
4-Chlorotoluene	5.5	0.50	5.0	0.0	111.0	78	122	5.7	2.1	20.0	
1,3-Dichlorobenzene	5.3	0.50	5.0	0.0	107.0	80	119	5.5	2.9	20.0	
1,4-Dichlorobenzene	5.2	0.50	5.0	0.0	104.0	79	118	5.3	2.4	20.0	
Dichlorodifluoromethane	4.5	0.50	5.0	0.0	91.0	32	152	4.4	3.8	20.0	
1,1-Dichloroethane	5.4	0.50	5.0	0.0	107.0	77	125	5.7	6.1	20.0	
1,2-Dichloroethane	5.2	0.50	5.0	0.0	105.0	73	128	5.4	2.9	20.0	
1,1-Dichloroethene	5.4	0.50	5.0	0.0	109.0	71	131	5.7	5.0	20.0	
cis-1,2-Dichloroethene	5.2	0.50	5.0	0.0	104.0	78	123	5.3	1.8	20.0	
trans-1,2-Dichloroethene	5.1	0.50	5.0	0.0	103.0	75	124	5.4	4.3	20.0	
1,2-Dichloropropane	5.4	0.50	5.0	0.0	107.0	78	122	5.6	3.3	20.0	
1,3-Dichloropropane	5.1	0.50	5.0	0.0	101.0	80	119	5.2	1.7	20.0	
2,2-Dichloropropane	4.9	0.50	5.0	0.0	98.0	60	139	5.2	6.6	20.0	



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: VOA5975C.I_220317A: 22 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** R376378
Method: SW8260B **Analysis Date:** 03/17/2022 19:50 **Prep Date:**
Lab ID: B22031229-006EMSD **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1,1-Dichloropropene	5.2	0.50	5.0	0.0	104.0	79	125	5.2	0.7	20.0	
cis-1,3-Dichloropropene	4.7	0.50	5.0	0.0	95.0	75	124	4.9	3.4	20.0	
trans-1,3-Dichloropropene	5.3	0.50	5.0	0.0	107.0	73	127	5.5	3.2	20.0	
Ethylbenzene	5.1	0.50	5.0	0.0	102.0	79	121	5.2	1.9	20.0	
Methyl tert-butyl ether (MTBE)	5.0	0.50	5.0	0.0	99.0	71	124	4.8	3.4	20.0	
Methyl ethyl ketone	55	10	50	0.0	111.0	56	143	55	0.1	20.0	
Methylene chloride	5.2	0.50	5.0	0.0	104.0	74	124	5.4	3.9	20.0	
Styrene	5.1	0.50	5.0	0.0	103.0	78	123	5.3	2.9	20.0	
1,1,1,2-Tetrachloroethane	5.1	0.50	5.0	0.0	102.0	78	124	5.3	3.9	20.0	
1,1,2,2-Tetrachloroethane	5.4	0.50	5.0	0.0	108.0	71	121	5.7	4.6	20.0	
Tetrachloroethene	4.9	0.50	5.0	0.0	98.0	74	129	5.1	4.2	20.0	
Toluene	5.5	0.50	5.0	0.0	111.0	80	121	5.8	4.2	20.0	
1,1,1-Trichloroethane	5.0	0.50	5.0	0.0	101.0	74	131	5.3	4.5	20.0	
1,1,2-Trichloroethane	5.4	0.50	5.0	0.0	108.0	80	119	5.5	1.4	20.0	
Trichloroethene	5.2	0.50	5.0	0.0	105.0	79	123	5.3	2.0	20.0	
Trichlorofluoromethane	5.2	0.50	5.0	0.0	103.0	65	141	5.1	1.8	20.0	
1,2,3-Trichloropropane	5.2	0.50	5.0	0.0	103.0	73	125	5.3	2.4	20.0	
Vinyl chloride	4.8	0.50	5.0	0.0	97.0	58	137	4.7	2.6	20.0	
m+p-Xylenes	10	0.50	10	0.0	100.0	80	121	10	2.5	20.0	
o-Xylene	5.1	0.50	5.0	0.0	102.0	78	122	5.2	1.6	20.0	
Xylenes, Total	15	0.50	15	0.0	101.0	79	121	15	2.2	20.0	
Surr: 1,2-Dichloroethane-d4	11	0.50	10	0.0	106.0	81	118	0.0			
Surr: Dibromofluoromethane	9.0	0.50	10	0.0	90.0	80	119	0.0			
Surr: p-Bromofluorobenzene	11	0.50	10	0.0	108.0	85	114	0.0			
Surr: Toluene-d8	10	0.50	10	0.0	103.0	89	112	0.0			

Associated Samples: B22031080-011E, B22031080-012A



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: VOA5975C.I_220317A: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R376378
Method: SW8260B **Analysis Date:** 03/17/2022 09:59 **Prep Date:**
Lab ID: CCV031722_ **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	4.9	0.50	5.0		98.0	80	120				
Bromobenzene	4.9	0.50	5.0		98.0	80	120				
Bromochloromethane	5.1	0.50	5.0		103.0	80	120				
Bromodichloromethane	4.9	0.50	5.0		99.0	80	120				
Bromoform	5.1	0.50	5.0		103.0	80	120				
Carbon tetrachloride	4.6	0.50	5.0		92.0	80	120				
Chlorobenzene	4.8	0.50	5.0		95.0	80	120				
Chlorodibromomethane	5.0	0.50	5.0		99.0	80	120				
Chloroethane	5.3	0.50	5.0		107.0	80	120				
Chloroform	4.8	0.50	5.0		97.0	80	120				
Chloromethane	5.1	0.50	5.0		101.0	80	120				
1,2-Dibromoethane	4.8	0.50	5.0		96.0	80	120				
2-Chlorotoluene	5.0	0.50	5.0		99.0	80	120				
Dibromomethane	4.9	0.50	5.0		99.0	80	120				
1,2-Dichlorobenzene	4.6	0.50	5.0		93.0	80	120				
4-Chlorotoluene	5.1	0.50	5.0		102.0	80	120				
1,3-Dichlorobenzene	4.8	0.50	5.0		97.0	80	120				
1,4-Dichlorobenzene	4.8	0.50	5.0		95.0	80	120				
Dichlorodifluoromethane	5.6	0.50	5.0		112.0	80	120				
1,1-Dichloroethane	4.9	0.50	5.0		98.0	80	120				
1,2-Dichloroethane	5.1	0.50	5.0		102.0	80	120				
1,1-Dichloroethene	4.8	0.50	5.0		97.0	80	120				
cis-1,2-Dichloroethene	4.7	0.50	5.0		95.0	80	120				
trans-1,2-Dichloroethene	4.6	0.50	5.0		93.0	80	120				
1,2-Dichloropropane	5.1	0.50	5.0		102.0	80	120				
1,3-Dichloropropane	5.0	0.50	5.0		99.0	80	120				
2,2-Dichloropropane	4.9	0.50	5.0		98.0	80	120				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: VOA5975C.I_220317A: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R376378
Method: SW8260B **Analysis Date:** 03/17/2022 09:59 **Prep Date:**
Lab ID: CCV031722_ **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1,1-Dichloropropene	4.5	0.50	5.0		90.0	80	120				
cis-1,3-Dichloropropene	4.9	0.50	5.0		98.0	80	120				
trans-1,3-Dichloropropene	5.1	0.50	5.0		102.0	80	120				
Ethylbenzene	4.6	0.50	5.0		92.0	80	120				
Methyl tert-butyl ether (MTBE)	4.8	0.50	5.0		97.0	80	120				
Methyl ethyl ketone	45	10	50		90.0	80	120				
Methylene chloride	4.7	0.50	5.0		95.0	80	120				
Styrene	4.8	0.50	5.0		95.0	80	120				
1,1,1,2-Tetrachloroethane	4.7	0.50	5.0		94.0	80	120				
1,1,2,2-Tetrachloroethane	5.3	0.50	5.0		105.0	80	120				
Tetrachloroethene	4.6	0.50	5.0		92.0	80	120				
Toluene	5.1	0.50	5.0		101.0	80	120				
1,1,1-Trichloroethane	4.6	0.50	5.0		91.0	80	120				
1,1,2-Trichloroethane	5.1	0.50	5.0		101.0	80	120				
Trichloroethene	4.9	0.50	5.0		98.0	80	120				
Trichlorofluoromethane	5.2	0.50	5.0		105.0	80	120				
1,2,3-Trichloropropane	5.0	0.50	5.0		100.0	80	120				
Vinyl chloride	5.1	0.50	5.0		101.0	80	120				
m+p-Xylenes	9.4	0.50	10		94.0	80	120				
o-Xylene	4.6	0.50	5.0		93.0	80	120				
Xylenes, Total	14	0.50	15		93.0	80	120				
Surr: 1,2-Dichloroethane-d4	11	0.50	10		107.0	80	120				
Surr: Dibromofluoromethane	9.1	0.50	10		91.0	80	120				
Surr: p-Bromofluorobenzene	11	0.50	10		106.0	80	120				
Surr: Toluene-d8	10	0.50	10		102.0	80	120				

Associated Samples: B22031080-011E, B22031080-012A



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: VOA5975C.I_220317A: 23 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R376378
Method: SW8260B **Analysis Date:** 03/17/2022 20:45 **Prep Date:**
Lab ID: CCV031722_Closing **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	5.1	0.50	5.0		103.0	50	150				
Bromobenzene	5.1	0.50	5.0		102.0	50	150				
Bromochloromethane	5.1	0.50	5.0		102.0	50	150				
Bromodichloromethane	5.1	0.50	5.0		102.0	50	150				
Bromoform	5.0	0.50	5.0		101.0	50	150				
Carbon tetrachloride	4.6	0.50	5.0		93.0	50	150				
Chlorobenzene	4.9	0.50	5.0		99.0	50	150				
Chlorodibromomethane	4.9	0.50	5.0		98.0	50	150				
Chloroethane	5.0	0.50	5.0		100.0	50	150				
Chloroform	4.9	0.50	5.0		99.0	50	150				
Chloromethane	5.1	0.50	5.0		102.0	50	150				
1,2-Dibromoethane	5.0	0.50	5.0		99.0	50	150				
2-Chlorotoluene	5.1	0.50	5.0		103.0	50	150				
Dibromomethane	5.2	0.50	5.0		104.0	50	150				
1,2-Dichlorobenzene	5.0	0.50	5.0		100.0	50	150				
4-Chlorotoluene	5.3	0.50	5.0		106.0	50	150				
1,3-Dichlorobenzene	5.2	0.50	5.0		104.0	50	150				
1,4-Dichlorobenzene	5.0	0.50	5.0		100.0	50	150				
Dichlorodifluoromethane	5.4	0.50	5.0		109.0	50	150				
1,1-Dichloroethane	5.0	0.50	5.0		99.0	50	150				
1,2-Dichloroethane	5.1	0.50	5.0		102.0	50	150				
1,1-Dichloroethene	4.9	0.50	5.0		99.0	50	150				
cis-1,2-Dichloroethene	5.0	0.50	5.0		100.0	50	150				
trans-1,2-Dichloroethene	4.8	0.50	5.0		97.0	50	150				
1,2-Dichloropropane	5.1	0.50	5.0		102.0	50	150				
1,3-Dichloropropane	5.1	0.50	5.0		102.0	50	150				
2,2-Dichloropropane	4.7	0.50	5.0		93.0	50	150				



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: VOA5975C.I_220317A: 23 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R376378
Method: SW8260B **Analysis Date:** 03/17/2022 20:45 **Prep Date:**
Lab ID: CCV031722_Closing **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1,1-Dichloropropene	4.7	0.50	5.0		94.0	50	150				
cis-1,3-Dichloropropene	4.9	0.50	5.0		98.0	50	150				
trans-1,3-Dichloropropene	5.1	0.50	5.0		102.0	50	150				
Ethylbenzene	4.8	0.50	5.0		97.0	50	150				
Methyl tert-butyl ether (MTBE)	4.5	0.50	5.0		90.0	50	150				
Methyl ethyl ketone	42	10	50		84.0	50	150				
Methylene chloride	4.9	0.50	5.0		98.0	50	150				
Styrene	4.9	0.50	5.0		99.0	50	150				
1,1,1,2-Tetrachloroethane	4.9	0.50	5.0		98.0	50	150				
1,1,2,2-Tetrachloroethane	5.2	0.50	5.0		104.0	50	150				
Tetrachloroethene	4.7	0.50	5.0		95.0	50	150				
Toluene	5.2	0.50	5.0		105.0	50	150				
1,1,1-Trichloroethane	4.9	0.50	5.0		97.0	50	150				
1,1,2-Trichloroethane	5.2	0.50	5.0		103.0	50	150				
Trichloroethene	4.9	0.50	5.0		99.0	50	150				
Trichlorofluoromethane	5.2	0.50	5.0		104.0	50	150				
1,2,3-Trichloropropane	4.8	0.50	5.0		97.0	50	150				
Vinyl chloride	5.0	0.50	5.0		100.0	50	150				
m+p-Xylenes	9.9	0.50	10		99.0	50	150				
o-Xylene	4.9	0.50	5.0		97.0	50	150				
Xylenes, Total	15	0.50	15		98.0	50	150				
Surr: 1,2-Dichloroethane-d4	10	0.50	10		103.0	50	150				
Surr: Dibromofluoromethane	8.9	0.50	10		89.0	50	150				
Surr: p-Bromofluorobenzene	11	0.50	10		107.0	50	150				
Surr: Toluene-d8	10	0.50	10		101.0	50	150				

Associated Samples: B22031080-011E, B22031080-012A



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: GECD.I_220318A: 10 **SampType:** Method Blank **Batch ID:** 164633
Method: SW8011 **Analysis Date:** 03/18/2022 15:47 **Prep Date:** 03/18/2022 08:50
Lab ID: MB-164633 **Units:** ug/L **Prep Method:** SW8011

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.0050									
Surr: 1,1,1,2-Tetrachloroethane	0.091	0.020	0.10		91.0	70	130				

Associated Samples: **B22031080-011G, B22031080-014A**

Run ID: Run Order: GECD.I_220318A: 11 **SampType:** Laboratory Control Sample **Batch ID:** 164633
Method: SW8011 **Analysis Date:** 03/18/2022 16:07 **Prep Date:** 03/18/2022 08:50
Lab ID: LCS-164633 **Units:** ug/L **Prep Method:** SW8011

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.24	0.010	0.25		96.0	60	140				
Surr: 1,1,1,2-Tetrachloroethane	0.092	0.020	0.10		92.0	70	130				

Associated Samples: **B22031080-011G, B22031080-014A**

Run ID: Run Order: GECD.I_220318A: 12 **SampType:** Laboratory Control Sample **Batch ID:** 164633
Method: SW8011 **Analysis Date:** 03/18/2022 16:27 **Prep Date:** 03/18/2022 08:50
Lab ID: LCS1-164633 **Units:** ug/L **Prep Method:** SW8011

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.10		105.0	60	140				
Surr: 1,1,1,2-Tetrachloroethane	0.093	0.020	0.10		93.0	70	130				

Associated Samples: **B22031080-011G, B22031080-014A**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: GECD.I_220318A: 21 **SampType:** Sample Matrix Spike **Batch ID:** 164633
Method: SW8011 **Analysis Date:** 03/18/2022 19:44 **Prep Date:** 03/18/2022 08:51
Lab ID: B22031080-011GMS **Units:** ug/L **Prep Method:** SW8011

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.23	0.010	0.24	0.0	95.0	60	140				
Surr: 1,1,1,2-Tetrachloroethane	0.090	0.020	0.097	0.0	93.0	70	130				

Associated Samples: **B22031080-011G, B22031080-014A**

Run ID: Run Order: GECD.I_220318A: 22 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** 164633
Method: SW8011 **Analysis Date:** 03/18/2022 20:04 **Prep Date:** 03/18/2022 08:51
Lab ID: B22031080-011GMSD **Units:** ug/L **Prep Method:** SW8011

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.23	0.010	0.24	0.0	94.0	60	140	0.23	1.2	20.0	
Surr: 1,1,1,2-Tetrachloroethane	0.088	0.020	0.097	0.0	91.0	70	130	0.0			

Associated Samples: **B22031080-011G, B22031080-014A**

Run ID: Run Order: GECD.I_220318A: 9 **SampType:** Continuing Calibration Verification Standard **Batch ID:** 164633
Method: SW8011 **Analysis Date:** 03/18/2022 15:27 **Prep Date:** 03/18/2022 08:51
Lab ID: CAL3-164633 **Units:** ug/L **Prep Method:** SW8011

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.10		103.0	80	120				
Surr: 1,1,1,2-Tetrachloroethane	0.094	0.020	0.10		94.0	80	120				

Associated Samples: **B22031080-011G, B22031080-014A**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: GECD.I_220318A: 23

SampType: Continuing Calibration Verification Standard

Batch ID: 164633

Method: SW8011

Analysis Date: 03/18/2022 20:44

Prep Date: 03/18/2022 08:51

Lab ID: CAL5-164633

Units: ug/L

Prep Method: SW8011

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.40	0.010	0.40		99.0	80	120				
Surr: 1,1,1,2-Tetrachloroethane	0.43	0.020	0.40		106.0	80	120				

Associated Samples: **B22031080-011G, B22031080-014A**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: GCFID-HP5-B_220316A: 5 **SampType:** Method Blank **Batch ID:** 164531
Method: SW8015C **Analysis Date:** 03/16/2022 21:54 **Prep Date:** 03/15/2022 12:43
Lab ID: MB-164531 **Units:** mg/L **Prep Method:** SW3520C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Diesel Range Organics (C10 to C24)	ND	0.15									
Oil Range Hydrocarbons (C24 to C40)	ND	0.15									
Total Extractable Hydrocarbons	ND	0.15									
Surr: o-Terphenyl	0.19	0.0020	0.20		96.0	56	125				
Surr: n-Triacontane	0.093	0.0020	0.10		93.0	50	150				

Associated Samples: **B22031080-011C**

Run ID: Run Order: GCFID-HP5-B_220316A: 3 **SampType:** Laboratory Control Sample **Batch ID:** 164531
Method: SW8015C **Analysis Date:** 03/16/2022 20:28 **Prep Date:** 03/15/2022 12:43
Lab ID: LCS-164531 **Units:** mg/L **Prep Method:** SW3520C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Diesel Range Organics (C10 to C24)	13	0.30	15		85.0	36	132				
Total Extractable Hydrocarbons	14	0.30	15		90.0	60	132				
Surr: o-Terphenyl	0.19	0.0020	0.20		96.0	56	125				

Associated Samples: **B22031080-011C**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: GCFID-HP5-B_220316A: 4 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 164531
Method: SW8015C **Analysis Date:** 03/16/2022 21:11 **Prep Date:** 03/15/2022 12:44
Lab ID: LCSD-164531 **Units:** mg/L **Prep Method:** SW3520C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Diesel Range Organics (C10 to C24)	13	0.30	15		87.0	36	132	13	2.8	20.0	
Total Extractable Hydrocarbons	14	0.30	15		93.0	60	132	14	2.7	20.0	
Surr: o-Terphenyl	0.20	0.0020	0.20		98.0	56	125	0.0			

Associated Samples: **B22031080-011C**

Run ID: Run Order: GCFID-HP5-B_220316A: 22 **SampType:** Laboratory Control Sample **Batch ID:** 164531
Method: SW8015C **Analysis Date:** 03/17/2022 14:02 **Prep Date:** 03/15/2022 12:44
Lab ID: LCS-164531-RRO **Units:** mg/L **Prep Method:** SW3520C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
TEH(Oil Range)	5.4	0.30	5.0		108.0	41	113				
Surr: n-Triacontane	0.083	0.0020	0.10		83.0	50	150				

Associated Samples: **B22031080-011C**

Run ID: Run Order: GCFID-HP5-B_220316A: 23 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** 164531
Method: SW8015C **Analysis Date:** 03/17/2022 14:45 **Prep Date:** 03/15/2022 12:44
Lab ID: LCSD-164531-RRO **Units:** mg/L **Prep Method:** SW3520C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
TEH(Oil Range)	5.6	0.30	5.0		113.0	41	113	5.4	4.2	20.0	
Surr: n-Triacontane	0.086	0.0020	0.10		86.0	50	150	0.0			

Associated Samples: **B22031080-011C**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: GCFID-HP5-B_220316A: 20 **SampType:** Sample Matrix Spike **Batch ID:** 164531
Method: SW8015C **Analysis Date:** 03/17/2022 12:37 **Prep Date:** 03/15/2022 12:44
Lab ID: B22030912-032CMS **Units:** mg/L **Prep Method:** SW3520C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Diesel Range Organics (C10 to C24)	13	0.30	14	0.0	89.0	36	132				
Total Extractable Hydrocarbons	14	0.30	14	0.0	95.0	60	132				
Surr: o-Terphenyl	0.19	0.0020	0.19	0.0	99.0	56	125				

Associated Samples: **B22031080-011C**

Run ID: Run Order: GCFID-HP5-B_220316A: 21 **SampType:** Sample Matrix Spike **Batch ID:** 164531
Method: SW8015C **Analysis Date:** 03/17/2022 13:20 **Prep Date:** 03/15/2022 12:45
Lab ID: B22030912-042CMS-RRO **Units:** mg/L **Prep Method:** SW3520C

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
TEH(Oil Range)	5.4	0.30	4.8	0.14	110.0	41	113				
Surr: n-Triacontane	0.084	0.0020	0.095	0.0	88.0	50	150				

Associated Samples: **B22031080-011C**

Run ID: Run Order: VARIAN1_220319A: 4 **SampType:** Method Blank **Batch ID:** R376431
Method: SW8015C **Analysis Date:** 03/19/2022 12:24 **Prep Date:**
Lab ID: MBLK_0319VAR06r **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
C6 to C10	ND	10									
Total Purgeable Hydrocarbons	ND	10									
Surr: Trifluorotoluene	18	1.0	25		73.0	70	130				

Associated Samples: **B22031080-011F, B22031080-013A**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: VARIAN1_220319A: 3 **SampType:** Laboratory Control Sample **Batch ID:** R376431
Method: SW8015C **Analysis Date:** 03/19/2022 11:16 **Prep Date:**
Lab ID: LCS_0319VAR04r **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
C6 to C10	152	20	170		89.0	78	122				
Total Purgeable Hydrocarbons	180	20	200		90.0	70	130				
Surr: Trifluorotoluene	21	1.0	25		85.0	70	130				

Associated Samples: **B22031080-011F, B22031080-013A**

Run ID: Run Order: VARIAN1_220319A: 14 **SampType:** Sample Matrix Spike **Batch ID:** R376431
Method: SW8015C **Analysis Date:** 03/19/2022 19:38 **Prep Date:**
Lab ID: B22031080-011FMS **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
C6 to C10	152	20	170	0.0	89.0	78	122				
Total Purgeable Hydrocarbons	180	20	200	0.0	90.0	70	130				
Surr: Trifluorotoluene	21	1.0	25	0.0	86.0	70	130				

Associated Samples: **B22031080-011F, B22031080-013A**

Run ID: Run Order: VARIAN1_220319A: 15 **SampType:** Sample Matrix Spike Duplicate **Batch ID:** R376431
Method: SW8015C **Analysis Date:** 03/19/2022 20:13 **Prep Date:**
Lab ID: B22031080-011FMDS **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
C6 to C10	154	20	170	0.0	91.0	78	122	152	1.5	20.0	
Total Purgeable Hydrocarbons	183	20	200	0.0	92.0	70	130	180	2.0	20.0	
Surr: Trifluorotoluene	22	1.0	25	0.0	87.0	70	130	0.0			

Associated Samples: **B22031080-011F, B22031080-013A**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: GCFID-HP5-B_220316A: 13 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R376330
Method: SW8015C **Analysis Date:** 03/17/2022 05:03 **Prep Date:**
Lab ID: CCV_0316HP520r-W **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
TEH(Oil Range)	5.2	0.30	5.0		105.0	80	120				
Surr: n-Triacontane	0.19	0.0020	0.20		96.0	80	120				

Associated Samples: **B22031080-011C**

Run ID: Run Order: GCFID-HP5-B_220316A: 14 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R376330
Method: SW8015C **Analysis Date:** 03/17/2022 05:46 **Prep Date:**
Lab ID: CCV_0316HP521r **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Diesel Range Organics (C10 to C24)	14	0.30	15		95.0	80	120				
Total Extractable Hydrocarbons	15	0.30	15		99.0	80	120				
Surr: o-Terphenyl	0.20	0.0020	0.20		100.0	80	120				

Associated Samples: **B22031080-011C**

Run ID: Run Order: GCFID-HP5-B_220316A: 24 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R376330
Method: SW8015C **Analysis Date:** 03/17/2022 16:02 **Prep Date:**
Lab ID: CCV_0316HP535r **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Diesel Range Organics (C10 to C24)	14	0.30	15		94.0	80	120				
Total Extractable Hydrocarbons	15	0.30	15		97.0	80	120				
Surr: o-Terphenyl	0.19	0.0020	0.20		95.0	80	120				

Associated Samples: **B22031080-011C**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: GCFID-HP5-B_220316A: 25 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R376330
Method: SW8015C **Analysis Date:** 03/17/2022 16:45 **Prep Date:**
Lab ID: CCV_0316HP536r-W **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
TEH(Oil Range)	5.1	0.30	5.0		102.0	80	120				
Surr: n-Triacontane	0.20	0.0020	0.20		98.0	80	120				

Associated Samples: **B22031080-011C**

Run ID: Run Order: VARIAN1_220319A: 2 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R376431
Method: SW8015C **Analysis Date:** 03/19/2022 10:42 **Prep Date:**
Lab ID: CCV_0319VAR03r **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
C6 to C10	171	20	168		102.0	80	120				
Total Purgeable Hydrocarbons	206	20	200		103.0	80	120				
Surr: Trifluorotoluene	22	1.0	25		89.0	80	120				

Associated Samples: **B22031080-011F, B22031080-013A**

Run ID: Run Order: VARIAN1_220319A: 17 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R376431
Method: SW8015C **Analysis Date:** 03/19/2022 21:21 **Prep Date:**
Lab ID: CCV_0319VAR21r **Units:** ug/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
C6 to C10	169	20	168		101.0	80	120				
Total Purgeable Hydrocarbons	205	20	200		102.0	80	120				
Surr: Trifluorotoluene	22	1.0	25		90.0	80	120				

Associated Samples: **B22031080-011F, B22031080-013A**



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: FID-HEADSPACE_220321A: 4 **SampType:** Method Blank **Batch ID:** R376486
Method: SW8015M **Analysis Date:** 03/21/2022 10:09 **Prep Date:**
Lab ID: MBLK **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Methane	ND	0.0010			0.0						

Associated Samples: B22031080-011H, B22031080-015A

Run ID: Run Order: FID-HEADSPACE_220321A: 2 **SampType:** Laboratory Control Sample **Batch ID:** R376486
Method: SW8015M **Analysis Date:** 03/21/2022 09:06 **Prep Date:**
Lab ID: LCS **Units:** ppm **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Methane	97	2.0	100		97.0	85	115				

Associated Samples: B22031080-011H, B22031080-015A

Run ID: Run Order: FID-HEADSPACE_220321A: 3 **SampType:** Laboratory Control Sample Duplicate **Batch ID:** R376486
Method: SW8015M **Analysis Date:** 03/21/2022 09:13 **Prep Date:**
Lab ID: LCSD **Units:** ppm **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Methane	97	2.0	100		97.0	85	115	97	0.3	20.0	

Associated Samples: B22031080-011H, B22031080-015A



Analytical QC Summary Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Run ID: Run Order: FID-HEADSPACE_220321A: 18 **SampType:** Sample Duplicate **Batch ID:** R376486
Method: SW8015M **Analysis Date:** 03/21/2022 11:33 **Prep Date:**
Lab ID: B22031229-026HDUP **Units:** mg/L **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Methane	0.49	0.16			0.0			0.48	2.1	20.0	

Associated Samples: **B22031080-011H, B22031080-015A**

Run ID: Run Order: FID-HEADSPACE_220321A: 1 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R376486
Method: SW8015M **Analysis Date:** 03/21/2022 08:59 **Prep Date:**
Lab ID: CCV **Units:** ppm **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Methane	100	2.0	100		100.0	85	115				

Associated Samples: **B22031080-011H, B22031080-015A**

Run ID: Run Order: FID-HEADSPACE_220321A: 26 **SampType:** Continuing Calibration Verification Standard **Batch ID:** R376486
Method: SW8015M **Analysis Date:** 03/21/2022 12:32 **Prep Date:**
Lab ID: CCV **Units:** ppm **Prep Method:**

Analytes	Result	LOQ	Spk value	Spk RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Methane	100	2.0	100		101.0	85	115				

Associated Samples: **B22031080-011H, B22031080-015A**



Analytical QC Exceptions Report

Prepared by Billings, MT Branch

Client: AECOM - Honolulu
Workorder: B22031080
Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

All quality control measures met criteria; there were no Analytical QC Exceptions.



Preparation and Analysis Dates Report

Work Order: B22031080

Client: AECOM - Honolulu

Project Name: CV18F0126, 60571032.02.46.01

Report Date: 3/24/2022

Lab ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Method	Prep Date	Prep Batch	Analysis Method	Analysis Date
011B	ERH2774 (RHMW15-05)	03/14/2022 13:45	Ground Water	Metals by ICP-MS, Total		SW3010A	03/16/2022 16:01	164579	SW6020	03/17/2022 16:48
011C	ERH2774 (RHMW15-05)	03/14/2022 13:45	Ground Water	Diesel Range Organics		SW3520C	03/16/2022 10:30	164531	SW8015C	03/17/2022 10:29
011G	ERH2774 (RHMW15-05)	03/14/2022 13:45	Ground Water	EDB in Water by ECD		SW8011	03/18/2022 08:51	164633	SW8011	03/18/2022 19:25
014A	ERH2773 (Trip Blank)-14894	03/14/2022 13:45	Trip Blank	EDB in Water by ECD		SW8011	03/18/2022 08:52	164633	SW8011	03/18/2022 17:06



Chemical Abstracts Service (CAS) Registry Numbers

Prepared by Billings, MT Branch

Client: AECOM - Honolulu

Workorder: B22031080

Project: CV18F0126, 60571032.02.46.01

Report Date: 03/24/2022

Analyses	CAS No
AGGREGATE ORGANICS	
Organic Carbon, Total (TOC)	7440-44-0
METALS, TOTAL	
Lead	7439-92-1
METALS, DISSOLVED	
Lead	7439-92-1
VOLATILE ORGANIC COMPOUNDS	
Benzene	71-43-2
Bromobenzene	108-86-1
Bromochloromethane	74-97-5
Bromodichloromethane	75-27-4
Bromoform	75-25-2
Carbon tetrachloride	56-23-5
Chlorobenzene	108-90-7
Chlorodibromomethane	124-48-1
Chloroethane	75-00-3
Chloroform	67-66-3
Chloromethane	74-87-3
1,2-Dibromoethane	106-93-4
2-Chlorotoluene	95-49-8
4-Chlorotoluene	106-43-4
Dibromomethane	74-95-3
1,2-Dichlorobenzene	95-50-1
1,3-Dichlorobenzene	541-73-1
1,4-Dichlorobenzene	106-46-7
Dichlorodifluoromethane	75-71-8
1,1-Dichloroethane	75-34-3
1,2-Dichloroethane	107-06-2
1,1-Dichloroethene	75-35-4
cis-1,2-Dichloroethene	156-59-2
trans-1,2-Dichloroethene	156-60-5
1,2-Dichloropropane	78-87-5
1,3-Dichloropropane	142-28-9
2,2-Dichloropropane	594-20-7
1,1-Dichloropropene	563-58-6
cis-1,3-Dichloropropene	10061-01-5
trans-1,3-Dichloropropene	10061-02-6
Ethylbenzene	100-41-4

Methyl ethyl ketone	78-93-3
Methyl tert-butyl ether (MTBE)	1634-04-4
Methylene chloride	75-09-2
Styrene	100-42-5
1,1,1,2-Tetrachloroethane	630-20-6
1,1,2,2-Tetrachloroethane	79-34-5
Tetrachloroethene	127-18-4
Toluene	108-88-3
1,1,1-Trichloroethane	71-55-6
1,1,2-Trichloroethane	79-00-5
Trichloroethene	79-01-6
Trichlorofluoromethane	75-69-4
1,2,3-Trichloropropane	96-18-4
Vinyl chloride	75-01-4
m+p-Xylenes	179601-23-1
o-Xylene	95-47-6
Xylenes, Total	1330-20-7

VOCS BY MICROEXTRACTION-ECD

1,2-Dibromoethane	106-93-4
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PETROLEUM HYDROCARBONS-VOLATILE

C6 to C10	
Total Purgeable Hydrocarbons	

PETROLEUM HYDROCARBONS-SEMI-VOLATILE

Diesel Range Organics (C10 to C24)	
Oil Range Hydrocarbons (C24 to C40)	
Total Extractable Hydrocarbons	

ORGANIC CHARACTERISTICS

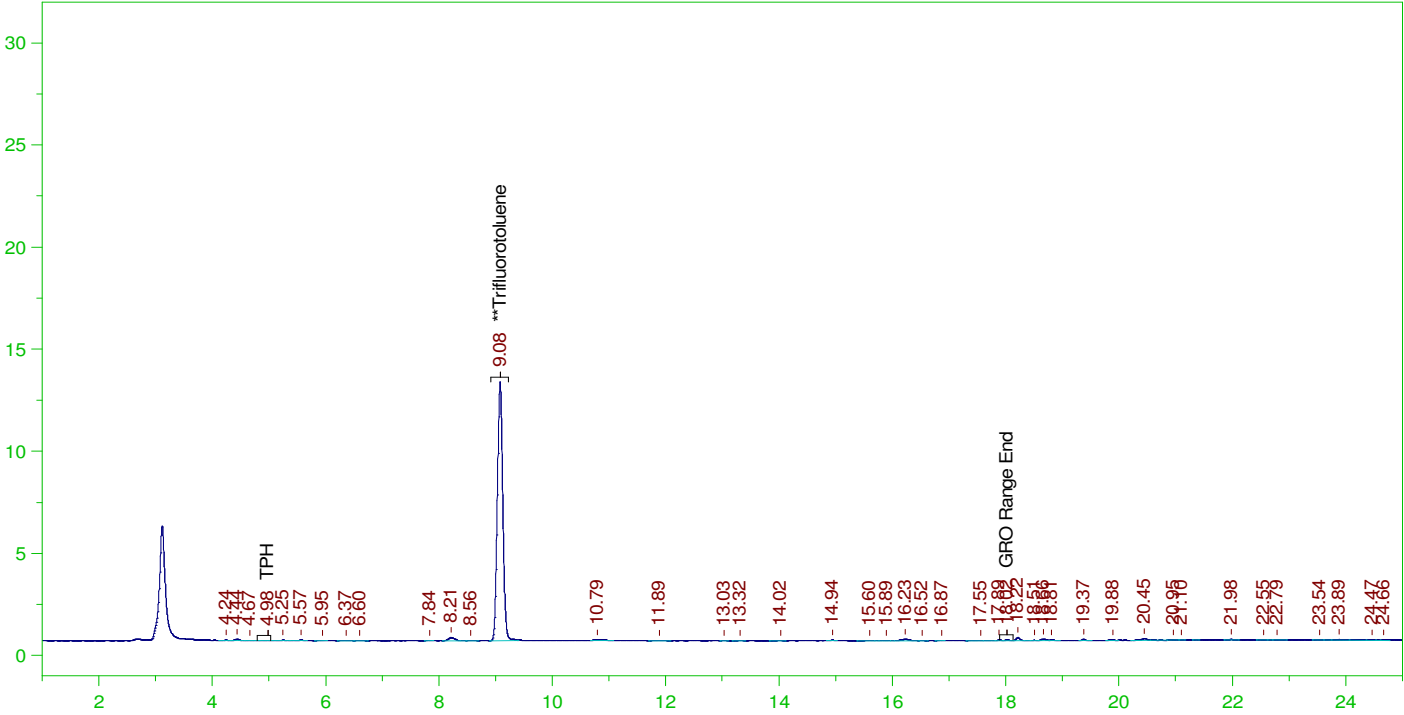
Methane	74-82-8
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ERH2774 (RHMW15-05)

G:\Org\VAR\DAT\VAR031922_b\0319VARB.0007.RAW

B22031080-011F ;0319VAR , \$HC-8015-GRO-W,



GASOLINE RANGE ORGANICS CHROMATOGRAM REPORT

Sample Name: B22031080-011F ;0319VAR , \$HC-8015-GRO-W,
Raw File: G:\Org\VAR\DAT\VAR031922_b\0319VARB.0007.RAW
Date & Time Acquired: 3/19/2022 12:59:13 PM
Method File: G:\Org\VAR\Methods\220318GRO_DoDAB%.MET
Calibration File: G:\Org\VAR\Cals\211208_220318GRO8015CB.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for C6 to C10: 979.9788
Mean RF for TPH: 955.6747
Rt range for Gasoline Range Organics: 4.79 to 18.13

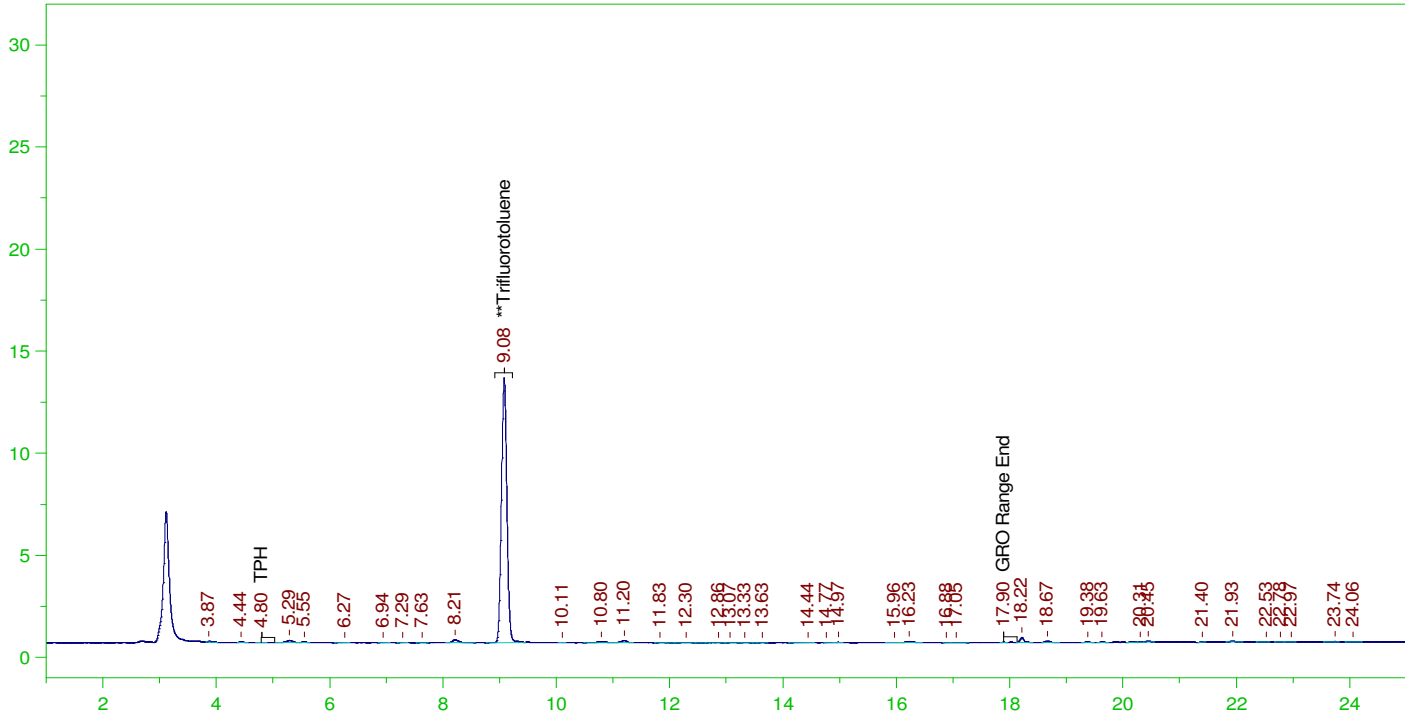
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
**Trifluorotoluene	9.078	25.	18.431	73.73

C6 to C10 Area:6323.975 C6 to C10 Amount: 1.290635
TPH Area:11125.87 TPH Amount: 2.32838

ERH2773 (Trip Blank)-14894

G:\Org\VAR\DAT\VAR031922_b\0319VARB.0009.RAW

B22031080-013A ;0319VAR , \$HC-8015-GRO-W,



GASOLINE RANGE ORGANICS CHROMATOGRAM REPORT

Sample Name: B22031080-013A ;0319VAR , \$HC-8015-GRO-W,
Raw File: G:\Org\VAR\DAT\VAR031922_b\0319VARB.0009.RAW
Date & Time Acquired: 3/19/2022 2:07:50 PM
Method File: G:\Org\VAR\Methods\220318GRO_DoDAB%.MET
Calibration File: G:\Org\VAR\Cals\211208_220318GRO8015CB.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for C6 to C10: 979.9788
Mean RF for TPH: 955.6747
Rt range for Gasoline Range Organics: 4.79 to 18.13

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
**Trifluorotoluene	9.08	25.	18.926	75.7

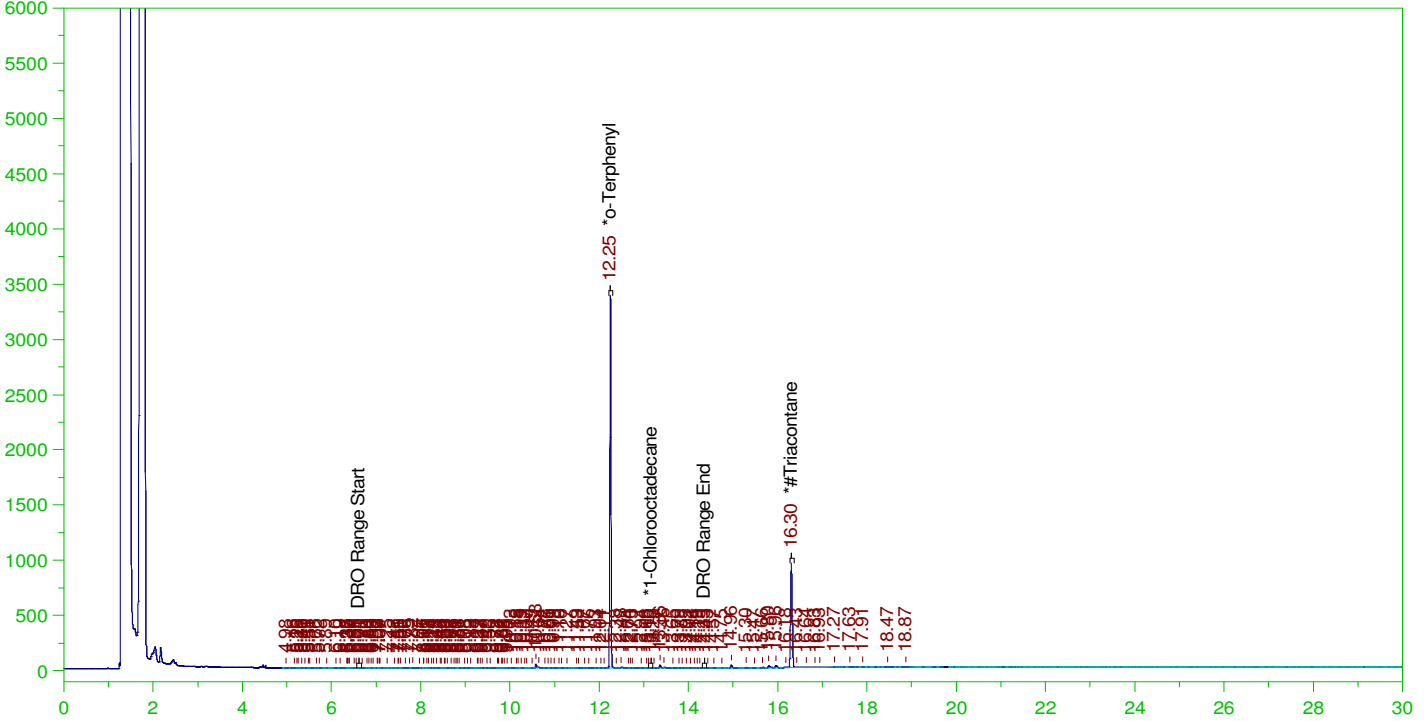
C6 to C10 Area:7580.491 C6 to C10 Amount: 1.547072
TPH Area:11584.91 TPH Amount: 2.424446

ERH2774 (RHMW15-05)

Batch ID: 164531

G:\org\HP5\DAT\HP5031622_b\0316HP5.0027.RAW

B22031080-011C ;0316HP5 , \$HC-8015-DRO-W,



DIESEL RANGE ORGANICS CHROMATOGRAM REPORT

Sample Name: B22031080-011C ;0316HP5 , \$HC-8015-DRO-W,
Raw File: G:\org\HP5\DAT\HP5031622_b\0316HP5.0027.RAW
Date & Time Acquired: 3/17/2022 10:29:36 AM
Method File: G:\Org\HP5\Methods\DR_8015-C24T-JK-L%.met
Calibration File: G:\Org\HP5\Cals\SW8015C_DRO220111JK-C24-T.CAL
Sample Weight: 1050 Dilution: 1 S.A.: 1

Mean RF for TEH: 32675.36

Rt range for Diesel Range Organics: 6.57 to 14.41

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.249	.19	.169	88.98	-
*1-Chlorooctadecane	13.165	.19	.	.04	-
*#Triacontane	16.303	.19	.079	41.56	-

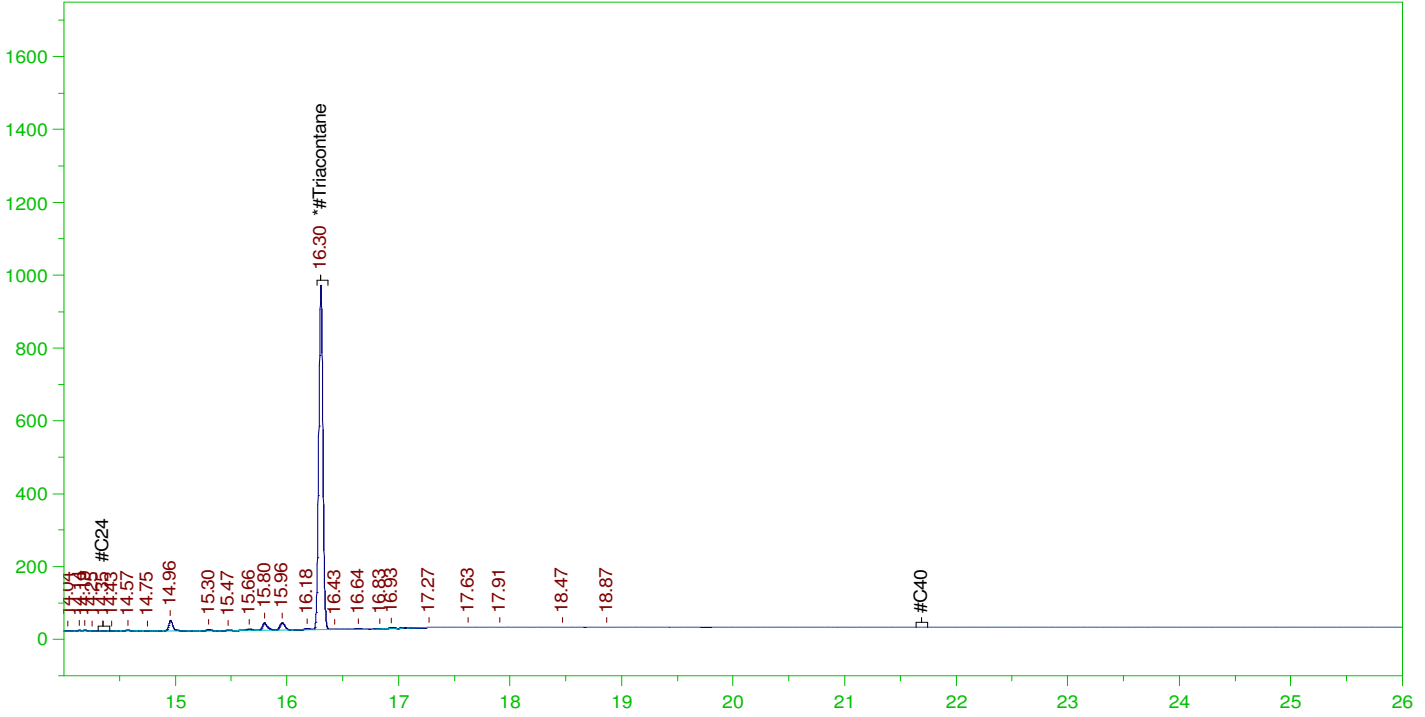
DRO Area:561390.8 DRO Amount: 1.636272E-02
TEH Area:959433.9 TEH Amount: 2.796439E-02

ERH2774 (RHMW15-05)

Batch ID: 164531

G:\org\HP5\DAT\HP5031622_b\0316HP5.0027.RAW

B22031080-011C ;0316HP5 , \$HC-8015-DRO-W,



RESIDUAL RANGE ORGANICS CHROMATOGRAM

Sample Name: B22031080-011C ;0316HP5 , \$HC-8015-DRO-W,
 Raw File: G:\org\HP5\DAT\HP5031622_b\0316HP5.0027.RAW
 Date & Time Acquired: 3/17/2022 10:29:36 AM
 Method File: G:\Org\HP5\Methods\DR_OROS-BK-L%.MET
 Calibration File: G:\Org\HP5\Cals\SW8015C_ORO220111BK_SAMP.CAL
 Sample Weight: 1050 Dilution: 1 S.A.: 1

Mean RF for for Residual Range Organics Calculations: 26424.55
 Rt range for Residual Range Organics: 14.31 to 21.74

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*#Triacontane_____	16.303	.476	.079	16.62

RRO Area:301241.7 RRO AMOUNT: 1.085721E-02

From: Ramos, Alethea <alethea.ramos@aecom.com>
Sent: Monday, December 13, 2021 3:11 PM
To: Tabitha Edwards
Cc: Pascua, Margie; billingsPM@energylab.com
Subject: RE: [EXTERNAL] FW: CV18F0126: Expedited NOI Groundwater Samples, Saturday 12/12 Submission

Categories: Must Attend

Hi Tabitha,

I believe Casper WY is DoD ELAP accredited in the TOC 9060 method. I spoke to Shari and she indicated there is a daily courier between Billings and Casper, and would be appx. a day delay. Under those stipulations, please subcontract these samples and inform on expedited TAT.

Thank you,

Alethea Ramos, CIH
Environmental Scientist, Environmental Health & Science, Environment
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From: Tabitha Edwards <tedwards@energylab.com>
Sent: Monday, December 13, 2021 7:05 AM
To: Ramos, Alethea <alethea.ramos@aecom.com>
Cc: Pascua, Margie <Margie.Pascua@aecom.com>; billingsPM@energylab.com
Subject: [EXTERNAL] FW: CV18F0126: Expedited NOI Groundwater Samples, Saturday 12/12 Submission
Importance: High

Alethea,

The TOC by 9060 must be subcontracted to our office in Casper, WY. I need authorization from you to subcontract these. Once that has been received we will discuss the TAT with them and let you know what is achievable.

Thank you,

Energy Laboratories, Inc.

Trust our People. Trust our Data.

Tabitha Edwards | Office Manager | Billings, MT

O: 406-869-6286 | tedwards@energylab.com | www.energylab.com

This transmission may contain confidential information and is for the use of the intended recipient(s). If you received this in error, please contact the sender and delete this email and all copies.

***We want to help you ship successfully!** Please plan ahead and allow extra time to receive supplies from the lab and for the lab to receive your samples. All carriers are in full-swing holiday peak season operating with double the volume and limited capacity. We appreciate your business so please contact your local branch or Project Manager to discuss adjustments to your shipping schedule or to ask questions.*

From: Ramos, Alethea [<mailto:alethea.ramos@aecom.com>]

Sent: Saturday, December 11, 2021 3:20 AM

To: Shari Endy; billingsPM@energylab.com

Cc: Jillian Miller; Pascua, Margie; KaaihiliChoy, Terri Ann

Subject: CV18F0126: Expedited NOI Groundwater Samples, Saturday 12/12 Submission

Importance: High

Hi Shari and Billings PM,

You will be receiving a Saturday shipment (12/12) of groundwater samples indicated in the attached COCs. We will need results by **Wednesday, December 15th**, and will pay any fees incurred for an expedited TAT. Please proceed with analysis without preservation traceability. Please see below tracking information links:

<https://www.fedex.com/fedextrack/?trknbr=287337969629&trkqual=2459558000~287337969629~FX>

<https://www.fedex.com/fedextrack/?trknbr=287343101019&trkqual=2459559000~287343101019~FX>

Thank you,

Alethea Ramos, CIH

Environmental Scientist, Environmental Health & Science, Environment

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