TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
Tel: (865)291-3000

TestAmerica Job ID: 140-11015-1
TestAmerica Sample Delivery Group: W08014
Client Project/Site: F16-049

For:
CH2M Hill Plateau Remediation Company
825 Jadwin Avenue
Richland, Washington 99352

Attn: Mr. Scot Fitzgerald

Authorized for release by:
4/4/2018 1:57:24 PM

Jamie McKinney, Senior Project Manager
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Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-049

TestAmerica Job ID: 140-11015-1
SDG: W08014

Qualifiers

Air - GC/MS VOA

Qualifier	Qualifier Description
D	The reported value is from a dilution.
U	Analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Client: CH2M Hill Plateau Remediation Company
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TestAmerica Job ID: 140-11015-1
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Job ID: 140-11015-1

Laboratory: TestAmerica Knoxville

Narrative

Job Narrative
140-11015-1

Comments
No additional comments.

Receipt
The samples were received on 3/21/2018 11:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice.

Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. Per client instructions, the firm responsible for delivery was filled in and dated by the sample receiving department on completion of the shipment. Relinquished date and time recorded is the same as laboratory receipt date and time.

Air - GC/MS VOA
The dilution factor field in TALS documents the dilution performed on the canister ("in-can" or "serial" dilution) and the results are adjusted accordingly. In addition to dilution factors on the canister, a volume other than 500 mL is also used to adjust the final results. It is necessary to examine the lab chronicle to obtain the volume of sample analyzed. For example, if a canister did not have a dilution performed on it, but only 50 mL was analyzed, then the results will increase by a factor of 10, and the dilution factor will be 1.

Method(s) TO 15 LL, TO-15: EPA methods TO-14A and TO-15 specify the use of humidified “zero air” as the blank reagent for canister cleaning, instrument calibration and sample analysis. Ultra-high purity humidified nitrogen from a cryogenic reservoir is used in place of “zero air” by TestAmerica Knoxville.

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

Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-049

TestAmerica Job ID: 140-11015-1
SDG: W08014

Client Sample ID: B3HY40 — Lab Sample ID: 140-11015-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.028	J D	0.080	0.014	ppb v/v	1.39		TO 15 LL	Total/NA
1,2-Dichloroethane	0.032	J D	0.080	0.019	ppb v/v	1.39		TO 15 LL	Total/NA
Acetone	9.55	D	2.00	0.54	ppb v/v	1.39		TO 15 LL	Total/NA
Benzene	0.21	D	0.080	0.023	ppb v/v	1.39		TO 15 LL	Total/NA
Chloroform	7.65	D	0.080	0.015	ppb v/v	1.39		TO 15 LL	Total/NA
Methylene Chloride	0.40	D	0.20	0.13	ppb v/v	1.39		TO 15 LL	Total/NA
Trichloroethene	0.079	D	0.040	0.014	ppb v/v	1.39		TO 15 LL	Total/NA
Carbon tetrachloride - DL	205	D	1.85	0.35	ppb v/v	1.39		TO 15 LL	Total/NA

Client Sample ID: B3HY41 — Lab Sample ID: 140-11015-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	8.88	J D	19.6	5.29	ppb v/v	1.47		TO 15 LL	Total/NA
Benzene	0.26	J D	0.78	0.23	ppb v/v	1.47		TO 15 LL	Total/NA
Chloroform	9.91	D	0.78	0.15	ppb v/v	1.47		TO 15 LL	Total/NA
Methylene Chloride	1.31	J D	1.96	1.27	ppb v/v	1.47		TO 15 LL	Total/NA
Carbon tetrachloride - DL	272	D	1.96	0.37	ppb v/v	1.47		TO 15 LL	Total/NA

Client Sample ID: B3HY42 — Lab Sample ID: 140-11015-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Carbon tetrachloride	0.28	D	0.080	0.015	ppb v/v	1.41		TO 15 LL	Total/NA
Chloroform	0.038	J D	0.080	0.015	ppb v/v	1.41		TO 15 LL	Total/NA
Methylene Chloride	0.19	J D	0.20	0.13	ppb v/v	1.41		TO 15 LL	Total/NA
Trichloroethene	0.77	D	0.040	0.014	ppb v/v	1.41		TO 15 LL	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: B3HY40
Lab Sample ID: 140-11015-1
Date Collected: 03/20/18 08:20
Matrix: Air
Date Received: 03/21/18 11:15
Sample Container: Summa Canister 6L

Method: TO 15 LL - Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.012	U D	0.080	0.012	ppb v/v			03/22/18 16:15	1.39
1,1-Dichloroethene	**0.028**	**J D**	0.080	0.014	ppb v/v			03/22/18 16:15	1.39
1,2-Dichloroethane	**0.032**	**J D**	0.080	0.019	ppb v/v			03/22/18 16:15	1.39
Acetone	**9.55**	**D**	2.00	0.54	ppb v/v			03/22/18 16:15	1.39
Benzene	**0.21**	**D**	0.080	0.023	ppb v/v			03/22/18 16:15	1.39
Chloroform	**7.65**	**D**	0.080	0.015	ppb v/v			03/22/18 16:15	1.39
Dibromochloromethane	0.017	U D	0.080	0.017	ppb v/v			03/22/18 16:15	1.39
Methylene Chloride	**0.40**	**D**	0.20	0.13	ppb v/v			03/22/18 16:15	1.39
Trichloroethene	**0.079**	**D**	0.040	0.014	ppb v/v			03/22/18 16:15	1.39
Vinyl chloride	0.029	U D	0.040	0.029	ppb v/v			03/22/18 16:15	1.39

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*60 - 140*		*03/22/18 16:15*	*1.39*

Method: TO 15 LL - Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	**205**	**D**	1.85	0.35	ppb v/v			03/23/18 09:56	1.39

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*60 - 140*		*03/23/18 09:56*	*1.39*

Client Sample ID: B3HY41
Lab Sample ID: 140-11015-2
Date Collected: 03/20/18 09:21
Matrix: Air
Date Received: 03/21/18 11:15
Sample Container: Summa Canister 6L

Method: TO 15 LL - Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.12	U D	0.78	0.12	ppb v/v			03/22/18 17:01	1.47
1,1-Dichloroethene	0.14	U D	0.78	0.14	ppb v/v			03/22/18 17:01	1.47
1,2-Dichloroethane	0.19	U D	0.78	0.19	ppb v/v			03/22/18 17:01	1.47
Acetone	**8.88**	**J D**	19.6	5.29	ppb v/v			03/22/18 17:01	1.47
Benzene	**0.26**	**J D**	0.78	0.23	ppb v/v			03/22/18 17:01	1.47
Chloroform	**9.91**	**D**	0.78	0.15	ppb v/v			03/22/18 17:01	1.47
Dibromochloromethane	0.17	U D	0.78	0.17	ppb v/v			03/22/18 17:01	1.47
Methylene Chloride	**1.31**	**J D**	1.96	1.27	ppb v/v			03/22/18 17:01	1.47
Trichloroethene	0.14	U D	0.39	0.14	ppb v/v			03/22/18 17:01	1.47
Vinyl chloride	0.28	U D	0.39	0.28	ppb v/v			03/22/18 17:01	1.47

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*60 - 140*		*03/22/18 17:01*	*1.47*

Method: TO 15 LL - Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	**272**	**D**	1.96	0.37	ppb v/v			03/23/18 05:55	1.47

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*60 - 140*		*03/23/18 05:55*	*1.47*

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-049

TestAmerica Job ID: 140-11015-1
SDG: W08014

Client Sample ID: B3HY42
Date Collected: 03/20/18 10:22
Date Received: 03/21/18 11:15
Sample Container: Summa Canister 6L

Lab Sample ID: 140-11015-3
Matrix: Air

Method: TO 15 LL - Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.012	U D	0.080	0.012	ppb v/v			03/23/18 06:53	1.41
1,1-Dichloroethene	0.014	U D	0.080	0.014	ppb v/v			03/23/18 06:53	1.41
1,2-Dichloroethane	0.019	U D	0.080	0.019	ppb v/v			03/23/18 06:53	1.41
Acetone	0.54	U D	2.00	0.54	ppb v/v			03/23/18 06:53	1.41
Benzene	0.023	U D	0.080	0.023	ppb v/v			03/23/18 06:53	1.41
Carbon tetrachloride	**0.28**	**D**	0.080	0.015	ppb v/v			03/23/18 06:53	1.41
Chloroform	**0.038**	**J D**	0.080	0.015	ppb v/v			03/23/18 06:53	1.41
Dibromochloromethane	0.017	U D	0.080	0.017	ppb v/v			03/23/18 06:53	1.41
Methylene Chloride	**0.19**	**J D**	0.20	0.13	ppb v/v			03/23/18 06:53	1.41
Trichloroethene	**0.77**	**D**	0.040	0.014	ppb v/v			03/23/18 06:53	1.41
Vinyl chloride	0.029	U D	0.040	0.029	ppb v/v			03/23/18 06:53	1.41

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*60 - 140*		*03/23/18 06:53*	*1.41*

Default Detection Limits

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-049

TestAmerica Job ID: 140-11015-1
SDG: W08014

Method: TO 15 LL - Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)

Analyte	RL	MDL	Units	Method
1,1,1-Trichloroethane	0.080	0.012	ppb v/v	TO 15 LL
1,1-Dichloroethene	0.080	0.014	ppb v/v	TO 15 LL
1,2-Dichloroethane	0.080	0.019	ppb v/v	TO 15 LL
Acetone	2.00	0.54	ppb v/v	TO 15 LL
Benzene	0.080	0.023	ppb v/v	TO 15 LL
Carbon tetrachloride	0.080	0.015	ppb v/v	TO 15 LL
Chloroform	0.080	0.015	ppb v/v	TO 15 LL
Dibromochloromethane	0.080	0.017	ppb v/v	TO 15 LL
Methylene Chloride	0.20	0.13	ppb v/v	TO 15 LL
Trichloroethene	0.040	0.014	ppb v/v	TO 15 LL
Vinyl chloride	0.040	0.029	ppb v/v	TO 15 LL

Surrogate Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-049

TestAmerica Job ID: 140-11015-1
SDG: W08014

Method: TO 15 LL - Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)

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

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	BFB (60-140)								
140-11015-1 - DL	B3HY40	101								
140-11015-1	B3HY40	94								
140-11015-2 - DL	B3HY41	100								
140-11015-2	B3HY41	102								
140-11015-3	B3HY42	101								
LCS 140-18914/1002	Lab Control Sample	98								
MB 140-18914/4	Method Blank	101								

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: TO 15 LL - Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)

Lab Sample ID: MB 140-18914/4
Matrix: Air
Analysis Batch: 18914

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.012	U	0.080	0.012	ppb v/v			03/22/18 12:52	1
1,1-Dichloroethene	0.014	U	0.080	0.014	ppb v/v			03/22/18 12:52	1
1,2-Dichloroethane	0.019	U	0.080	0.019	ppb v/v			03/22/18 12:52	1
Acetone	0.54	U	2.00	0.54	ppb v/v			03/22/18 12:52	1
Benzene	0.023	U	0.080	0.023	ppb v/v			03/22/18 12:52	1
Carbon tetrachloride	0.015	U	0.080	0.015	ppb v/v			03/22/18 12:52	1
Chloroform	0.015	U	0.080	0.015	ppb v/v			03/22/18 12:52	1
Dibromochloromethane	0.017	U	0.080	0.017	ppb v/v			03/22/18 12:52	1
Methylene Chloride	0.13	U	0.20	0.13	ppb v/v			03/22/18 12:52	1
Trichloroethene	0.014	U	0.040	0.014	ppb v/v			03/22/18 12:52	1
Vinyl chloride	0.029	U	0.040	0.029	ppb v/v			03/22/18 12:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*60 - 140*		*03/22/18 12:52*	*1*

Lab Sample ID: LCS 140-18914/1002
Matrix: Air
Analysis Batch: 18914

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,1,1-Trichloroethane			2.00	1.907		ppb v/v		95	70 - 130		
1,1-Dichloroethene			2.00	1.868		ppb v/v		93	70 - 130		
1,2-Dichloroethane			2.00	1.921		ppb v/v		96	70 - 130		
Acetone			2.00	2.039		ppb v/v		102	60 - 140		
Benzene			2.00	1.914		ppb v/v		96	70 - 130		
Carbon tetrachloride			2.00	2.128		ppb v/v		106	70 - 130		
Chloroform			2.00	1.859		ppb v/v		93	70 - 130		
Dibromochloromethane			2.00	2.319		ppb v/v		116	70 - 130		
Methylene Chloride			2.00	1.717		ppb v/v		86	70 - 130		
Trichloroethene			2.00	2.049		ppb v/v		102	70 - 130		
Vinyl chloride			2.00	1.751		ppb v/v		88	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-049

TestAmerica Job ID: 140-11015-1
SDG: W08014

Air - GC/MS VOA

Analysis Batch: 18914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-11015-1	B3HY40	Total/NA	Air	TO 15 LL	
140-11015-1 - DL	B3HY40	Total/NA	Air	TO 15 LL	
140-11015-2	B3HY41	Total/NA	Air	TO 15 LL	
140-11015-2 - DL	B3HY41	Total/NA	Air	TO 15 LL	
140-11015-3	B3HY42	Total/NA	Air	TO 15 LL	
MB 140-18914/4	Method Blank	Total/NA	Air	TO 15 LL	
LCS 140-18914/1002	Lab Control Sample	Total/NA	Air	TO 15 LL	

Client Sample ID: B3HY40

Lab Sample ID: 140-11015-1

Date Collected: 03/20/18 08:20

Matrix: Air

Date Received: 03/21/18 11:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO 15 LL		1.39	695 mL	500 mL	18914	03/22/18 16:15	HMT	TAL KNX
	Instrument ID: MR									
Total/NA	Analysis	TO 15 LL	DL	1.39	30 mL	500 mL	18914	03/23/18 09:56	HMT	TAL KNX
	Instrument ID: MR									

Client Sample ID: B3HY41

Lab Sample ID: 140-11015-2

Date Collected: 03/20/18 09:21

Matrix: Air

Date Received: 03/21/18 11:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO 15 LL		1.47	75 mL	500 mL	18914	03/22/18 17:01	HMT	TAL KNX
	Instrument ID: MR									
Total/NA	Analysis	TO 15 LL	DL	1.47	30 mL	500 mL	18914	03/23/18 05:55	HMT	TAL KNX
	Instrument ID: MR									

Client Sample ID: B3HY42

Lab Sample ID: 140-11015-3

Date Collected: 03/20/18 10:22

Matrix: Air

Date Received: 03/21/18 11:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO 15 LL		1.41	705 mL	500 mL	18914	03/23/18 06:53	HMT	TAL KNX
	Instrument ID: MR									

Client Sample ID: Method Blank

Lab Sample ID: MB 140-18914/4

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO 15 LL		1	500 mL	500 mL	18914	03/22/18 12:52	HMT	TAL KNX
	Instrument ID: MR									

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 140-18914/1002

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO 15 LL		1	500 mL	500 mL	18914	03/22/18 10:57	HMT	TAL KNX
	Instrument ID: MR									

Laboratory References:

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-049

TestAmerica Job ID: 140-11015-1
SDG: W08014

Method	Method Description	Protocol	Laboratory
TO 15 LL	Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)	EPA	TAL KNX

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-049

TestAmerica Job ID: 140-11015-1
SDG: W08014

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-11015-1	B3HY40	Air	03/20/18 08:20	03/21/18 11:15
140-11015-2	B3HY41	Air	03/20/18 09:21	03/21/18 11:15
140-11015-3	B3HY42	Air	03/20/18 10:22	03/21/18 11:15

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CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F16-049-283	PAGE 1 OF 1
COLLECTOR CHRIS FULTON CHPRC	**COMPANY CONTACT** SUMNER, LC	**TELEPHONE NO.** 376-3922	**PROJECT COORDINATOR** SUMNER, LC	**REQUIRED TAT** 15 Days	
SAMPLING LOCATION * 289-T, TOG Stack, Sample Shed, valve V55-Y62 (01)	**PROJECT DESIGNATION** 200 West Pump & Treat - ETBs and BioTreatment VOC Sampling - Gaseous		**SAF NO.** F16-049	**ORIGINAL**	
ICE CHEST NO. FB3	**FIELD LOGBOOK NO.** HNF-N-491 16/95	**ACTUAL SAMPLE DEPTH** N/A	**PURCHASE ORDER/CHARGE CODE** 304235	**METHOD OF SHIPMENT** FEDERAL EXPRESS	
SHIPPED TO TestAmerica Knoxville	**OFFSITE PROPERTY NO.** T2320-18 N/A 9203		**BILL OF LADING/AIR BILL NO.** 7717 9073 8712		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL HANDLING AND/OR STORAGE
N/A

PRESERVATION	None
HOLDING TIME	30 Days
TYPE OF CONTAINER	Summa Canister
NO. OF CONTAINER(S)	1
VOLUME	6L
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	FILTERED	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B3HY40	N/A	GASEOUS	MAR 2 0 2018	0820	✓

Received @ ambient, 1 box, Fedex ID trk# 7717 9073 8712, Custody seal intact SDG#W0814, 3 cans, 3 flows KW 3/21/18 1115

140-11015 Chain of Custody

CHAIN OF POSSESSION RELINQUISHED BY/REMOVED FROM	DATE/TIME	SIGN/ PRINT NAMES RECEIVED BY/STORED IN	DATE/TIME
CHRIS FULTON CHPRC	MAR 2 0 2018 1400	FEDEX	
Fed ex 3/21/18 1115 - entered by TA - KW 3/21/18 1115		Ken Wilson	3/21/18 1115

SPECIAL INSTRUCTIONS
TRVL-18-088
(1) TO-15_VOA: COMMON {1,1,1-Trichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, Acetone, Benzene, Carbon tetrachloride, Chloroform, Dibromochloromethane, Methylene chloride, Trichloroethene, Vinyl chloride};

FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 2/26/2018

FSR ID = FSR58250

TRVL NUM = TRVL-18-088

A-6003-618 (REV 3)

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REV.0

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F16-049-284	PAGE 1 OF 1
COLLECTOR CHRIS FULTON CHPRC	**COMPANY CONTACT** SUMNER, LC	**TELEPHONE NO.** 376-3922	**PROJECT COORDINATOR** SUMNER, LC	**REQUIRED TAT** 15 Days	
SAMPLING LOCATION * 289-T, TOG Stack, Sample Shed, valve V55-Y62 (02)	**PROJECT DESIGNATION** 200 West Pump & Treat - ETBs and BioTreatment VOC Sampling - Gaseous		**SAF NO.** F16-049	**ORIGINAL**	
ICE CHEST NO. FB3	**FIELD LOGBOOK NO.** HNF-N- 491 16/95	**ACTUAL SAMPLE DEPTH** N/A	**PURCHASE ORDER/CHARGE CODE** 304235	**METHOD OF SHIPMENT** FEDERAL EXPRESS	
SHIPPED TO TestAmerica Knoxville	**OFFSITE PROPERTY NO.** 9232018 N/A 9203		**BILL OF LADING/AIR BILL NO.** 7717 90738712		

SDG# W0814

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL HANDLING AND/OR STORAGE
N/A

PRESERVATION	None
HOLDING TIME	30 Days
TYPE OF CONTAINER	Summa Canister
NO. OF CONTAINER(S)	1
VOLUME	6L
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	FILTERED	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B3HY41	N/A	GASEOUS	MAR 2 0 2018	0921	✓

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CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	SIGN/ PRINT NAMES RECEIVED BY/STORED IN	DATE/TIME
CHRIS FULTON CHPRC	1400 MAR 2 0 2018	FEDEX	
FedEx 3/20/18 1115 - entered by TA - KW 3/2/18 1115		Ken Wilson	3/2/18 1115

SPECIAL INSTRUCTIONS
TRVL-18-088
(1) TO-15_VOA: COMMON {1,1,1-Trichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, Acetone, Benzene, Carbon tetrachloride, Chloroform, Dibromochloromethane, Methylene chloride, Trichloroethene, Vinyl chloride};

REV.0

4/4/2018

FINAL SAMPLE DISPOSITION | **DISPOSAL METHOD** | **DISPOSED BY** | **DATE/TIME**

PRINTED ON 2/26/2018 **FSR ID = FSR58251** **TRVL NUM = TRVL-18-088** A-6003-618 (REV 3)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F16-049-285	PAGE 1 OF 1
COLLECTOR CHRIS FULTON CHPRC	**COMPANY CONTACT** SUMNER, LC	**TELEPHONE NO.** 376-3922	**PROJECT COORDINATOR** SUMNER, LC	**REQUIRED TAT** 15 Days	
SAMPLING LOCATION * 289-T, TOG Stack, Sample shed, valve V55-Y62 (03)	**PROJECT DESIGNATION** 200 West Pump & Treat - ETBs and BioTreatment VOC Sampling - Gaseous		**SAF NO.** F16-049	**ORIGINAL**	
ICE CHEST NO. FB3	**FIELD LOGBOOK NO.** HNF-N- 491 16/95	**ACTUAL SAMPLE DEPTH** N/A	**PURCHASE ORDER/CHARGE CODE** 304235	**METHOD OF SHIPMENT** FEDERAL EXPRESS	
SHIPPED TO TestAmerica Knoxville	**OFFSITE PROPERTY NO.** 723206 N/A 9203		**BILL OF LADING/AIR BILL NO.** 7717 90738712		

SDG# W0804

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	None
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	HOLDING TIME	30 Days
		TYPE OF CONTAINER	Summa Canister
		NO. OF CONTAINER(S)	1
		VOLUME	6L
	SPECIAL HANDLING AND/OR STORAGE N/A	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	FILTERED	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B3HY42	N/A	GASEOUS	MAR 2 0 2018	1022	✓

CHAIN OF POSSESSION RELINQUISHED BY/REMOVED FROM	DATE/TIME	SIGN/ PRINT NAMES RECEIVED BY/STORED IN	DATE/TIME	SPECIAL INSTRUCTIONS
CHRIS FULTON CHPRC	1400 MAR 2 0 2018	FEDEX		TRVL-18-088 (1) TO-15_VOA: COMMON {1,1,1-Trichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, Acetone, Benzene, Carbon tetrachloride, Chloroform, Dibromochloromethane, Methylene chloride, Trichloroethene, Vinyl chloride};
FedEx 3/21/18 (11:5 - entered by TA - KL 3/21/18 11:5		Ken	Ken Wilson 3/21/18 11:5	

FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 2/26/2018

FSR ID = FSR58252

TRVL NUM = TRVL-18-088

A-6003-618 (REV 3)

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4/4/2018

Loc: 140
11015

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST **Log In Number:**

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Are the shipping containers intact?	/			☐ Containers, Broken	
2. Were ambient air containers received intact?			/	☑ Checked in lab	
3. The coolers/containers custody seal if present, is it intact?	/			☐ Yes ☐ NA	
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID :_____ Correction factor: _____			/	☐ Cooler Out of Temp, Client Contacted, Proceed/Cancel ☐ Cooler Out of Temp, Same Day Receipt	
5. Were all of the sample containers received intact?	/			☐ Containers, Broken	
6. Were samples received in appropriate containers?	/			☐ Containers, Improper; Client Contacted; Proceed/Cancel	
7. Do sample container labels match COC? (IDs, Dates, Times)	/			☐ COC & Samples Do Not Match ☐ COC Incorrect/Incomplete ☐ COC Not Received	
8. Were all of the samples listed on the COC received?	/			☐ Sample Received, Not on COC ☐ Sample on COC, Not Received	
9. Is the date/time of sample collection noted?	/			☐ COC; No Date/Time; Client Contacted	
10. Was the sampler identified on the COC?	/			☐ Sampler Not Listed on COC	**Labeling Verified by:** **Date:**
11. Is the client and project name/# identified?	/			☐ COC Incorrect/Incomplete	
12. Are tests/parameters listed for each sample?	/			☐ COC No tests on COC	**pH test strip lot number:**
13. Is the matrix of the samples noted?	/			☐ COC Incorrect/Incomplete	
14. Was COC relinquished? (Signed/Dated/Timed)		/		☑ COC Incorrect/Incomplete	
15. Were samples received within holding time?	/			☐ Holding Time - Receipt	
16. Were samples received with correct chemical preservative (excluding Encore)?			/	☐ pH Adjusted, pH Included (See box 16A) ☐ Incorrect Preservative	
17. Were VOA samples received without headspace?			/	☐ Headspace (VOA only)	
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number:_____			/	☐ Residual Chlorine	
19. For 1613B water samples is pH<9?			/	☐ If no, lab will adjust	
20. For rad samples was sample activity info. Provided?			/	☐ Project missing info	

	Box 16A: pH Preservation	Box 18A: Residual Chlorine
Preservative:		
Lot Number:		
Exp Date:		
Analyst:		
Date:		
Time:		

Project #: 1400229J PM Instructions: _____

Sample Receiving Associate: KW Date: 3/21/18

QA026R30.doc, 080916

04/04/2018

REV.0

TestAmerica Knoxville - Air Canister Initial Pressure Check

Gauge ID: G5
Date: 3/22/2018

Analyst	Sample ID	Asset #	Cleaning Job	Cert	Size (L)	Pressure @ Receipt (-in Hg or +psig)	Time	Comments
BKK	140-11015-A-1	09876	10773	B	6	-7.3	1015	+0.7
BKK	140-11015-A-2	11691	10773	B	6	-8.5	1016	+0.8
BKK	140-11015-A-3	10424	10760	B	6	-7.5	1017	+0.8