

RECEIVED NOVEMBER 20, 2008

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

0082236

ANALYTICAL REPORT

X09-004

Lot #: F8K040263

SDG #: SL768

Mike Neely

CH2M Hill Plateau Remediation
PO Box 1600, MS B6-06
Richland, WA 99352

TESTAMERICA LABORATORIES, INC.



Michael C. Franks
Project Manager

November 19, 2008

RECEIVED
JAN 22 2009

EDMC

TestAmerica

CASE NARRATIVE

THE LEADER IN ENVIRONMENTAL TESTING
 CH2MHill Plateau Remediation Company
 P.O. Box 1600
 MSIN B6-06
 Richland, Washington 99352
 November 19, 2008
 Attention: Mike Neely

SDG	: SL768
Number of Samples	: one sample
Sample Matrix	: water
Data Deliverable	: Summary
Date SDG Closed	: November 4, 2008.

II. Introduction

On November 4, 2008, one water sample was received by TestAmerica - St. Louis for chemical analysis. The samples were received within temperature criteria. See the COC and CUR forms for documentation of any variations on receipt conditions and temperature. Upon receipt, the samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

Deviation from Request: None

IV. Definitions

QCBLK-	Quality Control Blank, Method Blank
QCLCS-	Quality Control Laboratory Control Sample, Blank Spike
DUP-	Laboratory Duplicate
MS-	Matrix Spike
MSD-	Matrix Spike Duplicate

V. Comments

General

The following SAFs are associated with this SDG: X09-004

The term "Detection Limit" used in the analytical data report refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with a LCS/LCS duplicate.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CH2M Hill Plateau Remediation Company

November 19, 2008

SDG: SL768

Volatile Organics**Batch: 8323284**

The D% CCV is (higher recovered) outside the Method criteria (greater than 20% D) for Propionitrile (25.9%) and 1,4-Dioxane (33.0%) indicating a potential high bias for these analytes in the samples associated with this CCV. These analytes are not detected above the reporting limits in the associated samples

Affected Samples:

F8K040263 (1): B1XH00

The MS recovery for Vinyl Chloride and the MS/MSD RPDs for Acetone are outside the established QC limits. Method performance is demonstrated by acceptable LCS recoveries.

Affected Samples:

F8K040263 (1): B1XH00

According to the COC, sample was presumed to be preserved to a pH < 2. Due to the potential loss of volatile constituents, VOA vials are not checked for pH preservation until time of analysis. The sample pH was not less than 2, resulting in analysis being performed outside the 7 day holding time for unpreserved samples.

Affected Samples:

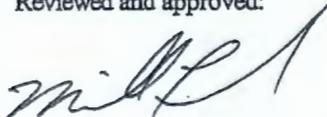
F8K040263 (1): B1XH00

There were no observations or nonconformances for the following methods:

Total Organic Halogens

I certify that this Summary Package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:



Michael Franks
St. Louis Project Manager

METHODS SUMMARY

F8K040263

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Total Organic Halogens	SW846 9020B	SW846 9020B
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B/826

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F8K040263

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
K17V2	001	B1XH00	11/03/08	11:30

NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Track Shipments/FedEx Kinko's Orders
Detailed Results

Tracking number	797092457632	Reference	GWS-026
Signed for by	S.WILSON	Destination	Earth City, MO
Ship date	Nov 3, 2008	Delivered to	Shipping/Receiving
Delivery date	Nov 4, 2008 9:25 AM	Service type	Priority Overnight
		Weight	29.0 lbs.

Status	Delivered
Signature image available	<u>Yes</u>

Date/Time	Activity	Location
Nov 4, 2008	9:25 AM	Delivered
	7:19 AM	On FedEx vehicle for delivery
	7:14 AM	At local FedEx facility
	5:11 AM	At dest sort facility
	4:10 AM	Departed FedEx location
Nov 3, 2008	12:48 AM	Arrived at FedEx location
	5:21 PM	Left FedEx origin facility
	5:12 PM	Package data transmitted to FedEx
	3:51 PM	Picked up

[Signature proof](#)
 [E-mail results](#)
 [Track more shipments/o](#)

Subscribe to tracking updates (optional)

Your name: Your e-mail address:

E-mail address	Language	Exception updates
<input type="text"/>	English <input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	English <input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	English <input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	English <input type="checkbox"/>	<input type="checkbox"/>

Select format: HTML Text Wireless

Add personal message:

Not available for Wireless or non-English characters.

By selecting this check box and the Submit button, I agree to these [Terms and Conditions](#)

GC/MS VOLATILES

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B1XH00

GC/MS Volatiles

Lot-Sample #....: F8K040263-001 Work Order #....: K17V21AC Matrix.....: WATER
 Date Sampled....: 11/03/08 Date Received...: 11/04/08
 Prep Date.....: 11/13/08 Analysis Date...: 11/13/08
 Prep Batch #....: 8323284
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
1,1-Dichloroethene	ND	1.0	ug/L	0.085
1,4-Dioxane	ND	80	ug/L	7.0
Ethylbenzene	ND	1.0	ug/L	0.061
Vinyl chloride	ND T	2.0	ug/L	0.13
Acetone	ND	2.0	ug/L	0.56
Methylene chloride	ND	1.0	ug/L	0.091
Carbon disulfide	ND	1.0	ug/L	0.029
1,1-Dichloroethane	ND	1.0	ug/L	0.070
2-Butanone	ND	5.0	ug/L	0.96
Chloroform	ND	1.0	ug/L	0.080
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.13
Propionitrile	ND	5.0	ug/L	4.7
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.089
1,1,1-Trichloroethane	ND	1.0	ug/L	0.099
Carbon tetrachloride	ND	1.0	ug/L	0.042
1,2-Dichloroethane	ND	1.0	ug/L	0.18
Benzene	ND	1.0	ug/L	0.032
Trichloroethene	ND	1.0	ug/L	0.11
4-Methyl-2-pentanone	ND	5.0	ug/L	0.72
1,1,2-Trichloroethane	ND	1.0	ug/L	0.19
Tetrachloroethene	ND	1.0	ug/L	0.14
Tetrahydrofuran	ND	10	ug/L	3.2
Xylenes (total)	ND	3.0	ug/L	1.6
1,4-Dichlorobenzene	ND	1.0	ug/L	0.10
1-Butanol	ND	40	ug/L	14
Toluene	ND	1.0	ug/L	0.029

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Toluene-d8	99	(76 - 115)
Dibromofluoromethane	106	(81 - 123)
1,2-Dichloroethane-d4	99	(70 - 130)
4-Bromofluorobenzene	94	(79 - 115)

NOTE(S) :

T Spike sample recovery is outside control limits.

CH2M Hill Plateau Remediation DOE RL

BLXH00

GC/MS Volatiles

Lot-Sample #: F8K040263-001

Work Order #: K17V21AC

Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F8K040263 Work Order #...: K251K1AA Matrix.....: WATER
 MB Lot-Sample #: F8K180000-284
 Analysis Date...: 11/13/08 Prep Date.....: 11/13/08
 Dilution Factor: 1 Prep Batch #...: 8323284

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	METHOD
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,4-Dioxane	ND	80	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Acetone	ND	2.0	ug/L	SW846 8260B
Methylene chloride	0.092 J	1.0	ug/L	SW846 8260B
Carbon disulfide	0.032 J	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
Propionitrile	ND	5.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Tetrahydrofuran	ND	10	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1-Butanol	ND	40	ug/L	SW846 8260B
Toluene	0.041 J	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Toluene-d8	100	(76 - 115)
Dibromofluoromethane	99	(81 - 123)
1,2-Dichloroethane-d4	101	(70 - 130)
4-Bromofluorobenzene	96	(79 - 115)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.
 J Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

Method Blank Report

GC/MS Volatiles

Lot-Sample #: F8K180000-284 B Work Order #: K251K1AA Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: F8K040263 Work Order #...: K251K1AC Matrix.....: WATER
 LCS Lot-Sample#: F8K180000-284
 Prep Date.....: 11/13/08 Analysis Date...: 11/13/08
 Prep Batch #...: 8323284
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCENT RECOVERY</u>	<u>METHOD</u>
1,4-Dioxane	200	226	ug/L	113	SW846 8260B
1,1-Dichloroethene	10.0	10.9	ug/L	109	SW846 8260B
Ethylbenzene	10.0	11.0	ug/L	110	SW846 8260B
Vinyl chloride	10.0	9.36	ug/L	94	SW846 8260B
Acetone	10.0	9.37	ug/L	94	SW846 8260B
Methylene chloride	10.0	11.1	ug/L	111	SW846 8260B
Carbon disulfide	10.0	8.45	ug/L	84	SW846 8260B
1,1-Dichloroethane	10.0	9.68	ug/L	97	SW846 8260B
2-Butanone	10.0	7.77	ug/L	78	SW846 8260B
Chloroform	10.0	10.2	ug/L	102	SW846 8260B
cis-1,2-Dichloroethene	10.0	10.2	ug/L	102	SW846 8260B
Propionitrile	50.0	51.5	ug/L	103	SW846 8260B
trans-1,2-Dichloroethene	10.0	10.2	ug/L	102	SW846 8260B
1,1,1-Trichloroethane	10.0	9.80	ug/L	98	SW846 8260B
Carbon tetrachloride	10.0	10.7	ug/L	107	SW846 8260B
1,2-Dichloroethane	10.0	9.84	ug/L	98	SW846 8260B
Benzene	10.0	10.2	ug/L	102	SW846 8260B
Trichloroethene	10.0	10.4	ug/L	104	SW846 8260B
4-Methyl-2-pentanone	10.0	7.26	ug/L	73	SW846 8260B
1,1,2-Trichloroethane	10.0	10.3	ug/L	103	SW846 8260B
Tetrachloroethene	10.0	10.2	ug/L	102	SW846 8260B
Tetrahydrofuran	50.0	47.6	ug/L	95	SW846 8260B
1,4-Dichlorobenzene	10.0	9.58	ug/L	96	SW846 8260B
1-Butanol	100	91.3	ug/L	91	SW846 8260B
Toluene	10.0	9.78	ug/L	98	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Toluene-d8	96	(82 - 115)
Dibromofluoromethane	98	(79 - 120)
1,2-Dichloroethane-d4	92	(62 - 130)
4-Bromofluorobenzene	93	(77 - 115)

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: F8K040263 Work Order #...: K251K1AC Matrix.....: WATER
LCS Lot-Sample#: F8K180000-284

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #....: SL768 Work Order #....: K17V21AE-MS Matrix.....: WATER
 MS Lot-Sample #: F8K040263-001 K17V21AF-MSD
 Date Sampled....: 11/03/08 Date Received...: 11/04/08
 Prep Date.....: 11/13/08 Analysis Date...: 11/13/08
 Prep Batch #....: 8323284
 Dilution Factor: 1

PARAMETER	SAMPLE	SPIKE	MEASRD	UNITS	PERCNT		METHOD
	AMOUNT	AMT	AMOUNT		RECVRY	RPD	
1,1-Dichloroethene	ND	10.0	9.28	ug/L	93		SW846 8260B
	ND	10.0	9.60	ug/L	96	3.4	SW846 8260B
Ethylbenzene	ND	10.0	9.48	ug/L	95		SW846 8260B
	ND	10.0	9.74	ug/L	97	2.6	SW846 8260B
1,4-Dioxane	ND	200	231	ug/L	116		SW846 8260B
	ND	200	214	ug/L	107	7.9	SW846 8260B
Vinyl chloride	ND	10.0	6.10	ug/L	61 a,T		SW846 8260B
	ND	10.0	7.14	ug/L	71	16	SW846 8260B
Acetone	ND	10.0	8.77	ug/L	88		SW846 8260B
	ND	10.0	12.8	ug/L	128 p	38	SW846 8260B
Methylene chloride	ND	10.0	9.05	ug/L	91		SW846 8260B
	ND	10.0	9.55	ug/L	96	5.4	SW846 8260B
Carbon disulfide	ND	10.0	8.58	ug/L	86		SW846 8260B
	ND	10.0	9.03	ug/L	90	5.1	SW846 8260B
1,1-Dichloroethane	ND	10.0	9.76	ug/L	98		SW846 8260B
	ND	10.0	9.77	ug/L	98	0.07	SW846 8260B
2-Butanone	ND	10.0	10.9	ug/L	109		SW846 8260B
	ND	10.0	10.2	ug/L	102	6.5	SW846 8260B
Chloroform	ND	10.0	9.92	ug/L	99		SW846 8260B
	ND	10.0	10.1	ug/L	101	2.2	SW846 8260B
cis-1,2-Dichloroethene	ND	10.0	9.67	ug/L	97		SW846 8260B
	ND	10.0	10.6	ug/L	106	8.7	SW846 8260B
Propionitrile	ND	50.0	62.5	ug/L	125		SW846 8260B
	ND	50.0	61.5	ug/L	123	1.5	SW846 8260B
trans-1,2-Dichloroethene	ND	10.0	9.00	ug/L	90		SW846 8260B
	ND	10.0	9.82	ug/L	98	8.7	SW846 8260B
1,1,1-Trichloroethane	ND	10.0	9.38	ug/L	94		SW846 8260B
	ND	10.0	9.87	ug/L	99	5.1	SW846 8260B
Carbon tetrachloride	ND	10.0	9.82	ug/L	98		SW846 8260B
	ND	10.0	9.99	ug/L	100	1.7	SW846 8260B
1,2-Dichloroethane	ND	10.0	10.6	ug/L	106		SW846 8260B
	ND	10.0	10.6	ug/L	106	0.66	SW846 8260B
Benzene	ND	10.0	9.82	ug/L	98		SW846 8260B
	ND	10.0	10.2	ug/L	102	4.1	SW846 8260B
Trichloroethene	ND	10.0	10.5	ug/L	105		SW846 8260B
	ND	10.0	10.6	ug/L	106	1.2	SW846 8260B
4-Methyl-2-pentanone	ND	10.0	10.3	ug/L	103		SW846 8260B
	ND	10.0	10.3	ug/L	103	0.29	SW846 8260B
1,1,2-Trichloroethane	ND	10.0	9.76	ug/L	98		SW846 8260B
	ND	10.0	9.75	ug/L	97	0.13	SW846 8260B

(Continued on next page)

MATRIX SPTKR SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL768 Work Order #...: K17V21AE-MS Matrix.....: WATER
 MS Lot-Sample #: F8K040263-001 K17V21AF-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT		METHOD
					RECVRY	RPD	
Tetrachloroethene	ND	10.0	8.60	ug/L	86		SW846 8260B
	ND	10.0	8.86	ug/L	89	3.0	SW846 8260B
Tetrahydrofuran	ND	50.0	54.1	ug/L	108		SW846 8260B
	ND	50.0	60.0	ug/L	120	10	SW846 8260B
1,4-Dichlorobenzene	ND	10.0	8.35	ug/L	83		SW846 8260B
	ND	10.0	8.78	ug/L	88	5.1	SW846 8260B
1-Butanol	ND	100	84.8	ug/L	85		SW846 8260B
	ND	100	88.9	ug/L	89	4.7	SW846 8260B
Toluene	ND	10.0	8.60	ug/L	86		SW846 8260B
	ND	10.0	8.91	ug/L	89	3.5	SW846 8260B

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Toluene-d8	89	(76 - 115)
	92	(76 - 115)
Dibromofluoromethane	104	(81 - 123)
	104	(81 - 123)
1,2-Dichloroethane-d4	104	(70 - 130)
	101	(70 - 130)
4-Bromofluorobenzene	91	(79 - 115)
	94	(79 - 115)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

p Relative percent difference (RPD) is outside stated control limits.

a Spiked analyte recovery is outside stated control limits.

T Spike sample recovery is outside control limits.

WET CHEMISTRY

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B1XH00

General Chemistry

Lot-Sample #...: F8K040263-001
Date Sampled...: 11/03/08

Work Order #...: K17V2
Date Received...: 11/04/08

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
TOX	ND	5.0	ug/L	SW846 9020B	11/13/08	8319076

Dilution Factor: 1 MDL.....: 3.5

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F8K040263

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>PREP</u> <u>BATCH #</u>
TOX	ND	Work Order #: K2XNX1AA 5.0	ug/L	MB Lot-Sample #: SW846 9020B	F8K140000-076 11/13/08	8319076
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: F8K040263

Matrix.....: WATER

<u>PARAMETER</u>	<u>SPIKE</u> <u>AMOUNT</u>	<u>MEASURED</u> <u>AMOUNT</u>	<u>UNITS</u>	<u>PERCNT</u> <u>RECVRY</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>PREP</u> <u>BATCH #</u>
TOX	100	98.4	ug/L	98	SW846 9020B	11/13/08	8319076
Work Order #: K2XNX1AC LCS Lot-Sample#: F8K140000-076							
Dilution Factor: 1							

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: F8K040263
 Date Sampled...: 10/29/08

Date Received...: 10/31/08

Matrix.....: WATER

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
TOX	6.6	100	106	ug/L	100	SW846 9020B	11/13/08	8319076
		Work Order #...: K11PVIAJ				MS Lot-Sample #: F8J310139-001		
		Dilution Factor: 1						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

