UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Environmental Sciences Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

DATE : March 7, 2012

SUBJECT: Region III Data QA Review

FROM: Colleen Walling
Region III ESAT RPO (3EA20)

TO: Rich Fetzer
Remedial Project Manager (3HS31)

Attached is the organic data validation report for the Dimock Residential Groundwater site (DAS:# R33917; SDG: #480-16127-1) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2763.

Attachment

TO: #0042 TDF: 03014 Data Validation
TO: #0042 TDF: #02085 Sample log-in processing

cc: Gene Nance (Techlaw)
Suddha Graves (Techlaw)

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ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Ex. 4 - CBI

LOCKHEED MARTIN
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Date: March 07, 2012

Subject: Organic Data Validation (M3 Level)
Case: R33917
Project: 480-16217-1
Site: Dimock

From: Ex. 4 - CBI
Organic Data Reviewer

Ex. 4 - CBI
Senior Oversight Chemist

To: Colleen Walling
ESAT Region 3 Project Officer

OVERVIEW

Third party Case R33917, Project 480-16217-1, consisted of thirteen (13) aqueous samples including two (2) field blanks analyzed for ethylene glycol. Samples were analyzed by TestAmerica Buffalo (TAL BUF) according to Test Methods for Evaluating Solid Waste SW-846 Method 8015B.

SUMMARY

Data were validated according to Region 3 Modifications to the National Functional Guidelines for Organic Data Review, Level M3 and is assigned the Superfund Data Validation Label S4VM (Stage_4_Validation_Manual). Areas of concern with respect to data usability are listed below.

MINOR PROBLEM

- The laboratory employed a four (4) point calibration curve for the analysis of the compounds requested; however, Method 8015B specifies the use of a five (5) point curve. No action was taken by the reviewer based on this deviation from the method.

NOTES

- Ethylene glycol failed precision criteria [Percent Difference (%D)] in a continuing calibration. No positive results were reported for this compound. Quantitation limits for this compound were not impacted since the %D did not exceed the 50% criteria.

- Reported recoveries and Relative Percent Differences (RPDs) in Laboratory Control Sample (LCS) analysis and Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses of sample HW57 were within control limits.

- The calibration factors calculated by the reviewer were slightly different than those calculated by the laboratory. Differences in calibration factors were due to rounding by the laboratory.

- No positive results were reported for the samples in this sample set; therefore, no confirmation analyses were required.

ATTACHMENTS

Appendix A – Glossary of Data Qualifier Codes
Appendix B – Data Summary Form(s)
Appendix C – Chain of Custody Records
Appendix D – Laboratory Case Narrative

DCN: R33917_480-16217-1

GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)

CODES RELATED TO IDENTIFICATION
(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

NO CODE = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

NJ = Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.

Q = No analytical result.

DATA SUMMARY FORM: Volatiles

Case #: R33917 Project : 480-16217-1
Site : DIMOCK Number of Water Samples : 13
Lab. : TAL BUF

Sample Number :		FB17		FB18		HW03		HW03z		HW07	
Sampling Location :		FB17		FB18		HW03		HW03		HW07	
Laboratory ID :		480-16217-1		480-16217-2		480-16217-3		480-16217-4		480-16217-5	
Field QC :		Field Blank		Field Blank							
Matrix :		Water		Water		Water		Water		Water	
Units :		mg/L		mg/L		mg/L		mg/L		mg/L	
Date Sampled :		02/14/2012		02/15/2012		02/14/2012		02/14/2012		02/15/2012	
Time Sampled :		09:09		09:45		15:18		15:19		11:36	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
Volatile Compound	RL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Ethylene glycol	10										

Sample Number :		HW11		HW11-P		HW53		HW53-P		HW57	
Sampling Location :		HW11		HW11		HW53		HW53		HW57	
Laboratory ID :		480-16217-6		480-16217-7		480-16217-8		480-16217-9		480-16217-10	
Matrix :		Water		Water		Water		Water		Water	
Units :		mg/L		mg/L		mg/L		mg/L		mg/L	
Date Sampled :		02/13/2012		02/13/2012		02/13/2012		02/13/2012		02/14/2012	
Time Sampled :		15:05		15:22		14:57		15:17		10:07	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
Volatile Compound	RL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Ethylene glycol	10										

Sample Number :		HW57-P		HW58		HW59					
Sampling Location :		HW57		HW58		HW59					
Laboratory ID :		480-16217-11		480-16217-12		480-16217-13					
Matrix :		Water		Water		Water					
Units :		mg/L		mg/L		mg/L					
Date Sampled :		02/14/2012		02/14/2012		02/14/2012					
Time Sampled :		10:31		14:47		10:33					
Dilution Factor :		1.0		1.0		1.0					
Volatile Compound	RL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Ethylene glycol	10										

RL = Reporting Limit SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (RL * Dilution Factor) Revised 09/99

USEPA CLP Generic COC (LAB COPY)
DateShipped: 2/15/2012
CarrierName: FedEx
AirbillNo: 7980 6288 0337

CHAIN OF CUSTODY RECORD

Project Code: TL01-11-12-001

No: 3-021512-133332-0238
Lab: Test America DIM
Lab Contact:
Lab Phone: 716.504.9822

Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	For Lab Use Only
FB17	Aqueous/ Dan Jacobsen	Grab	EthyGlycol(7), EthyGlycol(7)	5487 (-NA- / 40mlGlassVial), 5488 (-NA- / 40mlGlassVial) (2)	FB17	02/14/2012 09:09	
FB18	Aqueous/ Joel Munson	Grab	EthyGlycol(7), EthyGlycol(7)	5794 (-NA- / 40mlGlassVial), 5795 (-NA- / 40mlGlassVial) (2)	FB18	02/15/2012 09:45	
HW03	Drinking Water/ David Johnson	Grab	EthyGlycol(7), EthyGlycol(7)	5685 (-NA- / 40mlGlassVial), 5686 (-NA- / 40mlGlassVial) (2)	HW03	02/14/2012 15:18	
HW03z	Drinking Water/ David Johnson	Grab	EthyGlycol(7), EthyGlycol(7)	5719 (-NA- / 40mlGlassVial), 5720 (-NA- / 40mlGlassVial) (2)	HW03	02/14/2012 15:19	
HW07	Drinking Water/ David Johnson	Grab	EthyGlycol(7), EthyGlycol(7)	5760 (-NA- / 40mlGlassVial), 5761 (-NA- / 40mlGlassVial) (2)	HW07	02/15/2012 11:36	
HW11	Drinking Water/ Bryan Berna	Grab	EthyGlycol(7), EthyGlycol(7)	5386 (-NA- / 40mlGlassVial), 5387 (-NA- / 40mlGlassVial) (2)	HW11	02/13/2012 15:05	
HW11-P	Drinking Water/ Dan Jacobsen	Grab	EthyGlycol(7), EthyGlycol(7)	5438 (-NA- / 40mlGlassVial), 5439 (-NA- / 40mlGlassVial) (2)	HW11-P	02/13/2012 15:22	

Special Instructions:

Shipment for Case Complete? N
Samples Transferred From Chain of Custody #

Analysis Key: EthyGlycol=17-Ethylene Glycol

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
14	[illegible]	02/15/12	[illegible]	2-16-12	1000						

4.1 #1

Appendix D
Laboratory Case Narrative

Comments
No additional comments.

Receipt
All samples were received in good condition within temperature requirements.

GC VOA
Method(s) 8015: The percent difference in the associated continuing calibration verification (CCV 480-51962/34) for Ethylene Glycol exceeded 20% on the ZB-5 column, indicating a high bias.

No analytical or quality issues were noted.

METHOD SUMMARY

Client: Techlaw, Inc

Job Number: 480-16217-1

Description	Lab Location	Method	Preparation Method
Matrix Water			
Glycols -Direct Injection (GC/FID)	TAL BUF	SW846 8015B	
8015 Direct Injection Prep (Aqueous)	TAL BUF		SW846 8015 Prep

Lab References:

TAL BUF = TestAmerica Buffalo

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Attachment 2

Appendix A
Form Is

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo
Job No.: 480-16217-1
SDG No.:
Client Sample ID: FB17
Lab Sample ID: 480-16217-1
Matrix: Water
Lab File ID: PE09247.d
Analysis Method: 8015B
Date Collected: 02/14/2012 09:09
Sample wt/vol: 0.5(mL)
Date Analyzed: 02/17/2012 15:46
Soil Aliquot Vol:
Dilution Factor: 1
Soil Extract Vol.:
GC Column: ZB-5 ID: 0.25(mm)
% Moisture:
Level: (low/med) Low
Analysis Batch No.: 51962
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
107-21-1	Ethylene glycol	ND		10	0.76

CAS NO.	SURROGATE	%REC	Q	LIMITS
110-63-4	1,4-Butanediol	103		66-130

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo
Job No.: 480-16217-1
SDG No.:
Client Sample ID: FB18
Lab Sample ID: 480-16217-2
Matrix: Water
Lab File ID: PE09248.d
Analysis Method: 8015B
Date Collected: 02/15/2012 09:45
Sample wt/vol: 0.5(mL)
Date Analyzed: 02/17/2012 16:03
Soil Aliquot Vol:
Dilution Factor: 1
Soil Extract Vol.:
GC Column: ZB-5 ID: 0.25(mm)
% Moisture:
Level: (low/med) Low
Analysis Batch No.: 51962
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
107-21-1	Ethylene glycol	ND		10	0.76

CAS NO.	SURROGATE	%REC	Q	LIMITS
110-63-4	1,4-Butanediol	105		66-130

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo
Job No.: 480-16217-1
SDG No.:
Client Sample ID: HW03
Lab Sample ID: 480-16217-3
Matrix: Water
Lab File ID: PE09249.d
Analysis Method: 8015B
Date Collected: 02/14/2012 15:18
Sample wt/vol: 0.5(mL)
Date Analyzed: 02/17/2012 16:20
Soil Aliquot Vol:
Dilution Factor: 1
Soil Extract Vol.:
GC Column: ZB-5 ID: 0.25(mm)
% Moisture:
Level: (low/med) Low
Analysis Batch No.: 51962
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
107-21-1	Ethylene glycol	ND		10	0.76

CAS NO.	SURROGATE	%REC	Q	LIMITS
110-63-4	1,4-Butanediol	115		66-130

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Client Sample ID: HW03Z Lab Sample ID: 480-16217-4

Matrix: Water Lab File ID: PE09250.d

Analysis Method: 8015B Date Collected: 02/14/2012 15:19

Sample wt/vol: 0.5(mL) Date Analyzed: 02/17/2012 16:38

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-5 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 51962 Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
107-21-1	Ethylene glycol	ND		10	0.76

CAS NO.	SURROGATE	%REC	Q	LIMITS
110-63-4	1,4-Butanediol	104		66-130

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo
Job No.: 480-16217-1
SDG No.:
Client Sample ID: HW07
Lab Sample ID: 480-16217-5
Matrix: Water
Lab File ID: PE09251.d
Analysis Method: 8015B
Date Collected: 02/15/2012 11:36
Sample wt/vol: 0.5(mL)
Date Analyzed: 02/17/2012 16:55
Soil Aliquot Vol:
Dilution Factor: 1
Soil Extract Vol.:
GC Column: ZB-5 ID: 0.25(mm)
% Moisture:
Level: (low/med) Low
Analysis Batch No.: 51962
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
107-21-1	Ethylene glycol	ND		10	0.76

CAS NO.	SURROGATE	%REC	Q	LIMITS
110-63-4	1,4-Butanediol	113		66-130

FORM I 8015B

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Client Sample ID: HW11 Lab Sample ID: 480-16217-6

Matrix: Water Lab File ID: PE09252.d

Analysis Method: 8015B Date Collected: 02/13/2012 15:05

Sample wt/vol: 0.5(mL) Date Analyzed: 02/17/2012 17:12

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-5 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 51962 Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
107-21-1	Ethylene glycol	ND		10	0.76

CAS NO.	SURROGATE	%REC	Q	LIMITS
110-63-4	1,4-Butanediol	108		66-130

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Client Sample ID: HW11-P Lab Sample ID: 480-16217-7

Matrix: Water Lab File ID: PE09253.d

Analysis Method: 8015B Date Collected: 02/13/2012 15:22

Sample wt/vol: 0.5(mL) Date Analyzed: 02/17/2012 17:30

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-5 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 51962 Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
107-21-1	Ethylene glycol	ND		10	0.76

CAS NO.	SURROGATE	%REC	Q	LIMITS
110-63-4	1,4-Butanediol	108		66-130

FORM I 8015B

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Client Sample ID: HW53 Lab Sample ID: 480-16217-8

Matrix: Water Lab File ID: PE09254.d

Analysis Method: 8015B Date Collected: 02/13/2012 14:57

Sample wt/vol: 0.5(mL) Date Analyzed: 02/17/2012 17:47

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-5 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 51962 Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
107-21-1	Ethylene glycol	ND		10	0.76

CAS NO.	SURROGATE	%REC	Q	LIMITS
110-63-4	1,4-Butanediol	106		66-130

FORM I 8015B

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Client Sample ID: HW53-P Lab Sample ID: 480-16217-9

Matrix: Water Lab File ID: PE09256.d

Analysis Method: 8015B Date Collected: 02/13/2012 15:17

Sample wt/vol: 0.5(mL) Date Analyzed: 02/17/2012 18:21

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-5 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 51962 Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
107-21-1	Ethylene glycol	ND		10	0.76

CAS NO.	SURROGATE	%REC	Q	LIMITS
110-63-4	1,4-Butanediol	103		66-130

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Client Sample ID: HW57 Lab Sample ID: 480-16217-10

Matrix: Water Lab File ID: PE09257.d

Analysis Method: 8015B Date Collected: 02/14/2012 10:07

Sample wt/vol: 0.5(mL) Date Analyzed: 02/17/2012 18:39

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-5 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 51962 Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
107-21-1	Ethylene glycol	ND		10	0.76

CAS NO.	SURROGATE	%REC	Q	LIMITS
110-63-4	1,4-Butanediol	109		66-130

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Client Sample ID: HW57-P Lab Sample ID: 480-16217-11

Matrix: Water Lab File ID: PE09260.d

Analysis Method: 8015B Date Collected: 02/14/2012 10:31

Sample wt/vol: 0.5(mL) Date Analyzed: 02/17/2012 19:31

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-5 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 51962 Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
107-21-1	Ethylene glycol	ND		10	0.76

CAS NO.	SURROGATE	%REC	Q	LIMITS
110-63-4	1,4-Butanediol	112		66-130

FORM I 8015B

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo
Job No.: 480-16217-1
SDG No.:
Client Sample ID: HW58
Lab Sample ID: 480-16217-12
Matrix: Water
Lab File ID: PE09261.d
Analysis Method: 8015B
Date Collected: 02/14/2012 14:47
Sample wt/vol: 0.5(mL)
Date Analyzed: 02/17/2012 19:48
Soil Aliquot Vol:
Dilution Factor: 1
Soil Extract Vol.:
GC Column: ZB-5 ID: 0.25(mm)
% Moisture:
Level: (low/med) Low
Analysis Batch No.: 51962
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
107-21-1	Ethylene glycol	ND		10	0.76

CAS NO.	SURROGATE	%REC	Q	LIMITS
110-63-4	1,4-Butanediol	106		66-130

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-16217-1

SDG No.:

Client Sample ID: HW59 | Lab Sample ID: 480-16217-13

Matrix: Water | Lab File ID: PE09262.d

Analysis Method: 8015B | Date Collected: 02/14/2012 10:33

Sample wt/vol: 0.5(mL) | Date Analyzed: 02/17/2012 20:05

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: ZB-5 ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 51962 | Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
107-21-1	Ethylene glycol	ND		10	0.76

CAS NO.	SURROGATE	%REC	Q	LIMITS
110-63-4	1,4-Butanediol	107		66-130

Appendix B
Support Documentation

GC VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Instrument ID: PE-01 Start Date: 02/01/2012 10:57

Analysis Batch Number: 49964 End Date: 02/01/2012 19:02

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		02/01/2012 10:57	1		ZB-5 0.25(mm)
STD 480-49964/5 IC		02/01/2012 11:15	1	PE08205.d	ZB-5 0.25(mm)
STD 480-49964/6 IC		02/01/2012 11:32	1	PE08206.d	ZB-5 0.25(mm)
STD 480-49964/7 IC		02/01/2012 11:49	1	PE08207.d	ZB-5 0.25(mm)
STD 480-49964/8 IC		02/01/2012 12:06	1	PE08208.d	ZB-5 0.25(mm)
ICV 480-49964/9		02/01/2012 12:24	1		ZB-5 0.25(mm)
ZZZZZ		02/01/2012 13:43	1		ZB-5 0.25(mm)
ZZZZZ		02/01/2012 14:11	1		ZB-5 0.25(mm)
ICV 480-49964/12		02/01/2012 14:48	1		ZB-5 0.25(mm)
CCV 480-49964/13		02/01/2012 15:52	1		ZB-5 0.25(mm)
ZZZZZ		02/01/2012 16:09	1		ZB-5 0.25(mm)
ZZZZZ		02/01/2012 16:26	1		ZB-5 0.25(mm)
ZZZZZ		02/01/2012 16:44	1		ZB-5 0.25(mm)
ZZZZZ		02/01/2012 17:01	1		ZB-5 0.25(mm)
MDLV 480-49832/5-A		02/01/2012 17:18	1		ZB-5 0.25(mm)
MDLV 480-49832/6-A		02/01/2012 17:36	1		ZB-5 0.25(mm)
ZZZZZ		02/01/2012 17:53	50		ZB-5 0.25(mm)
		02/01/2012 18:10	1		ZB-5 0.25(mm)
CCV 480-49964/24		02/01/2012 19:02	1		ZB-5 0.25(mm)

8015B

FORM VI
GC VOA INITIAL CALIBRATION DATA
EXTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1 Analy Batch No.: 49964

SDG No.:

Instrument ID: PE-01 GC Column: ZB-5 ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/01/2012 10:57 Calibration End Date: 02/01/2012 12:06 Calibration ID: 5852

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD 480-49964/5	PE08205.d
Level 2	STD 480-49964/6	PE08206.d
Level 3	STD 480-49964/7	PE08207.d
Level 4	STD 480-49964/8	PE08208.d

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4		B	M1	M2								
2-Methoxyethanol	563452	596737	595761	513714	Ave		571859.509				6.2		20.0			
2-Ethoxyethanol	751570	792686	787469	694526	Ave		760510.780				5.3		20.0			
Propylene glycol	617951	671784	682739	601502	Ave		643217.933				5.4		20.0			
Ethylene glycol	459250	498692	513964	454783	Ave		480568.287				5.3		20.0			
2,2'-Oxybisethanol	548106	538716	560304	500903	Ave		540870.511				4.4		20.0			
Triethylene Glycol	362706	305218	329041	307007	Ave		350933.990				17.0		20.0			
1,4-Butanediol	913252	977122	967058	853325	Ave		917742.130				5.9		20.0			

Note: The m1 coefficient is the same as Ave CF for an Ave curve type.

GC VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Instrument ID: PE-01 Start Date: 02/17/2012 08:17

Analysis Batch Number: 51962 End Date: 02/17/2012 20:23

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 480-51962/3		02/17/2012 08:17	1		ZB-5 0.25(mm)
ZZZZZ		02/17/2012 08:57	1		ZB-5 0.25(mm)
ZZZZZ		02/17/2012 09:14	1		ZB-5 0.25(mm)
ZZZZZ		02/17/2012 09:59	1		ZB-5 0.25(mm)
ZZZZZ		02/17/2012 10:17	1		ZB-5 0.25(mm)
ZZZZZ		02/17/2012 10:34	1		ZB-5 0.25(mm)
ZZZZZ		02/17/2012 10:51	1		ZB-5 0.25(mm)
ZZZZZ		02/17/2012 11:09	1		ZB-5 0.25(mm)
ZZZZZ		02/17/2012 11:26	1		ZB-5 0.25(mm)
ZZZZZ		02/17/2012 11:43	1		ZB-5 0.25(mm)
ZZZZZ		02/17/2012 12:01	1		ZB-5 0.25(mm)
CCV 480-51962/14		02/17/2012 12:18	1		ZB-5 0.25(mm)
ZZZZZ		02/17/2012 12:35	1		ZB-5 0.25(mm)
ZZZZZ		02/17/2012 12:53	1		ZB-5 0.25(mm)
ZZZZZ		02/17/2012 13:10	1		ZB-5 0.25(mm)
ZZZZZ		02/17/2012 13:27	1		ZB-5 0.25(mm)
ZZZZZ		02/17/2012 13:45	1		ZB-5 0.25(mm)
ZZZZZ		02/17/2012 14:02	1		ZB-5 0.25(mm)
ZZZZZ		02/17/2012 14:19	1		ZB-5 0.25(mm)
ZZZZZ		02/17/2012 14:37	1		ZB-5 0.25(mm)
CCV 480-51962/23		02/17/2012 14:54	1	PE09244.d	ZB-5 0.25(mm)
MB 480-51945/1-A		02/17/2012 15:11	1	PE09245.d	ZB-5 0.25(mm)
LCS 480-51945/2-A		02/17/2012 15:29	1	PE09246.d	ZB-5 0.25(mm)
480-16217-1	FB17	02/17/2012 15:46	1	PE09247.d	ZB-5 0.25(mm)
480-16217-2	FB18	02/17/2012 16:03	1	PE09248.d	ZB-5 0.25(mm)
480-16217-3	HW03	02/17/2012 16:20	1	PE09249.d	ZB-5 0.25(mm)
480-16217-4	HW03Z	02/17/2012 16:38	1	PE09250.d	ZB-5 0.25(mm)
480-16217-5	HW07	02/17/2012 16:55	1	PE09251.d	ZB-5 0.25(mm)
480-16217-6	HW11	02/17/2012 17:12	1	PE09252.d	ZB-5 0.25(mm)
480-16217-7	HW11-P	02/17/2012 17:30	1	PE09253.d	ZB-5 0.25(mm)
480-16217-8	HW53	02/17/2012 17:47	1	PE09254.d	ZB-5 0.25(mm)
CCV 480-51962/34		02/17/2012 18:04	1	PE09255.d	ZB-5 0.25(mm)
480-16217-9	HW53-P	02/17/2012 18:21	1	PE09256.d	ZB-5 0.25(mm)
480-16217-10	HW57	02/17/2012 18:39	1	PE09257.d	ZB-5 0.25(mm)
480-16217-10 MS	HW57 MS	02/17/2012 18:56	1	PE09258.d	ZB-5 0.25(mm)
480-16217-10 MSD	HW57 MSD	02/17/2012 19:13	1	PE09259.d	ZB-5 0.25(mm)
480-16217-11	HW57-P	02/17/2012 19:31	1	PE09260.d	ZB-5 0.25(mm)
480-16217-12	HW58	02/17/2012 19:48	1	PE09261.d	ZB-5 0.25(mm)
480-16217-13	HW59	02/17/2012 20:05	1	PE09262.d	ZB-5 0.25(mm)
CCV 480-51962/42		02/17/2012 20:23	1	PE09263.d	ZB-5 0.25(mm)

8015B

FORM VII
GC VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Lab Sample ID: CCV 480-51962/23 Calibration Date: 02/17/2012 14:54

Instrument ID: PE-01 Calib Start Date: 02/01/2012 10:57

GC Column: ZB-5 ID: 0.25(mm) Calib End Date: 02/01/2012 12:06

Lab File ID: PE09244.d Conc. Units: ng/uL Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2-Methoxyethanol	Ave	571860	664765		23.2	20.0	16.2	20.0
2-Ethoxyethanol	Ave	760511	886892		23.3	20.0	16.6	20.0
Propylene glycol	Ave	643218	742282		23.1	20.0	15.4	20.0
Ethylene glycol	Ave	480568	549536		22.9	20.0	14.4	20.0
2,2'-Oxybisethanol	Ave	540871	606742		22.4	20.0	12.2	20.0
Triethylene Glycol	Ave	350934	315363		18.0	20.0	-10.1	20.0
1,4-Butanediol	Ave	917742	944359		51.5	50.0	2.9	20.0

FORM VII 8015B

FORM VII
GC VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Lab Sample ID: CCV 480-51962/34 Calibration Date: 02/17/2012 18:04

Instrument ID: PE-01 Calib Start Date: 02/01/2012 10:57

GC Column: ZB-5 ID: 0.25(mm) Calib End Date: 02/01/2012 12:06

Lab File ID: PE09255.d Conc. Units: ng/uL Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2-Methoxyethanol	Ave	571860	717780		25.1	20.0	25.5*	20.0
2-Ethoxyethanol	Ave	760511	975186		25.6	20.0	28.2*	20.0
Propylene glycol	Ave	643218	816023		25.4	20.0	26.9*	20.0
Ethylene glycol	Ave	480568	607592		25.3	20.0	26.4*	20.0
2,2'-Oxybisethanol	Ave	540871	628010		23.2	20.0	16.1	20.0
Triethylene Glycol	Ave	350934	282432		16.1	20.0	-19.5	20.0
1,4-Butanediol	Ave	917742	1050612		57.2	50.0	14.5	20.0

FORM VII 8015B

FORM VII
GC VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Lab Sample ID: CCV 480-51962/42 Calibration Date: 02/17/2012 20:23

Instrument ID: PE-01 Calib Start Date: 02/01/2012 10:57

GC Column: ZB-5 ID: 0.25(mm) Calib End Date: 02/01/2012 12:06

Lab File ID: PE09263.d Conc. Units: ng/uL Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2-Methoxyethanol	Ave	571860	665354		23.3	20.0	16.3	20.0
2-Ethoxyethanol	Ave	760511	887579		23.3	20.0	16.7	20.0
Propylene glycol	Ave	643218	738443		23.0	20.0	14.8	20.0
Ethylene glycol	Ave	480568	542614		22.6	20.0	12.9	20.0
2,2'-Oxybisethanol	Ave	540871	550061		20.3	20.0	1.7	20.0
Triethylene Glycol	Ave	350934	227901		13.0	20.0	-35.1*	20.0
1,4-Butanediol	Ave	917742	939149		51.2	50.0	2.3	20.0

FORM VII 8015B

FORM III
GC VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Matrix: Water Level: Low Lab File ID: PE09246.d

Lab ID: LCS 480-51945/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC	QC LIMITS REC	#
Ethylene glycol	20.0	19.0	95	62-148	

Column to be used to flag recovery and RPD values

FORM III 8015B

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo
Job No.: 480-16217-1
SDG No.:
Client Sample ID:
Lab Sample ID: LCS 480-51945/2-A
Matrix: Water
Lab File ID: PE09246.d
Analysis Method: 8015B
Date Collected:
Sample wt/vol: 0.5(mL)
Date Analyzed: 02/17/2012 15:29
Soil Aliquot Vol:
Dilution Factor: 1
Soil Extract Vol.:
GC Column: ZB-5 ID: 0.25(mm)
% Moisture:
Level: (low/med) Low
Analysis Batch No.: 51962
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
107-21-1	Ethylene glycol	19.0		10	0.76

CAS NO.	SURROGATE	%REC	Q	LIMITS
110-63-4	1,4-Butanediol	100		66-130

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Client Sample ID: HW57 MS Lab Sample ID: 480-16217-10 MS

Matrix: Water Lab File ID: PE09258.d

Analysis Method: 8015B Date Collected: 02/14/2012 10:07

Sample wt/vol: 0.5(mL) Date Analyzed: 02/17/2012 18:56

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-5 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 51962 Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
107-21-1	Ethylene glycol	20.2		10	0.76

CAS NO.	SURROGATE	%REC	Q	LIMITS
110-63-4	1,4-Butanediol	105		66-130

FORM III
GC VOA MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Matrix: Water Level: Low Lab File ID: PE09258.d

Lab ID: 480-16217-10 MS Client ID: HW57 MS

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC	QC LIMITS REC	#
Ethylene glycol	20.0	ND	20.2	101	50-150	

Column to be used to flag recovery and RPD values

FORM III 8015B

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo
Job No.: 480-16217-1
SDG No.:
Client Sample ID: HW57 MSD
Lab Sample ID: 480-16217-10 MSD
Matrix: Water
Lab File ID: PE09259.d
Analysis Method: 8015B
Date Collected: 02/14/2012 10:07
Sample wt/vol: 0.5(mL)
Date Analyzed: 02/17/2012 19:13
Soil Aliquot Vol:
Dilution Factor: 1
Soil Extract Vol.:
GC Column: ZB-5 ID: 0.25(mm)
% Moisture:
Level: (low/med) Low
Analysis Batch No.: 51962
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
107-21-1	Ethylene glycol	20.2		10	0.76

CAS NO.	SURROGATE	%REC	Q	LIMITS
110-63-4	1,4-Butanediol	106		66-130

FORM I 8015B

FORM III
GC VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Matrix: Water Level: Low Lab File ID: PE09259.d

Lab ID: 480-16217-10 MSD Client ID: HW57 MSD

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Ethylene glycol	20.0	20.2	101	0	50	50-150	

Column to be used to flag recovery and RPD values

FORM III 8015B

FORM II
GC VOA SURROGATE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): ZB-5 ID: 0.25 (mm)

Client Sample ID	Lab Sample ID	14BD1 #
FB17	480-16217-1	103
FB18	480-16217-2	105
HW03	480-16217-3	115
HW03Z	480-16217-4	104
HW07	480-16217-5	113
HW11	480-16217-6	108
HW11-P	480-16217-7	108
HW53	480-16217-8	106
HW53-P	480-16217-9	103
HW57	480-16217-10	109
HW57-P	480-16217-11	112
HW58	480-16217-12	106
HW59	480-16217-13	107
	MB 480-51945/1-A	101
	LCS 480-51945/2-A	100
HW57 MS	480-16217-10 MS	105
HW57 MSD	480-16217-10 MSD	106

QC LIMITS
66-130

14BD = 1,4-Butanediol

Column to be used to flag recovery values

FORM II 8015B

GC VOA BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Batch Number: 51945 Batch Start Date: 02/17/12 06:57 Batch Analyst: Neary, Mary Ann

Batch Method: 8015 Prep Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	GLY_CCV_1000 00014	GLY_SURR1000 00016		
MB 480-51945/1		8015 Prep, 8015B		0.5 mL	1 mL		50 uL		
LCS 480-51945/2		8015 Prep, 8015B		0.5 mL	1 mL	10 uL	50 uL		
480-16217-B-1	FB17	8015 Prep, 8015B	T	0.5 mL	1 mL		50 uL		
480-16217-B-2	FB18	8015 Prep, 8015B	T	0.5 mL	1 mL		50 uL		
480-16217-A-3	HW03	8015 Prep, 8015B	T	0.5 mL	1 mL		50 uL		
480-16217-B-4	HW03Z	8015 Prep, 8015B	T	0.5 mL	1 mL		50 uL		
480-16217-B-5	HW07	8015 Prep, 8015B	T	0.5 mL	1 mL		50 uL		
480-16217-B-6	HW11	8015 Prep, 8015B	T	0.5 mL	1 mL		50 uL		
480-16217-B-7	HW11-P	8015 Prep, 8015B	T	0.5 mL	1 mL		50 uL		
480-16217-B-8	HW53	8015 Prep, 8015B	T	0.5 mL	1 mL		50 uL		
480-16217-B-9	HW53-P	8015 Prep, 8015B	T	0.5 mL	1 mL		50 uL		
480-16217-B-10	HW57	8015 Prep, 8015B	T	0.5 mL	1 mL		50 uL		
480-16217-A-10 MS	HW57	8015 Prep, 8015B	T	0.5 mL	1 mL	10 uL	50 uL		
480-16217-A-10 MSD	HW57	8015 Prep, 8015B	T	0.5 mL	1 mL	10 uL	50 uL		
480-16217-B-11	HW57-P	8015 Prep, 8015B	T	0.5 mL	1 mL		50 uL		
480-16217-B-12	HW58	8015 Prep, 8015B	T	0.5 mL	1 mL		50 uL		
480-16217-B-13	HW59	8015 Prep, 8015B	T	0.5 mL	1 mL		50 uL		

Batch Notes	
Methanol Lot Number	de997

Basis	Basis Description
T	Total/NA

FORM IV
GC VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Lab Sample ID: MB 480-51945/1-A

Matrix: Water Date Extracted: 02/17/2012 06:57

Lab File ID:(1) PE09245.d Lab File ID:(2)

Date Analyzed:(1) 02/17/2012 15:11 Date Analyzed:(2)

Instrument ID:(1) PE-01 Instrument ID:(2)

GC Column:(1) ZB-5 ID: 0.25(mm) GC Column:(2) ID:

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	LCS 480-51945/2-A	02/17/2012 15:29	
FB17	480-16217-1	02/17/2012 15:46	
FB18	480-16217-2	02/17/2012 16:03	
HW03	480-16217-3	02/17/2012 16:20	
HW03Z	480-16217-4	02/17/2012 16:38	
HW07	480-16217-5	02/17/2012 16:55	
HW11	480-16217-6	02/17/2012 17:12	
HW11-P	480-16217-7	02/17/2012 17:30	
HW53	480-16217-8	02/17/2012 17:47	
HW53-P	480-16217-9	02/17/2012 18:21	
HW57	480-16217-10	02/17/2012 18:39	
HW57 MS	480-16217-10 MS	02/17/2012 18:56	
HW57 MSD	480-16217-10 MSD	02/17/2012 19:13	
HW57-P	480-16217-11	02/17/2012 19:31	
HW58	480-16217-12	02/17/2012 19:48	
HW59	480-16217-13	02/17/2012 20:05	

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-16217-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 480-51945/1-A

Matrix: Water Lab File ID: PE09245.d

Analysis Method: 8015B Date Collected:

Sample wt/vol: 0.5(mL) Date Analyzed: 02/17/2012 15:11

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-5 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 51962 Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
107-21-1	Ethylene glycol	ND		10	0.76

CAS NO.	SURROGATE	%REC	Q	LIMITS
110-63-4	1,4-Butanediol	101		66-130