

**VERTICAL PROFILE BORING (VPB) – 133
OU 2 OFF-SITE GROUNDWATER INVESTIGATION
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP)
BETHPAGE, NEW YORK**

GROUNDWATER ANALYTICAL DATA GROUPS

- SDG D1061
- SDG D1108
- SDG D1148
- SDG D1208
- SDG D1280
- SDG D1320
- SDG D1365
- SDG D1436

D1066



TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER N^o 1152 | PAGE OF

PROJECT NO: 112600622
 FACILITY: *BRIDGE 012*
 SAMPLERS (SIGNATURE): *[Signature]*

LABORATORY NAME AND CONTACT: *CHAMBER*
 ADDRESS: *284 Shorthold Street*
 CITY, STATE: *Mountainside NJ 07092*

PHONE NUMBER: 757-461-3768
 PHONE NUMBER: 917-496-9203

PROJECT MANAGER: *DAVID BENNAK*
 FIELD OPERATIONS LEADER: *J. Ferguson*

CARRIERWAYBILL NUMBER: 8735 5966 0358

DATE	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC ETC)	COLLECTION METHOD	COMP (G) GRAB (G)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	COMMENTS
01/04	11:20	BP-VPB133-GW-058	VPB 133	57'	58'	GW	G	G	1	G		
01/04	08:30	BP-VPB-TB-010412		N/A	N/A	GW	G	G	2	G		
01/04	16:00	BP-VPB133-GW-114	VPB 133	113'	114'	GW	G	G	2	G		H ₂ M SPURT
01/05	11:55	BP-VPB133-GW-146	VPB 133	147'	148'	GW	G	G	1	G		
01/05	13:35	BP-VPB133-GW-150	VPB 133	149'	150'	GW	G	G	2	G		H ₂ M SPURT
01/06	12:25	BP-VPB133-GW-194	VPB 133	198'	199'	GW	G	G	1	G		H ₂ M SPURT

1. RELINQUISHED BY: *[Signature]* DATE: 01/06/2013 TIME: 14:20

2. RELINQUISHED BY: *[Signature]* DATE: 01/06/2013 TIME: 14:30

3. RELINQUISHED BY: *FedEx* DATE: 1/7/12 TIME: 9:45

COMMENTS: *TRAIL UPK*

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

D1108

PROJECT NO: **112600622** FACILITY: **BETHANE 00-2** LABORATORY NAME AND CONTACT: **ChromBET**
 SAMPLERS (SIGNATURE): *[Signature]* FIELD OPERATIONS LEADER: **J. Ferguson / S. Cantz** ADDRESS: **284 Sheffield Street**
 CARRIERWAYBILL NUMBER: **8993 8010 8761** CITY, STATE: **Mechanicville NY 01203**

STANDARD TAT 24 hr. 48 hr. 72 hr. 7 day 14 day
 RUSH TAT *Fast Results*

DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, OC, ETC.)	COLLECTION METHOD	GRAB (G) COMP (C)	NO. OF CONTAINERS	CONTAINER TYPE	PRESERVATIVE USED	TYPE OF ANALYSIS	COMMENTS
01-09	11:00	BP-VPB-TB-010912	VPB 133	—	—	GW	G	G	2	G			
01-09	13:10	BP-VPB-133-GW-234	VPB 133	233	234	GW	G	G	2	G			Split sample
01-09	15:05	BP-VPB133-GW-254	VPB 133	253	254	GW	G	G	2	G			Split sample
01-10	10:10	BP-VPB133-GW-274	VPB 133	273	274	GW	G	G	2	G			Split sample
1-10	12:10	BP-VPB133-GW-294	VPB 133	293	294	GW	G	G	2	G			Split sample
1-10	15:15	BP-VPB133-GW-314	VPB 133	313	314	GW	G	G	2	G			Split sample
1-11	10:30	BP-VPB133-GW-334	VPB 133	333	334	GW	G	G	2	G			"
1-11	13:00	BP-VPB133-GW-354	VPB 133	353	354	GW	G	G	2	G			"
1-11	16:30	BP-VPB133-GW-374	VPB 133	373	374	GW	G	G	2	G			"

1. RELINQUISHED BY: *[Signature]* DATE: **1/11/12** TIME: **18:00** 1. RECEIVED BY: **FEDEX** DATE: **1/12/12** TIME: **18:00**
 2. RELINQUISHED BY: *[Signature]* DATE: **1/11/12** TIME: **9:10** 2. RECEIVED BY: **FEDEX** DATE: **1/12/12** TIME: **9:10**
 3. RELINQUISHED BY: **FEDEX** DATE: **1/12/12** TIME: **9:10** 3. RECEIVED BY: **FEDEX** DATE: **1/12/12** TIME: **9:10**

COMMENTS: **White (Accompanies Sample)**



TETRA TECH, INC.

CHAIN OF CUSTODY

NUMBER N^o 1165

PAGE 1 OF 1

D 1148

PROJECT NO: 112600622
 FACILITY: Bermudez 023 VPB133
 SAMPLERS (SIGNATURE):

PROJECT MANAGER: David Boyack
 FIELD OPERATIONS LEADER: Jim Furusawa
 CARRIERWAYBILL NUMBER: 8993 8010 8772

LABORATORY NAME AND CONTACT: WILMINGTON (K. HANDEL)
 ADDRESS: 284 Shoffield Street
 CITY, STATE: Newarkside NJ 07103

PHONE NUMBER: 757 461 3368
 PHONE NUMBER: 412-496-9283

STANDARD TAT
 RUSH TAT 24 hr. 48 hr. 72 hr. 7 day 14 day

DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD	COMP (C) GRAB (G)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS	COMMENTS
1/12	08:00	BP-VPB-7B-0112-12	VPB 133	393	394	GW	G	G	2	X			
1/12	10:55	BP-VPB133-GW-394	VPB 133	413	414	GW	G	G	1	X			no sufficient volume for split with H2O2
1/12	12:35	BP-VPB133-GW-414	VPB 133	433	434	GW	G	G	3	X			
1/12	12:40	BP-VPB133-GW-434	VPB 133	454	454	GW	G	G	3	X			split sample H2O2
1/12	10:15	BP-VPB133-GW-454	VPB 133	473	474	GW	G	G	2	X			
1/12	12:15	BP-VPB133-GW-474	VPB 133	493	494	GW	G	G	2	X			
1/12	14:10	BP-VPB133-GW-494	VPB 133										

1. RELINQUISHED BY:
 TIME: 16:30 DATE: 1/13/2012

2. RELINQUISHED BY:
 TIME: 10:45 DATE: 1/14/12

3. RELINQUISHED BY:
 TIME: 10:45 DATE: 1/14/12

RECEIVED BY: FedEx TIME: 16:30 DATE: 1/13/2012

RECEIVED BY: Ken Burns TIME: 10:45 DATE: 1/14/12

RECEIVED BY: Ken Burns TIME: 10:45 DATE: 1/14/12

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

FORM NO. TTH115-001 4/02R

D1208



TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER **Nº 1151** | PAGE **OF**

PROJECT NO: **112600622** FACILITY: **EMPACT OUS VPB133**
 LABORATORY NAME AND CONTACT: **LABORATORY (K. Kimmel)**
 SAMPLERS (SIGNATURE): *[Signature]* ADDRESS: **284 Shirkfield Street**
 CITY, STATE: **Montgomery, AL 36102**
 PROJECT MANAGER: **J. Ferguson / S. Coats**
 FIELD OPERATIONS LEADER: **8987 4256 0978**
 PHONE NUMBER: **757-461-3768**
 PHONE NUMBER: **412-496-9383**
 CARRIER/WAYBILL NUMBER: **8987 4256 0978**

DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC)	COLLECTION METHOD GRAB (G) COMP (C)	NO. OF CONTAINERS	PRESERVATIVE USED	CONTAINER TYPE PLASTIC (P) or GLASS (G)	TYPE OF ANALYSIS	COMMENTS	1. RECEIVED BY	DATE	TIME
													DATE	DATE	TIME
1/16	12:00	BP-VPB133-GW-574	VPB 133	573	574	GW	G	2	X	G	Vertical Organic Comp. ML	SPILT Sample NUS		1/18/2012	17:30
1/16	10:00	BP-VPB-TB-011612				GW	G	2	X	G		TBP Blank			
1/16	16:30	BP-VPB133-GW-534	VPB 133	533	534	GW	G	2	X	G		Atom Split Sample			
1/17	10:30	BP-VPB133-GW-534	VPB 133	533	534	GW	G	2	X	G		Atom Split Sample			
1/17	13:25	BP-VPB133-GW-574	VPB 133	573	574	GW	G	2	X	G		SEMIQUANT in Sample NUS to Analyze from 2008			
1/17	16:00	BP-VPB133-GW-574	VPB 133	573	574	GW	G	2	X	G		16 16 16			
1/18	10:15	BP-VPB133-GW-614	VPB 133	613	614	GW	G	2	X	G		SEMIQUANT in Sample highly permeable zone			
1/18	13:15	BP-VPB133-GW-634	VPB 133	633	634	GW	G	2	X	G		stop reactor for work whilst filling VCC for			
1/18	16:00	BP-VPB133-GW-654	VPB 133	653	654	GW	G	2	X	G		stop sediment control			

1. RELINQUISHED BY: *[Signature]* DATE: **1/18/2012** TIME: **17:30**
 2. RELINQUISHED BY: *[Signature]* DATE: **1/18/2012** TIME: **17:30**
 3. RELINQUISHED BY: **FedEx** DATE: **1/19/12** TIME: **9:10**

COMMENTS: **LABORATORY EXPENSES AB# 8987 4256 0978**

D1280



TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER **Nº 1154** | PAGE **1** OF **1**

PROJECT NO: **1126006022** FACILITY: **ATTN: OUR VPB'S** PROJECT MANAGER: **David BAYAK** LABORATORY NAME AND CONTACT: **Chemstar C.K. Raymond**
 SAMPLERS (SIGNATURE): FIELD OPERATIONS LEADER: **J. Longman / J. Long** ADDRESS: **284 Sheffield Street**
 CARRIERWAY/BILL NUMBER: **8987 4526 0989** CITY, STATE: **Mountainside NJ 07092**

STANDARD TAT RUSH TAT 24 hr. 48 hr. 72 hr. 7 day 14 day

DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD	GRAB (G) COMP (G)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	COMMENTS
1/20	12:20	BP-VPB133-6W-694	VPB 133	693	6W	G	G	2			
1/19	08:00	BP-VPB-TB-011917			6W	G	G	2			
1/23	15:50	BP-VPB133-6W-734	VPB 133	733	6W	G	G	2			
1/20	15:30	BP-VPB133-6W-703	VPB 133	703	6W	G	G	2			
1/23	11:40	BP-VPB133-6W-714	VPB 133	713	6W	G	G	2			
1/24	11:00	BP-VPB133-6W-744	VPB 133	743	6W	G	G	2			
1/24	15:50	BP-VPB133-6W-764	VPB 133	763	6W	G	G	2			
1/24	13:00	BP-VPB133-6W-754	VPB 133	753	6W	G	G	2			

1. RELINQUISHED BY: DATE: **1/24/2022** TIME: **18:00** 1. RECEIVED BY: **ASST 8987 4526 0989** DATE: **1/24/2022** TIME: **18:00**
 2. RELINQUISHED BY: DATE: **1/25/22** TIME: **9:10** 2. RECEIVED BY: **PS** DATE: **1/25/22** TIME: **9:10**
 3. RELINQUISHED BY: **PS** DATE: **1/25/22** TIME: **9:10** 3. RECEIVED BY: **PS** DATE: **1/25/22** TIME: **9:10**

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY) 4/02R FORM NO. TNLUS-001

Temp: 49C

TYPE OF ANALYSIS
Vol 5

2nd test on Sample

D1365



TETRA TECHNUS, INC. CHAIN OF CUSTODY NUMBER **1156** | PAGE **1** OF **1**

PROJECT NO: **1260622** FACILITY: **BENTON CO. VTB33** LABORATORY NAME AND CONTACT: **Chambers R. Howard**
 SAMPLERS (SIGNATURE): *[Signature]* FIELD OPERATIONS LEADER: **Tom Logeson / B. Linn** ADDRESS: **284 Sheffield Street**
 CARRIERWAYBILL NUMBER: **8000 4356 0791** CITY, STATE: **Mount Pleasant MS 39092**

DATE	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD	GRAB (G) COMP (G)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	COMMENTS
1/30	11:30	BP-VTB133-GW-844	VPB 133	843	GW	G	G	2	X	-	Clear, Turbid, white/reds.
1/30	14:30	BP-VTB133-GW-854	VPB 133	853	GW	G	G	2	X	X	Clear, Turbid, yellow / suspension
1/30	08:00	BP-VTB133-TB-013017-5F	-	-	GW	G	G	2	-	X	
1/31	10:10	BP-VTB133-GW-864	VPB 133	863	GW	G	G	2	X	-	Cloudy, Turbid
1/31	13:10	BP-VTB133-GW-874	VPB 133	873	GW	G	G	2	X	-	" "
1/31	16:10	BP-VTB133-GW-884	VPB 133	883	GW	G	G	2	X	-	" "
2/1	12:30	BP-VTB133-GW-904	VPB 133	903	GW	G	G	2	X	-	" "

1. RELINQUISHED BY: *[Signature]* DATE: **3/1/2012** TIME: **17:15** 1. RECEIVED BY: **PERMANENT EXPRESS AB# 8000 4356 0791** DATE: **3/1/2012** TIME: **15:45**
 2. RELINQUISHED BY: *[Signature]* DATE: _____ TIME: _____ 2. RECEIVED BY: _____ DATE: _____ TIME: _____
 3. RELINQUISHED BY: **Fedex** DATE: **2/2/12** TIME: **9:15** 3. RECEIVED BY: **Palak Shah** DATE: **2/2/12** TIME: **9:15**

COMMENTS: **Temp 40C**

two vials were sent for this sample no validation action was taken as the alternate vial was available for sample analysis. According to the laboratory, sample BP-VPB133-GW-114 had two (2) of two (2) sample vials with big air bubbles in both vials, sample BP-VPB133-GW-150 had two (2) of two (2) sample vials with medium air bubbles, and sample BP-VPB133-GW-148 had one (1) of one (1) sample vial with small multiple air bubbles. Samples BP-VPB133-GW-114 and BP-VPB133-GW-150 VOC sample positive results were qualified estimated, (J), and the non-detected sample results were qualified rejected, (UR), per the Region 2 data validation guidelines. Sample BP-VPB133-GW-148 VOC results were not qualified for the sample vial small air bubble content identified in the email.

The continuing calibration verification (CCV) percent differences (%D) were greater than the 20% quality control limit for dichlorodifluoromethane, chloromethane, vinyl chloride, 1,1,2-trichlorotrifluoroethane, acetone, and methylene acetate for instrument MSVOAG on 01/10/12 @ 13:13.

Affected samples:

BP-VPB-TB-010412 BP-VPB133-GW-058 BP-VPB133-GW-148
BP-VPB133-GW-194

Action: The aforementioned sample positive and non-detected results for dichlorodifluoromethane, chloromethane, vinyl chloride, 1,1,2-trichlorotrifluoroethane, acetone, and methylene acetate were qualified estimated, (J) and (UJ), respectively.

The laboratory control sample (LCS) percent recoveries (%R) were greater than the quality control limit for chloromethane and 1,2-dibromo-3-chloropropane for batch VBG0110W2.

Affected samples:

BP-VPB-TB-010412 BP-VPB133-GW-058 BP-VPB133-GW-148
BP-VPB133-GW-194

Action: The positive results for chloromethane for samples BP-VPB133-GW-058 and BP-VPB133-GW-148 were qualified estimated, (J). The non-detected chloromethane and 1,2-dibromo-3-chloropropane sample results were not qualified.

The surrogate %R for toluene-d8 was less than the quality control limits for sample BP-VPB133-GW-058.

Action: Sample BP-VPB133-GW-058 positive and non-detected results were qualified estimated, (J) and (UJ), respectively.

Positive results below the limit of quantitation (LOQ) and above the method detection limit (MDL) were qualified as estimated, (J), due to uncertainty near the detection limit.

Additional Comments

The Matrix Spike (MS) and MS duplicate (MSD) %Rs were greater than the quality control limit for chloromethane, methyl tert-butyl ether, and 2-hexanone for a spiked sample from another SDG.

Affected samples: None

Action: No validation action was taken as the sample was not from this SDG.

Forty-nine (49) analytes were reported for VOCs.

Non-detected sample results were reported to the LOD.

Sample BP-VPB133-GW-148 had the analytes octanal and 1,2,3-trichloropropane identified as present in the tentatively identified compound page of the laboratory sample results. This was identified for report completeness and no validation action was necessary.

TO: D. BRAYACK
SDG: D1061


PAGE: 3

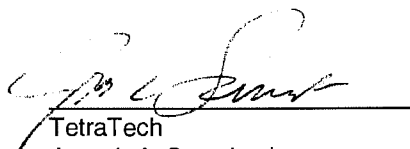
EXECUTIVE SUMMARY

Laboratory Performance Issues: Sample VOC results were qualified for CCV %D, LCS %R, and surrogate %R quality control limit non-compliances.

Other Factors Affecting Data Quality: Sample BP-VPB133-GW-114 and BP-VPB133-GW-150 VOC positive results were qualified and non-detected VOC results rejected for significant air bubble content in the sample vials. Positive results below the LOQ and above the MDL were qualified as estimated, (J), due to uncertainty near the detection limit.

The data for these analyses were reviewed with reference to the USEPA SW-846 Method 8260B, USEPA Region II Hazardous Waste Support Branch Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B SOP HW-24 Revision #2 August 2008 and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (April 2009).


TetraTech
Joseph Kalinyak
Chemist/Data Validator


TetraTech
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

- Appendix A - Qualified Analytical Results
- Appendix B - Results as Reported by the Laboratory
- Appendix C - Region II Data Validation Forms
- Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Value Qualifier Key (Val Qual)

J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The result is an estimated non-detected quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U - Value is a non-detect as reported by the laboratory.

UR – Non-detected result is considered rejected, (UR), as a result of technical non-compliances.

DATA QUALIFICATION CODE (QUAL CODE)

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed

PARAMETER	BP-VPB133-GW-058		BP-VPB133-GW-114		BP-VPB133-GW-148		BP-VPB133-GW-150					
	RESULT	VL	QLCD	RESULT	VL	QLCD	RESULT	VL	QLCD			
PROJ_NO: 00622	NSAMPLE		BP-VPB133-GW-058		BP-VPB133-GW-114		BP-VPB133-GW-148		BP-VPB133-GW-150			
SDG: D1061	LAB_ID		D1061-01		D1061-03		D1061-04		D1061-05			
FRACTION: OV	SAMP_DATE		1/4/2012		1/4/2012		1/5/2012		1/5/2012			
MEDIA: WATER	QC_TYPE		NM		NM		NM		NM			
	UNITS		UG/L		UG/L		UG/L		UG/L			
	PCT_SOLIDS		0.0		0.0		0.0		0.0			
	DUP_OF											
	RESULT	VL	QLCD	RESULT	VL	QLCD	RESULT	VL	QLCD	RESULT	VL	QLCD
1,1-TRICHLOROETHANE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
1,1,2,2-TETRACHLOROETHANE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
1,1,2-TRICHLOROETHANE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5 UJ		CR	0.5 UR		Q	0.5 UJ		C	0.5 UR		Q
1,1-DICHLOROETHANE	0.5 UJ		R	0.5 UR		Q	1.3			1.1 J		Q
1,1-DICHLOROETHENE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.63 J		PQ
1,2,4-TRICHLOROBENZENE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
1,2-DIBROMO-3-CHLOROPROPANE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
1,2-DIBROMOETHANE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
1,2-DICHLOROBENZENE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
1,2-DICHLOROETHANE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
1,2-DICHLOROPROPANE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
1,3-DICHLOROBENZENE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
1,4-DICHLOROBENZENE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
2-BUTANONE	2.5 UJ		R	2.5 UR		Q	4.9 J		P	2.5 UR		Q
2-HEXANONE	2.5 UJ		R	2.5 UR		Q	2.5 U			2.5 UR		Q
4-METHYL-2-PENTANONE	2.5 UJ		R	2.5 UR		Q	2.5 U			2.5 UR		Q
ACETONE	42 J		CR	5.5 J		Q	27 J		C	3.8 J		PQ
BENZENE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
BROMODICHLOROMETHANE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
BROMOFORM	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
BROMOMETHANE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
CARBON DISULFIDE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
CARBON TETRACHLORIDE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
CHLOROBENZENE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
CHLORODIBROMOMETHANE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
CHLOROETHANE	1.7 J		R	0.5 UR		Q	0.5 U			0.5 UR		Q
CHLOROFORM	0.5 J		PR	0.5 UR		Q	0.5 U			0.42 J		PQ
CHLOROMETHANE	2.1 J		CER	0.5 UR		Q	4 J		CE	0.5 UR		Q
CIS-1,2-DICHLOROETHENE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
CIS-1,3-DICHLOROPROPENE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
CYCLOHEXANE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
DICHLORODIFLUOROMETHANE	0.5 UJ		CR	0.5 UR		Q	0.5 UJ		C	0.5 UR		Q
ETHYLBENZENE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q
ISOPROPYLBENZENE	0.5 UJ		R	0.5 UR		Q	0.5 U			0.5 UR		Q

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-194	BP-VPB-TB-010412
SDG: D1061	LAB_ID	D1061-06	D1061-02
FRACTION: OV	SAMP_DATE	1/6/2012	1/4/2012
MEDIA: WATER	QC_TYPE	NM	NM
	UNITS	UG/L	UG/L
	PCT_SOLIDS	0.0	0.0
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5 UJ	0.5 UJ	0.5 UJ C
1,1-DICHLOROETHANE	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	0.5 U	0.5 U	0.5 U
1,2,4-TRICHLOROBENZENE	0.5 U	0.5 U	0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	0.5 U	0.5 U	0.5 U
1,2-DIBROMOETHANE	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.5 U	0.5 U	0.5 U
1,2-DICHLOROPROPANE	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	0.5 U	0.5 U	0.5 U
2-BUTANONE	2.5 U	2.5 U	2.5 U
2-HEXANONE	2.5 U	2.5 U	2.5 U
4-METHYL-2-PENTANONE	2.5 U	2.5 U	2.5 U
ACETONE	2.5 UJ	2.5 UJ	2.5 UJ C
BENZENE	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.5 U	0.5 U	0.5 U
BROMOFORM	0.5 U	0.5 U	0.5 U
BROMOMETHANE	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	0.5 U	0.5 U	0.5 U
CHLOROETHANE	0.5 U	0.5 U	0.5 U
CHLOROFORM	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	0.5 UJ	0.5 UJ	0.5 UJ C
CIS-1,2-DICHLOROETHENE	0.5 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.5 U	0.5 U	0.5 U
CYCLOHEXANE	0.5 U	0.5 U	0.5 U
DICHLORODIFLUOROMETHANE	0.5 UJ	0.5 UJ	0.5 UJ C
ETHYLBENZENE	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	0.5 U	0.5 U	0.5 U

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-058			BP-VPB133-GW-114			BP-VPB133-GW-148			BP-VPB133-GW-150							
		LAB_ID	D1061-01	D1061-03	D1061-04	D1061-05	SAMP_DATE	1/4/2012	1/5/2012	1/5/2012	QC_TYPE	NM	NM	UG/L	UG/L	UG/L	0.0	0.0
FRACTION: OV	QC_TYPE	NM	NM	NM	NM	UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
MEDIA: WATER	PCT_SOLIDS	0.0	0.0	0.0	0.0	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	1 UJ	1 UJ	R	1 UR	1 UR	Q	1 U	1 U	Q	1 UR	1 UR	Q	1 UR	1 UR	Q	1 UR	1 UR	Q
METHYL ACETATE	0.5 UJ	0.5 UJ	CR	0.5 UR	0.5 UR	Q	0.5 UJ	0.5 UJ	Q	0.5 UR	0.5 UR	C	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
METHYL CYCLOHEXANE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UR	Q	0.5 U	0.5 U	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
METHYL TERT-BUTYL ETHER	2.6 J	2.6 J	R	0.5 UR	0.5 UR	Q	2.2	2.2	Q	0.5 UR	0.5 UR	Q	2.3 J	2.3 J	Q	0.5 UR	0.5 UR	Q
METHYLENE CHLORIDE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UR	Q	0.5 U	0.5 U	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
O-XYLENE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UR	Q	0.5 U	0.5 U	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
STYRENE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UR	Q	0.5 U	0.5 U	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
TETRACHLOROETHENE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UR	Q	0.5 U	0.5 U	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
TOLUENE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UR	Q	0.5 U	0.5 U	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
TRANS-1,2-DICHLOROETHENE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UR	Q	0.5 U	0.5 U	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
TRANS-1,3-DICHLOROPROPENE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UR	Q	0.5 U	0.5 U	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
TRICHLOROETHENE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UR	Q	0.5 UJ	0.5 UJ	Q	0.5 UR	0.5 UR	Q	0.79 J	0.79 J	Q	1.4 J	1.4 J	Q
TRICHLOROFLUOROMETHANE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UR	Q	0.5 U	0.5 U	Q	0.5 UR	0.5 UR	Q	0.5 U	0.5 U	Q	0.5 UR	0.5 UR	Q
VINYL CHLORIDE	0.5 UJ	0.5 UJ	CR	0.5 UR	0.5 UR	Q	0.5 UJ	0.5 UJ	Q	0.5 UR	0.5 UR	C	0.5 UJ	0.5 UJ	Q	0.5 UR	0.5 UR	Q

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-194	BP-VPB-TB-010412			
SDG: D1061	LAB_ID	D1061-06	D1061-02			
FRACTION: OV	SAMP_DATE	1/6/2012	1/4/2012			
MEDIA: WATER	QC_TYPE	NM	NM			
	UNITS	UG/L	UG/L			
	PCT_SOLIDS	0.0	0.0			
	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	1 U	1 U		1 U	1 U	
METHYL ACETATE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
METHYL CYCLOHEXANE	0.5 U	0.5 U		0.5 U	0.5 U	
METHYL TERT-BUTYL ETHER	0.5 U	0.5 U		0.5 U	0.5 U	
METHYLENE CHLORIDE	0.5 U	0.5 U		0.5 U	0.5 U	
O-XYLENE	0.5 U	0.5 U		0.5 U	0.5 U	
STYRENE	0.5 U	0.5 U		0.5 U	0.5 U	
TETRACHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U	
TOLUENE	0.5 U	0.5 U		0.5 U	0.5 U	
TRANS-1,2-DICHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U	
TRANS-1,3-DICHLOROPROPENE	0.5 U	0.5 U		0.5 U	0.5 U	
TRICHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U	
TRICHLOROFLUOROMETHANE	0.5 U	0.5 U		0.5 U	0.5 U	
VINYL CHLORIDE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C

TO: D. Brayack
FROM: A. Cognetti
SDG: D1108
DATE: February 21, 2012
PAGE: 2

The continuing calibration percent differences (%Ds) for several target analytes were greater than the 20% quality control limit On January 13, 2012 @ 16:35 on instrument MSVOA R. The analytes were carbon tetrachloride, chloroform, trans- 1,3-dichloropropene, dibromochloromethane and bromoform. The nondetected bromoform results were qualified as estimated (UJ) in the affected samples BP-VPB133-GW-234, BP-VPB133-GW-254, BP-VPB133-GW-274, BP-VPB133-GW-294, BP-VPB133-GW-314, BP-VPB133-GW-334, BP-VPB133-GW-354 and BP-VPB133-GW-374.

The initial calibration %RSDs for several target analytes were greater than the 15% quality control limit on January 17, 2012 on instrument MSVOA G. The analytes were bromomethane, chloroethane, acetone, methyl acetate, methylene chloride, 2-butanone, 4-methyl-2-pentanone, 2-hexanone and tetrachloroethene. The nondetected bromomethane, chloroethane, acetone, methyl acetate, methylene chloride, 2-butanone, 4-methyl-2-pentanone, 2-hexanone and tetrachloroethene results were qualified as estimated (UJ) in the affected sample BP-VPB-TB-010912.

The laboratory control sample (LCS) percent recoveries (%Rs) of 2-butanone and cis-1,2-dichloroethene were greater than the upper quality control limit in batch BSR0113W1. The positive 2-butanone and cis-1,2-dichloroethene results were qualified as estimated (J) in the affected samples BP-VPB133-GW-234, BP-VPB133-GW-254, BP-VPB133-GW-274, BP-VPB133-GW-294, BP-VPB133-GW-314, BP-VPB133-GW-334, BP-VPB133-GW-354 and BP-VPB133-GW-374.

Additional Comments

The matrix spike/matrix spike duplicate (MS/MSD) %Rs for cis-1,2-dichloroethene, methyl cyclohexane, trichloroethene, chlorobenzene and o-xylene were outside quality control limits in a sample not included in this SDG. No action was taken on the for cis-1,2-dichloroethene, methyl cyclohexane, trichloroethene, chlorobenzene and o-xylene results. In addition, the %R of ethyl benzene was greater than the upper quality control limit. No action was taken.

Nondetected results are reported to the limit of detection (LOD).

Positive results below the Reporting Limit (RL) and above the detection limit were qualified as estimated, (J), due to uncertainty near the detection limit.

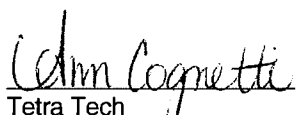
EXECUTIVE SUMMARY

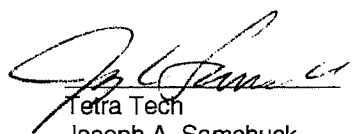
Laboratory Performance Issues: The continuing calibration %Ds and % drifts for several analytes exceeded quality control limits. The %RSDs exceeded the quality control limit for several analytes resulting in the qualification of data. The LCS %Rs of 2-butanone and cis-1,2-dichloroethene were greater than the upper quality control limit.

Other Factors Affecting Data Quality: None.

TO: D. Brayack
FROM: A. Cognetti
SDG: D1108
DATE: February 21, 2012
PAGE: 3

The data for these analyses were reviewed with reference to SOP # HW-24 Revision #2, August 2008, USEPA Region II Hazardous Waste Support Branch Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846/8260B, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories", April 2009. The text of this report has been formulated to address only those problem areas affecting data quality.


Tetra Tech
Ann Cognetti
Chemist/Data Validator


Tetra Tech
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Region II Data Validation Forms
4. Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 00622	NSAMPLE		BP-VPB133-GW-234		BP-VPB133-GW-254		BP-VPB133-GW-274		BP-VPB133-GW-294				
	LAB_ID	D1108-02	D1108-03	D1108-04	D1108-05	SAMP_DATE	1/9/2012	1/10/2012	1/10/2012	QC_TYPE	NM	UG/L	0.0
FRACTION: OV	QC_TYPE	NM	UG/L	0.0	PCT_SOLIDS	0.0	DUP_OF	RESULT	VQL	QLCD	RESULT	VQL	QLCD
MEDIA: WATER	UNITS	UG/L	0.0	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	
1,1,2,2-TETRACHLOROETHANE	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
1,1,2-TRICHLOROETHANE	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
1,1-DICHLOROETHANE	3		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
1,1-DICHLOROETHENE	0.68 J	P	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
1,2,4-TRICHLOROBENZENE	0.46 J	P	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
1,2-DIBROMO-3-CHLOROPROPANE	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	
1,2-DIBROMOETHANE	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
1,2-DICHLOROBENZENE	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
1,2-DICHLOROETHANE	0.51 J	P	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
1,2-DICHLOROPROPANE	2.2		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
1,3-DICHLOROBENZENE	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
1,4-DICHLOROBENZENE	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
2-BUTANONE	2.7 J	EP	13 J	E	2.5 UJ	C	2.5 UJ	C	2.5 UJ	C	2.5 UJ	C	
2-HEXANONE	2.5 UJ	C	2.5 UJ	C	2.5 UJ	C	2.5 UJ	C	2.5 UJ	C	2.5 UJ	C	
4-METHYL-2-PENTANONE	2.5 U		2.5 U		2.5 U		2.5 U		2.5 U		2.5 U		
ACETONE	5 J	P	9.1	P	4.7 J	P	6.8		6.8		6.8		
BENZENE	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
BROMODICHLOROMETHANE	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	
BROMOFORM	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	
BROMOMETHANE	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
CARBON DISULFIDE	0.5 UJ	C	1.8 J	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	
CARBON TETRACHLORIDE	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	
CHLOROBENZENE	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
CHLORODIBROMOMETHANE	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	
CHLOROETHANE	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
CHLOROFORM	3.1 J	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	
CHLOROMETHANE	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
CIS-1,2-DICHLOROETHENE	1.8 J	E	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
CIS-1,3-DICHLOROPROPENE	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	
CYCLOHEXANE	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	
DICHLORODIFLUOROMETHANE	2.1 J	C	2 J	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	
ETHYLBENZENE	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		
ISOPROPYLBENZENE	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	

PROJ_NO: 00622	NSAMPLE		BP-VPB133-GW-314		BP-VPB133-GW-334		BP-VPB133-GW-354		BP-VPB133-GW-374									
	LAB_ID	D1108-06	D1108-07	D1108-08	D1108-09	SAMP_DATE	1/1/2012	1/1/2012	1/1/2012	QC_TYPE	NM	UG/L	0.0					
FRACTION: OV	SAMP_DATE	1/1/2012	NM	UG/L	0.0	PCT_SOLIDS	0.0	DUP_OF	PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
MEDIA: WATER	QC_TYPE	NM	UG/L	0.0	DUP_OF	PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
						1,1,1-TRICHLOROETHANE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
						1,1,2,2-TETRACHLOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						1,1,2-TRICHLOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						1,1,2-TRICHLOROTRIFLUOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						1,1-DICHLOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						1,1-DICHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						1,2,4-TRICHLOROBENZENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						1,2-DIBROMO-3-CHLOROPROPANE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
						1,2-DIBROMOETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						1,2-DICHLOROBENZENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						1,2-DICHLOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						1,2-DICHLOROPROPANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						1,3-DICHLOROBENZENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						1,4-DICHLOROBENZENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						2-BUTANONE	2.5 U	5.5 J	E	2.5 UJ	5.5 J	E	2.5 UJ	5.5 J	E	2.5 UJ	5.5 J	E
						2-HEXANONE	2.5 UJ	2.5 UJ	C	2.5 UJ	2.5 UJ	C	2.5 UJ	2.5 UJ	C	2.5 UJ	2.5 UJ	C
						4-METHYL-2-PENTANONE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
						ACETONE	6.2	7.3		6.2	7.3		6.2	7.3		6.2	7.3	
						BENZENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						BROMODICHLOROMETHANE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
						BROMOFORM	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
						BROMOMETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						CARBON DISULFIDE	0.5 UJ	2.4 J	C	0.5 UJ	2.4 J	C	0.5 UJ	1.6 J	C	0.5 UJ	1.6 J	C
						CARBON TETRACHLORIDE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
						CHLOROBENZENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						CHLORODIBROMOMETHANE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
						CHLOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						CHLOROFORM	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
						CHLOROMETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						CIS-1,2-DICHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						CIS-1,3-DICHLOROPROPENE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
						CYCLOHEXANE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
						DICHLORODIFLUOROMETHANE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
						ETHYLBENZENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
						ISOPROPYLBENZENE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C

PROJ_NO: 00622	NSAMPLE	BP-VPB-TB-010912	
SDG: D1108	LAB_ID	D1108-01	
FRACTION: OV	SAMP_DATE	1/9/2012	
MEDIA: WATER	QC_TYPE	NM	
	UNITS	UG/L	
	PCT_SOLIDS	0.0	
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.5 U		
1,1,2,2-TETRACHLOROETHANE	0.5 U		
1,1,2-TRICHLOROETHANE	0.5 U		
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5 U		
1,1-DICHLOROETHANE	0.5 U		
1,1-DICHLOROETHENE	0.5 U		
1,2,4-TRICHLOROBENZENE	0.5 U		
1,2-DIBROMO-3-CHLOROPROPANE	0.5 U		
1,2-DIBROMOETHANE	0.5 U		
1,2-DICHLOROBENZENE	0.5 U		
1,2-DICHLOROETHANE	0.5 U		
1,2-DICHLOROPROPANE	0.5 U		
1,3-DICHLOROBENZENE	0.5 U		
1,4-DICHLOROBENZENE	0.5 U		
2-BUTANONE	2.5 UJ	C	
2-HEXANONE	2.5 UJ	C	
4-METHYL-2-PENTANONE	2.5 UJ	C	
ACETONE	2.5 UJ	C	
BENZENE	0.5 U		
BROMODICHLOROMETHANE	0.5 U		
BROMOFORM	0.5 U		
BROMOMETHANE	0.5 UJ	C	
CARBON DISULFIDE	0.5 U		
CARBON TETRACHLORIDE	0.5 U		
CHLOROBENZENE	0.5 U		
CHLORODIBROMOMETHANE	0.5 U		
CHLOROETHANE	0.5 UJ	C	
CHLOROFORM	0.5 U		
CHLOROMETHANE	0.5 U		
CIS-1,2-DICHLOROETHENE	0.5 U		
CIS-1,3-DICHLOROPROPENE	0.5 U		
CYCLOHEXANE	0.5 U		
DICHLORODIFLUOROMETHANE	0.5 U		
ETHYLBENZENE	0.5 U		
ISOPROPYLBENZENE	0.5 U		

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-234	BP-VPB133-GW-254	BP-VPB133-GW-274	BP-VPB133-GW-294	
SDG: D1108	LAB_ID	D1108-02	D1108-03	D1108-04	D1108-05	
FRACTION: OV	SAMP_DATE	1/9/2012	1/9/2012	1/10/2012	1/10/2012	
MEDIA: WATER	QC_TYPE	NM	NM	NM	NM	
	UNITS	UG/L	UG/L	UG/L	UG/L	
	PCT_SOLIDS	0.0	0.0	0.0	0.0	
	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	1 U	1 U		1 U	1 U	
METHYL ACETATE	0.5 U	0.5 U		0.5 U	0.5 U	
METHYL CYCLOHEXANE	0.5 U	0.5 U		0.5 U	0.5 U	
METHYL TERT-BUTYL ETHER	8.8	5.4		0.5 U	0.5 U	
METHYLENE CHLORIDE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
O-XYLENE	0.5 U	0.5 U		0.5 U	0.5 U	
STYRENE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
TETRACHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U	
TOLUENE	0.5 U	0.5 U		0.5 U	0.5 U	
TRANS-1,2-DICHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U	
TRANS-1,3-DICHLOROPROPENE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
TRICHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U	
TRICHLOROFLUOROMETHANE	0.5 U	0.5 U		0.5 U	0.5 U	
VINYL CHLORIDE	0.5 U	0.5 U		0.5 U	0.5 U	

PROJ_NO: 00622 SDG: D1108 FRACTION: OV MEDIA: WATER	BP-VPB133-GW-314		BP-VPB133-GW-334		BP-VPB133-GW-354		BP-VPB133-GW-374					
	NSAMPLE	LAB_ID	D1108-06	D1108-07	D1108-08	D1108-09	SAMP_DATE	QC_TYPE	UNITS	PCT_SOLIDS	DUP_OF	
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	1 U	0.5 U		1 U	0.5 U		1 U	0.5 U		1 U	0.5 U	
METHYL ACETATE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
METHYL CYCLOHEXANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
METHYL TERT-BUTYL ETHER	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
METHYLENE CHLORIDE	0.5 U	0.5 U	C	0.5 U	0.5 U	C	0.5 U	0.5 U	C	0.5 U	0.5 U	C
O-XYLENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
STYRENE	0.5 U	0.5 U	C	0.5 U	0.5 U	C	0.5 U	0.5 U	C	0.5 U	0.5 U	C
TETRACHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
TOLUENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
TRANS-1,2-DICHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
TRANS-1,3-DICHLOROPROPENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
TRICHLOROETHENE	0.5 U	0.5 U	C	0.5 U	0.5 U	C	0.5 U	0.5 U	C	0.5 U	0.5 U	C
TRICHLOROFLUOROMETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
VINYL CHLORIDE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	

PROJ_NO: 00622	NSAMPLE	BP-VPB-TB-010912	
SDG: D1108	LAB_ID	D1108-01	
FRACTION: OV	SAMP_DATE	1/9/2012	
MEDIA: WATER	QC_TYPE	NM	
	UNITS	UG/L	
	PCT_SOLIDS	0.0	
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
M+P-XYLENES	1	U	
METHYL ACETATE	0.5	UJ	C
METHYL CYCLOHEXANE	0.5	U	
METHYL TERT-BUTYL ETHER	0.5	U	
METHYLENE CHLORIDE	0.5	UJ	C
O-XYLENE	0.5	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	UJ	C
TOLUENE	0.5	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.5	U	
TRICHLOROETHENE	0.5	U	
TRICHLOROFLUOROMETHANE	0.5	U	
VINYL CHLORIDE	0.5	U	

TO: D. Brayack
FROM: A. Cognetti
SDG: D1148
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pentanone, 2-hexanone and tetrachloroethene results were qualified as estimated (UJ) in the affected samples BP-VPB-TB-0112122, BP-VPB133-GW-434, BP-VPB133-GW-454, BP-VPB133-GW-474 and BP-VPB133-GW-494.

The continuing calibration percent differences and/or percent drifts were greater than the 20% quality control limit for several target analytes on January 18, 2012 @ 5:41 on instrument MSVOAG. The analytes were acetone, methyl acetate and tetrachloroethane. The nondetected acetone, methyl acetate and tetrachloroethane results were qualified as estimated (UJ) in the affected samples BP-VPB-TB-0112122, BP-VPB133-GW-434, BP-VPB133-GW-454, BP-VPB133-GW-474 and BP-VPB133-GW-494.

Due to sediment in samples BP-VPB133-GW-394 and BP-VPB133-GW-414, the laboratory had to analyze them as soil after decanting the top portion of liquid. No validation action was taken.

Additional Comments

The percent recovery (%R) of surrogate 1,2-dichloroethane-d4 was greater than the upper quality control limit in samples BP-VPB-TB-011212, BP-VPB133-GW-434, BP-VPB133-GW-454, BP-VPB133-GW-474 and BP-VPB133-GW-494. No action was taken on the nondetected results in the affected samples.

The matrix spike/matrix spike duplicate (MS/MSD) %Rs for cis-1,2-dichloroethene, methyl cyclohexane, trichloroethene, chlorobenzene and o-xylene were outside quality control limits in a sample not included in this SDG. No action was taken on the for cis-1,2-dichloroethene, methyl cyclohexane, trichloroethene, chlorobenzene and o-xylene results. In addition, the %R of ethyl benzene was greater than the upper quality control limit. No action was taken.

The MS/MSD %Rs of 1,1,2,2-tetrachloroethane was greater than the upper quality control limit in a sample not included in this SDG. No action was taken on the 1,1,2,2-tetrachloroethane results. In addition, the MSD %Rs of isopropylbenzene and 1,2,4-trichlorobenzene were outside quality control limits. No action was taken.

The laboratory control sample %R of methyl tert-butyl ether was greater than the upper quality control limit in batch BSG0117W3. No action was taken on the nondetected methyl tert-butyl ether results in the affected samples.

Nondetected results are reported to the limit of detection (LOD).

Positive results below the Reporting Limit (RL) and above the detection limit were qualified as estimated, (J), due to uncertainty near the detection limit.

EXECUTIVE SUMMARY

Laboratory Performance Issues: The continuing calibration %Ds and % drifts for several analytes exceeded quality control limits. The %RSDs exceeded the quality control limit for several analytes resulting in the qualification of data.

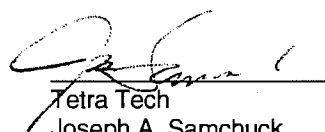
Other Factors Affecting Data Quality: Due to sediment in samples BP-VPB133-GW-394 and BP-VPB133-GW-414, the laboratory had to analyzed them as soil after decanting the top portion of liquid.

TO: D. Brayack
FROM: A. Cognetti
SDG: D1148
DATE: February 21, 2012
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The data for these analyses were reviewed with reference to SOP # HW-24 Revision #2, August 2008, USEPA Region II Hazardous Waste Support Branch Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846/8260B, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories", April 2009. The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Ann Cognetti
Chemist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Region II Data Validation Forms
4. Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 00622 SDG: D1148 FRACTION: OV MEDIA: WATER	BP-VPB133-GW-434		BP-VPB133-GW-454		BP-VPB133-GW-474		BP-VPB133-GW-494		
	NSAMPLE LAB_ID	D1148-04	D1148-05	D1148-06	D1148-07	SAMP_DATE	1/12/2012	1/13/2012	1/13/2012
QC_TYPE	NM	NM	NM	NM	NM	UG/L	0.0	0.0	0.0
PCT_SOLIDS	0.0	0.0	0.0	0.0	0.0	UG/L	0.0	0.0	0.0
DUP_OF						UG/L	0.0	0.0	0.0
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
1,1,2,2-TETRACHLOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
1,1-DICHLOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
1,1-DICHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
1,2,4-TRICHLOROBENZENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
1,2-DIBROMO-3-CHLOROPROPANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
1,2-DIBROMOETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
1,2-DICHLOROBENZENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
1,2-DICHLOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
1,2-DICHLOROPROPANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
1,3-DICHLOROBENZENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
1,4-DICHLOROBENZENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
2-BUTANONE	2.5 UJ	2.5 UJ	C	2.5 UJ	2.5 UJ	C	2.5 UJ	2.5 UJ	C
2-HEXANONE	2.5 UJ	2.5 UJ	C	2.5 UJ	2.5 UJ	C	2.5 UJ	2.5 UJ	C
4-METHYL-2-PENTANONE	2.5 UJ	2.5 UJ	C	2.5 UJ	2.5 UJ	C	2.5 UJ	2.5 UJ	C
ACETONE	2.5 UJ	2.5 UJ	C	2.5 UJ	2.5 UJ	C	2.5 UJ	2.5 UJ	C
BENZENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
BROMODICHLOROMETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
BROMOFORM	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
BROMOMETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
CARBON DISULFIDE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
CARBON TETRACHLORIDE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
CHLOROBENZENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
CHLORODIBROMOMETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
CHLOROETHANE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
CHLOROFORM	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
CHLOROMETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
CIS-1,2-DICHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
CIS-1,3-DICHLOROPROPENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
CYCLOHEXANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
DICHLORODIFLUOROMETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
ETHYLBENZENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
ISOPROPYLBENZENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	

PROJ_NO: 00622 SDG: D1148 FRACTION: OV MEDIA: WATER	NSAMPLE	BP-VPB-TB-011212		
	LAB_ID	D1148-01		
	SAMP_DATE	1/12/2012		
	QC_TYPE	NM		
	UNITS	UG/L		
	PCT_SOLIDS	0.0		
	DUP_OF			
PARAMETER	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE		0.5 U		
1,1,2,2-TETRACHLOROETHANE		0.5 U		
1,1,2-TRICHLOROETHANE		0.5 U		
1,1,2-TRICHLOROTRIFLUOROETHANE		0.5 U		
1,1-DICHLOROETHANE		0.5 U		
1,1-DICHLOROETHENE		0.5 U		
1,2,4-TRICHLOROBENZENE		0.5 U		
1,2-DIBROMO-3-CHLOROPROPANE		0.5 U		
1,2-DIBROMOETHANE		0.5 U		
1,2-DICHLOROBENZENE		0.5 U		
1,2-DICHLOROETHANE		0.5 U		
1,2-DICHLOROPROPANE		0.5 U		
1,3-DICHLOROBENZENE		0.5 U		
1,4-DICHLOROBENZENE		0.5 U		
2-BUTANONE		2.5 UJ	C	
2-HEXANONE		2.5 UJ	C	
4-METHYL-2-PENTANONE		2.5 UJ	C	
ACETONE		2.5 UJ	C	
BENZENE		0.5 U		
BROMODICHLOROMETHANE		0.5 U		
BROMOFORM		0.5 U		
BROMOMETHANE		0.5 U		
CARBON DISULFIDE		0.5 U		
CARBON TETRACHLORIDE		0.5 U		
CHLOROBENZENE		0.5 U		
CHLORODIBROMOMETHANE		0.5 U		
CHLOROETHANE		0.5 UJ	C	
CHLOROFORM		0.5 U		
CHLOROMETHANE		0.5 U		
CIS-1,2-DICHLOROETHENE		0.5 U		
CIS-1,3-DICHLOROPROPENE		0.5 U		
CYCLOHEXANE		0.5 U		
DICHLORODIFLUOROMETHANE		0.5 U		
ETHYLBENZENE		0.5 U		
ISOPROPYLBENZENE		0.5 U		

PROJ_NO: 00622	NSAMPLE	BP-VPB-TB-011212	
SDG: D1148	LAB_ID	D1148-01	
FRACTION: OV	SAMP_DATE	1/12/2012	
MEDIA: WATER	QC_TYPE	NM	
	UNITS	UG/L	
	PCT_SOLIDS	0.0	
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
M+P-XYLENES	1 U		
METHYL ACETATE	0.5 UJ	C	
METHYL CYCLOHEXANE	0.5 U		
METHYL TERT-BUTYL ETHER	0.5 U		
METHYLENE CHLORIDE	0.5 UJ	C	
O-XYLENE	0.5 U		
STYRENE	0.5 U		
TETRACHLOROETHENE	0.5 UJ	C	
TOLUENE	0.5 U		
TRANS-1,2-DICHLOROETHENE	0.5 U		
TRANS-1,3-DICHLOROPROPENE	0.5 U		
TRICHLOROETHENE	0.5 U		
TRICHLOROFLUOROMETHANE	0.5 U		
VINYL CHLORIDE	0.5 U		

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-394	BP-VPB133-GW-414			
SDG: D1148	LAB_ID	D1148-08	D1148-09			
FRACTION: OV	SAMP_DATE	1/12/2012	1/12/2012			
MEDIA: SOIL	QC_TYPE	NM	NM			
	UNITS	UG/KG	UG/KG			
	PCT_SOLIDS	100.0	100.0			
	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	5 U	5 U		5 U		
METHYL ACETATE	2.5 U	2.5 U		2.5 U		
METHYL CYCLOHEXANE	2.5 U	2.5 U		2.5 U		
METHYL TERT-BUTYL ETHER	2.5 U	2.5 U		2.5 U		
METHYLENE CHLORIDE	2.5 U	2.5 U		2.5 U		
O-XYLENE	2.5 U	2.5 U		2.5 U		
STYRENE	2.5 U	2.5 U		2.5 U		
TETRACHLOROETHENE	2.5 U	2.5 U		2.5 U		
TOLUENE	2.5 U	2.5 U		2.5 U		
TRANS-1,2-DICHLOROETHENE	2.5 U	2.5 U		2.5 U		
TRANS-1,3-DICHLOROPROPENE	2.5 U	2.5 U		2.5 U		
TRICHLOROETHENE	2.5 U	2.5 U		2.5 U		
TRICHLOROFLUOROMETHANE	2.5 U	2.5 U		2.5 U		
VINYL CHLORIDE	2.5 U	2.5 U		2.5 U		

TO: D. Brayack
FROM: A. Cognetti
SDG: D1208
DATE: February 21, 2012
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nondetected results of the aforementioned analytes were qualified as estimated (UJ) in the affected samples BP-VPB-TB-011612, BP-VPB133-GW-514, BP-VPB133-GW-534, BP-VPB133-GW-554 and BP-VPB133-GW-634.

The continuing calibration %Ds for trans-1,2-dichloroethene carbon tetrachloride and bromoform were greater than the 20% quality control limit on January 19, 2012 @ 13:24 on instrument MSVOA R. The nondetected trans-1,2-dichloroethene carbon tetrachloride and bromoform results were qualified as estimated (UJ) in the affected samples BP-VPB-TB-011612, BP-VPB133-GW-514, BP-VPB133-GW-534, BP-VPB133-GW-554 and BP-VPB133-GW-634.

Due to sediment in samples BP-VPB133-GW-574, BP-VPB133-GW-594, BP-VPB133-GW-614 and BP-VPB133-GW-654, the laboratory had to analyze them as soil after decanting the top portion of liquid. No action was taken.

It was noted by the laboratory that samples BP-VPB133-GW-534, BP-VPB133-GW-554 and BP-VPB133-GW-634 contained air bubbles. The positive results in these samples were qualified as estimated (J) and the nondetected results were rejected (UR).

Additional Comments

The matrix spike (MS) percent recovery (%R) for 1,2,4-trichlorobenzene was less than the lower quality control limit in a sample not included in this SDG. No action was taken on the for 1,2,4-trichlorobenzene results. In addition, the MSD %R of 1,1,2,2-tetrachloroethane was greater than the upper quality control limit. No action was taken.

The relative percent difference (RPD) for trans-1,2-dichloroethene was outside quality control limits in the MS/MSD of sample D1165-03 which is not included in this SDG. No action was taken.

Nondetected results are reported to the limit of detection (LOD).

Positive results below the Reporting Limit (RL) and above the detection limit were qualified as estimated, (J), due to uncertainty near the detection limit.

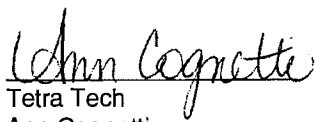
EXECUTIVE SUMMARY

Laboratory Performance Issues: The continuing calibration %Ds and % drifts for several analytes exceeded quality control limits. The %RSDs exceeded the quality control limit for several analytes resulting in the qualification of data.

Other Factors Affecting Data Quality: Due to sediment in samples BP-VPB133-GW-574, BP-VPB133-GW-594, BP-VPB133-GW-614 and BP-VPB133-GW-654, the laboratory had to analyzed them as soil after decanting the top portion of liquid. Samples BP-VPB133-GW-534, BP-VPB133-GW-554 and BP-VPB133-GW-634 contained air bubbles

TO: D. Brayack
FROM: A. Cognetti
SDG: D1208
DATE: February 21, 2012
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The data for these analyses were reviewed with reference to SOP # HW-24 Revision #2, August 2008, USEPA Region II Hazardous Waste Support Branch Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846/8260B, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories", April 2009. The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Ann Cognetti
Chemist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Region II Data Validation Forms
4. Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 00622	NSAMPLE		BP-VPB133-GW-574		BP-VPB133-GW-594		BP-VPB133-GW-614		BP-VPB133-GW-654			
	LAB_ID	D1208-05	D1208-06	D1208-07	D1208-08	D1208-09	D1208-09	D1208-09	D1208-09	D1208-09		
SDG: D1208	SAMP_DATE	1/17/2012	1/17/2012	1/17/2012	1/18/2012	1/18/2012	1/18/2012	1/18/2012	1/18/2012	1/18/2012		
FRACTION: OV	QC_TYPE	NM	NM	NM	NM	NM	NM	NM	NM	NM		
MEDIA: SEDIMENT	UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG		
	PCT_SOLIDS											
	DUP_OF											
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
1,1,2,2-TETRACHLOROETHANE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
1,1,2-TRICHLOROETHANE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
1,1-DICHLOROETHANE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
1,1-DICHLOROETHENE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
1,2,4-TRICHLOROBENZENE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
1,2-DIBROMO-3-CHLOROPROPANE	2.5 UJ	2.5 UJ	C	2.55 UJ	2.55 UJ	C	2.45 UJ	2.45 UJ	C	2.5 UJ	2.5 UJ	C
1,2-DIBROMOETHANE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
1,2-DICHLOROBENZENE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
1,2-DICHLOROETHANE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
1,2-DICHLOROPROPANE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
1,3-DICHLOROBENZENE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
1,4-DICHLOROBENZENE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
2-BUTANONE	12.5 U	12.5 U		12.5 U	12.5 U		12.5 U	12.5 U		12.5 U	12.5 U	
2-HEXANONE	12.5 U	12.5 U		12.5 U	12.5 U		12.5 U	12.5 U		12.5 U	12.5 U	
4-METHYL-2-PENTANONE	12.5 U	12.5 U		12.5 U	12.5 U		12.5 U	12.5 U		12.5 U	12.5 U	
ACETONE	32	32		38	38		34	34		31	31	
BENZENE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
BROMODICHLOROMETHANE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
BROMOFORM	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
BROMOMETHANE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
CARBON DISULFIDE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
CARBON TETRACHLORIDE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
CHLOROBENZENE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
CHLORODIBROMOMETHANE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
CHLOROETHANE	2.5 UJ	2.5 UJ	C	2.55 UJ	2.55 UJ	C	2.45 UJ	2.45 UJ	C	2.5 UJ	2.5 UJ	C
CHLOROFORM	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
CHLOROMETHANE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
CIS-1,2-DICHLOROETHENE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
CIS-1,3-DICHLOROPROPENE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
CYCLOHEXANE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
DICHLORODIFLUOROMETHANE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
ETHYLBENZENE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	
ISOPROPYLBENZENE	2.5 U	2.5 U		2.55 U	2.55 U		2.45 U	2.45 U		2.5 U	2.5 U	

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-514	BP-VPB133-GW-534	BP-VPB133-GW-554	BP-VPB133-GW-534				
SDG: D1208	LAB_ID	D1208-01	D1208-03	D1208-04	D1208-08				
FRACTION: OV	SAMP_DATE	1/16/2012	1/16/2012	1/17/2012	1/18/2012				
MEDIA: WATER	QC_TYPE	NM	NM	NM	NM				
	UNITS	UG/L	UG/L	UG/L	UG/L				
	PCT_SOLIDS	0.0	0.0	0.0	0.0				
	DUP_OF								
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,1,2,2-TETRACHLOROETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,1,2-TRICHLOROETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,1-DICHLOROETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,1-DICHLOROETHENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,2,4-TRICHLOROBENZENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,2-DIBROMO-3-CHLOROPROPANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,2-DIBROMOETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,2-DICHLOROBENZENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,2-DICHLOROETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,2-DICHLOROPROPANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,3-DICHLOROBENZENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,4-DICHLOROBENZENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
2-BUTANONE	2.5 U	2.5 UR	Q	2.5 UR	2.5 UR	Q	2.5 UR	2.5 UR	Q
2-HEXANONE	2.5 U	2.5 UR	Q	2.5 UR	2.5 UR	Q	2.5 UR	2.5 UR	Q
4-METHYL-2-PENTANONE	2.5 U	2.5 UR	Q	2.5 UR	2.5 UR	Q	2.5 UR	2.5 UR	Q
ACETONE	7.6	4.2 J	PQ	4.2 J	4.8 J	PQ	8.2 J	8.2 J	Q
BENZENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
BROMODICHLOROMETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
BROMOFORM	0.5 UJ	0.5 UR	C	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
BROMOMETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CARBON DISULFIDE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CARBON TETRACHLORIDE	0.5 UJ	0.5 UR	C	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CHLOROBENZENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CHLORODIBROMOMETHANE	0.5 UJ	0.5 UR	C	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CHLOROETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CHLOROFORM	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CHLOROMETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CIS-1,2-DICHLOROETHENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CIS-1,3-DICHLOROPROPENE	0.5 UJ	0.5 UR	C	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CYCLOHEXANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
DICHLORODIFLUOROMETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
ETHYLBENZENE	0.5 UJ	0.5 UR	C	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
ISOPROPYLBENZENE	0.5 UJ	0.5 UR	C	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q

PROJ_NO: 00622	NSAMPLE	BP-VPB-TB-011612	
SDG: D1208	LAB_ID	D1208-02	
FRACTION: OV	SAMP_DATE	1/16/2012	
MEDIA: WATER	QC_TYPE	NM	
	UNITS	UG/L	
	PCT_SOLIDS	0.0	
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.5 U		
1,1,2,2-TETRACHLOROETHANE	0.5 U		
1,1,2-TRICHLOROETHANE	0.5 U		
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5 U		
1,1-DICHLOROETHANE	0.5 U		
1,1-DICHLOROETHENE	0.5 U		
1,2,4-TRICHLOROBENZENE	0.5 U		
1,2-DIBROMO-3-CHLOROPROPANE	0.5 U		
1,2-DIBROMOETHANE	0.5 U		
1,2-DICHLOROBENZENE	0.5 U		
1,2-DICHLOROETHANE	0.5 U		
1,2-DICHLOROPROPANE	0.5 U		
1,3-DICHLOROBENZENE	0.5 U		
1,4-DICHLOROBENZENE	0.5 U		
2-BUTANONE	2.5 U		
2-HEXANONE	2.5 U		
4-METHYL-2-PENTANONE	2.5 U		
ACETONE	2.5 U		
BENZENE	0.5 U		
BROMODICHLOROMETHANE	0.5 U		
BROMOFORM	0.5 UJ		C
BROMOMETHANE	0.5 U		
CARBON DISULFIDE	0.5 U		
CARBON TETRACHLORIDE	0.5 UJ		C
CHLOROBENZENE	0.5 U		
CHLORODIBROMOMETHANE	0.5 UJ		C
CHLOROETHANE	0.5 U		
CHLOROFORM	0.5 U		
CHLOROMETHANE	0.5 U		
CIS-1,2-DICHLOROETHENE	0.5 U		
CIS-1,3-DICHLOROPROPENE	0.5 UJ		C
CYCLOHEXANE	0.5 U		
DICHLORODIFLUOROMETHANE	0.5 U		
ETHYLBENZENE	0.5 UJ		C
ISOPROPYLBENZENE	0.5 UJ		C

PROJ_NO: 00622	NSAMPLE		BP-VPB133-GW-514		BP-VPB133-GW-534		BP-VPB133-GW-554		BP-VPB133-GW-634			
	LAB_ID	SAMP_DATE	D1208-01	D1208-03	D1208-04	D1208-03	D1208-04	D1208-08	D1208-08	D1208-08		
SDG: D1208	FRACTION: OV		1/16/2012	1/16/2012	1/17/2012	1/16/2012	1/17/2012	1/18/2012	1/18/2012	1/18/2012		
MEDIA: WATER	QC_TYPE		NM	NM	NM	NM	NM	NM	NM	NM		
	UNITS		UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L		
	PCT_SOLIDS		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	DUP_OF											
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	1 U	1 U	Q	1 UR	1 UR	Q	1 UR	1 UR	Q	1 UR	1 UR	Q
METHYL ACETATE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
METHYL CYCLOHEXANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
METHYL TERT-BUTYL ETHER	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
METHYLENE CHLORIDE	0.5 UJ	0.5 UR	C	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
O-XYLENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
STYRENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
TETRACHLOROETHENE	0.5 UJ	0.5 UR	C	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
TOLUENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
TRANS-1,2-DICHLOROETHENE	0.5 UJ	0.5 UR	C	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
TRANS-1,3-DICHLOROPROPENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
TRICHLOROETHENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
TRICHLOROFLUOROMETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
VINYL CHLORIDE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q

PROJ_NO: 00622		NSAMPLE	BP-VPB-TB-011612		
SDG: D1208		LAB_ID	D1208-02		
FRACTION: OV		SAMP_DATE	1/16/2012		
MEDIA: WATER		QC_TYPE	NM		
		UNITS	UG/L		
		PCT_SOLIDS	0.0		
		DUP_OF			
PARAMETER	RESULT	VQI	QLCD		
M+P-XYLENES	1	U			
METHYL ACETATE	0.5	U			
METHYL CYCLOHEXANE	0.5	U			
METHYL TERT-BUTYL ETHER	0.5	U			
METHYLENE CHLORIDE	0.5	UJ	C		
O-XYLENE	0.5	U			
STYRENE	0.5	U			
TETRACHLOROETHENE	0.5	UJ	C		
TOLUENE	0.5	U			
TRANS-1,2-DICHLOROETHENE	0.5	UJ	C		
TRANS-1,3-DICHLOROPROPENE	0.5	U			
TRICHLOROETHENE	0.5	U			
TRICHLOROFLUOROMETHANE	0.5	U			
VINYL CHLORIDE	0.5	U			

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DATE: MARCH 20, 2012

The continuing calibration percent differences and/or percent drifts were greater than the 20% quality control limit for chloromethane and bromomethane on 01/26/2012 at 18:20 on instrument MSVOA R. The nondetected results for chloromethane and bromomethane were qualified as estimated "UJ" in the affected samples BP-VPB133-GW-754 and BP-VPB-TB-011912.

The initial calibration %RSDs for bromomethane, styrene and bromoform were greater than the 15% quality control limit on 01/24/2012 on instrument MSVOA T. The nondetected results for bromomethane, styrene and bromoform were qualified as estimated "UJ" in the affected samples BP-VPB133-GW-694, BP-VPB133-GW-703, BP-VPB133-GW-714, BP-VPB133-GW-734, BP-VPB133-GW-744 and BP-VPB133-GW-764.

The continuing calibration percent differences and/or percent drifts were greater than the 20% quality control limit for bromomethane, chloroethane and carbon disulfide on 01/26/2012 at 11:48 on instrument MSVOA T. The nondetected results for bromomethane, chloroethane and carbon disulfide were qualified as estimated "UJ" in the affected samples BP-VPB133-GW-694, BP-VPB133-GW-703, BP-VPB133-GW-714, BP-VPB133-GW-734, BP-VPB133-GW-744 and BP-VPB133-GW-764.

Sample BP-VPB133-GW-694 had a surrogate recovery less than the quality control limit for 4-bromofluorobenzene and internal standards recoveries below the quality control limits for pentafluorobenzene, chlorobenzene-d5 and 1,4-dichlorobenzene-d4. The sample was reanalyzed and had surrogate recoveries for 4-bromofluorobenzene and toluene-d8 less than the quality control limits and an internal standard recovery for 1,4-dichlorobenzene-d4 below the quality control limit. The reanalysis was chosen for validation purposes. The positive and nondetected results reported for sample BP-VPB133-GW-694 were qualified as estimated, "J" and "UJ", respectively, as a result of surrogate noncompliances. The nondetected results reported for sample BP-VPB133-GW-694 for the affected compounds were qualified as estimated, "UJ", as a result of internal standard noncompliances..

Samples BP-VPB133-GW-703, BP-VPB133-GW-714, BP-VPB133-GW-734, BP-VPB133-GW-744 and BP-VPB133-GW-764 had surrogate recoveries less than the quality control limits for 4-bromofluorobenzene. The samples were reanalyzed and had surrogate recoveries for 4-bromofluorobenzene and/or toluene-d8 less than the quality control limits. The original analyses were chosen for validation purposes. The positive and nondetected results reported for samples BP-VPB133-GW-703, BP-VPB133-GW-714, BP-VPB133-GW-734, BP-VPB133-GW-744 and BP-VPB133-GW-764 were qualified as estimated, "J" and "UJ", respectively.

Samples BP-VPB133-GW-703, BP-VPB133-GW-714, BP-VPB133-GW-734, BP-VPB133-GW-744, BP-VPB133-GW-764 had internal standard recoveries less than the quality control limits for 1,4-dichlorobenzene-d4. The samples were reanalyzed and had internal standard recoveries for 1,4-dichlorobenzene-d4 less than the quality control limits. The original analyses were chosen for validation purposes. The nondetected results reported for samples BP-VPB133-GW-703, BP-VPB133-GW-714, BP-VPB133-GW-734, BP-VPB133-GW-744 and BP-VPB133-GW-764 for the affected compounds were qualified as estimated, "UJ".

Positive results below the Reporting Limit (RL) and above the detection limit were qualified as estimated, (J), due to uncertainty near the detection limit.

Additional Comments

Groundwater samples BP-VPB133-GW-694, BP-VPB133-GW-703, BP-VPB133-GW-714, BP-VPB133-GW-734, BP-VPB133-GW-744 and BP-VPB133-GW-764 were analyzed as soil samples due to the amount of sediment in the samples. The sample results were reported as ug/kg on a wet weight basis.

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DATE: MARCH 20, 2012

The laboratory control sample duplicate (LCSD) percent recovery for chloromethane was greater than the upper quality control limit affecting samples BP-VPB133-GW-754 and BP-VPB-TB-011912. No validation actions were required as all sample results for chloromethane were nondetects.

The laboratory control sample (LCS) / laboratory control sample duplicate (LCSD) relative percent difference was outside the quality control limits for methyl acetate affecting samples BP-VPB133-GW-754 and BP-VPB-TB-011912. No validation actions were required as the LCS and LCSD percent recoveries for methyl acetate were within the quality control limits.

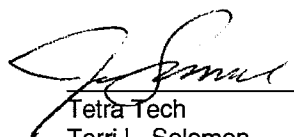
Nondetected results are reported to the limit of detection (LOD).

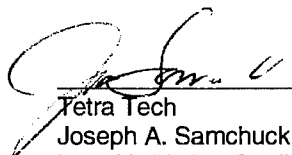
EXECUTIVE SUMMARY

Laboratory Performance Issues: Several initial %RSDs and continuing calibration %Ds / % drifts for several compounds exceeded the quality control limits.

Other Factors Affecting Data Quality: Several surrogate and internal standards were below the quality control limits. Positive results below the RL and above the detection limit were qualified as estimated.

The data for these analyses were reviewed with reference to SOP # HW-24 Revision #2, August 2008, USEPA Region II Hazardous Waste Support Branch Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846/8260B, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories", April 2009. The text of this report has been formulated to address only those problem areas affecting data quality.


Tetra Tech
Terri L. Solomon
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Tetra Tech
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Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Region II Data Validation Forms
4. Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-754	BP-VPB-TB-011912
SDG: D1280	LAB_ID	D1280-08	D1280-02
FRACTION: OV	SAMP_DATE	1/24/2012	1/19/2012
MEDIA: WATER	QC_TYPE	NM	NM
	UNITS	UG/L	UG/L
	PCT_SOLIDS	100.0	100.0
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	0.5 U	0.5 U	0.5 U
1,2,4-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	0.5 U	0.5 U	0.5 U
1,2-DIBROMOETHANE	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHENE	0.5 U	0.5 U	0.5 U
1,2-DICHLOROPROPANE	0.5 U	0.5 U	0.5 U
1,3-DICHLOROETHANE	0.5 U	0.5 U	0.5 U
1,4-DICHLOROETHANE	0.5 U	0.5 U	0.5 U
2-BUTANONE	2.5 U	2.5 U	2.5 U
2-HEXANONE	2.5 U	2.5 U	2.5 U
4-METHYL-2-PENTANONE	2.5 U	2.5 U	2.5 U
ACETONE	6.8	2.5 U	2.5 U
BENZENE	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.5 U	0.5 U	0.5 U
BROMOFORM	0.5 U	0.5 U	0.5 U
BROMOMETHANE	0.5 UJ	0.5 UJ	0.5 UJ C
CARBON DISULFIDE	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	0.5 U	0.5 U	0.5 U
CHLOROETHANE	0.5 U	0.5 U	0.5 U
CHLOROFORM	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	0.5 UJ	0.5 UJ	0.5 UJ C
CIS-1,2-DICHLOROETHENE	0.5 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.5 UJ	0.5 UJ	0.5 UJ C
CYCLOHEXANE	0.5 UJ	0.5 UJ	0.5 UJ C
DICHLORODIFLUOROMETHANE	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	0.5 U	0.5 U	0.5 U

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-754	BP-VPB-TB-011912			
SDG: D1280	LAB_ID	D1280-08	D1280-02			
FRACTION: OV	SAMP_DATE	1/24/2012	1/19/2012			
MEDIA: WATER	QC_TYPE	NM	NM			
	UNITS	UG/L	UG/L			
	PCT_SOLIDS	100.0	100.0			
	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	1 U	1 U		1 U	1 U	
METHYL ACETATE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
METHYL CYCLOHEXANE	0.5 U	0.5 U		0.5 U	0.5 U	
METHYL TERT-BUTYL ETHER	0.5 U	0.5 U		0.5 U	0.5 U	
METHYLENE CHLORIDE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
O-XYLENE	0.5 U	0.5 U		0.5 U	0.5 U	
STYRENE	0.5 U	0.5 U		0.5 U	0.5 U	
TETRACHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U	
TOLUENE	0.5 U	0.5 U		0.5 U	0.5 U	
TRANS-1,2-DICHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U	
TRANS-1,3-DICHLOROPROPENE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
TRICHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U	
TRICHLOROFLUOROMETHANE	0.5 U	0.5 U		0.5 U	0.5 U	
VINYL CHLORIDE	0.5 U	0.5 U		0.5 U	0.5 U	

PROJ_NO: 00622	NSAMPLE		BP-VPB133-GW-694RE		BP-VPB133-GW-703		BP-VPB133-GW-714		BP-VPB133-GW-734			
	LAB_ID	SAMP_DATE	D1280-01RE	1/20/2012	D1280-04	1/20/2012	D1280-05	1/23/2012	D1280-03	1/23/2012		
FRACTION: OV	QC_TYPE	NM	NM	NM	NM	NM	NM	NM	NM	NM		
MEDIA: SEDIMENT	UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG		
	PCT_SOLIDS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	DUP_OF											
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
1,1,2,2-TETRACHLOROETHANE	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.45 UJ	NR	2.45 UJ	2.45 UJ	NR
1,1,2-TRICHLOROETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
1,1-DICHLOROETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
1,1-DICHLOROETHENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
1,2,4-TRICHLOROBENZENE	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.45 UJ	NR	2.45 UJ	2.45 UJ	NR
1,2-DIBROMO-3-CHLOROPROPANE	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.45 UJ	NR	2.45 UJ	2.45 UJ	NR
1,2-DIBROMOETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
1,2-DICHLOROBENZENE	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.45 UJ	NR	2.45 UJ	2.45 UJ	NR
1,2-DICHLOROETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
1,2-DICHLOROPROPANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
1,2-DICHLOROPROPANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
1,3-DICHLOROBENZENE	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.45 UJ	NR	2.45 UJ	2.45 UJ	NR
1,4-DICHLOROBENZENE	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.45 UJ	NR	2.45 UJ	2.45 UJ	NR
2-BUTANONE	12.5 UJ	12.5 UJ	R	12.5 UJ	12.5 UJ	R	12.5 UJ	12.5 UJ	R	12.5 UJ	12.5 UJ	R
2-HEXANONE	12.5 UJ	12.5 UJ	R	12.5 UJ	12.5 UJ	R	12.5 UJ	12.5 UJ	R	12.5 UJ	12.5 UJ	R
4-METHYL-2-PENTANONE	12.5 UJ	12.5 UJ	R	12.5 UJ	12.5 UJ	R	12.5 UJ	12.5 UJ	R	12.5 UJ	12.5 UJ	R
ACETONE	29 J	35 J	R	35 J	35 J	R	19 J	16 J	PR	16 J	16 J	PR
BENZENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
BROMODICHLOROMETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
BROMOFORM	2.5 UJ	2.5 UJ	CR	2.5 UJ	2.5 UJ	CR	2.45 UJ	2.45 UJ	CR	2.45 UJ	2.45 UJ	CR
BROMOMETHANE	2.5 UJ	2.5 UJ	CR	2.5 UJ	2.5 UJ	CR	2.45 UJ	2.45 UJ	CR	2.45 UJ	2.45 UJ	CR
CARBON DISULFIDE	2.5 UJ	2.5 UJ	CR	2.5 UJ	2.5 UJ	CR	2.45 UJ	2.45 UJ	CR	2.45 UJ	2.45 UJ	CR
CARBON TETRACHLORIDE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
CHLOROBENZENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
CHLORODIBROMOMETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
CHLOROETHANE	2.5 UJ	2.5 UJ	CR	2.5 UJ	2.5 UJ	CR	2.45 UJ	2.45 UJ	CR	2.45 UJ	2.45 UJ	CR
CHLOROFORM	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
CHLOROMETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
CIS-1,2-DICHLOROETHENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
CIS-1,3-DICHLOROPROPENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
CYCLOHEXANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
DICHLORODIFLUOROMETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
ETHYLBENZENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
ISOPROPYLBENZENE	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR	2.45 UJ	2.45 UJ	NR	2.45 UJ	2.45 UJ	NR

PROJ_NO: 00622	NSAMPLE		BP-VPB133-GW-694RE		BP-VPB133-GW-703		BP-VPB133-GW-714		BP-VPB133-GW-734			
	LAB_ID	D1280-01RE	D1280-04	D1280-05	D1280-03	D1280-04	D1280-05	D1280-03	D1280-03	D1280-03		
FRACTION: OV	SAMP_DATE	1/20/2012	1/20/2012	1/23/2012	1/20/2012	1/20/2012	1/23/2012	1/23/2012	1/23/2012	1/23/2012		
MEDIA: SEDIMENT	QC_TYPE	NM	NM	NM	NM	NM	NM	NM	NM	NM		
	UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG		
	PCT_SOLIDS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	DUP_OF											
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	5 UJ	5 UJ	R	5 UJ	5 UJ	R	4.95 UJ	4.95 UJ	R	4.9 UJ	4.9 UJ	R
METHYL ACETATE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
METHYL CYCLOHEXANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
METHYL TERT-BUTYL ETHER	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
METHYLENE CHLORIDE	2.7 J	2.7 J	PR	2.7 J	2.7 J	PR	2.7 J	2.7 J	PR	2.45 UJ	2.45 UJ	R
O-XYLENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
STYRENE	2.5 UJ	2.5 UJ	CR	2.5 UJ	2.5 UJ	CR	2.45 UJ	2.45 UJ	CR	2.45 UJ	2.45 UJ	CR
TETRACHLOROETHENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
TOLUENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
TRANS-1,2-DICHLOROETHENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
TRANS-1,3-DICHLOROPROPENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
TRICHLOROETHENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
TRICHLOROFLUOROMETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R
VINYL CHLORIDE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.45 UJ	2.45 UJ	R	2.45 UJ	2.45 UJ	R

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-744	BP-VPB133-GW-764			
SDG: D1280	LAB_ID	D1280-06	D1280-07			
FRACTION: OV	SAMP_DATE	1/24/2012	1/24/2012			
MEDIA: SEDIMENT	QC_TYPE	NM	NM			
	UNITS	UG/KG	UG/KG			
	PCT_SOLIDS	0.0	0.0			
	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,1,2,2-TETRACHLOROETHANE	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR
1,1,2-TRICHLOROETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,1-DICHLOROETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,1-DICHLOROETHENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,2,4-TRICHLOROBENZENE	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR
1,2-DIBROMO-3-CHLOROPROPANE	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR
1,2-DIBROMOETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,2-DICHLOROETHANE	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR
1,2-DICHLOROETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,2-DICHLOROPROPANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,3-DICHLOROBENZENE	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR
1,4-DICHLOROBENZENE	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR
2-BUTANONE	12.5 UJ	12.5 UJ	R	12.5 UJ	12.5 UJ	R
2-HEXANONE	12.5 UJ	12.5 UJ	R	12.5 UJ	12.5 UJ	R
4-METHYL-2-PENTANONE	12.5 UJ	12.5 UJ	R	12.5 UJ	12.5 UJ	R
ACETONE	24 J	24 J	PR	35 J	35 J	R
BENZENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
BROMODICHLOROMETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
BROMOFORM	2.5 UJ	2.5 UJ	CR	2.5 UJ	2.5 UJ	CR
BROMOMETHANE	2.5 UJ	2.5 UJ	CR	2.5 UJ	2.5 UJ	CR
CARBON DISULFIDE	2.5 UJ	2.5 UJ	CR	2.5 UJ	2.5 UJ	CR
CARBON TETRACHLORIDE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CHLOROBENZENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CHLORODIBROMOMETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CHLOROETHANE	2.5 UJ	2.5 UJ	CR	2.5 UJ	2.5 UJ	CR
CHLOROFORM	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CHLOROMETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CIS-1,2-DICHLOROETHENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CIS-1,3-DICHLOROPROPENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CYCLOHEXANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
DICHLORODIFLUOROMETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
ETHYLBENZENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
ISOPROPYLBENZENE	2.5 UJ	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-744	BP-VPB133-GW-764			
SDG: D1280	LAB_ID	D1280-06	D1280-07			
FRACTION: OV	SAMP_DATE	1/24/2012	1/24/2012			
MEDIA: SEDIMENT	QC_TYPE	NM	NM			
	UNITS	UG/KG	UG/KG			
	PCT_SOLIDS	0.0	0.0			
	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	4.95 UJ	UJ	R	5 UJ	UJ	R
METHYL ACETATE	2.5 UJ	UJ	R	2.5 UJ	UJ	R
METHYL CYCLOHEXANE	2.5 UJ	UJ	R	2.5 UJ	UJ	R
METHYL TERT-BUTYL ETHER	2.5 UJ	UJ	R	2.5 UJ	UJ	R
METHYLENE CHLORIDE	2.5 UJ	UJ	R	3.1 J	J	PR
O-XYLENE	2.5 UJ	UJ	R	2.5 UJ	UJ	R
STYRENE	2.5 UJ	UJ	CR	2.5 UJ	UJ	CR
TETRACHLOROETHENE	2.5 UJ	UJ	R	2.5 UJ	UJ	R
TOLUENE	2.5 UJ	UJ	R	2.5 UJ	UJ	R
TRANS-1,2-DICHLOROETHENE	2.5 UJ	UJ	R	2.5 UJ	UJ	R
TRANS-1,3-DICHLOROPROPENE	2.5 UJ	UJ	R	2.5 UJ	UJ	R
TRICHLOROETHENE	2.5 UJ	UJ	R	2.5 UJ	UJ	R
TRICHLOROFLUOROMETHANE	2.5 UJ	UJ	R	2.5 UJ	UJ	R
VINYL CHLORIDE	2.5 UJ	UJ	R	2.5 UJ	UJ	R

Volatiles (VOC)

Due to the nature of the matrices, the environmental groundwater samples, BP-VPB133-834, BP-VPB133-GW-784, BP-VPB133-GW-808, BP-VPB133-GW-814, and BP-VPB133-GW-824, were analyzed as soils. The sample results were reported in µg/Kg based on the dry weight of the sample.

Positive results reported below the LOQ but above the Method Detection Limit (MDL) were qualified as estimated, (J).

Additional Comments

The aqueous Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD), BSR0103W1 and BSR0103W2G0216W1, had a Percent Recoveries (%Rs) for dichlorodifluoromethane chloride above the upper quality control limit. No action necessary because no positive results were reported for this compound in the affected samples.

The soil Matrix Spike Duplicate (MS/MSD) analysis yielded a %R for 1,2,4-trichlorobenzene below the lower quality control limit. No action was taken because the Matrix Spike (MS) %R was acceptable and the MS/MSD parent sample was not a sample from this SDG.

Non-detected results are reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

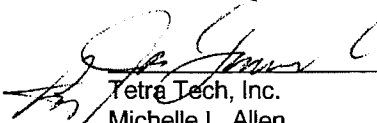
Laboratory Performance Issues: The aqueous LCS/LCSD had high %Rs for a target compound.

Other Factors Affecting Data Quality: A MSD %R was low. Positive results reported below the LOQ but above the MDL were qualified as estimated.


TO: D. BRAYACK
SDG: D1320

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The data for these analyses were reviewed with reference to the SOP #HW-24 Revision #2, USEPA Region II Hazardous Waste Support Branch Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B (August 2008), EPA Method SW-846 8260C analytical and reporting protocols, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (April 2009).



Tetra Tech, Inc.
Michelle L. Allen
Chemist/Data Validator



Tetra Tech, Inc.
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Region II Data Validation Forms
4. Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 00622 SDG: D1320 FRACTION: OV MEDIA: SOIL	BP-VPB133-834		BP-VPB133-DM		BP-VPB133-GW-784		BP-VPB133-GW-808		
	NSAMPLE LAB_ID	D1320-09	D1320-08	D1320-02	D1320-04	SAMP_DATE	1/27/2012	1/25/2012	1/26/2012
QC_TYPE	NM	NM	NM	NM	NM	UG/KG	UG/KG	UG/KG	UG/KG
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	0.0	0.0	0.0	0.0
PCT_SOLIDS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DUP_OF									
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
1,1,2,2-TETRACHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
1,1,2-TRICHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
1,1-DICHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
1,1-DICHLOROETHENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
1,2,4-TRICHLOROBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
1,2-DIBROMO-3-CHLOROPROPANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
1,2-DIBROMOETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
1,2-DICHLOROBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
1,2-DICHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
1,2-DICHLOROPROPANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
1,3-DICHLOROBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
1,4-DICHLOROBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
2-BUTANONE	12.5 U	12.5 U		12.5 U	12.5 U		12.5 U	12.5 U	
2-HEXANONE	12.5 U	12.5 U		12.5 U	12.5 U		12.5 U	12.5 U	
4-METHYL-2-PENTANONE	12.5 U	12.5 U		12.5 U	12.5 U		12.5 U	12.5 U	
ACETONE	73	51		53	24 J		24 J	P	
BENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
BROMODICHLOROMETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
BROMOFORM	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
BROMOMETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
CARBON DISULFIDE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
CARBON TETRACHLORIDE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
CHLOROBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
CHLORODIBROMOMETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
CHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
CHLOROFORM	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
CHLOROMETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
CIS-1,2-DICHLOROETHENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
CIS-1,3-DICHLOROPROPENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
CYCLOHEXANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
DICHLORODIFLUOROMETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
ETHYLBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
ISOPROPYLBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-814	BP-VPB133-GW-824			
SDG: D1320	LAB_ID	D1320-05	D1320-06			
FRACTION: OV	SAMP_DATE	1/26/2012	1/27/2012			
MEDIA: SOIL	QC_TYPE	NM	NM			
	UNITS	UG/KG	UG/KG			
	PCT_SOLIDS	0.0	0.0			
	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	2.5 U	2.5 U		2.55 U	2.55 U	
1,1,2,2-TETRACHLOROETHANE	2.5 U	2.5 U		2.55 U	2.55 U	
1,1,2-TRICHLOROETHANE	2.5 U	2.5 U		2.55 U	2.55 U	
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5 U	2.5 U		2.55 U	2.55 U	
1,1-DICHLOROETHANE	2.5 U	2.5 U		2.55 U	2.55 U	
1,1-DICHLOROETHENE	2.5 U	2.5 U		2.55 U	2.55 U	
1,2,4-TRICHLOROBENZENE	2.5 U	2.5 U		2.55 U	2.55 U	
1,2-DIBROMO-3-CHLOROPROPANE	2.5 U	2.5 U		2.55 U	2.55 U	
1,2-DIBROMOETHANE	2.5 U	2.5 U		2.55 U	2.55 U	
1,2-DICHLOROBENZENE	2.5 U	2.5 U		2.55 U	2.55 U	
1,2-DICHLOROETHANE	2.5 U	2.5 U		2.55 U	2.55 U	
1,2-DICHLOROPROPANE	2.5 U	2.5 U		2.55 U	2.55 U	
1,3-DICHLOROBENZENE	2.5 U	2.5 U		2.55 U	2.55 U	
1,4-DICHLOROBENZENE	2.5 U	2.5 U		2.55 U	2.55 U	
2-BUTANONE	12.5 U	12.5 U		12.5 U	12.5 U	
2-HEXANONE	12.5 U	12.5 U		12.5 U	12.5 U	
4-METHYL-2-PENTANONE	12.5 U	12.5 U		12.5 U	12.5 U	
ACETONE	27	27		28	28	
BENZENE	2.5 U	2.5 U		2.55 U	2.55 U	
BROMODICHLOROMETHANE	2.5 U	2.5 U		2.55 U	2.55 U	
BROMOFORM	2.5 U	2.5 U		2.55 U	2.55 U	
BROMOMETHANE	2.5 U	2.5 U		2.55 U	2.55 U	
CARBON DISULFIDE	2.5 U	2.5 U		2.55 U	2.55 U	
CARBON TETRACHLORIDE	2.5 U	2.5 U		2.55 U	2.55 U	
CHLOROBENZENE	2.5 U	2.5 U		2.55 U	2.55 U	
CHLORODIBROMOMETHANE	2.5 U	2.5 U		2.55 U	2.55 U	
CHLOROETHANE	2.5 U	2.5 U		2.55 U	2.55 U	
CHLOROFORM	2.5 U	2.5 U		2.55 U	2.55 U	
CHLOROMETHANE	2.5 U	2.5 U		2.55 U	2.55 U	
CIS-1,2-DICHLOROETHENE	2.5 U	2.5 U		2.55 U	2.55 U	
CIS-1,3-DICHLOROPROPENE	2.5 U	2.5 U		2.55 U	2.55 U	
CYCLOHEXANE	2.5 U	2.5 U		2.55 U	2.55 U	
DICHLORODIFLUOROMETHANE	2.5 U	2.5 U		2.55 U	2.55 U	
ETHYLBENZENE	2.5 U	2.5 U		2.55 U	2.55 U	
ISOPROPYLBENZENE	2.5 U	2.5 U		2.55 U	2.55 U	

PROJ_NO: 00622 SDG: D1320 FRACTION: OV MEDIA: SOIL	NSAMPLE		BP-VPB133-834		BP-VPB133-DM		BP-VPB133-GW-784		BP-VPB133-GW-808						
	LAB_ID	D1320-09	D1320-08	D1320-02	D1320-04	SAMP_DATE	1/27/2012	1/25/2012	1/26/2012	QC_TYPE	NM	NM	UG/KG	UG/KG	UG/KG
UNITS	UG/KG	0.0	0.0	0.0	0.0	PCT_SOLIDS	0.0	0.0	0.0	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES		5 U		5 U				5 U					4.95 U		
METHYL ACETATE		2.5 U		2.5 U				2.5 U					2.5 U		
METHYL CYCLOHEXANE		2.5 U		2.5 U				2.5 U					2.5 U		
METHYL TERT-BUTYL ETHER		2.5 U		2.5 U				2.5 U					2.5 U		
METHYLENE CHLORIDE		2.5 U		2.5 U				2.5 U					2.5 U		
O-XYLENE		2.5 U		2.5 U				2.5 U					2.5 U		
STYRENE		2.5 U		2.5 U				2.5 U					2.5 U		
TETRACHLOROETHENE		2.5 U		2.5 U				2.5 U					2.5 U		
TOLUENE		2.5 U		2.5 U				2.5 U					2.5 U		
TRANS-1,2-DICHLOROETHENE		2.5 U		2.5 U				2.5 U					2.5 U		
TRANS-1,3-DICHLOROPROPENE		2.5 U		2.5 U				2.5 U					2.5 U		
TRICHLOROETHENE		2.5 U		2.5 U				2.5 U					2.5 U		
TRICHLOROFLUOROMETHANE		2.5 U		2.5 U				2.5 U					2.5 U		
VINYL CHLORIDE		2.5 U		2.5 U				2.5 U					2.5 U		

PARAMETER	BP-VPB133-GW-814		BP-VPB133-GW-824	
	RESULT	QLCD	RESULT	QLCD
M+P-XYLENES	5 U		5 U	
METHYL ACETATE	2.5 U		2.55 U	
METHYL CYCLOHEXANE	2.5 U		2.55 U	
METHYL TERT-BUTYL ETHER	2.5 U		2.55 U	
METHYLENE CHLORIDE	2.5 U		2.55 U	
O-XYLENE	2.5 U		2.55 U	
STYRENE	2.5 U		2.55 U	
TETRACHLOROETHENE	2.5 U		2.55 U	
TOLUENE	2.5 U		2.55 U	
TRANS-1,2-DICHLOROETHENE	2.5 U		2.55 U	
TRANS-1,3-DICHLOROPROPENE	2.5 U		2.55 U	
TRICHLOROETHENE	2.5 U		2.55 U	
TRICHLOROFLUOROMETHANE	2.5 U		2.55 U	
VINYL CHLORIDE	2.5 U		2.55 U	
NSAMPLE	BP-VPB133-GW-814		BP-VPB133-GW-824	
LAB_ID	D1320-05		D1320-06	
SAMP_DATE	1/26/2012		1/27/2012	
QC_TYPE	NM		NM	
UNITS	UG/KG		UG/KG	
PCT_SOLIDS	0.0		0.0	
DUP_OF				

PROJ_NO: 00622 SDG: D1320 FRACTION: OV MEDIA: WATER	NSAMPLE		BP-VPB133-DW		BP-VPB133-GW-794		BP-VPB-TB-012512	
	LAB_ID	D1320-07	RESULT	QLCD	RESULT	QLCD	RESULT	QLCD
SAMP_DATE	1/27/2012	1/27/2012	0.5 U		0.5 U		0.5 U	
QC_TYPE	NM	NM	0.5 U		0.5 U		0.5 U	
UNITS	UG/L	UG/L	0.5 U		0.5 U		0.5 U	
PCT_SOLIDS	0.0	0.0	0.5 U		0.5 U		0.5 U	
DUP_OF			0.5 U		0.5 U		0.5 U	
PARAMETER	RESULT	QLCD	RESULT	QLCD	RESULT	QLCD	RESULT	QLCD
1,1,1-TRICHLOROETHANE	0.5 U		0.5 U		0.5 U		0.5 U	
1,1,2,2-TETRACHLOROETHANE	0.5 U		0.5 U		0.5 U		0.5 U	
1,1,2-TRICHLOROETHANE	0.5 U		0.5 U		0.5 U		0.5 U	
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5 U		0.5 U		0.5 U		0.5 U	
1,1-DICHLOROETHANE	0.5 U		0.5 U		0.5 U		0.5 U	
1,1-DICHLOROETHENE	0.5 U		0.5 U		0.5 U		0.5 U	
1,2,4-TRICHLOROBENZENE	0.5 U		0.5 U		0.5 U		0.5 U	
1,2-DIBROMO-3-CHLOROPROPANE	0.5 U		0.5 U		0.5 U		0.5 U	
1,2-DIBROMOETHANE	0.5 U		0.5 U		0.5 U		0.5 U	
1,2-DICHLOROBENZENE	0.5 U		0.5 U		0.5 U		0.5 U	
1,2-DICHLOROETHANE	0.5 U		0.5 U		0.5 U		0.5 U	
1,2-DICHLOROPROPANE	0.5 U		0.5 U		0.5 U		0.5 U	
1,3-DICHLOROBENZENE	0.5 U		0.5 U		0.5 U		0.5 U	
1,4-DICHLOROBENZENE	0.5 U		0.5 U		0.5 U		0.5 U	
2-BUTANONE	2.5 U		3.9 J	P	2.5 U		2.5 U	
2-HEXANONE	2.5 U		2.5 U		2.5 U		2.5 U	
4-METHYL-2-PENTANONE	2.5 U		2.5 U		2.5 U		2.5 U	
ACETONE	1.6 J	P	15		15		2.5 U	
BENZENE	0.5 U		0.5 U		0.5 U		0.5 U	
BROMODICHLOROMETHANE	1.1		0.5 U		0.5 U		0.5 U	
BROMOFORM	0.5 U		0.5 U		0.5 U		0.5 U	
BROMOMETHANE	0.5 U		0.5 U		0.5 U		0.5 U	
CARBON DISULFIDE	0.5 U		0.5 U		0.5 U		0.5 U	
CARBON TETRACHLORIDE	0.5 U		0.5 U		0.5 U		0.5 U	
CHLOROBENZENE	0.5 U		0.5 U		0.5 U		0.5 U	
CHLORODIBROMOMETHANE	1.7		0.5 U		0.5 U		0.5 U	
CHLOROETHANE	0.5 U		0.5 U		0.5 U		0.5 U	
CHLOROFORM	0.63 J	P	0.5 U		0.5 U		0.5 U	
CHLOROMETHANE	0.5 U		0.5 U		0.5 U		0.5 U	
CIS-1,2-DICHLOROETHENE	0.5 U		0.5 U		0.5 U		0.5 U	
CIS-1,3-DICHLOROPROPENE	0.5 U		0.5 U		0.5 U		0.5 U	
CYCLOHEXANE	0.5 U		0.5 U		0.5 U		0.5 U	
DICHLORODIFLUOROMETHANE	0.5 U		0.5 U		0.5 U		0.5 U	
ETHYLBENZENE	0.5 U		0.5 U		0.5 U		0.5 U	
ISOPROPYLBENZENE	0.5 U		0.5 U		0.5 U		0.5 U	

PROJ_NO: 00622	NSAMPLE	BP-VPB133-DW		BP-VPB133-GW-794		BP-VPB-TB-012512			
		LAB_ID	D1320-07	D1320-03	D1320-01	LAB_ID	D1320-01		
SDG: D1320	SAMP_DATE	1/27/2012	1/25/2012	1/25/2012	1/25/2012	1/25/2012	1/25/2012		
FRACTION: OV	QC_TYPE	NM	NM	NM	NM	NM	NM		
MEDIA: WATER	UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L		
	PCT_SOLIDS	0.0	0.0	0.0	0.0	0.0	0.0		
	DUP_OF								
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	1 U	1 U		1 U	1 U		1 U	1 U	
METHYL ACETATE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
METHYL CYCLOHEXANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
METHYL TERT-BUTYL ETHER	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
METHYLENE CHLORIDE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
O-XYLENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
STYRENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
TETRACHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
TOLUENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
TRANS-1,2-DICHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
TRANS-1,3-DICHLOROPROPENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
TRICHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
TRICHLOROFLUOROMETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
VINYL CHLORIDE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	



TO: D. BRAYACK **DATE:** MARCH 21, 2012
FROM: TERRI L. SOLOMON **COPIES:** DV FILE
SUBJECT: ORGANIC DATA VALIDATION – VOC
NWIRP BETHPAGE CTO WE 066
SAMPLE DELIVERY GROUP (SDG) – D1365
SAMPLES: 8/Aqueous/VOC
BP-VPB133-GW-844 BP-VPB133-GW-854
BP-VPB133-GW-864 BP-VPB133-GW-874
BP-VPB133-GW-884 BP-VPB133-GW-904
BP-VPB133-TB-013012-JF

Overview

The sample set for NWIRP Bethpage, CTO WE 066, SDG D1365 consists of six (6) environmental aqueous samples and a trip blank analyzed for volatile organic compounds (VOCs). There was no field duplicate contained in this SDG.

The samples were collected on January 30 and 31 and February 1, 2012 by Tetra Tech and analyzed by Chemtech. VOC analyses were conducted in accordance with EPA Method SW-846 8260B analytical and reporting protocol. The data contained in this SDG were validated with regard to the following parameters:

- * • Data completeness
- * • Holding times
- * • GC/MS Tuning
- Initial/continuing calibrations
- * • Laboratory Method Blank Results
- * • Surrogate Recoveries
- * • Laboratory Control Sample Recoveries
- * • Internal Standard Recoveries
- * • Compound Quantitation
- * • Compound Identification
- * • Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Qualified analytical results are presented in Appendix A, results as reported by the laboratory are presented in Appendix B, Region II data validation forms are presented in Appendix C, and documentation supporting these findings is presented in Appendix D.

VOC

The initial calibration relative standard deviations (%RSDs) for bromomethane, methyl acetate, methylene chloride, cyclohexane, trans-1,3-dichloropropene and cis-1,3-dichloropropene were greater than the 15% quality control limit on 01/26/2012 on instrument MSVOA R. The nondetected results for bromomethane, methyl acetate, methylene chloride, cyclohexane, trans-1,3-dichloropropene and cis-1,3-dichloropropene were qualified as estimated "UJ" in the affected sample BP-VPB133-TB-013012-JF.

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DATE: MARCH 21, 2012

The continuing calibration percent differences and/or percent drifts were greater than the 20% quality control limit for methyl acetate on 02/02/2012 at 18:11 on instrument MSVOA R. The nondetected result for methyl acetate was qualified as estimated "UJ" in the affected sample BP-VPB133-TB-013012-JF

The continuing calibration percent differences and/or percent drifts were greater than the 20% quality control limit for chloroethane and trichlorofluoromethane on 02/02/2012 at 12:12 on instrument MSVOA F. The nondetected results for chloroethane and trichlorofluoromethane were qualified as estimated "UJ" in the affected samples BP-VPB133-GW-844, BP-VPB133-GW-854, BP-VPB133-GW-864, BP-VPB133-GW-874, BP-VPB133-GW-884 and BP-VPB133-GW-904.

Positive results below the Reporting Limit (RL) and above the detection limit were qualified as estimated, (J), due to uncertainty near the detection limit.

Additional Comments

Groundwater samples BP-VPB133-GW-844, BP-VPB133-GW-854, BP-VPB133-GW-864, BP-VPB133-GW-874, BP-VPB133-GW-884 and BP-VPB133-GW-904 were analyzed as soil samples due to the amount of sediment in the samples. The sample results were reported as ug/kg on a wet weight basis.

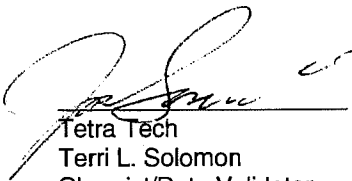
Nondetected results are reported to the limit of detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance Issues: Several initial %RSDs and continuing calibration %Ds / % drifts for several compounds exceeded the quality control limits.

Other Factors Affecting Data Quality: Positive results below the RL and above the detection limit were qualified as estimated.

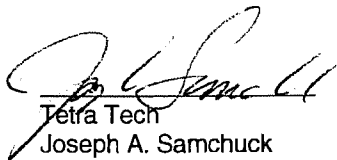
The data for these analyses were reviewed with reference to SOP # HW-24 Revision #2, August 2008, USEPA Region II Hazardous Waste Support Branch Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846/8260B, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories", April 2009. The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Terri L. Solomon
Chemist/Data Validator

MEMO TO: D. BRAYACK - PAGE 3

DATE: MARCH 21, 2012



Tetra Tech

Joseph A. Samchuck

Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Region II Data Validation Forms
4. Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 00622		NSAMPLE	BP-Y/PB133-TB-013012-JF
SDG: D1365		LAB_ID	D1365-03
FRACTION: OV		SAMP_DATE	1/30/2012
MEDIA: WATER		QC_TYPE	NM
		UNITS	UG/L
		PCT_SOLIDS	0.0
		DUP_OF	
PARAMETER	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.5 U		
1,1,2,2-TETRACHLOROETHANE	0.5 U		
1,1,2-TRICHLOROETHANE	0.5 U		
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5 U		
1,1-DICHLOROETHANE	0.5 U		
1,1-DICHLOROETHENE	0.5 U		
1,2,4-TRICHLOROBENZENE	0.5 U		
1,2-DIBROMO-3-CHLOROPROPANE	0.5 U		
1,2-DIBROMOETHANE	0.5 U		
1,2-DICHLOROBENZENE	0.5 U		
1,2-DICHLOROETHANE	0.5 U		
1,2-DICHLOROPROPANE	0.5 U		
1,3-DICHLOROBENZENE	0.5 U		
1,4-DICHLOROBENZENE	0.5 U		
2-BUTANONE	2.5 U		
2-HEXANONE	2.5 U		
4-METHYL-2-PENTANONE	2.5 U		
ACETONE	2.5 U		
BENZENE	0.5 U		
BROMODICHLOROMETHANE	0.5 U		
BROMOFORM	0.5 U		
BROMOMETHANE	0.5 UJ		C
CARBON DISULFIDE	0.5 U		
CARBON TETRACHLORIDE	0.5 U		
CHLOROBENZENE	0.5 U		
CHLORODIBROMOMETHANE	0.5 U		
CHLOROETHANE	0.5 U		
CHLOROFORM	0.5 U		
CHLOROMETHANE	0.5 U		
CIS-1,2-DICHLOROETHENE	0.5 U		
CIS-1,3-DICHLOROPROPENE	0.5 UJ		C
CYCLOHEXANE	0.5 UJ		C
DICHLORODIFLUOROMETHANE	0.5 U		
ETHYLBENZENE	0.5 U		
ISOPROPYLBENZENE	0.5 U		

PROJ_NO: 00622	NSAMPLE	BP-VPB133-TB-013012-JF	
SDG: D1365	LAB_ID	D1365-03	
FRACTION: OV	SAMP_DATE	1/30/2012	
MEDIA: WATER	QC_TYPE	NM	
	UNITS	UG/L	
	PCT_SOLIDS	0.0	
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
M+P-XYLENES	1	U	
METHYL ACETATE	0.5	UJ	C
METHYL CYCLOHEXANE	0.5	U	
METHYL TERT-BUTYL ETHER	0.5	U	
METHYLENE CHLORIDE	0.5	UJ	C
O-XYLENE	0.5	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.5	UJ	C
TRICHLOROETHENE	0.5	U	
TRICHLOROFLUOROMETHANE	0.5	U	
VINYL CHLORIDE	0.5	U	

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-844		BP-VPB133-GW-854		BP-VPB133-GW-864		BP-VPB133-GW-874	
		LAB_ID	D1365-01	D1365-02	D1365-04	D1365-05	LAB_ID	D1365-06	D1365-07
SDG: D1365	SAMP_DATE	1/30/2012	1/30/2012	1/30/2012	1/31/2012	1/31/2012	1/31/2012	1/31/2012	1/31/2012
FRACTION: OV	QC_TYPE	NM	NM	NM	NM	NM	NM	NM	NM
MEDIA: SOIL	UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
	PCT_SOLIDS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	DUP_OF								
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
1,1,2,2-TETRACHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
1,1,2-TRICHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
1,1-DICHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
1,1-DICHLOROETHENE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
1,2,4-TRICHLOROBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
1,2-DIBROMO-3-CHLOROPROPANE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
1,2-DIBROMOETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
1,2-DICHLOROBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
1,2-DICHLOROPROPANE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
1,2-DICHLOROBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
1,3-DICHLOROBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
1,4-DICHLOROBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
2-BUTANONE	12.5 U	13 U		12.5 U	13 U		13 U	12.5 U	
2-HEXANONE	12.5 U	13 U		12.5 U	13 U		13 U	12.5 U	
4-METHYL-2-PENTANONE	12.5 U	13 U		12.5 U	13 U		13 U	12.5 U	
ACETONE	12.5 U	18 J	P	18 J	13 U		13 U	20 J	P
BENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
BROMODICHLOROMETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
BROMOFORM	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
BROMOMETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
CARBON DISULFIDE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
CARBON TETRACHLORIDE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
CHLOROBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
CHLORODIBROMOMETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
CHLOROETHANE	2.5 UJ	2.5 UJ	C	2.5 UJ	2.5 UJ	C	2.55 UJ	2.45 UJ	C
CHLOROFORM	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
CHLOROMETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
CIS-1,2-DICHLOROETHENE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
CIS-1,3-DICHLOROPROPENE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
CYCLOHEXANE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
DICHLORODIFLUOROMETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
ETHYLBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	
ISOPROPYLBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.55 U	2.45 U	

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-844		BP-VPB133-GW-854		BP-VPB133-GW-864		BP-VPB133-GW-874										
		LAB_ID	D1365-01	D1365-02	D1365-04	D1365-05	SAMP_DATE	1/30/2012	1/31/2012	1/31/2012	QC_TYPE	NM	NM	UG/KG	UG/KG	0.0		
SDG: D1365	FRACTION: OV	1/30/2012	NM	UG/KG	0.0	1/30/2012	NM	UG/KG	0.0	1/30/2012	NM	UG/KG	0.0	1/31/2012	NM	UG/KG	0.0	
MEDIA: SOIL	PCT_SOLIDS	0.0	DUP_OF	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES		5 U		4.95 U	5 U		5 U			4.9 U	5 U		5 U			4.9 U	5 U	
METHYL ACETATE		2.5 U		2.5 U	2.5 U		2.55 U			2.45 U	2.55 U		2.55 U			2.45 U	2.55 U	
METHYL CYCLOHEXANE		2.5 U		2.5 U	2.5 U		2.55 U			2.45 U	2.55 U		2.55 U			2.45 U	2.55 U	
METHYL TERT-BUTYL ETHER		2.5 U		2.5 U	2.5 U		2.55 U			2.45 U	2.55 U		2.55 U			2.45 U	2.55 U	
METHYLENE CHLORIDE		2.5 U		2.5 U	2.5 U		2.55 U			2.45 U	2.55 U		2.55 U			2.45 U	2.55 U	
O-XYLENE		2.5 U		2.5 U	2.5 U		2.55 U			2.45 U	2.55 U		2.55 U			2.45 U	2.55 U	
STYRENE		2.5 U		2.5 U	2.5 U		2.55 U			2.45 U	2.55 U		2.55 U			2.45 U	2.55 U	
TETRACHLOROETHENE		2.5 U		2.5 U	2.5 U		2.55 U			2.45 U	2.55 U		2.55 U			2.45 U	2.55 U	
TOLUENE		2.5 U		2.5 U	2.5 U		2.55 U			2.45 U	2.55 U		2.55 U			2.45 U	2.55 U	
TRANS-1,2-DICHLOROETHENE		2.5 U		2.5 U	2.5 U		2.55 U			2.45 U	2.55 U		2.55 U			2.45 U	2.55 U	
TRANS-1,3-DICHLOROPROPENE		2.5 U		2.5 U	2.5 U		2.55 U			2.45 U	2.55 U		2.55 U			2.45 U	2.55 U	
TRICHLOROETHENE		2.5 U		2.5 U	2.5 U		2.55 U			2.45 U	2.55 U		2.55 U			2.45 U	2.55 U	
TRICHLOROFLUOROMETHANE		2.5 UJ	C	2.5 UJ	2.5 UJ	C	2.55 UJ			2.45 UJ	2.55 UJ	C	2.55 UJ			2.45 UJ	2.55 UJ	C
VINYL CHLORIDE		2.5 U		2.5 U	2.5 U		2.55 U			2.45 U	2.55 U		2.55 U			2.45 U	2.55 U	

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-884	BP-VPB133-GW-904			
SDG: D1365	LAB_ID	D1365-06	D1365-07			
FRACTION: OV	SAMP_DATE	1/31/2012	2/1/2012			
MEDIA: SOIL	QC_TYPE	NM	NM			
	UNITS	UG/KG	UG/KG			
	PCT_SOLIDS	0.0	0.0			
	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U	
1,1,2,2-TETRACHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U	
1,1,2-TRICHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U	
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U	
1,1-DICHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U	
1,1-DICHLOROETHENE	2.5 U	2.5 U		2.5 U	2.5 U	
1,2,4-TRICHLOROETHENE	2.5 U	2.5 U		2.5 U	2.5 U	
1,2-DIBROMO-3-CHLOROPROPANE	2.5 U	2.5 U		2.5 U	2.5 U	
1,2-DIBROMOETHANE	2.5 U	2.5 U		2.5 U	2.5 U	
1,2-DICHLOROETHENE	2.5 U	2.5 U		2.5 U	2.5 U	
1,2-DICHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U	
1,2-DICHLOROPROPANE	2.5 U	2.5 U		2.5 U	2.5 U	
1,3-DICHLOROETHENE	2.5 U	2.5 U		2.5 U	2.5 U	
1,4-DICHLOROETHENE	2.5 U	2.5 U		2.5 U	2.5 U	
2-BUTANONE	12.5 U	12.5 U		12.5 U	12.5 U	
2-HEXANONE	12.5 U	12.5 U		12.5 U	12.5 U	
4-METHYL-2-PENTANONE	12.5 U	12.5 U		12.5 U	12.5 U	
ACETONE	20 J	P		33		
BENZENE	2.5 U	2.5 U		2.5 U	2.5 U	
BROMODICHLOROMETHANE	2.5 U	2.5 U		2.5 U	2.5 U	
BROMOFORM	2.5 U	2.5 U		2.5 U	2.5 U	
BROMOMETHANE	2.5 U	2.5 U		2.5 U	2.5 U	
CARBON DISULFIDE	2.5 U	2.5 U		2.5 U	2.5 U	
CARBON TETRACHLORIDE	2.5 U	2.5 U		2.5 U	2.5 U	
CHLOROBENZENE	2.5 U	2.5 U		2.5 U	2.5 U	
CHLORODIBROMOMETHANE	2.5 U	2.5 U		2.5 U	2.5 U	
CHLOROETHANE	2.5 UJ	C		2.5 UJ	C	
CHLOROFORM	2.5 U	2.5 U		2.5 U	2.5 U	
CHLOROMETHANE	2.5 U	2.5 U		2.5 U	2.5 U	
CIS-1,2-DICHLOROETHENE	2.5 U	2.5 U		2.5 U	2.5 U	
CIS-1,3-DICHLOROPROPENE	2.5 U	2.5 U		2.5 U	2.5 U	
CYCLOHEXANE	2.5 U	2.5 U		2.5 U	2.5 U	
DICHLORODIFLUOROMETHANE	2.5 U	2.5 U		2.5 U	2.5 U	
ETHYLBENZENE	2.5 U	2.5 U		2.5 U	2.5 U	
ISOPROPYLBENZENE	2.5 U	2.5 U		2.5 U	2.5 U	

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-884	BP-VPB133-GW-904			
SDG: D1365	LAB_ID	D1365-08	D1365-07			
FRACTION: OV	SAMP_DATE	1/31/2012	2/1/2012			
MEDIA: SOIL	QC_TYPE	NM	NM			
	UNITS	UG/KG	UG/KG			
	PCT_SOLIDS	0.0	0.0			
	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	5 U	5 U		5 U	5 U	
METHYL ACETATE	2.5 U	2.5 U		2.5 U	2.5 U	
METHYL CYCLOHEXANE	2.5 U	2.5 U		2.5 U	2.5 U	
METHYL TERT-BUTYL ETHER	2.5 U	2.5 U		2.5 U	2.5 U	
METHYLENE CHLORIDE	2.5 U	2.5 U		2.6 J	2.5 U	P
O-XYLENE	2.5 U	2.5 U		2.5 U	2.5 U	
STYRENE	2.5 U	2.5 U		2.5 U	2.5 U	
TETRACHLOROETHENE	2.5 U	2.5 U		2.5 U	2.5 U	
TOLUENE	2.5 U	2.5 U		2.5 U	2.5 U	
TRANS-1,2-DICHLOROETHENE	2.5 U	2.5 U		2.5 U	2.5 U	
TRANS-1,3-DICHLOROPROPENE	2.5 U	2.5 U		2.5 U	2.5 U	
TRICHLOROETHENE	2.5 U	2.5 U		2.5 U	2.5 U	
TRICHLOROFLUOROMETHANE	2.5 UJ	2.5 UJ	C	2.5 UJ	2.5 UJ	C
VINYL CHLORIDE	2.5 U	2.5 U		2.5 U	2.5 U	

The continuing calibration performed on instrument MSVOAG on 02/08/12 @ 11:29 had Percent Differences (%Ds) for 2-butanone, bromoform, and bromomethane, and Percent Drifts (%Drifts) for chloroethane and methyl acetate above the 20% quality control criterion. Only non-detected results were reported for these compounds in the affected samples, BP-VPB133-GW-974 and BP-VPB133-TB-020212-JRF, and these non-detects were qualified as estimated, (UJ).

The Percent Recovery (%R) for the surrogate spike compound, 4-bromofluorobenzene, was below the lower quality control limit in sample BP-VPB133-GW-959. The sample was reanalyzed with similar results. The results from the initial analysis were used in the data validation. The non-detected results reported for the target compounds in this sample were qualified as estimated, (UJ).

Additional Comments

Non-detected results are reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance Issues: Some continuing calibration %Ds and %Drifts exceeded 20%. One sample had a low surrogate %R.

Other Factors Affecting Data Quality: None.

TO: D. BRAYACK
SDG: D1436

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The data for these analyses were reviewed with reference to the SOP #HW-24 Revision #2, USEPA Region II Hazardous Waste Support Branch Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B (August 2008), EPA Method SW-846 8260C analytical and reporting protocols, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (April 2009).



Tetra Tech, Inc.
Michelle L. Allen
Chemist/Data Validator



Tetra Tech, Inc.
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Region II Data Validation Forms
4. Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times \text{IDL}$ for inorganics and $< \text{CRQL}$ for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $> 40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $< 30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-939	BP-VPB133-GW-959			
SDG: D1436	LAB_ID	D1436-02	D1436-03			
FRACTION: OV	SAMP_DATE	2/2/2012	2/2/2012			
MEDIA: SOIL	QC_TYPE	NM	NM			
	UNITS	UG/KG	UG/KG			
	PCT_SOLIDS	0.0	0.0			
	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		2.5 U			2.5 UJ	R
1,1,2,2-TETRACHLOROETHANE		2.5 U			2.5 UJ	R
1,1,2-TRICHLOROETHANE		2.5 U			2.5 UJ	R
1,1,2-TRICHLOROTRIFLUOROETHANE		2.5 U			2.5 UJ	R
1,1-DICHLOROETHANE		2.5 U			2.5 UJ	R
1,1-DICHLOROETHENE		2.5 U			2.5 UJ	R
1,2,4-TRICHLOROBENZENE		2.5 U			2.5 UJ	R
1,2-DIBROMO-3-CHLOROPROPANE		2.5 U			2.5 UJ	R
1,2-DIBROMOETHANE		2.5 U			2.5 UJ	R
1,2-DICHLOROBENZENE		2.5 U			2.5 UJ	R
1,2-DICHLOROETHANE		2.5 U			2.5 UJ	R
1,2-DICHLOROPROPANE		2.5 U			2.5 UJ	R
1,3-DICHLOROBENZENE		2.5 U			2.5 UJ	R
1,4-DICHLOROBENZENE		2.5 U			2.5 UJ	R
2-BUTANONE		12.5 U			12.5 UJ	R
2-HEXANONE		12.5 U			12.5 UJ	R
4-METHYL-2-PENTANONE		12.5 U			12.5 UJ	R
ACETONE		12.5 U			12.5 UJ	R
BENZENE		2.5 U			2.5 UJ	R
BROMODICHLOROMETHANE		2.5 U			2.5 UJ	R
BROMOFORM		2.5 U			2.5 UJ	R
BROMOMETHANE		2.5 U			2.5 UJ	R
CARBON DISULFIDE		2.5 U			2.5 UJ	R
CARBON TETRACHLORIDE		2.5 U			2.5 UJ	R
CHLOROBENZENE		2.5 U			2.5 UJ	R
CHLORODIBROMOMETHANE		2.5 U			2.5 UJ	R
CHLOROETHANE		2.5 U			2.5 UJ	R
CHLOROFORM		2.5 U			2.5 UJ	R
CHLOROMETHANE		2.5 U			2.5 UJ	R
CIS-1,2-DICHLOROETHENE		2.5 U			2.5 UJ	R
CIS-1,3-DICHLOROPROPENE		2.5 U			2.5 UJ	R
CYCLOHEXANE		2.5 U			2.5 UJ	R
DICHLORODIFLUOROMETHANE		2.5 U			2.5 UJ	R
ETHYLBENZENE		2.5 U			2.5 UJ	R
ISOPROPYLBENZENE		2.5 U			2.5 UJ	R

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-939	BP-VPB133-GW-959
SDG: D1436	LAB_ID	D1436-02	D1436-03
FRACTION: OV	SAMP_DATE	2/2/2012	2/2/2012
MEDIA: SOIL	QC_TYPE	NM	NM
	UNITS	UG/KG	UG/KG
	PCT_SOLIDS	0.0	0.0
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
M+P-XYLENES	5 U	5 UJ	R
METHYL ACETATE	2.5 U	2.5 UJ	R
METHYL CYCLOHEXANE	2.5 U	2.5 UJ	R
METHYL TERT-BUTYL ETHER	2.5 U	2.5 UJ	R
METHYLENE CHLORIDE	2.5 U	2.5 UJ	R
O-XYLENE	2.5 U	2.5 UJ	R
STYRENE	2.5 U	2.5 UJ	R
TETRACHLOROETHENE	2.5 U	2.5 UJ	R
TOLUENE	2.5 U	2.5 UJ	R
TRANS-1,2-DICHLOROETHENE	2.5 U	2.5 UJ	R
TRANS-1,3-DICHLOROPROPENE	2.5 U	2.5 UJ	R
TRICHLOROETHENE	2.5 U	2.5 UJ	R
TRICHLOROFLUOROMETHANE	2.5 U	2.5 UJ	R
VINYL CHLORIDE	2.5 U	2.5 UJ	R

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-974	BP-VPB133-TB-020212-JRF			
SDG: D1436	LAB_ID	D1436-04	D1436-01			
FRACTION: OV	SAMP_DATE	2/3/2012	2/2/2012			
MEDIA: WATER	QC_TYPE	NM	NM			
	UNITS	UG/L	UG/L			
	PCT_SOLIDS	0.0	0.0			
	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.5 U			0.5 U		
1,1,2,2-TETRACHLOROETHANE	0.5 U			0.5 U		
1,1,2-TRICHLOROETHANE	0.5 U			0.5 U		
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5 U			0.5 U		
1,1-DICHLOROETHANE	0.5 U			0.5 U		
1,1-DICHLOROETHENE	0.5 U			0.5 U		
1,2,4-TRICHLOROBENZENE	0.5 U			0.5 U		
1,2-DIBROMO-3-CHLOROPROPANE	0.5 U			0.5 U		
1,2-DIBROMOETHANE	0.5 U			0.5 U		
1,2-DICHLOROBENZENE	0.5 U			0.5 U		
1,2-DICHLOROETHANE	0.5 U			0.5 U		
1,2-DICHLOROPROPANE	0.5 U			0.5 U		
1,3-DICHLOROBENZENE	0.5 U			0.5 U		
1,4-DICHLOROBENZENE	0.5 U			0.5 U		
2-BUTANONE	2.5 UJ		C	2.5 UJ		C
2-HEXANONE	2.5 U			2.5 U		
4-METHYL-2-PENTANONE	2.5 U			2.5 U		
ACETONE	2.5 U			2.5 U		
BENZENE	0.5 U			0.5 U		
BROMODICHLOROMETHANE	0.5 U			0.5 U		
BROMOFORM	0.5 UJ		C	0.5 UJ		C
BROMOMETHANE	0.5 UJ		C	0.5 UJ		C
CARBON DISULFIDE	0.5 U			0.5 U		
CARBON TETRACHLORIDE	0.5 U			0.5 U		
CHLOROBENZENE	0.5 U			0.5 U		
CHLORODIBROMOMETHANE	0.5 U			0.5 U		
CHLOROETHANE	0.5 UJ		C	0.5 UJ		C
CHLOROFORM	0.5 U			0.5 U		
CHLOROMETHANE	0.5 U			0.5 U		
CIS-1,2-DICHLOROETHENE	0.5 U			0.5 U		
CIS-1,3-DICHLOROPROPENE	0.5 U			0.5 U		
CYCLOHEXANE	0.5 U			0.5 U		
DICHLORODIFLUOROMETHANE	0.5 U			0.5 U		
ETHYLBENZENE	0.5 U			0.5 U		
ISOPROPYLBENZENE	0.5 U			0.5 U		

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-974	BP-VPB133-TB-020212-JRF			
SDG: D1436	LAB_ID	D1436-04	D1436-01			
FRACTION: OV	SAMP_DATE	2/3/2012	2/2/2012			
MEDIA: WATER	QC_TYPE	NM	NM			
	UNITS	UG/L	UG/L			
	PCT_SOLIDS	0.0	0.0			
	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	1 U	1 U		1 U	1 U	
METHYL ACETATE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
METHYL CYCLOHEXANE	0.5 U	0.5 U		0.5 U	0.5 U	
METHYL TERT-BUTYL ETHER	0.5 U	0.5 U		0.5 U	0.5 U	
METHYLENE CHLORIDE	0.5 U	0.5 U		0.5 U	0.5 U	
O-XYLENE	0.5 U	0.5 U		0.5 U	0.5 U	
STYRENE	0.5 U	0.5 U		0.5 U	0.5 U	
TETRACHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U	
TOLUENE	0.5 U	0.5 U		0.5 U	0.5 U	
TRANS-1,2-DICHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U	
TRANS-1,3-DICHLOROPROPENE	0.5 U	0.5 U		0.5 U	0.5 U	
TRICHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U	
TRICHLOROFUOROMETHANE	0.5 U	0.5 U		0.5 U	0.5 U	
VINYL CHLORIDE	0.5 U	0.5 U		0.5 U	0.5 U	