LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

ERM
2525 Natomas Park Drive, Suite 350
Sacramento, CA 95833
ATTN: Ms. Maria Barajas-Albalawi

January 25, 2008

SUBJECT: BRC Tronox Parcel C/D/F/G, Data Validation

Dear Ms. Barajas-Albalawi

Enclosed is the revised data validation report for the fraction listed below. Please replace the previously submitted report with the enclosed revised report.

SDG#	LDC#	Fraction
IQK1137	18036B6	Wet Chemistry
IQK1480	18036D6	Wet Chemistry
IQK1979	18036Q6	Wet Chemistry

Please feel free to contact us if you have any questions.

Sincerely,

Erlinda T. Rauto
Operations Manager/Senior Chemist

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

ERM
2525 Natomas Park Drive, Suite 350
Sacramento, CA 95833
ATTN: Ms. Maria Barajas-Albalawi

January 22, 2008

SUBJECT: BRC Tronox Parcel C/D/F/G, Data Validation

Dear Ms. Barajas-Albalawi

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on January 2, 2008. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 18036:

SDG #	Fraction
IQK1136, IQK1137, IQK1433, IQK1480, IQK1509, IQK1512, IQK1514, IQK1726, IQK1728, IQK1853, IQK1872, IQK1873, IQK1956, IQK1976, IQK1977, IQK1978, IQK1979, IQK2275, IQK2276, IQK2277	2,2'-/4,4'-Dichlorobenzil, Wet Chemistry

The data validation was performed under EPA Level III and Level IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998

Please feel free to contact us if you have any questions.

Sincerely,

Erlinda T. Rauto
Operations Manager/Senior Chemist

9,863 Pages-CD

Attachment 1

80/20 EDD

LDC #18036 (ERM-Sacramento / BRC Tronox Parcel C/D/F/G)

LDC	SDG#	DATE REC'D	(3) DATE DUE	Dichloro-beznil (8270C)		Chlorite (300.1)		Cr(VI) (7196A)																											
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	IQK1136	01/02/08	01/23/08	-	-	1	0	1	0																										
B	IQK1137	01/02/08	01/23/08	0	11	0	11	0	11																										
C	IQK1433	01/02/08	01/23/08	1	0	1	0	1	0																										
D	IQK1480	01/02/08	01/23/08	0	12	0	12	0	12																										
E	IQK1509	01/02/08	01/23/08	0	6	0	6	0	6																										
F	IQK1512	01/02/08	01/23/08	0	7	0	7	0	7																										
G	IQK1514	01/02/08	01/23/08	0	10	0	10	0	10																										
H	IQK1726	01/02/08	01/23/08	0	7	0	7	0	7																										
I	IQK1728	01/02/08	01/23/08	0	9	0	9	0	9																										
J	IQK1853	01/02/08	01/23/08	1	0	1	0	1	0																										
K	IQK1872	01/02/08	01/23/08	0	10	0	10	0	10																										
L	IQK1873	01/02/08	01/23/08	0	6	0	6	0	6																										
M	IQK1956	01/02/08	01/23/08	1	0	1	0	1	0																										
N	IQK1976	01/02/08	01/23/08	0	7	0	7	0	7																										
O	IQK1977	01/02/08	01/23/08	0	2	0	2	0	2																										
P	IQK1978	01/02/08	01/23/08	0	4	0	4	0	4																										
Q	IQK1979	01/02/08	01/23/08	0	2	0	2	0	2																										
R	IQK2275	01/02/08	01/23/08	0	9	0	9	0	9																										
S	IQK2276	01/02/08	01/23/08	0	6	0	6	0	6																										
T	IQK2277	01/02/08	01/23/08	1	0	1	0	1	0																										
Total	T/LR			4	108	5	108	5	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	338

Shaded cells indicate Level IV validation (all other cells are Level IIII validation). These sample counts do not include MS/MSD, and DUPs

BRC Tronox Parcel C/D/F/G
Data Validation Reports
LDC# 18036

Dichlorobenzil

LDC Report# 18036B2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 9, 2007

LDC Report Date: January 15, 2008

Matrix: Soil

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1137

Sample Identification

TSB-CR-07-0'
TSB-CR-07-10'
TSB-CR-08-0'
TSB-CR-08-0'-FD
TSB-CJ-08-10'
TSB-CJ-04-0'
TSB-CJ-04-10'
TSB-CJ-07-0'
TSB-CJ-07-10'
TSB-CJ-03-0'
TSB-CJ-03-10'
TSB-CJ-08-10'MS
TSB-CJ-08-10'MSD

Introduction

This data review covers 13 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

Samples TSB-CR-08-0' and TSB-CR-08-0'-FD were identified as field duplicates. No 2,2'-/4,4'-Dichlorobenzil was detected in any of the samples.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK1137

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK1137

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK1137

No Sample Data Qualified in this SDG

LDC #: 18036B2b **VALIDATION COMPLETENESS WORKSHEET** Date: 1/14/08
SDG #: IQK1137 Level IV Page: 1 of 1
Laboratory: Test America Reviewer: Q
2nd Reviewer: [signature]

METHOD: GC/MS 2,2'-/4,4'-Dichlorobenzil (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/9/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	no ccc & spc
IV.	Continuing calibration/ICV	A	ICV ≤ 25%.
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/CRQLs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D = 3+4
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:
MS Soils

1	TSB-CR-07-0'	11	TSB-CJ-03-10'	21	TK12065-BK1	31	
2	TSB-CR-07-10'	12	TSB-CJ-08-10'MS	22		32	
3	TSB-CR-08-0'	13	TSB-CJ-08-10'MSD	23		33	
4	TSB-CR-08-0'-FD	14		24		34	
5	TSB-CJ-08-10'	15		25		35	
6	TSB-CJ-01-0'	16		26		36	
7	TSB-CJ-04-10'	17		27		37	
8	TSB-CJ-07-0'	18		28		38	
9	TSB-CJ-07-10'	19		29		39	
10	TSB-CJ-03-0'	20		30		40	

LDC #: 18036B2b
SDG #: 18K1137

VALIDATION FINDINGS CHECKLIST

Reviewer: Q
2nd Reviewer: L

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?			✓	
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of $\geq$ 0.990?			✓	
Were all percent relative standard deviations (%RSD) $\leq$ 30% and relative response factors (RRF) > 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?			✓	
Were all percent differences (%D) $\leq$ 25% and relative response factors (RRF) $\geq$ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 18036B6
SDG #: 18K113T

VALIDATION FINDINGS CHECKLIST

Reviewer: Q
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.		✓		
XVII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 2.2/4.4'-Dichlorobenzil
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU.
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 18036B2b
SDG #: 18K1137

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: [signature]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

RRF = $(A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound,
C_x = Concentration of compound,
S = Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	11/7/07	~~Phenol (1st~~ 5th internal standard) TTT	1.191	1.191	1.151	1.151	5.83	5.81
			Naphthalene (2nd internal standard)						
			Fluorene (3rd internal standard)						
			Pentachlorophenol (4th internal standard)						
			Bis(2-ethylhexyl)phthalate (5th internal standard)						
			Benzo(a)pyrene (6th internal standard)						
2	ICAL	11/15/07	~~Phenol (1st~~ 5th internal standard) TTT	1.122	1.122	1.047	1.047	7.01	7.01
			Naphthalene (2nd internal standard)						
			Fluorene (3rd internal standard)						
			Pentachlorophenol (4th internal standard)						
			Bis(2-ethylhexyl)phthalate (5th internal standard)						
			Benzo(a)pyrene (6th internal standard)						
3			Phenol (1st internal standard)						
			Naphthalene (2nd internal standard)						
			Fluorene (3rd internal standard)						
			Pentachlorophenol (4th internal standard)						
			Bis(2-ethylhexyl)phthalate (5th internal standard)						
			Benzo(a)pyrene (6th internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 18036B6
SDG #: 18K1137

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer:
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	SSTD050	11/12/07	~~Phenol~~ (~~1st~~ 5th internal standard) TTT	1.151	1.368	1.368	18.9	18.9
			Naphthalene (2nd internal standard)					
			Fluorene (3rd internal standard)					
			Pentachlorophenol (4th internal standard)					
			Bis(2-ethylhexyl)phthalate (5th internal standard)					
			Benzo(a)pyrene (6th internal standard)					
2	SSTD050	11/16/07	~~Phenol~~ (~~1st~~ 5th internal standard) TTT	1.151	1.185	1.185	3.0	3.0
			Naphthalene (2nd internal standard)					
			Fluorene (3rd internal standard)					
			Pentachlorophenol (4th internal standard)					
			Bis(2-ethylhexyl)phthalate (5th internal standard)					
			Benzo(a)pyrene (6th internal standard)					
3	SSTD054	11/15/07	~~Phenol~~ (~~1st~~ 5th internal standard) TTT	1.047	1.117	1.117	6.7	6.7
			Naphthalene (2nd internal standard)					
			Fluorene (3rd internal standard)					
			Pentachlorophenol (4th internal standard)					
			Bis(2-ethylhexyl)phthalate (5th internal standard)					
	SSTD050	11/19/07	~~Benzo(a)pyrene~~ (~~6th~~ 5th internal standard) TTT	1.047	1.047	1.047	0.0	0.0

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 18036B2b
SDG #: 18K1137

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: 9
2nd reviewer: 9

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	50	32.74	65	65	0
2-Fluorobiphenyl	↓	36.15	72	72	↓
Terphenyl-d14	↓	44.43	89	89	↓
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

LDC #: 18036B2b
SDG #: 18K1137

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = | MS - MSD | * 2/(MS + MSD) MS = Matrix spike percent recovery MSD = Matrix spike duplicate percent recovery

MS/MSD samples: 12/13

Compound	Spike Added (µg/kg)		Sample Concentration (µg/kg)	Spiked Sample Concentration (µg/kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	-------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol											
N-Nitroso-di-n-propylamine											
4-Chloro-3-methylphenol											
Acenaphthene											
Pentachlorophenol											
Pyrene											
TTT	3330	3330	ND	2870	3210	86	86	96	96	11	11

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 18036B6
SDG #: 18K113T

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: A
2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = | LCS - LCSD | * 2/(LCS + LCSD) LCS = Laboratory control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: TK1206S-BS1

Compound	Spike Added (ug/kg)		Spike Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol										
N-Nitroso-di-n-propylamine										
4-Chloro-3-methylphenol										
Acenaphthene										
Pentachlorophenol										
Pyrene										
TTT	3330	NA	3170	NA	95	95				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 18036B2b
SDG #: 18K1137

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: 9
2nd reviewer: 9

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

$$\text{Concentration} = \frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

V_i = Volume of extract injected in microliters (ul)

V_t = Volume of the concentrated extract in microliters (ul)

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. ND , _____:

Conc. = ( )( )( )( )( )( )
( )( )( )( )( )

=

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

LDC Report# 18036C2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 13, 2007

LDC Report Date: January 15, 2008

Matrix: Water

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1433

Sample Identification

RINSATE 2

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

Sample "Rinsate 2" was identified as a rinsate. No 2,2'-/4,4'-Dichlorobenzil was found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK1433

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK1433

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK1433

No Sample Data Qualified in this SDG

LDC #: 18036C2b
SDG #: IQK1433
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/14/08
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS 2,2'-/4,4'-Dichlorobenzil (EPA SW 846 Method 8270C) DYD

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/13/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	no ccc & spcc
IV.	Continuing calibration/ICV	A	ICV ≤ 25%. +
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	insufficient sample
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	R = 1

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	RINSATE 2 W	11	IK15059-BLK1	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC Report# 18036D2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 13, 2007

LDC Report Date: January 15, 2008

Matrix: Soil

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1480

Sample Identification

TSB-DR-06-0'
TSB-DR-06-10'
TSB-DR-05-0'
TSB-DR-05-0'-FD
TSB-DR-05-10'
TSB-DR-03-0'
TSB-DR-03-0'MS/MSD
TSB-DR-03-10'
TSB-DJ-01-0'
TSB-DJ-01-10'
TSB-DR-04-0'
TSB-DR-04-10'
TSB-DR-03-0'MS/MSDMS
TSB-DR-03-0'MS/MSDMSD

Introduction

This data review covers 14 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

Sample "Rinsate 2" (from SDG IQK1433) was identified as a rinsate. No 2,2'-/4,4'-Dichlorobenzil was found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

Samples TSB-DR-05-0' and TSB-DR-05-0'-FD were identified as field duplicates. No 2,2'-/4,4'-Dichlorobenzil was detected in any of the samples.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK1480

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK1480

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK1480

No Sample Data Qualified in this SDG

LDC #: 18036D2b **VALIDATION COMPLETENESS WORKSHEET** Date: 1/14/08
SDG #: IQK1480 Level IV Page: 1 of 1
Laboratory: Test America Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS 2,2'-/4,4'-Dichlorobenzil (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/13/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	no ccc & spcc
IV.	Continuing calibration/ICV	A	ICV ≤ 25% ✓
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/CRQLs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D = 3+4
XVII.	Field blanks	NO	R = Rinsate 2 (IQK1433)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:
All Soils

1	TSB-DR-06-0'	11	TSB-DR-04-0'	21	~~FSB~~	31	
2	TSB-DR-06-10'	12	TSB-DR-04-10'	22	7K17046-BK1	32	
3	TSB-DR-05-0'	13	TSB-DR-03-0'MS/MSDMS	23		33	
4	TSB-DR-05-0'-FD	14	TSB-DR-03-0'MS/MSDMSD	24		34	
5	TSB-DR-05-10'	15		25		35	
6	TSB-DR-03-0'	16		26		36	
7	TSB-DR-03-0'MS/MSD	17		27		37	
8	TSB-DR-03-10'	18		28		38	
9	TSB-DJ-01-0'	19		29		39	
10	TSB-DJ-01-10'	20		30		40	

LDC #: 18036026
SDG #: 18K1480

VALIDATION FINDINGS CHECKLIST

Reviewer: 9
2nd Reviewer: 1

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?			✓	
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of $\geq$ 0.990?			✓	
Were all percent relative standard deviations (%RSD) $\leq$ 30% and relative response factors (RRF) $>$ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?			✓	
Were all percent differences (%D) $\leq$ 25% and relative response factors (RRF) $\geq$ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?	✓		✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?	✓		✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 18036D4
SDG #: 18KH80

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: 9
2nd Reviewer: 1

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds from the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs	✓			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.		✓		
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 2,2'/4,4'-Dichlorobenzil
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU.
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 18036026
SDG #: 18K1480

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: 0
2nd Reviewer: 2

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

RRF = $(A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard
S = Standard deviation of the RRFs, X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	11/15/07	~~Phenol (1st~~ 5th internal standard) TTT	1.122	1.122	1.047	1.047	7.01	7.01
			Naphthalene (2nd internal standard)						
			Fluorene (3rd internal standard)						
			Pentachlorophenol (4th internal standard)						
			Bis(2-ethylhexyl)phthalate (5th internal standard)						
			Benzo(a)pyrene (6th internal standard)						
2	ICAL	11/20/07	~~Phenol (1st~~ 5th internal standard) TTT	1.357	1.351	1.345	1.345	8.14	8.15
			Naphthalene (2nd internal standard)						
			Fluorene (3rd internal standard)						
			Pentachlorophenol (4th internal standard)						
			Bis(2-ethylhexyl)phthalate (5th internal standard)						
			Benzo(a)pyrene (6th internal standard)						
3			Phenol (1st internal standard)						
			Naphthalene (2nd internal standard)						
			Fluorene (3rd internal standard)						
			Pentachlorophenol (4th internal standard)						
			Bis(2-ethylhexyl)phthalate (5th internal standard)						
			Benzo(a)pyrene (6th internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 18036D2b
SDG #: 18K1488

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 8

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	STD050	11/19/07	~~Phenol~~ (1st internal standard) TTT	1.047	1.047	1.047	0	0
			Naphthalene (2nd internal standard)					
			Fluorene (3rd internal standard)					
			Pentachlorophenol (4th internal standard)					
			Bis(2-ethylhexyl)phthalate (5th internal standard)					
			Benzo(a)pyrene (6th internal standard)					
2	~~STD020~~	11/20/07	~~Phenol~~ (1st internal standard) TTT	1.345	1.268	1.268	5.7	5.7
			Naphthalene (2nd internal standard)					
			Fluorene (3rd internal standard)					
			Pentachlorophenol (4th internal standard)					
			Bis(2-ethylhexyl)phthalate (5th internal standard)					
			Benzo(a)pyrene (6th internal standard)					
3			Phenol (1st internal standard)					
			Naphthalene (2nd internal standard)					
			Fluorene (3rd internal standard)					
			Pentachlorophenol (4th internal standard)					
			Bis(2-ethylhexyl)phthalate (5th internal standard)					
			Benzo(a)pyrene (6th internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 18036026
SDG #: 18K1480

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: 9
2nd reviewer: 9

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	50	38.07	76	76	0
2-Fluorobiphenyl	1	43.62	87	87	1
Terphenyl-d14	1	41.98	84	84	1
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

LDC #: 18036026
SDG #: 18K1480

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 2

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = I MS - MSD I * 2/(MS + MSD) MS = Matrix spike percent recovery MSD = Matrix spike duplicate percent recovery

MS/MSD samples: 13/14

Compound	Spike Added (ug/kg)		Sample Concentration (ug/kg)	Spiked Sample Concentration (ug/kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol											
N-Nitroso-di-n-propylamine											
4-Chloro-3-methylphenol											
Acenaphthene											
Pentachlorophenol											
Pyrene											
TTT	3330	3330	ND	3050	3190	91	91	96	96	5	4

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 18036D-b
SDG #: 18K1480

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 9

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA

Where: SSC = Spike concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD)

LCS = Laboratory control sample percent recovery

LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: TK1#046-BS1

Compound	Spike Added (MPS)		Spike Concentration MPST		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
Phenol										
N-Nitroso-di-n-propylamine										
4-Chloro-3-methylphenol										
Acenaphthene										
Pentachlorophenol										
Pyrene										
TTT	3330	NA	3360	NA	101	101				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 18036026
SDG #: 02-1480

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: 9
2nd reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

V_i = Volume of extract injected in microliters (ul)

V_t = Volume of the concentrated extract in microliters (ul)

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 10 , _____:

Conc. = ( )( )( )( )( )
( )( )( )( )( )

=

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 13, 2007

LDC Report Date: January 15, 2008

Matrix: Soil

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1509

Sample Identification

TSB-CR-04-0'
TSB-CR-04-10'
TSB-CR-05-0'
TSB-CR-05-10'
TSB-CR-06-0'
TSB-CR-06-10'

Introduction

This data review covers 6 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

Sample "Rinsate 2" (from SDG IQK1433) was identified as a rinsate. No 2,2'-/4,4'-Dichlorobenzil was found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK1509

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK1509

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK1509

No Sample Data Qualified in this SDG

LDC #: 18036E2b
SDG #: IQK1509
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/14/08
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: GC/MS 2,2'-/4,4'-Dichlorobenzil (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/13/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	No CCC & SPCC
IV.	Continuing calibration/ICV	A	RPD ≤ 25%.
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	Rinsate 2 (IQK1433)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	TSB-CR-04-0' S	11	IK17046-BLK1	21		31	
2	TSB-CR-04-10'	12		22		32	
3	TSB-CR-05-0'	13		23		33	
4	TSB-CR-05-10'	14		24		34	
5	TSB-CR-06-0'	15		25		35	
6	TSB-CR-06-10'	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 12, 2007

LDC Report Date: January 15, 2008

Matrix: Soil

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1512

Sample Identification

TSB-CR-03-0'
TSB-CR-03-10'
TSB-CJ-05-0'
TSB-CJ-05-10'
TSB-CJ-06-0'
TSB-CJ-06-0'-FD
TSB-CJ-06-10'

Introduction

This data review covers 7 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

Samples TSB-CJ-06-0' and TSB-CJ-06-0'-FD were identified as field duplicates. No 2,2'-/4,4'-Dichlorobenzil was detected in any of the samples.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK1512

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK1512

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK1512

No Sample Data Qualified in this SDG

LDC #: 18036F2b

SDG #: IQK1512

Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 1/14/08

Page: 1 of 1

Reviewer: Q

2nd Reviewer: Q

METHOD: GC/MS 2,2'-/4,4'-Dichlorobenzil (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/12/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	no ccc & spcc
IV.	Continuing calibration/ICV	A	ICV ≤ 25%.
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D = 5 + 6
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

All Soils

1	TSB-CR-03-0'	11	TK17096-BLK	21		31	
2	TSB-CR-03-10'	12	TK19054-BS1	22		32	
3	TSB-CJ-05-0'	13		23		33	
4	TSB-CJ-05-10'	14		24		34	
5	TSB-CJ-06-0'	15		25		35	
6	TSB-CJ-06-0'-FD	16		26		36	
7	TSB-CJ-06-10'	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC Report# 18036G2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 12, 2007

LDC Report Date: January 15, 2008

Matrix: Soil

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1514

Sample Identification

TSB-CJ-02-0'
TSB-CJ-02-10'
TSB-CJ-01-0'
TSB-CJ-01-10'
TSB-CJ-01-0'-FD
TSB-CR-02-0'
TSB-CR-02-10'
TSB-CR-01-0'
TSB-CR-01-0'-MS/MSD
TSB-CR-01-10'
TSB-CR-01-0'-MS/MSDMS
TSB-CR-01-0'-MS/MSDMSD

Introduction

This data review covers 12 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

Samples TSB-CJ-01-0' and TSB-CJ-01-0'-FD were identified as field duplicates. No 2,2'-/4,4'-Dichlorobenzil was detected in any of the samples.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK1514

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK1514

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK1514

No Sample Data Qualified in this SDG

LDC #: 18036G2b
SDG #: IQK1514
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/14/08
Page: 1 of 1
Reviewer: 4
2nd Reviewer:

METHOD: GC/MS 2,2'-/4,4'-Dichlorobenzil (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/12/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	& no ccc & spcc
IV.	Continuing calibration/ICV	A	%RSD ≤ 25%.
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D = 3
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:
MW 30/9

1	TSB-CJ-02-0'	11	TSB-CR-01-0'-MS/MSDMS	21	IK19054-BK1	31	
2	TSB-CJ-02-10'	12	TSB-CR-01-0'-MS/MSDMSD	22		32	
3	TSB-CJ-01-0'	13		23		33	
4	TSB-CJ-01-10'	14		24		34	
5	TSB-CJ-01-0'-FD	15		25		35	
6	TSB-CR-02-0'	16		26		36	
7	TSB-CR-02-10'	17		27		37	
8	TSB-CR-01-0'	18		28		38	
9	TSB-CR-01-0'-MS/MSD	19		29		39	
10	TSB-CR-01-10'	20		30		40	

LDC Report# 18036H2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 14, 2007

LDC Report Date: January 15, 2008

Matrix: Soil

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1726

Sample Identification

TSB-DR-01-0'
TSB-DR-01-10'
TSB-DR-02-0'
TSB-DR-02-0'-FD
TSB-DR-02-10'
JB-NWDITCH-01-0'
JB-NWDITCH-01-10'

Introduction

This data review covers 7 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

Samples TSB-DR-02-0' and TSB-DR-02-0'-FD were identified as field duplicates. No 2,2'-/4,4'-Dichlorobenzil was detected in any of the samples.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK1726

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK1726

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK1726

No Sample Data Qualified in this SDG

LDC #: 18036H2b
SDG #: IQK1726
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/14/08
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS 2,2'-/4,4'-Dichlorobenzil (EPA SW 846 Method 8270C) OND

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/14/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	NO CCC RSPCC
IV.	Continuing calibration/ICV	A	ICV≤25%.
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N/D	D=3+4
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:
MI 30,15

1	TSB-DR-01-0'	11	IK19052-BK1	21		31	
2	TSB-DR-01-10'	12	IK19069-BK1	22		32	
3	TSB-DR-02-0'	13	IK19063-BK1	23		33	
4	TSB-DR-02-0'-FD	14		24		34	
5	TSB-DR-02-10'	15		25		35	
6	JB-NWDITCH-01-0'	16		26		36	
7	JB-NWDITCH-01-10'	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC Report# 18036I2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 14, 2007

LDC Report Date: January 21, 2008

Matrix: Soil

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1728

Sample Identification

TSB-FR-01-0'
TSB-FR-01-10'
TSB-FJ-07-0'
TSB-FJ-07-10'
TSB-FJ-06-0'
TSB-FJ-06-0'-FD
TSB-FJ-06-10'
TSB-FJ-05-0'
TSB-FJ-05-10'
TSB-FR-01-0'MS
TSB-FR-01-0'MSD

Introduction

This data review covers 11 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

Samples TSB-FJ-06-0' and TSB-FJ-06-0'-FD were identified as field duplicates. No 2,2'-/4,4'-Dichlorobenzil was detected in any of the samples.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK1728

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK1728

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK1728

No Sample Data Qualified in this SDG

LDC #: 18036I2b
SDG #: IQK1728
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/14/08
Page: 1 of 1
Reviewer: g
2nd Reviewer: f

METHOD: GC/MS 2,2'-/4,4'-~~Dichlorobenzil~~ Dichlorobenzil (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/14/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	no ccc & sPCC ↓
IV.	Continuing calibration/ICV	A	%RSD ≤ 25%.
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D = 5+6
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:
MS Soils

1	TSB-FR-01-0'	11	TSB-FR-01-0'MSD	21	IK19063-BLK1	31	
2	TSB-FR-01-10'	12		22		32	
3	TSB-FJ-07-0'	13		23		33	
4	TSB-FJ-07-10'	14		24		34	
5	TSB-FJ-06-0'	15		25		35	
6	TSB-FJ-06-0'-FD	16		26		36	
7	TSB-FJ-06-10'	17		27		37	
8	TSB-FJ-05-0'	18		28		38	
9	TSB-FJ-05-10'	19		29		39	
10	TSB-FR-01-0'MS	20		30		40	

LDC Report# 18036J2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 15, 2007

LDC Report Date: January 15, 2008

Matrix: Water

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1853

Sample Identification

RINSATE 3

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

Sample "Rinsate 3" was identified as a rinsate. No 2,2'-/4,4'-Dichlorobenzil was found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK1853

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK1853

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK1853

No Sample Data Qualified in this SDG

LDC #: 18036J2b

SDG #: IQK1853

Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 1/14/08

Page: 1 of 1

Reviewer: CM

2nd Reviewer: [illegible]

METHOD: GC/MS 2,2'-/4,4'-~~Dichlorobenzil~~ Dichlorobenzil (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/15/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	no ecc & spcc
IV.	Continuing calibration/ICV	A	ICV ≤ 25% ✓
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	insufficient sample
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	R=1

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	RINSATE 3 W	11	IK18034-BLK1	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC Report# 18036K2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 15, 2007

LDC Report Date: January 15, 2008

Matrix: Soil

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1872

Sample Identification

TSB-FJ-03-0'
TSB-FJ-03-0'-FD
TSB-FJ-03-10'
TSB-FJ-10-0'
TSB-FJ-10-10'
TSB-FJ-4-0'
TSB-FJ-4-10'
TSB-FJ-02-0'
TSB-FJ-02-0'-FD
TSB-FJ-02-10'

Introduction

This data review covers 10 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

Sample "Rinsate 3" (from SDG IQK1853) was identified as a rinsate. No 2,2'-/4,4'-Dichlorobenzil was found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

Samples TSB-FJ-03-0' and TSB-FJ-03-0'-FD and samples TSB-FJ-02-0' and TSB-FJ-02-0'-FD were identified as field duplicates. No 2,2'-/4,4'-Dichlorobenzil was detected in any of the samples.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK1872

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK1872

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK1872

No Sample Data Qualified in this SDG

LDC #: 18036K2b

SDG #: IQK1872

Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 1/14/08

Page: 1 of 1

Reviewer: Q

2nd Reviewer: [illegible]

METHOD: GC/MS 2,2'-/4,4'-~~Dichlrobenzil~~ Dichlorobenzil (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/15/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	no ccc & spcc
IV.	Continuing calibration/ICV	A	ICV = 25% D.
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D = 1+2, 8+9
XVII.	Field blanks	ND	Rinsate 3 (IQK1853)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

All Soils

1	TSB-FJ-03-0'	11	TK19063-13-k1	21		31	
2	TSB-FJ-03-0'-FD	12		22		32	
3	TSB-FJ-03-10'	13		23		33	
4	TSB-FJ-10-0'	14		24		34	
5	TSB-FJ-10-10'	15		25		35	
6	TSB-FJ-4-0'	16		26		36	
7	TSB-FJ-4-10'	17		27		37	
8	TSB-FJ-02-0'	18		28		38	
9	TSB-FJ-02-0'-FD	19		29		39	
10	TSB-FJ-02-10'	20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 15, 2007

LDC Report Date: January 15, 2008

Matrix: Soil

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1873

Sample Identification

TSB-FR-02-0'
TSB-FR-02-10'
TSB-FJ-09-0'
TSB-FJ-09-10'
TSB-FR-03-0'
TSB-FR-03-10'
TSB-FR-02-0'MS
TSB-FR-02-0'MSD

Introduction

This data review covers 8 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

Sample "Rinsate 3" (from SDG IQK1853) was identified as a rinsate. No 2,2'-/4,4'-Dichlorobenzil was found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK1873

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK1873

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK1873

No Sample Data Qualified in this SDG

LDC #: 18036L2b
SDG #: IQK1873
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/14/08
Page: 1 of 1
Reviewer: a
2nd Reviewer: a

METHOD: GC/MS 2,2'-/4,4'-~~Dichlorobenz~~Dichlorobenzil (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/15/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	
IV.	Continuing calibration/ICV	A	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	Rinsate3 (IBK1853)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:
MS/SD

1	TSB-FR-02-0'	11	7K26006-B4C1	21		31	
2	TSB-FR-02-10'	12	7K19069-B4C1	22		32	
3	TSB-FJ-09-0'	13		23		33	
4	TSB-FJ-09-10'	14		24		34	
5	TSB-FR-03-0'	15		25		35	
6	TSB-FR-03-10'	16		26		36	
7	TSB-FR-02-0'MS	17		27		37	
8	TSB-FR-02-0'MSD	18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 16, 2007

LDC Report Date: January 15, 2008

Matrix: Water

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1956

Sample Identification

RINSATE 4

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

Sample "Rinsate 4" was identified as a rinsate. No 2,2'-/4,4'-Dichlorobenzil was found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK1956

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK1956

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK1956

No Sample Data Qualified in this SDG

LDC #: 18036M2b **VALIDATION COMPLETENESS WORKSHEET** Date: 1/14/08
SDG #: IQK1956 Level III Page: 1 of 1
Laboratory: Test America Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS 2,2'-/4,4'-~~Dichlorobenzil~~ Dichlorobenzil (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/16/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	no exceedances
IV.	Continuing calibration/ICV	A	ICV ≤ 25%.
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	insufficient sample
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	R=1

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	RINSATE 4 W	11	IK19096B4-1	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 16, 2007

LDC Report Date: January 15, 2008

Matrix: Soil

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1976

Sample Identification

TSB-FJ-08-0'
TSB-FJ-08-10'
TSB-FR-05-0'
TSB-FR-05-10'
TSB-FR-04-0'
TSB-FR-04-0'-FD
TSB-FR-04-10'

Introduction

This data review covers 7 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

Sample "Rinsate 4" (from SDG IQK1956) was identified as a rinsate. No 2,2'-/4,4'-Dichlorobenzil was found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

Samples TSB-FR-04-0' and TSB-FR-04-0'-FD were identified as field duplicates. No 2,2'-/4,4'-Dichlorobenzil was detected in any of the samples.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK1976

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK1976

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK1976

No Sample Data Qualified in this SDG

LDC #: 18036N2b **VALIDATION COMPLETENESS WORKSHEET** Date: 1/14/08
SDG #: IQK1976 Level III Page: 1 of 1
Laboratory: Test America Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS 2,2'-/4,4'-~~Dichlorobenzil~~ Dichlorobenzil (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/16/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	no ccc & %rsd
IV.	Continuing calibration/ICV	A	ICV ≤ 25%.
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D = 5+6
XVII.	Field blanks	ND	Rinsate (IBK1956)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:
MS/D

1	TSB-FJ-08-0'	11	TK26006-BK1	21		31	
2	TSB-FJ-08-10'	12		22		32	
3	TSB-FR-05-0'	13		23		33	
4	TSB-FR-05-10'	14		24		34	
5	TSB-FR-04-0'	15		25		35	
6	TSB-FR-04-0'-FD	16		26		36	
7	TSB-FR-04-10'	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 16, 2007

LDC Report Date: January 15, 2008

Matrix: Soil

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1977

Sample Identification

TSB-FJ-01-0'
TSB-FJ-01-10'
TSB-FJ-01-0'MS
TSB-FJ-01-0'MSD

Introduction

This data review covers 4 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

Sample "Rinsate 4" (from SDG IQK1956) was identified as a rinsate. No 2,2'-/4,4'-Dichlorobenzil was found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK1977

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK1977

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK1977

No Sample Data Qualified in this SDG

LDC #: 18036O2b **VALIDATION COMPLETENESS WORKSHEET** Date: 1/14/08
SDG #: IQK1977 Level III Page: 1 of 1
Laboratory: Test America Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS 2,2'-/4,4'-~~Dichlrobenzil~~ Dichlorobenzil (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/16/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	no ccc & spcc
IV.	Continuing calibration/ICV	A	ICV ≤ 25%.
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	Rinsate 4 (IQK1956)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	TSB-FJ-01-0'	11	7K28060-BLK1	21		31	
2	TSB-FJ-01-10'	12	7K28006-BLK1	22		32	
3	TSB-FJ-01-0'MS	13		23		33	
4	TSB-FJ-01-0'MSD	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 16, 2007

LDC Report Date: January 15, 2008

Matrix: Soil

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1978

Sample Identification

TSB-GR-01-0'
TSB-GR-01-5'
TSB-GJ-06-0'
TSB-GJ-06-5'

Introduction

This data review covers 4 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

Sample "Rinsate 4" (from SDG IQK1956) was identified as a rinsate. No 2,2'-/4,4'-Dichlorobenzil was found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK1978

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK1978

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK1978

No Sample Data Qualified in this SDG

LDC #: 18036P2b **VALIDATION COMPLETENESS WORKSHEET** Date: 1/14/08
SDG #: IQK1978 Level III Page: 1 of 1
Laboratory: Test America Reviewer: 9
2nd Reviewer: 9

METHOD: GC/MS 2,2'-/4,4'-~~Dichlorobenzil~~ Dichlorobenzil (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/16/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	no eccs & spcc
IV.	Continuing calibration/ICV	A	ICV ≤ 25%.
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	Rinsate 4 (IQK1956)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	TSB-GR-01-0' S	11	7K26006-BLK1	21		31	
2	TSB-GR-01-5'	12		22		32	
3	TSB-GJ-06-0'	13		23		33	
4	TSB-GJ-06-5'	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 16, 2007

LDC Report Date: January 15, 2008

Matrix: Soil

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1979

Sample Identification

TSB-GJ-01-0'
TSB-GJ-01-5'

Introduction

This data review covers 2 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK1979

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK1979

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK1979

No Sample Data Qualified in this SDG

LDC #: 18036Q2b **VALIDATION COMPLETENESS WORKSHEET** Date: 1/14/08

SDG #: IQK1979 Level III Page: 1 of 1

Laboratory: Test America Reviewer: 9

2nd Reviewer: 9

METHOD: GC/MS 2,2'-/4,4'-~~Dichlorobenzil~~ Dichlorobenzil (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/16/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	no ccc & spcc
IV.	Continuing calibration/ICV	A	ICV = 25%. ✓
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	TSB-BJ-01-0' S	11	IQK2600G-BK1	21		31	
2	TSB-BJ-01-5' ✓	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 19, 2007

LDC Report Date: January 15, 2008

Matrix: Soil

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK2275

Sample Identification

TSB-GJ-02-0'
TSB-GJ-02-0'-FD
TSB-GJ-02-5'
TSB-GJ-07-0'
TSB-GJ-07-5'
TSB-GJ-05-0'
TSB-GJ-05-5'
TSB-GJ-03-0'
TSB-GJ-03-5'

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

Sample "Rinsate 5" (from SDG IQK2277) was identified as a rinsate. No 2,2'-/4,4'-Dichlorobenzil was found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

Samples TSB-GJ-02-0' and TSB-GJ-02-0'-FD were identified as field duplicates. No 2,2'-/4,4'-Dichlorobenzil was detected in any of the samples.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK2275

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK2275

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK2275

No Sample Data Qualified in this SDG

LDC #: 18036R2b **VALIDATION COMPLETENESS WORKSHEET** Date: 1/14/08
SDG #: IQK2275 Level III Page: 1 of 1
Laboratory: Test America Reviewer: a
2nd Reviewer:

METHOD: GC/MS 2,2'-/4,4'-~~Dichlorobenzit~~ Dichlorobenzi (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/19/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	no ccc & spcc
IV.	Continuing calibration/ICV	A	ICV ≤ 30%. d
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D = 1 + 2
XVII.	Field blanks	ND	Rinsate 5 (IQK2277)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:
MS Soil

1	TSB-GJ-02-0'	11	IQK2129-BLK1	21		31	
2	TSB-GJ-02-0'-FD	12		22		32	
3	TSB-GJ-02-5'	13		23		33	
4	TSB-GJ-07-0'	14		24		34	
5	TSB-GJ-07-5'	15		25		35	
6	TSB-GJ-05-0'	16		26		36	
7	TSB-GJ-05-5'	17		27		37	
8	TSB-GJ-03-0'	18		28		38	
9	TSB-GJ-03-5'	19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 19, 2007

LDC Report Date: January 15, 2008

Matrix: Soil

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK2276

Sample Identification

TSB-GR-02-0'
TSB-GR-02-0'-FD
TSB-GR-02-5'
TSB-GJ-04-0'
TSB-GJ-04-0'-MS/MSD
TSB-GJ-04-5'
TSB-GJ-04-0'-MS/MSDMS
TSB-GJ-04-0'-MS/MSDMSD

Introduction

This data review covers 8 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

Sample "Rinsate 5" (from SDG IQK2277) was identified as a rinsate. No 2,2'-/4,4'-Dichlorobenzil was found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

Samples TSB-GR-02-0' and TSB-GR-02-0'-FD were identified as field duplicates. No 2,2'-/4,4'-Dichlorobenzil was detected in any of the samples.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK2276

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK2276

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK2276

No Sample Data Qualified in this SDG

LDC #: 18036S2b **VALIDATION COMPLETENESS WORKSHEET** Date: 4/14/08
SDG #: IQK2276 Level III Page: 1 of 1
Laboratory: Test America Reviewer: Q
2nd Reviewer: Q

METHOD: GC/MS 2,2'-/4,4'-~~Dichlrobenzi~~Dichlorobenzidine (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/19/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	No ccc & spcc
IV.	Continuing calibration/ICV	A	ICV ≤ 25%
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D = 1+2
XVII.	Field blanks	ND	Rinsate 5 (IQK2277)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:
MS Soils

1	TSB-GR-02-0'	11	IQK26129-BLK1	21		31	
2	TSB-GR-02-0'-FD	12		22		32	
3	TSB-GR-02-5'	13		23		33	
4	TSB-GR-04-0'	14		24		34	
5	TSB-GR-04-0'-MS/MSD	15		25		35	
6	TSB-GR-04-5'	16		26		36	
7	TSB-GR-04-0'-MS/MSDMS	17		27		37	
8	TSB-GR-04-0'-MS/MSDMSD	18		28		38	
9		19		29		39	
10		20		30		40	

LDC Report# 18036T2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 19, 2007

LDC Report Date: January 15, 2008

Matrix: Water

Parameters: 2,2'-/4,4'-Dichlorobenzil

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK2277

Sample Identification

RINSATE 5

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for 2,2'-/4,4'-Dichlorobenzil.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 2,2'-/4,4'-Dichlorobenzil was found in the method blanks.

Sample "Rinsate 5" was identified as a rinsate. No 2,2'-/4,4'-Dichlorobenzil was found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Data Qualification Summary - SDG IQK2277

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Laboratory Blank Data Qualification Summary - SDG IQK2277

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
2,2'-/4,4'-Dichlorobenzil - Field Blank Data Qualification Summary - SDG IQK2277

No Sample Data Qualified in this SDG

LDC #: 18036T2b
SDG #: IQK2277
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/14/08
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS 2,2'-/4,4'-~~Dichlorobenzil~~ Dichlorobenzil (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/19/07
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	no ccc & spcc
IV.	Continuing calibration/ICV	A	ICV %R 70.
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	R=1

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	RINSATE 5 W	11	TK230T0-BK01	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

BRC Tronox Parcel C/D/F/G
Data Validation Reports
LDC# 18036

Wet Chemistry

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 9, 2007

LDC Report Date: January 7, 2008

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1136

Sample Identification

RINSATE 1
RINSATE 1MS
RINSATE 1MSD

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample "RINSATE 1" was identified as a rinsate. No contaminant concentrations were found in this blank.

IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Data Qualification Summary - SDG IQK1136

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK1136

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK1136

No Sample Data Qualified in this SDG

LDC #: 18036A6
SDG #: IQK1136
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/3/58
Page: 1 of 1
Reviewer: AK
2nd Reviewer: W

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/9/57
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/MSD
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	ND	R = 1

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: All Water

1	RINSATE 1	11		21		31	
2	RINSATE 1MS	12		22		32	
3	RINSATE 1MSD	13		23		33	
4	PB	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: 300.1 Surr: A

LDC #: 18036A6
SDG #: IQK1136

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CL
2nd reviewer:

All circled methods are applicable to each sample.

Sample ID	Parameter
1	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] [✓ Chlorite] ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
QC Sample 2 - 3	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____

Comments:

Revision 1

LDC Report# 18036B6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 9, 2007

LDC Report Date: January 25, 2008

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1137

Sample Identification

TSB-CR-07-0'
TSB-CR-07-10'
TSB-CR-08-0'
TSB-CR-08-0'-FD
TSB-CJ-08-10'
TSB-CJ-04-0'
TSB-CJ-04-10'
TSB-CJ-07-0'
TSB-CJ-07-10'
TSB-CJ-03-0'
TSB-CJ-03-10'
TSB-CR-07-0'MS
TSB-CR-07-0'MSD

Introduction

This data review covers 13 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample "RINSATE 1" (from SDG IQK1136) was identified as a rinsate. No contaminant concentrations were found in this blank.

*IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Analyte	Flag	A or P
TSB-CR-07-10'	Dichloroacetate	87.44 (90-115)	Chlorite	J- (all detects) UJ (all non-detects)	P
TSB-CR-08-0'-FD	Dichloroacetate	83.75 (90-115)	Chlorite	J- (all detects) UJ (all non-detects)	P
TSB-CJ-08-10'	Dichloroacetate	89.73 (90-115)	Chlorite	J- (all detects) UJ (all non-detects)	P
TSB-CJ-04-0'	Dichloroacetate	88.87 (90-115)	Chlorite	J- (all detects) UJ (all non-detects)	P
TSB-CJ-04-10'	Dichloroacetate	68.94 (90-115)	Chlorite	J- (all detects) UJ (all non-detects)	P

Sample	Surrogate	%R (Limits)	Analyte	Flag	A or P
TSB-CJ-07-0'	Dichloroacetate	89.70 (90-115)	Chlorite	J- (all detects) UJ (all non-detects)	P
TSB-CJ-07-10'	Dichloroacetate	87.88 (90-115)	Chlorite	J- (all detects) UJ (all non-detects)	P
TSB-CJ-03-0'	Dichloroacetate	83.64 (90-115)	Chlorite	J- (all detects) UJ (all non-detects)	P

*Corrected affected analyte from "All TCL compounds" to Chlorite.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples TSB-CR-08-0' and TSB-CR-08-0'-FD were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

*BRC Tronox Parcel C/D/F/G
Wet Chemistry - Data Qualification Summary - SDG IQK1137

SDG	Sample	*Analyte	Flag	A or P	Reason
IQK1137	TSB-CR-07-10' TSB-CR-08-0'-FD TSB-CJ-08-10' TSB-CJ-04-0' TSB-CJ-04-10' TSB-CJ-07-0' TSB-CJ-07-10' TSB-CJ-03-0'	Chlorite	J- (all detects) UJ (all non-detects)	P	Surrogate recovery (%R)

*Corrected affected analyte from "All TCL compounds" to Chlorite in above Surrogate recovery (%R) finding.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK1137

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK1137

No Sample Data Qualified in this SDG

LDC #: 18036B6
SDG #: IQK1137
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 1/13/08
Page: 1 of 1
Reviewer: AL
2nd Reviewer: LW

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/9/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/MSD
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	A	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	ND	D: 3+4
X	Field blanks	ND	R: Rinsate 1 (for IQK1136)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: All soil

1	TSB-CR-07-0'	11	TSB-CJ-03-10'	21		31	
2	TSB-CR-07-10'	12	TSB-CR-07-0'MS	22		32	
3	TSB-CR-08-0'	13	TSB-CR-07-0'MSD	23		33	
4	TSB-CR-08-0'-FD	14	PB	24		34	
5	TSB-CJ-08-10'	15		25		35	
6	~~TSB-CJ-07-0'~~ TSB-CJ-04-0'	16		26		36	
7	TSB-CJ-04-10'	17		27		37	
8	TSB-CJ-07-0'	18		28		38	
9	TSB-CJ-07-10'	19		29		39	
10	TSB-CJ-03-0'	20		30		40	

Notes: 300.1 Surr: SW

LDC #: 18036B6
SDG #: IQU1137

VALIDATION FINDINGS CHECKLIST

Reviewer: dl
2nd Reviewer:

Method: Inorganics (EPA Method Sm Conv)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial calibration correlation coefficients > 0.995?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	✓			
Were titrant checks performed as required? (Level IV only)			✓	
Were balance checks performed as required? (Level IV only)			✓	
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
IV. Matrix Spike/Matrix Spike Duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL(≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were < 5X the CRDL.	✓			
V. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	✓			
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓	✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 18036B6
SDG #: IQV1137

VALIDATION FINDINGS CHECKLIST

Reviewer: AL
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
VI. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were detection limits < RL?	✓			
VII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
IX. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target analytes were detected in the field duplicates.		✓		
X. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.		✓		

LDC #: 1803686
SDG #: IQK1137

VALIDATION FINDINGS WORKSHEET

Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: al
2nd reviewer: [signature]

All circled methods are applicable to each sample.

Sample ID	Parameter
1 - 11	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC (circled: CR^{6+}) (circled: Chlorite)
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
QC sample 12 - 13	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC (circled: CR^{6+}) (circled: Chlorite)
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}

Comments:

LDC #: 18036B6
SDG #: IQK1137

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: AL
2nd Reviewer:

METHOD: Chlorite (EPA 300.1)
Are surrogates required by the method? Yes ✓ or No____.
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
(Y) N N/A Were surrogates spiked into all samples and blanks?
Y (N) N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Date	Lab ID/Reference	Column	Surrogate Compound	%R (Limits)	Associated Samples	Qualifications
		2		A	87.44 (90-115)	2	J-/UJ/A P
		4		↓	83.75 (↓)	4	↓
		5		↓	89.73 (↓)	5	↓
		6		↓	88.87 (↓)	6	↓
		7		↓	68.94 (↓)	7	↓
		8		↓	89.70 (↓)	8	↓
		9		↓	87.88 (↓)	9	↓
		10		↓	83.64 (↓)	10	↓
		12		↓	87.72 (90-115)	12	No qual (AC)
		13		✓	86.71 (90-115)	13	↓

Letter Designation	Surrogate Compound	Recovery QC Limits (Soil)	Recovery QC Limits (Water)	Comments
A	Dichloroacetate			
B				

LDC #: 18036B6
SDG #: IQK1137

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: AL
2nd Reviewer: MV

METHOD: Inorganics, Method Sw Cvw

The correlation coefficient (r) for the calibration of Chlorite was recalculated. Calibration date: 11/7/07

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
True = concentration of each analyte in the ICV or CCV source

Type of Analysis	Analyte		Conc (ug/L) (units)	Area (units)	Recalculated r or %R	Reported r or %R	Acceptable (Y/N)
Initial calibration	Chlorite	Blank	0	0	0.999899	0.999899	Y
Calibration verification		Standard 1	20	485148.30			
		Standard 2	100	2580797.40			
		Standard 3	200	5228081.60			
		Standard 4	400	10646272			
		Standard 5	-				
		Standard 6					
		Standard 7					
Calibration verification	Chlorite	99.3284	100		99.3%	NR	Y
Calibration verification	Cr^{6+}	0.31738	0.30		105.8%	NR	Y
Calibration verification							

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 18036B6
SDG #: Iak1137

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: al
2nd Reviewer:

METHOD: Inorganics, Method Sw Conv

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated %R / RPD	Reported %R / RPD	Acceptable (Y/N)
7k19101-BS1	Laboratory control sample	Chloride	102.9956	100	103%	103%	Y
7k19120-MS1	Matrix spike sample	Cr^{6+}	(SSR-SR) 0.34196	0.4	85.5%	86%	Y
7k19120-MSD1	Duplicate sample	Cr^{6+}	0.34083	0.34523	1	1	Y

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 18036B6
SDG #: I24137

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: AA
2nd reviewer: V

METHOD: Inorganics, Method Sw Conv

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Have results been reported and calculated correctly?
(Y) N N/A Are results within the calibrated range of the instruments?
(Y) N N/A Are all detection limits below the CRQL?

Compound (analyte) results for _____ reported with a positive detect were recalculated and verified using the following equation:

Concentration = Recalculation:

All ND

#	Sample ID	Analyte	Reported Concentration ( )	Calculated Concentration ( )	Acceptable (Y/N)

Note: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 13, 2007

LDC Report Date: January 8, 2008

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1433

Sample Identification

RINSATE 2
RINSATE 2MS
RINSATE 2MSD

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
RINSATE 2 RINSATE 2MS RINSATE 2MSD	Hexavalent chromium	30 hrs	24 hrs	J- (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample "RINSATE 2" was identified as a rinsate. No contaminant concentrations were found in this blank with the following exceptions:

Rinsate ID	Sampling Date	Analyte	Concentration	Associated Samples
RINSATE 2	11/13/07	Hexavalent chromium	0.0046 mg/L	No associated samples in this SDG

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Data Qualification Summary - SDG IQK1433

SDG	Sample	Analyte	Flag	A or P	Reason
IQK1433	RINSATE 2	Hexavalent chromium	J- (all detects) UJ (all non-detects)	P	Technical holding times

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK1433

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK1433

No Sample Data Qualified in this SDG

LDC #: 18036C6
SDG #: IQK1433
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/3/08
Page: 1 of 1
Reviewer: AL
2nd Reviewer: ✓

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 11/13/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/MSD
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	SW	R: 1

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

All water

1	RINSATE 2	11		21		31	
2	RINSATE 2MS	12		22		32	
3	RINSATE 2MSD	13		23		33	
4	PB	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: 300.1 Surr: A

LDC #: 1803CC6
SDG #: IQK1433

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer:
2nd reviewer:

All circled methods are applicable to each sample.

QC sample

Sample ID	Parameter
1	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC [✓ CR^{6+}] [✓ Chlorite] ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
2-3	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC [✓ CR^{6+}] [✓ Chlorite] ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ____

Comments:

LDC #: 18036C6
SDG #: I2K1433

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: ck
2nd reviewer: MV

All circled dates have exceeded the technical holding time.
(Y) N N/A Were all samples preserved as applicable to each method ?
(Y) N N/A Were all cooler temperatures within validation criteria?

Method:	7196A					
Parameters:	Cr^{6+}					
Technical holding time:	24 Hrs					

Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
1 - 3	11/13/07	11/14/07		(30 hrs)			J-/ns/p
	1450	2047					

LDC #: 18036C6
SDG #: IQU1433

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: AL
2nd Reviewer: [illegible]

METHOD: Inorganics, EPA Method Sw Conv

(Y) N N/A Were field blanks identified in this SDG?
(Y) N N/A Were target analytes detected in the field blanks?

Blank units: mg/L Associated sample units: _____
Sampling date: 11/13/97 Soil factor applied _____
Field blank type: (circle one) Field Blank / (Rinsate) / Other: _____ Associated Samples: none

Analyte	Blank ID	Blank Action Limit	Sample Identification									
	1											
Cr6+	0.0046	0.023										

Blank units: _____ Associated sample units: _____
Sampling date: _____ Soil factor applied _____
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: _____

Analyte	Blank ID	Blank Action Limit	Sample Identification									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 13, 2007

LDC Report Date: January 25, 2008

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1480

Sample Identification

TSB-DR-06-0'
TSB-DR-06-10'
TSB-DR-05-0'
TSB-DR-05-0'-FD
TSB-DR-05-10'
TSB-DR-03-0'
TSB-DR-03-0'MS/MSD
TSB-DR-03-10'
TSB-DJ-01-0'
TSB-DJ-01-10'
TSB-DR-04-0'
TSB-DR-04-10'
TSB-DR-03-0'MS/MSDMS
TSB-DR-03-0'MS/MSDMSD

Introduction

This data review covers 14 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample "RINSATE 2" (from SDG IQK1433) was identified as a rinsate. No contaminant concentrations were found in this blank with the following exceptions:

Rinsate ID	Sampling Date	Analyte	Concentration	Associated Samples
RINSATE 2	11/13/07	Hexavalent chromium	0.0046 mg/L	All samples in SDG IQK1480

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

*IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Analyte	Flag	A or P
TSB-DR-05-0'-FD	Dichloroacetate	80.88 (90-115)	Chlorite	J- (all detects) UJ (all non-detects)	P

*Corrected affected analyte from "All TCL compounds" to Chlorite.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples TSB-DR-05-0' and TSB-DR-05-0'-FD were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		Difference (Limits)
	TSB-DR-05-0'	TSB-DR-05-0'-FD	
Hexavalent chromium	1.0U	1.3	0.3 (≤1.0)

***BRC Tronox Parcel C/D/F/G**
Wet Chemistry - Data Qualification Summary - SDG IQK1480

SDG	Sample	*Analyte	Flag	A or P	Reason
IQK1480	TSB-DR-05-0'-FD	Chlorite	J- (all detects) UJ (all non-detects)	P	Surrogate recovery (%R)

*Corrected affected analyte from "All TCL compounds" to Chlorite in above Surrogate recovery (%R) finding.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK1480

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK1480

No Sample Data Qualified in this SDG

LDC #: 18036D6
SDG #: IQK1480
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 1/13/58
Page: 1 of 1
Reviewer: AL
2nd Reviewer: L

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/13/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	~~SW~~ A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/MSD
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	A	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	D: 3+4
X	Field blanks	SW	R: Rinsate 2 (from IQK1433)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: All soil

1	TSB-DR-06-0'	11	TSB-DR-04-0'	21		31	
2	TSB-DR-06-10'	12	TSB-DR-04-10'	22		32	
3	TSB-DR-05-0'	13	TSB-DR-03-0'MS/MSDMS	23		33	
4	TSB-DR-05-0'-FD	14	TSB-DR-03-0'MS/MSDMSD	24		34	
5	TSB-DR-05-10'	15	PB	25		35	
6	TSB-DR-03-0'	16		26		36	
7	TSB-DR-03-0'MS/MSD	17		27		37	
8	TSB-DR-03-10'	18		28		38	
9	TSB-DJ-01-0'	19		29		39	
10	TSB-DJ-01-10'	20		30		40	

Notes: 300.1 Surr: SW

LDC #: 18036D6
SDG #: IQK1480

VALIDATION FINDINGS CHECKLIST

Reviewer: dl
2nd Reviewer: lv

Method: Inorganics (EPA Method See Cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	✓ except as noted	✓		PS-115% in 3002
Were titrant checks performed as required? (Level IV only)			-	
Were balance checks performed as required? (Level IV only)			-	
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL(≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were < 5X the CRDL.	✓			
V. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	✓			
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 19036A6
SDG #: IQK140

VALIDATION FINDINGS CHECKLIST

Reviewer: AA
2nd Reviewer: W

Validation Area	Yes	No	NA	Findings/Comments
VII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were detection limits < RL?	✓			
VIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
IX. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target analytes were detected in the field duplicates.	✓			
X. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.	✓			

LDC #: 1803696
SDG #: IQK1480

VALIDATION FINDINGS WORKSHEET

Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CA
2nd reviewer:

All circled methods are applicable to each sample.

Sample ID	Parameter
1-12	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] [✓ Chlorite] ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
13-14	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] [✓ Chlorite] ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}

QC sample

Comments:

LDC #: 18D36D6
SDG #: I2K1480

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: AL
2nd Reviewer: LA

METHOD: Inorganics, EPA Method Sw Conv

(Y) N N/A Were field blanks identified in this SDG?
(Y) N N/A Were target analytes detected in the field blanks?

Blank units: mg/L Associated sample units: mg/kg
Sampling date: 11/13/17 Soil factor applied _____
Field blank type: (circle one) Field Blank / (Rinsate) / Other: _____ Associated Samples: All (NDs > RL) ~~CNDs~~

Analyte	Blank ID	Blank Action Limit	Sample Identification									
	Rinsate 2											
Cr6+	0.0046	~~0.023~~										

Blank units: _____ Associated sample units: _____
Sampling date: _____ Soil factor applied _____
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: _____

Analyte	Blank ID	Blank Action Limit	Sample Identification									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 18036D6
SDG #: IQK1480

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Chlorite (EPA 300.1)
Are surrogates required by the method? Yes ✓ or No____.
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
[✓ Y] N N/A Were surrogates spiked into all samples and blanks?
Y [✓ N] N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Date	Lab ID/Reference	Column	Surrogate Compound	%R (Limits)	Associated Samples	Qualifications
		4		A	80.88 (90-115)	4	J-/UJ/P
					( )		
					( )		
					( )		
					( )		
					( )		
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Letter Designation	Surrogate Compound	Recovery QC Limits (Soil)	Recovery QC Limits (Water)	Comments
A	Dichloroacetate			
B				

LDC#:18036D6
SDG#:See Cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: MM
2nd Reviewer: LW

Inorganics, Method See Cover

(Y) N NA Were field duplicate pairs identified in this SDG?
(Y) N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		Difference RPD	
	3	4		
Chromium VI	1.0U	1.3	~~200~~ 0.3 (≤ 1.0)	

V:\FIELD DUPLICATES\FD_inorganic\18036D6.wpd

LDC #: 18036D6
SDG #: Lak1480

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: AL
2nd Reviewer: LA

METHOD: Inorganics, Method Sw Cover

The correlation coefficient (r) for the calibration of Cr6+ was recalculated. Calibration date: 11/21/17

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
True = concentration of each analyte in the ICV or CCV source

Type of Analysis	Analyte		Conc (ug/L) (units)	Area (units)	Recalculated r or %R	Reported r or %R	Acceptable (Y/N)
(Initial calibration) Calibration verification	Cr6+	Blank	0	0	0.999973	0.99997	Y
		Standard 1	0.01	0.007			
		Standard 2	0.025	0.019			
		Standard 3	0.1	0.077			
		Standard 4	0.5	0.401			
		Standard 5	-				
		Standard 6					
		Standard 7					
Calibration verification	Cr6+	0.30469	0.3		101.6 %	NR	Y
Calibration verification	Chloride	93.7350	100		93.7 %	NR	Y
Calibration verification							

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 19036DC
SDG #: I2K145

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: AA
2nd Reviewer: [illegible]

METHOD: Inorganics, Method Sw Conv

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

%R = Found / True x 100 Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

RPD = |S-D| / (S+D)/2 x 100 Where, S = Original sample concentration
D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated %R / RPD	Reported %R / RPD	Acceptable (Y/N)
7k20143-BS1	Laboratory control sample	Cr6+	0.35838	0.4	89.6%	90%	Y
7k19101-MS2	Matrix spike sample	Chloride	(SSR-SR) 81.1402	100	81.1%	81%	Y
7k19101-MSD2	Duplicate sample	Chloride	85.0849	81.1402	5	5	Y

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 18036D6
SDG #: IQK180

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: AL
2nd reviewer: ✓

METHOD: Inorganics, Method Sm Conv

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Have results been reported and calculated correctly?
(Y) N N/A Are results within the calibrated range of the instruments?
(Y) N N/A Are all detection limits below the CRQL?

Compound (analyte) results for _____ reported with a positive detect were recalculated and verified using the following equation:

Concentration = Recalculation:

$$Cr^{6+} = \frac{(0.03315\ mg/L)(50\ mL)(10)}{1.25\ g} = 1.326\ mg/g = 1.326\ mg/kg$$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	4	Cr^{6+}	1.3	1.326	Y

Note: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 13, 2007

LDC Report Date: January 8, 2008

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1509

Sample Identification

TSB-CR-04-0'
TSB-CR-04-10'
TSB-CR-05-0'
TSB-CR-05-10'
TSB-CR-06-0'
TSB-CR-06-10'
TSB-CR-04-0'MS
TSB-CR-04-0'MSD

Introduction

This data review covers 8 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample "RINSATE 2" (from SDG IQK1433) was identified as a rinsate. No contaminant concentrations were found in this blank with the following exceptions:

Rinsate ID	Sampling Date	Analyte	Concentration	Associated Samples
RINSATE 2	11/13/07	Hexavalent chromium	0.0046 mg/L	All samples in SDG IQK1509

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Data Qualification Summary - SDG IQK1509

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK1509

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK1509

No Sample Data Qualified in this SDG

LDC #: 18036E6
SDG #: IQK1509
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/3/08
Page: 1 of 1
Reviewer: AL
2nd Reviewer: ✓

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/13/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/MSD
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	SW	R: Rinsate 2 (from IQK1433)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

All soil

1	TSB-CR-04-0'	11		21		31	
2	TSB-CR-04-10'	12		22		32	
3	TSB-CR-05-0'	13		23		33	
4	TSB-CR-05-10'	14		24		34	
5	TSB-CR-06-0'	15		25		35	
6	TSB-CR-06-10'	16		26		36	
7	TSB-CR-04-0'MS	17		27		37	
8	TSB-CR-04-0'MSD	18		28		38	
9	PB	19		29		39	
10		20		30		40	

Notes: 300.1 Surr: A

LDC #: 18036E6
SDG #: I2K1509

VALIDATION FINDINGS WORKSHEET

Sample Specific Analysis Reference

Page: 1 of 1
Reviewer:
2nd reviewer:

All circled methods are applicable to each sample.

QC samples

Sample ID	Parameter
1-6	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] [✓ Chlorite] ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
7-8	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} [✓ Chlorite] ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}

Comments: ____

LDC #: 18836E6
SDG #: IQK1509

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: AA
2nd Reviewer: [illegible]

METHOD: Inorganics, EPA Method Sw Conv

(Y) N N/A Were field blanks identified in this SDG?
(Y) N N/A Were target analytes detected in the field blanks?

Blank units: mg/L Associated sample units: mg/kg
Sampling date: 11/13/97 Soil factor applied _____
Field blank type: (circle one) Field Blank / (Rinsate) / Other: _____ Associated Samples: All (ND)

Analyte	Blank ID	Blank Action Limit	Sample Identification									
	Rinsate2											
Cr^{6+}	0.0046	~~0.0023~~										

Blank units: _____ Associated sample units: _____
Sampling date: _____ Soil factor applied _____
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: _____

Analyte	Blank ID	Blank Action Limit	Sample Identification									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 12, 2007

LDC Report Date: January 7, 2008

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1512

Sample Identification

TSB-CR-03-0'
TSB-CR-03-10'
TSB-CJ-05-0'
TSB-CJ-05-10'
TSB-CJ-06-0'
TSB-CJ-06-0'-FD
TSB-CJ-06-10'
TSB-CR-03-0'MS
TSB-CR-03-0'MSD

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples TSB-CJ-06-0' and TSB-CJ-06-0'-FD were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Data Qualification Summary - SDG IQK1512

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK1512

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK1512

No Sample Data Qualified in this SDG

LDC #: 18036F6
SDG #: IQK1512
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/4/08
Page: 1 of 1
Reviewer: AL
2nd Reviewer:

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/12/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/MSD
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	ND	D: 5+6
X	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

All soil

1	TSB-CR-03-0'	11		21		31	
2	TSB-CR-03-10'	12		22		32	
3	TSB-CJ-05-0'	13		23		33	
4	TSB-CJ-05-10'	14		24		34	
5	TSB-CJ-06-0'	15		25		35	
6	TSB-CJ-06-0'-FD	16		26		36	
7	TSB-CJ-06-10'	17		27		37	
8	TSB-CR-03-0'MS	18		28		38	
9	TSB-CR-03-0'MSD	19		29		39	
10	TB	20		30		40	

Notes: 300.1 Surr: A

LDC #: 18036F6
SDG #: IQK1512

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: AL
2nd reviewer:

All circled methods are applicable to each sample.

Sample ID	Parameter
1-7	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] [✓ Chl-ite] ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
QC Sample 8-9	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} [✓ Chl-ite] ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 12, 2007

LDC Report Date: January 7, 2008

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1514

Sample Identification

TSB-CJ-02-0'
TSB-CJ-02-10'
TSB-CJ-01-0'
TSB-CJ-01-10'
TSB-CJ-01-0'-FD
TSB-CR-02-0'
TSB-CR-02-10'
TSB-CR-01-0'
TSB-CR-01-0'-MS/MSD
TSB-CR-01-10'
TSB-CR-01-0'-MS/MSDMS
TSB-CR-01-0'-MS/MSDMSD

Introduction

This data review covers 12 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples TSB-CJ-01-0' and TSB-CJ-01-0'-FD were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Data Qualification Summary - SDG IQK1514

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK1514

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK1514

No Sample Data Qualified in this SDG

LDC #: 18036G6
SDG #: IQK1514
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/4/08
Page: 1 of 1
Reviewer: AL
2nd Reviewer:

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/12/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/MSD
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	ND	D: 3+5
X	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: All soil

1	TSB-CJ-02-0'	11	TSB-CR-01-0'-MS/MSDMS	21		31	
2	TSB-CJ-02-10'	12	TSB-CR-01-0'-MS/MSDMSD	22		32	
3	TSB-CJ-01-0' D	13	PB	23		33	
4	TSB-CJ-01-10'	14		24		34	
5	TSB-CJ-01-0'-FD D	15		25		35	
6	TSB-CR-02-0'	16		26		36	
7	TSB-CR-02-10'	17		27		37	
8	TSB-CR-01-0'	18		28		38	
9	TSB-CR-01-0'-MS/MSD	19		29		39	
10	TSB-CR-01-10'	20		30		40	

Notes: 300.1 Surr: A

LDC #: 18036G6
SDG #: IQK1514

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: AL
2nd reviewer:

All circled methods are applicable to each sample.

QC samples

Sample ID	Parameter
1-10	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] [✓ Chlorite] ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
11-12	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] [✓ Chlorite] ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 14, 2007

LDC Report Date: January 7, 2008

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1726

Sample Identification

TSB-DR-01-0'
TSB-DR-01-10'
TSB-DR-02-0'
TSB-DR-02-0'-FD
TSB-DR-02-10'
JB-NWDITCH-01-0'
JB-NWDITCH-01-10'

Introduction

This data review covers 7 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples TSB-DR-02-0' and TSB-DR-02-0'-FD were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Data Qualification Summary - SDG IQK1726

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK1726

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK1726

No Sample Data Qualified in this SDG

LDC #: 18036H6
SDG #: IQK1726
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/4/08
Page: 1 of 1
Reviewer: AA
2nd Reviewer: ✓

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/14/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	} from IQK1514, IQK1728, IQK1873
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	ND	D: 3+4
X	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: All soil

1	TSB-DR-01-0'	11		21		31	
2	TSB-DR-01-10'	12		22		32	
3	TSB-DR-02-0'	13		23		33	
4	TSB-DR-02-0'-FD	14		24		34	
5	TSB-DR-02-10'	15		25		35	
6	JB-NWDITCH-01-0'	16		26		36	
7	JB-NWDITCH-01-10'	17		27		37	
8	PB	18		28		38	
9		19		29		39	
10		20		30		40	

Notes: 300.1 Snm: A

LDC #: 18036H6
SDG #: TAK1726

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: AL
2nd reviewer: L

All circled methods are applicable to each sample.

Sample ID	Parameter
1-7	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] [✓ Chlorite] ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}

Comments: ____________________

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 14, 2007

LDC Report Date: January 8, 2008

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1728

Sample Identification

TSB-FR-01-0'
TSB-FR-01-10'
TSB-FFJ-07-0'
TSB-FJ-07-10'
TSB-FJ-06-0'
TSB-FJ-06-0'-FD
TSB-FJ-06-10'
TSB-FJ-05-0'
TSB-FJ-05-10'
TSB-FR-01-0'MS
TSB-FR-01-0'MSD

Introduction

This data review covers 11 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
TSB-FR-02-0'MS/MSD (TSB-FJ-05-0' TSB-FJ-05-10')	Chlorite	-	74 (75-125)	-	J- (all detects) UJ (all non-detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples TSB-FJ-06-0' and TSB-FJ-06-0'-FD were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Data Qualification Summary - SDG IQK1728

SDG	Sample	Analyte	Flag	A or P	Reason
IQK1728	TSB-FJ-05-0' TSB-FJ-05-10'	Chlorite	J- (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicates (%R)

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK1728

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK1728

No Sample Data Qualified in this SDG

LDC #: 18036I6
SDG #: IQK1728
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/4/08
Page: 1 of 1
Reviewer: AK
2nd Reviewer: LC

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/14/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	SW	MS/MSD
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	ND	D: 5+6
X	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

All soil

1	TSB-FR-01-0'	11	TSB-FR-01-0'MSD	21		31	
2	TSB-FR-01-10'	12	PB	22		32	
3	TSB-FJ-07-0'	13		23		33	
4	TSB-FJ-07-10'	14		24		34	
5	TSB-FJ-06-0'	15		25		35	
6	TSB-FJ-06-0'-FD	16		26		36	
7	TSB-FJ-06-10'	17		27		37	
8	TSB-FJ-05-0'	18		28		38	
9	TSB-FJ-05-10'	19		29		39	
10	TSB-FR-01-0'MS	20		30		40	

Notes: 300.1 Surr: A

LDC #: 18036I6
SDG #: IQK1728

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: AL
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1-9	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC (CR^{6+}) (Chlorite) ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
QC sample 10-11	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC (CR^{6+}) (Chlorite) ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}

Comments: ____________________

LDC #: 18036 I6
SDG #: I0K172X

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: AL
2nd Reviewer:

METHOD: Inorganics, EPA Method Sw Conv

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Was a matrix spike analyzed for each matrix in this SDG?

Y (N) N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y N (N/A) Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤35% for soil samples?

LEVEL IV ONLY:

Y N (N/A) Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
	TSB-FR-02-0'MS/MD	So	Chlorite		74		8-9	J-/UJ/A

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 15, 2007

LDC Report Date: January 8, 2008

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1853

Sample Identification

RINSATE 3
RINSATE 3MS
RINSATE 3MSD

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
RINSATE 3 RINSATE 3MS RINSATE 3MSD	Hexavalent chromium	30 hrs	24 hrs	J- (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample "RINSATE 3" was identified as a rinsate. No contaminant concentrations were found in this blank.

IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Data Qualification Summary - SDG IQK1853

SDG	Sample	Analyte	Flag	A or P	Reason
IQK1853	RINSATE 3	Hexavalent chromium	J- (all detects) UJ (all non-detects)	P	Technical holding times

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK1853

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK1853

No Sample Data Qualified in this SDG

LDC #: 18036J6
SDG #: IQK1853
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/9/08
Page: 1 of 1
Reviewer: AL
2nd Reviewer: ✓

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 11/15/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/MSD
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	ND	R=1

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

All Water

1	RINSATE 3	11		21		31	
2	RINSATE 3MS	12		22		32	
3	RINSATE 3MSD	13		23		33	
4	PB	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: 300.1 Surr: A

LDC #: 18036J6
SDG #: 12K1853

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: AL
2nd reviewer:

All circled methods are applicable to each sample.

QC samples

Sample ID	Parameter
1	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] [✓ Chlorite] ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
2 - 3	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} [✓ Chlorite] ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
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	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}

Comments:

LDC #: 18036J6
SDG #: I12U853

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: AL
2nd reviewer:

All circled dates have exceeded the technical holding time.
(Y) N N/A Were all samples preserved as applicable to each method ?
(Y) N N/A Were all cooler temperatures within validation criteria?

Method:	7196A					
Parameters:	Cr^{6+}					
Technical holding time:	24 Hrs					

Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
1-3	11/15/07	11/16/07		(30 hrs)			J-/UJ/R
	1315	1917					

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 15, 2007

LDC Report Date: January 8, 2008

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1872

Sample Identification

TSB-FJ-03-0'
TSB-FJ-03-0'-FD
TSB-FJ-03-10'
TSB-FJ-10-0'
TSB-FJ-10-10'
TSB-FJ-4-0'
TSB-FJ-4-10'
TSB-FJ-02-0'
TSB-FJ-02-0'-FD
TSB-FJ-02-10'
TSB-FJ-03-0'MS
TSB-FJ-03-0'MSD

Introduction

This data review covers 12 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample "RINSATE 3" (from SDG IQK1853) was identified as a rinsate. No contaminant concentrations were found in this blank.

IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
TSB-FR-02-0'MS/MSD (All samples in SDG IQK1872)	Chlorite	-	74 (75-125)	-	J- (all detects) UJ (all non-detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples TSB-FJ-03-0'-FD and TSB-FJ-03-0'-FD, and samples TSB-FJ-02-0' and TSB-FJ-02-0'-FD were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Data Qualification Summary - SDG IQK1872

SDG	Sample	Analyte	Flag	A or P	Reason
IQK1872	TSB-FJ-03-0' TSB-FJ-03-0'-FD TSB-FJ-03-10' TSB-FJ-10-0' TSB-FJ-10-10' TSB-FJ-4-0' TSB-FJ-4-10' TSB-FJ-02-0' TSB-FJ-02-0'-FD TSB-FJ-02-10'	Chlorite	J- (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicates (%R)

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK1872

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK1872

No Sample Data Qualified in this SDG

LDC #: 18036K6
SDG #: IQK1872
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/4/08
Page: 1 of 1
Reviewer: AK
2nd Reviewer: ✓

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/15/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	SW	MS/MSD
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	ND	D_1: 1+2 D_2: 8+9
X	Field blanks	ND	R: Rinsate 3 (fm IQK1853)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: AK soil

1	TSB-FJ-03-0' D_1	11	TSB-FJ-03-0'MS	21		31	
2	TSB-FJ-03-0'-FD D_1	12	TSB-FJ-03-0'MSD	22		32	
3	TSB-FJ-03-10'	13	PB	23		33	
4	TSB-FJ-10-0'	14		24		34	
5	TSB-FJ-10-10'	15		25		35	
6	TSB-FJ-4-0'	16		26		36	
7	TSB-FJ-4-10'	17		27		37	
8	TSB-FJ-02-0' D_2	18		28		38	
9	TSB-FJ-02-0'-FD D_2	19		29		39	
10	TSB-FJ-02-10'	20		30		40	

Notes: 300.1 Sum: A

LDC #: 18036K6
SDG #: IQK1872

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: AL
2nd reviewer:

All circled methods are applicable to each sample.

QC sample

Sample ID	Parameter
1-10	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] [✓ Chlorite] ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
11-12	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}

Comments:

LDC #: 18D36 K6
SDG #: I0K1872

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: AA
2nd Reviewer: L

METHOD: Inorganics, EPA Method Sr Conv

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y (N) N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y N (N/A) Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤35% for soil samples?

LEVEL IV ONLY:

Y N (N/A) Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
	TSB-FR-02-0'MS/MSD	So	Chlorite		74		All	J- / UJ / A

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 15, 2007

LDC Report Date: January 8, 2008

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1873

Sample Identification

TSB-FR-02-0'
TSB-FR-02-10'
TSB-FJ-09-0'
TSB-FJ-09-10'
TSB-FR-03-0'
TSB-FR-03-10'
TSB-FR-02-0'MS
TSB-FR-02-0'MSD

Introduction

This data review covers 8 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample "RINSATE 3" (from SDG IQK1853) was identified as a rinsate. No contaminant concentrations were found in this blank.

IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
TSB-FR-02-0'MS/MSD (All samples in SDG IQK1873)	Chlorite	-	74 (75-125)	-	J- (all detects) UJ (all non-detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Data Qualification Summary - SDG IQK1873

SDG	Sample	Analyte	Flag	A or P	Reason
IQK1873	TSB-FR-02-0' TSB-FR-02-10' TSB-FJ-09-0' TSB-FJ-09-10' TSB-FR-03-0' TSB-FR-03-10'	Chlorite	J- (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicates (%R)

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK1873

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK1873

No Sample Data Qualified in this SDG

LDC #: 18036L6
SDG #: IQK1873
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/4/08
Page: 1 of 1
Reviewer: AK
2nd Reviewer: [illegible]

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/15/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	SW	MS/MSD
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	ND	R: Rinsate 3 (from IQK1853)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: All Soil

1	TSB-FR-02-0'	11		21		31	
2	TSB-FR-02-10'	12		22		32	
3	TSB-FJ-09-0'	13		23		33	
4	TSB-FJ-09-10'	14		24		34	
5	TSB-FR-03-0'	15		25		35	
6	TSB-FR-03-10'	16		26		36	
7	TSB-FR-02-0'MS	17		27		37	
8	TSB-FR-02-0'MSD	18		28		38	
9	FB	19		29		39	
10		20		30		40	

Notes: 300.1 Surr: A

LDC #: 18036C6
SDG #: I2K1873

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: AL
2nd reviewer: ___

All circled methods are applicable to each sample.

Sample ID	Parameter
1-6	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC [✓ CR^{6+}] [✓ Chlorite] ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
7-8	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC [✓ CR^{6+}] [✓ Chlorite] ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO$_3$ NO$_2$ SO$_4$ PO$_4$ ALK CN$^-$ NH$_3$ TKN TOC CR^{6+}

QC sample

Comments: ___

LDC #: 18036 LL
SDG #: I2K1873

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: AL
2nd Reviewer:

METHOD: Inorganics, EPA Method Sw Conv

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Was a matrix spike analyzed for each matrix in this SDG?

Y (N) N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y N (N/A) Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤35% for soil samples?

LEVEL IV ONLY:

Y N (N/A) Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
	7/8	So	Chlorite		74		All	J-/UJ/A

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 16, 2007

LDC Report Date: January 8, 2008

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1956

Sample Identification

RINSATE 4

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
RINSATE 4	Hexavalent chromium	25 hrs	24 hrs	J- (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample "RINSATE 4" was identified as a rinsate. No contaminant concentrations were found in this blank.

IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

V. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VI. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Data Qualification Summary - SDG IQK1956

SDG	Sample	Analyte	Flag	A or P	Reason
IQK1956	RINSATE 4	Hexavalent chromium	J- (all detects) UJ (all non-detects)	P	Technical holding times

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK1956

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK1956

No Sample Data Qualified in this SDG

LDC #: 18036M6
SDG #: IQK1956
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/4/08
Page: 1 of 1
Reviewer: ak
2nd Reviewer: ✓

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 11/16/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	N	Client Specified
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	ND	R: 1

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: All water

1	RINSATE 4	11		21		31	
2	FB	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: 300.1 Surr: A

LDC #: 10036M6
SDG #: IQK1956

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC (CR^{6+}) (Chlorite) ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}

Comments:

LDC #: 18036M6
SDG #: I2K195C

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: AL
2nd reviewer: LW

All circled dates have exceeded the technical holding time.
(Y) N N/A Were all samples preserved as applicable to each method ?
(Y) N N/A Were all cooler temperatures within validation criteria?

Method:	7196A					
Parameters:	Cr^{6+}					
Technical holding time:	24 hrs					

Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
1	11/16/07	11/17/07		(25 hrs)			J-/UJ/P
	1400	1500					

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 16, 2007

LDC Report Date: January 7, 2008

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1976

Sample Identification

TSB-FJ-08-0'
TSB-FJ-08-10'
TSB-FR-05-0'
TSB-FR-05-10'
TSB-FR-04-0'
TSB-FR-04-0'-FD
TSB-FR-04-10'
TSB-FJ-08-0'MS
TSB-FJ-08-0'MSD

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample "RINSATE 4" (from SDG IQK1956) was identified as a rinsate. No contaminant concentrations were found in this blank.

IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples TSB-FR-04-0' and TSB-FR-04-0'-FD were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Data Qualification Summary - SDG IQK1976

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK1976

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK1976

No Sample Data Qualified in this SDG

LDC #: 18036N6
SDG #: IQK1976
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/9/08
Page: 1 of 1
Reviewer: ak
2nd Reviewer:

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/16/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/MSD
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	ND	D: 5+6
X	Field blanks	ND	R: Rinsate 4 (from IQK1956)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

All Soil

1	TSB-FJ-08-0'	11		21		31	
2	TSB-FJ-08-10'	12		22		32	
3	TSB-FR-05-0'	13		23		33	
4	TSB-FR-05-10'	14		24		34	
5	TSB-FR-04-0'	15		25		35	
6	TSB-FR-04-0'-FD	16		26		36	
7	TSB-FR-04-10'	17		27		37	
8	TSB-FJ-08-0'MS	18		28		38	
9	TSB-FJ-08-0'MSD	19		29		39	
10	PB	20		30		40	

Notes: 300.1 Surr: A

LDC #: 18036NG
SDG #: IAK1974

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: al
2nd reviewer:

All circled methods are applicable to each sample.

Sample ID	Parameter
1-7	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC (CR^{6+}) (Chlorite) ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
8-9	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} (Chlorite) ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}

QC Samples (margin note beside 8-9)

Comments: ____________________

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 16, 2007

LDC Report Date: January 7, 2008

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1977

Sample Identification

TSB-FJ-01-0'
TSB-FJ-01-10'
TSB-FJ-01-0'MS
TSB-FJ-01-0'MSD

Introduction

This data review covers 4 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample "Rinsate 4" (from SDG IQK1956) was identified as a rinsate. No contaminant concentrations were found in this blank.

IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Data Qualification Summary - SDG IQK1977

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK1977

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK1977

No Sample Data Qualified in this SDG

LDC #: 18036O6
SDG #: IQK1977
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/4/08
Page: 1 of 1
Reviewer: AL
2nd Reviewer:

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/16/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/MSD
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	ND	R: Rinsate 4 (from IQK1956)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: All soil

1	TSB-FJ-01-0'	11		21		31	
2	TSB-FJ-01-10'	12		22		32	
3	TSB-FJ-01-0'MS	13		23		33	
4	TSB-FJ-01-0'MSD	14		24		34	
5	PB	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: 300.1 Surr: A

LDC #: 1803606
SDG #: I2K1977

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: AK
2nd reviewer:

All circled methods are applicable to each sample.

QC sample

Sample ID	Parameter
1-2	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] [✓ Chlorite] ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
3-4	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] [✓ Chlorite] ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ___ ___ ___ ___
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 16, 2007

LDC Report Date: January 7, 2008

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1978

Sample Identification

TSB-GR-01-0'
TSB-GR-01-5'
TSB-GJ-06-0'
TSB-GJ-06-5'

Introduction

This data review covers 4 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample "Rinsate 4" (from SDG IQK1956) was identified as a rinsate. No contaminant concentrations were found in this blank.

IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Data Qualification Summary - SDG IQK1978

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK1978

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK1978

No Sample Data Qualified in this SDG

LDC #: 18036P6
SDG #: IQK1978
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/4/08
Page: 1 of 1
Reviewer: AL
2nd Reviewer: W

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/16/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	} from IQK1977 IQK2275
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	ND	R: Rinsate 4 (from IQK1956)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: All soil

1	TSB-GR-01-0'	11		21		31	
2	TSB-GR-01-5'	12		22		32	
3	TSB-GJ-06-0'	13		23		33	
4	TSB-GJ-06-5'	14		24		34	
5	PB	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: 300.1 Surr: ~~SW~~ A

LDC #: 18036P6
SDG #: Iak1978

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: AA
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1-4	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC (CR^{6+}) (Chlorite) ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}

Comments:______________________________

Revision 1

LDC Report# 18036Q6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 16, 2007

LDC Report Date: January 25, 2008

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK1979

Sample Identification

TSB-GJ-01-0'
TSB-GJ-01-5'

Introduction

This data review covers 2 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample "Rinsate 4" (from SDG IQK1956) was identified as a rinsate. No contaminant concentrations were found in this blank.

*IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Analyte	Flag	A or P
TSB-GJ-01-5'	Dichloroacetate	85.38 (90-115)	Chlorite	J- (all detects) UJ (all non-detects)	P

*Removed Hexavalent chromium from above finding.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

***BRC Tronox Parcel C/D/F/G**
Wet Chemistry - Data Qualification Summary - SDG IQK1979

SDG	Sample	Analyte	Flag	A or P	Reason
IQK1979	TSB-GJ-01-5'	Chlorite	J- (all detects) UJ (all non-detects)	P	Surrogate recovery (%R)

*Removed Hexavalent chromium from above Surrogate recovery (%R) finding.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK1979

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK1979

No Sample Data Qualified in this SDG

LDC #: 18036Q6
SDG #: IQK1979
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/4/08
Page: 1 of 1
Reviewer: AL
2nd Reviewer:

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/16/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	from IQK1977, IQK2275
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	ND	R: Rinsate 4 (from IQK1956)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

All Soil

1	TSB-BJ-01-0'	11		21		31	
2	TSB-BJ-01-5'	12		22		32	
3	PB	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: 300.1 SW: SW

LDC #: 18036Q6
SDG #: IQK1979

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1-2	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} Chlorite ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}

Comments:

LDC #: 18036Q6
SDG #: IQK1975

Page: 1 of 1
Reviewer:
2nd Reviewer:

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

METHOD: Chlorite (EPA 300.1)

Are surrogates required by the method? Yes ✓ or No____.

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

[✓ Y] N N/A Were surrogates spiked into all samples and blanks?

Y [✓ N] N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Date	Lab ID/Reference	Column	Surrogate Compound	%R (Limits)	Associated Samples	Qualifications
		2		A	85.38 (90-115)	2	J-/UJ/P
					( )		
					( )		
					( )		
					( )		
					( )		
					( )		
					( )		
					( )		
					( )		
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					( )		
					( )		
					( )		
					( )		
					( )		

Letter Designation	Surrogate Compound	Recovery QC Limits (Soil)	Recovery QC Limits (Water)	Comments
A	Dichloroacetate			
B				

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 19, 2007

LDC Report Date: January 7, 2008

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK2275

Sample Identification

TSB-GJ-02-0'
TSB-GJ-02-0'-FD
TSB-GJ-02-5'
TSB-GJ-07-0'
TSB-GJ-07-5'
TSB-GJ-05-0'
TSB-GJ-05-5'
TSB-GJ-03-0'
TSB-GJ-03-5'
TSB-GJ-02-0'MS
TSB-GJ-02-0'MSD

Introduction

This data review covers 11 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample "RINSATE 5" (from SDG IQK2277) was identified as a rinsate. No contaminant concentrations were found in this blank.

IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples TSB-GJ-02-0' and TSB-GJ-02-0'-FD were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Data Qualification Summary - SDG IQK2275

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK2275

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK2275

No Sample Data Qualified in this SDG

LDC #: 18036R6
SDG #: IQK2275
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/4/08
Page: 1 of 1
Reviewer: ak
2nd Reviewer: w

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/19/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/MSD
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	ND	D: 1+2
X	Field blanks	ND	R: Rinsate 5 (from IQK2277)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

All Soil

1	TSB-GJ-02-0'	11	TSB-GJ-02-0'MSD	21		31	
2	TSB-GJ-02-0'-FD	12	FB	22		32	
3	TSB-GJ-02-5'	13		23		33	
4	TSB-GJ-07-0'	14		24		34	
5	TSB-GJ-07-5'	15		25		35	
6	TSB-GJ-05-0'	16		26		36	
7	TSB-GJ-05-5'	17		27		37	
8	TSB-GJ-03-0'	18		28		38	
9	TSB-GJ-03-5'	19		29		39	
10	TSB-GJ-02-0'MS	20		30		40	

Notes: 300.1 Surr: A

LDC #: 18036L6
SDG #: IQK2275

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: AL
2nd reviewer: L

All circled methods are applicable to each sample.

Sample ID	Parameter
1-9	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC [✓ CR^{6+}] [✓ Chlorite] ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
QC Sample 10-11	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} [✓ Chlorite] ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}

Comments: ____________________

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 19, 2007

LDC Report Date: January 7, 2008

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK2276

Sample Identification

TSB-GR-02-0'
TSB-GR-02-0'-FD
TSB-GR-02-5'
TSB-GJ-04-0'
TSB-GJ-04-0'-MS/MSD
TSB-GJ-04-5'
TSB-GJ-04-0'-MS/MSDMS
TSB-GJ-04-0'-MS/MSDMSD

Introduction

This data review covers 8 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample "RINSATE 5" (from SDG IQK2277) was identified as a rinsate. No contaminant concentrations were found in this blank.

IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples TSB-GR-02-0' and TSB-GR-02-0'-FD were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Data Qualification Summary - SDG IQK2276

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK2276

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK2276

No Sample Data Qualified in this SDG

LDC #: 18036S6
SDG #: IQK2276
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/4/08
Page: 1 of 1
Reviewer: ak
2nd Reviewer:

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/19/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/MSD
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	ND	D: 1+2
X	Field blanks	ND	R: Rinsate 5 (from IQK2277)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

All soil

1	TSB-GR-02-0'	11		21		31	
2	TSB-GR-02-0'-FD	12		22		32	
3	TSB-GR-02-5'	13		23		33	
4	TSB-GR-04-0'	14		24		34	
5	TSB-GR-04-0'-MS/MSD	15		25		35	
6	TSB-GR-04-5'	16		26		36	
7	TSB-GR-04-0'-MS/MSDMS	17		27		37	
8	TSB-GR-04-0'-MS/MSDMSD	18		28		38	
9	PB	19		29		39	
10		20		30		40	

Notes: 300.1 Surr: A

LDC #: 1803656
SDG #: IQK2276

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1-6	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC (CR^{6+}) (Chlorite)
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
QC sample 7-8	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC (CR^{6+}) (Chlorite)
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: BRC Tronox Parcel C/D/F/G

Collection Date: November 19, 2007

LDC Report Date: January 8, 2008

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQK2277

Sample Identification

RINSATE 5
RINSATE 5MS
RINSATE 5MSD

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.1 for Chlorite and EPA SW 846 Method 7196A for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section X.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
RINSATE 5 RINSATE 5MS RINSATE 5MSD	Hexavalent chromium	33.5 hrs	24 hrs	J- (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample "RINSATE 5" was identified as a rinsate. No contaminant concentrations were found in this blank.

IV. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Data Qualification Summary - SDG IQK2277

SDG	Sample	Analyte	Flag	A or P	Reason
IQK2277	RINSATE 5	Hexavalent chromium	J- (all detects) UJ (all non-detects)	P	Technical holding times

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQK2277

No Sample Data Qualified in this SDG

BRC Tronox Parcel C/D/F/G
Wet Chemistry - Field Blank Data Qualification Summary - SDG IQK2277

No Sample Data Qualified in this SDG

LDC #: 18036T6
SDG #: IQK2277
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/4/08

Reviewer: AK
2nd Reviewer: ✓

METHOD: Chlorite (EPA Method 300.1), Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 11/19/07
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/MSD
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	ND	R=1

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

All water

1	RINSATE 5	11		21		31	
2	RINSATE 5MS	12		22		32	
3	RINSATE 5MSD	13		23		33	
4	PB	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: 300.1 Surr: A

LDC #: 1803676
SDG #: I2k2277

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: [signature]
2nd reviewer: [signature]

All circled methods are applicable to each sample.

Sample ID	Parameter
1	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC (CR^{6+}) (Chlorite)
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
QC samples 2-3	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC (CR^{6+})
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}

Comments:

LDC #: 180376
SDG #: IQ42277

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: AA
2nd reviewer:

All circled dates have exceeded the technical holding time.
(Y) N N/A Were all samples preserved as applicable to each method ?
(Y) N N/A Were all cooler temperatures within validation criteria?

Method:	7196A					
Parameters:	Cr^{6+}					
Technical holding time:	24 hrs					

Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
1-3	11/19/07	11/20/07		(33.5 hrs)			J/UJ/P
	1240	2216					

HT.6