



LABORATORY DATA CONSULTANTS, INC.

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Northgate Environmental Management, Inc.
1100 Quail Street Ste. 102
Newport Beach, CA 92660
ATTN: Ms. Cindy Arnold

June 2, 2010

SUBJECT: Tronox LLC Facility, 2010 PCS, Henderson, Nevada,
Data Validation

Dear Ms. Arnold,

Enclosed is the final validation report for the fraction listed below. This SDG was received on May 5, 2010. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 23124:

<u>SDG #</u>	<u>Fraction</u>
091003270	Asbestos

The data validation was performed under Stage 2B/4 guidelines. The analyses were validated using the following documents, as applicable to each method:

- Standard Operating Procedures (SOP) 40, Data Review/Validation, BRC 2009
- Quality Assurance Project Plan Tronox LLC Facility, Henderson Nevada, June 2009
- NDEP Guidance, May 2006
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004

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

Sincerely,

Erlinda T. Rauto
Operations Manager/Senior Chemist

**Tronox PCS
Data Validation Reports
LDC# 23124**

Asbestos

LDC

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Tronox LLC Facility, PCS, Henderson, Nevada
Collection Date: April 7, 2010
LDC Report Date: June 2, 2010
Matrix: Soil
Parameters: Asbestos
Validation Level: Stage 2B & 4
Laboratory: EMSL Analytical, Inc.

Sample Delivery Group (SDG): 091003270

Sample Identification

SA192-0.33 BPC
RSAR3-0.33 BPC
SA193-0.33 BPC**
SA120-0.33 BPC
SA213-0.33 BPC
SSAQ4-01-0.00 BPC
SA121-0.33 BPC
SSAQ4-03-0.00 BPC
SSAR4-03-0.00 BPC
SA29-0.33 BPC**
SA09-0.33 BPC**
SSAQ4-03-0.33 BPC

**Indicates sample underwent Stage 4 review

Introduction

This data review covers 12 soil samples listed on the cover sheet. The analyses were per EPA Method 540-R-97-028 for Asbestos.

This review follows the Standard Operating Procedures (SOP) 40, Data Review/Validation (BRC 2009), the Quality Assurance Project Plan Tronox LLC Facility, Henderson, Nevada (June 2009), NDEP guidance (May 2006), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

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.

Samples indicated by a double asterisk on the front cover underwent a Stage 4 review. A Stage 2B review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Stage 2B criteria since this review is 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.
- UU Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- B The analytical result may be a false positive totally attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.
- JB The analytical result may be biased high and partially attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.
- JK The analytical result is an estimated maximum possible concentration (EMPC).
- X The analytical result is not used for reporting because a more accurate and precise result is reported in its place.
- J-TDS The analytical result is estimated based on failure of the Total Dissolved Solids (TDS) correctness check performed in accordance with the Standard Method 1030E.
- J-CAB The analytical result is estimated based on failure of the cation-anion balance correctness check performed in accordance with Standard Method 1030E.
- J-TDS & CAB The analytical result is unreliable based on the failure of the cation-anion balance and TDS correctness check performed in accordance with standard Method 1030E.
- 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

No holding time requirement is specified for asbestos.

No cooler temperature requirement is specified for asbestos.

II. Calibration

A NIST standard reference material containing Chrysotile, Amosite, and Crocidolite asbestos was analyzed. The calibration identified the proper constituents.

III. Blanks

The blank analyses showed no asbestos contamination.

No field blanks were identified in this SDG.

IV. Sample Result Verification

All sample result verifications were acceptable for samples on which a Stage 4 review was performed.

All analytes reported below the PQL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 091003270	All analytes reported below the PQL.	J (all detects)	A

The results listed on the final report were verified against the raw data worksheets. The results were transcribed correctly to the final report.

V. Overall Assessment

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

VI. Field Duplicates

No field duplicates were identified in this SDG.

**Tronox LLC Facility, PCS, Henderson, Nevada
Asbestos - Data Qualification Summary - SDG 091003270**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
091003270	SA192-0.33 BPC RSAR3-0.33 BPC SA193-0.33 BPC** SA120-0.33 BPC SA213-0.33 BPC SSAQ4-01-0.00 BPC SA121-0.33 BPC SSAQ4-03-0.00 BPC SSAR4-03-0.00 BPC SA29-0.33 BPC** SA09-0.33 BPC** SSAQ4-03-0.33 BPC	All analytes reported below the PQL.	J (all detects)	A	Sample result verification (sp)

**Tronox LLC Facility, PCS, Henderson, Nevada
Asbestos - Laboratory Blank Data Qualification Summary - SDG 091003270**

No Sample Data Qualified in this SDG

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Asbestos - Field Blank Data Qualification Summary - SDG 091003270**

No Sample Data Qualified in this SDG

LDC #: 23124A6
 SDG #: 091003270
 Laboratory: EMSL Analytical, Inc.

Tronox Northgate Henderson
VALIDATION COMPLETENESS WORKSHEET

Stage 2B / 4

Date: 5/19/10
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Asbestos (EPA Method 540-R-97-028)

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	4/7/10
II.	Calibration verification	A	
III.	Blanks	A	Filter + Equipment Blanks
IV.	Matrix Duplicates	N	Client specified
V.	Sample result verification	N	
VI.	Overall assessment of data	A	
VII.	Field duplicates	N	
VIII.	Field blanks	N	

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

Validated Samples: *Hand 4*
Soil

1	SA192-0.33 BPC	11	SA09-0.33 BPC**	21		31	
2	RSAR3-0.33 BPC	12	SSAQ4-03-0.33 BPC	22		32	
3	SA193-0.33 BPC**	13		23		33	
4	SA120-0.33 BPC	14		24		34	
5	SA213-0.33 BPC	15		25		35	
6	SSAQ4-01-0.00 BPC	16		26		36	
7	SA121-0.33 BPC <i>w/</i>	17		27		37	
8	SSAQ4-03-0.00 BPC	18		28		38	
9	SSAR4-03-0.00 BPC	19		29		39	
10	SA29-0.33 BPC**	20		30		40	

Notes: _____

LDC #: 2314A6
 SDG #: See cover

VALIDATION FINDINGS CHECKLIST

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

Tronox Northgate Henderson Worksheet

Method: Asbestos (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 balance checks performed as required?			✓	
Was the flow rate for the IST opening calibrated to 72 ml/min?	✓			
Was the leak check performed?	✓			
Was chrysotile beam dose sensitivity acceptable?	✓			
Was camera constant calibration acceptable?	✓			
Was crocidolite spectrum Na sensitivity acceptable?	✓			
Was Mg-Si K-alpha peak resolvability acceptable?	✓			
Were K factors acceptable?	✓			
Was detector resolution at the Mn K-alpha peak acceptable?	✓			
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Were 4% of unused filter lot blanks analyzed prior to sampling and < 0.2 fiber/mm ² ?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
IV. Matrix Duplicates				
Was a duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated DUP.		✓		
Was the duplicate relative percent differences (RPD) ≤ 50%?			✓	
V. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓		✓	
Were samples prepared in accordance with the Modified Elutriator Method for the Determination of Asbestos in Soil and Bulk Material, Revision 1, Berman and Kolk, May 2000?	✓			
Were the EDXA and SAED photos provided?	✓			
Was the analytical sensitivity greater than 3.00E+06?	✓			
Were asbestos fibers recorded ≥5.0 microns in length, 3:1 aspect ratio, and a modified 0.4 micron min. width?	✓			
Was analysis stopped upon recording 25 asbestos fibers ≥10 microns in length after current grid opening was completed.	✓			

LDC #: 2312186
 SDG #: see com

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

Validation Area	Yes	No	NA	Findings/Comments
VI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
VII. Field duplicates				
Field duplicate pairs were identified in this SDG.		/		
Target analytes were detected in the field duplicates and RPD \leq 50%.			/	
VIII. Field blanks				
Field blanks were identified in this SDG.		/		
Target analytes were detected in the field blanks.			/	

EDD CHECKLIST

LDC #: 23124
 SDG #: 091003270

Page: 1 of 1
 Reviewer: BC
 2nd Reviewer: JE

Tronox Northgate Henderson Worksheet

EDD Area	Yes	No	NA	Findings/Comments
I. Completeness				
Is there an EDD for the associated Tronox validation report?	X			
II. EDD Qualifier Population				
Were all qualifiers from the validation report populated into the EDD?	X			
III. EDD Lab Anomalies				
Were EDD anomalies identified?	X			
If yes, were they corrected or documented for the client?	X			See EDD_discrepancy_ form_LDC23124_060210.doc
IV. EDD Delivery				
Was the final EDD sent to the client?	X			