



**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

January 7, 2010

SUBJECT: Tronox LLC Facility, 2009 Phase B Investigation, Henderson,  
Nevada, Data Validation

Dear Ms. Arnold,

Enclosed is the final validation report for the fraction listed below. This SDG was received on January 4, 2010. Attachment 1 is a summary of the samples that were reviewed for each analysis.

**LDC Project # 22328:**

**SDG #**                      **Fraction**

TRX09081353    Organic Acids

The data validation was performed under Stage 2B 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 Superfund Organic Methods Data Review, June 2008

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

Sincerely,

Erlinda T. Rauto  
Operations Manager/Senior Chemist



EDD CHECKLIST

LDC #: 22328  
 SDG #: TRX09081353

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

Tronox Northgate Henderson Worksheet

EDD Area	Yes	No	NA	Findings/Comments
<b>I. Completeness</b>				
Is there an EDD for the associated Tronox validation report?	X			
<b>II. EDD Qualifier Population</b>				
Were all qualifiers from the validation report populated into the EDD?	X			
<b>III. EDD Lab Anomalies</b>				
Were EDD anomalies identified?	X			
If yes, were they corrected or documented for the client?	X			See EDD_discrepancy_form LDC22328 010710.doc
<b>IV. EDD Delivery</b>				
Was the final EDD sent to the client?	X			

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada  
Data Validation Reports  
LDC #22328**

Organic Acids

**LDC**

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

**Project/Site Name:** Tronox LLC Facility, 2009 Phase B Investigation,  
Henderson, Nevada

**Collection Date:** August 4, 2009

**LDC Report Date:** January 6, 2010

**Matrix:** Water

**Parameters:** Organic Acids

**Validation Level:** Stage 2B

**Laboratory:** Alpha Analytical, Inc.

**Sample Delivery Group (SDG):** TRX09081353

**Sample Identification**

FB080409-GW

## Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per HPLC Method for Organic Acids.

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 Superfund Organic Methods Data Review (June 2008) 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.
- 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**

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**

Initial calibration of compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination ( $r^2$ ) was greater than or equal to 0.990 .

### **b. Calibration Verification**

Calibration verification was performed at the required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent difference (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

## **III. Blanks**

Method blanks were reviewed for each matrix as applicable. No organic acids were found in the method blanks.

Sample FB080409-GW was identified as a field blank. No organic acids were found in this blank.

## **IV. Accuracy and Precision Data**

### **a. Surrogate Recovery**

Surrogates were not required by the method.

### **b. 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.



### **c. Laboratory Control Samples**

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

### **V. Target Compound Identification**

Raw data were not reviewed for this SDG.

### **VI. Project Quantitation Limit**

All compounds reported below the PQL were qualified as follows:

<b>Sample</b>	<b>Finding</b>	<b>Flag</b>	<b>A or P</b>
All samples in SDG TRX09081353	All compounds reported below the PQL.	J (all detects)	A

Raw data were not reviewed for this SDG.

### **VII. System Performance**

Raw data were not reviewed for this SDG.

### **VIII. Overall Assessment of Data**

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

### **IX. Field Duplicates**

No field duplicates were identified in this SDG.

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada  
Organic Acids - Data Qualification Summary - SDG TRX09081353**

<b>SDG</b>	<b>Sample</b>	<b>Compound</b>	<b>Flag</b>	<b>A or P</b>	<b>Reason (Code)</b>
TRX09081353	FB080409-GW	All compounds reported below the PQL.	J (all detects)	A	Project Quantitation Limit (PQL) (sp)

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada  
Organic Acids - Laboratory Blank Data Qualification Summary - SDG TRX09081353**

No Sample Data Qualified in this SDG

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada  
Organic Acids - Field Blank Data Qualification Summary - SDG TRX09081353**

No Sample Data Qualified in this SDG

**Tronox Northgate Henderson**

**VALIDATION COMPLETENESS WORKSHEET**

LDC #: 22328A47  
 SDG #: TRX09081353  
 Laboratory: Alpha Analytical, Inc.

Stage 2B

Date: 1/05/10  
 Page: 1 of 1  
 Reviewer: JG  
 2nd Reviewer: [Signature]

**METHOD:** HPLC Organic Acids (HPLC Method)

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: 8/04/09
IIa.	Initial calibration	A r <sup>2</sup>
IIb.	Calibration verification/ICV	A CW ≤ 20% ICV ≤ 30%
III.	Blanks	A
IVa.	Surrogate recovery	N Not req'd.
IVb.	Matrix spike/Matrix spike duplicates	N client spec
IVc.	Laboratory control samples	A LCS
V.	Target compound identification	N
VI.	Compound Quantitation and CRQLs	N
VII.	System Performance	N
VIII.	Overall assessment of data	A
IX.	Field duplicates	N
X.	Field blanks	ND FB = 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: Water

1	FB080409-GW	11	21	31
2	MBLK-22549	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: \_\_\_\_\_