

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Data Validation Reports
LDC #21991**

Metals

LDC

Laboratory Data Consultants, Inc. Data Validation Report

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

Collection Date: August 3 through August 4, 2009

LDC Report Date: November 18, 2009

Matrix: Water

Parameters: Metals

Validation Level: Stage 2B

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): R0904290

Sample Identification

M-31AB
M-31ABDISS
M-50B
M-21B
FB080409-GW
M-31ABMS
M-31ABDUP
M-50BMS
M-50BDUP

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010B, 6020, and 7000 for Metals. The metals analyzed were Aluminum, Antimony, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Tungsten, Uranium, Vanadium, and Zinc.

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) 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.

Blanks are summarized in Section IV.

Field duplicates are summarized in Section XIV.

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. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

| Method Blank ID | Analyte | Maximum Concentration | Associated Samples |
|-----------------|---|---|-------------------------------|
| PB (prep blank) | Copper | 0.9 ug/L | All samples in SDG R0904290 |
| ICB/CCB | Boron Beryllium Chromium Potassium Tungsten | 7.9 ug/L 0.10 ug/L 0.7 ug/L 50 ug/L 0.03 ug/L | All samples in SDG R0904290 |
| ICB/CCB | Barium Iron Strontium | 1.9 ug/L 5.7 ug/L 0.3 ug/L | M-31AB M-31ABDISS M-50B |
| ICB/CCB | Barium Strontium | 0.8 ug/L 0.2 ug/L | M-21B FB080409-GW |
| ICB/CCB | Sodium | 346 ug/L | M-31AB |
| ICB/CCB | Sodium | 195 ug/L | M-31ABDISS M-50B |

Sample concentrations were compared to concentrations detected in the method blanks as required by the QAPP. No sample data was qualified with the following exceptions:

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|-------------|---|---|---|
| M-31AB | Beryllium | 0.20 ug/L | 0.30U ug/L |
| M-31ABDISS | Copper Tungsten Iron | 9.3 ug/L 0.59 ug/L 9.5 ug/L | 10.0U ug/L 1.00U ug/L 20.0U ug/L |
| M-50B | Tungsten | 0.65 ug/L | 1.00U ug/L |
| M-21B | Copper Tungsten | 5.9 ug/L 0.52 ug/L | 10.0U ug/L 1.00U ug/L |
| FB080409-GW | Boron Copper Chromium Tungsten | 9.0 ug/L 0.8 ug/L 0.9 ug/L 0.01 ug/L | 50.0U ug/L 10.0U ug/L 5.0U ug/L 0.10U ug/L |

Sample FB080409-GW was identified as a field blank. No metal contaminants were found in this blank with the following exceptions:

| Field Blank ID | Sampling Date | Analyte | Concentration | Associated Samples |
|----------------|---------------|---|---|--------------------|
| FB080409-GW | 8/4/09 | Boron Chromium Copper Tungsten | 9.0 ug/L 0.9 ug/L 0.8 ug/L 0.01 ug/L | M-21B |

Sample concentrations were compared to concentrations detected in the field blanks as required by the QAPP. No sample data was qualified with the following exceptions:

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|--------|--------------------|------------------------|------------------------------|
| M-21B | Copper Tungsten | 5.9 ug/L 0.52 ug/L | 10.0U ug/L 1.00U ug/L |

Sample MC-3B-FILT (from SDG R0902886) was identified as a filter blank. No metal contaminants were found in this blank with the following exceptions:

| Filter Blank ID | Sampling Date | Analyte | Concentration | Associated Samples |
|-----------------|---------------|--|--|--------------------|
| MC-3B-FILT | 5/21/09 | Aluminum Antimony Calcium Magnesium Manganese Molybdenum Strontium Titanium Tungsten Zinc | 5.3 ug/L 0.03 ug/L 116 ug/L 2.3 ug/L 0.2 ug/L 1.7 ug/L 0.2 ug/L 0.7 ug/L 0.06 ug/L 2.2 ug/L | M-31ABDISS |

Sample concentrations were compared to concentrations detected in the filter blanks as required by the QAPP. No sample data was qualified with the following exceptions:

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|------------|------------------------------|------------------------------------|--|
| M-31ABDISS | Aluminum Tungsten Zinc | 34.3 ug/L 0.59 ug/L 1.4 ug/L | 50.0U ug/L 1.00U ug/L 10.0U ug/L |

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

| DUP ID (Associated Samples) | Analyte | RPD (Limits) | Difference (Limits) | Flag | A or P |
|--|----------|--------------|---------------------------|---|--------|
| M-31ABDUP (M-31AB M-31ABDISS M-50B) | Platinum | - | 1.10 ug/L (≤ 1.00) | J (all detects) UJ (all non-detects) | A |
| | Tungsten | - | 1.11 ug/L (≤ 1.00) | J (all detects) UJ (all non-detects) | |

VIII. Laboratory Control Samples (LCS)

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

IX. Internal Standards

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met with the following exceptions:

| Diluted Sample | Analyte | %D (Limits) | Associated Samples | Flag | A or P |
|----------------|----------|--------------------|-------------------------------|---|--------|
| M-50BL | Aluminum | 10.5 (≤ 10) | M-31AB M-31ABDISS M-50B | J (all detects) UJ (all non-detects) | A |

XII. Sample Result Verification and Project Quantitation Limit

All analytes reported below the PQL were qualified as follows:

| Sample | Finding | Flag | A or P |
|-----------------------------|--------------------------------------|-----------------|--------|
| All samples in SDG R0904290 | All analytes reported below the PQL. | J (all detects) | A |

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

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

XIV. Field Duplicates

No field duplicates were identified in this SDG.

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Data Qualification Summary - SDG R0904290**

| SDG | Sample | Analyte | Flag | A or P | Reason (Code) |
|----------|---|---|--|--------|--|
| R0904290 | M-31AB M-31ABDISS M-50B | Platinum Tungsten | J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects) | A | Duplicate sample analysis (Difference) (ld) |
| R0904290 | M-31AB M-31ABDISS M-50B | Aluminum | J (all detects) UJ (all non-detects) | A | ICP serial dilution (%D) (sd) |
| R0904290 | M-31AB M-31ABDISS M-50B M-21B FB080409-GW | All analytes reported below the PQL. | J (all detects) | A | Sample result verification (PQL) (sp) |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Laboratory Blank Data Qualification Summary - SDG R0904290**

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|-------------|---|---|--------|------|
| R0904290 | M-31AB | Beryllium | 0.30U ug/L | A | bl |
| R0904290 | M-31ABDISS | Copper Tungsten Iron | 10.0U ug/L 1.00U ug/L 20.0U ug/L | A | bl |
| R0904290 | M-50B | Tungsten | 1.00U ug/L | A | bl |
| R0904290 | M-21B | Copper Tungsten | 10.0U ug/L 1.00U ug/L | A | bl |
| R0904290 | FB080409-GW | Boron Copper Chromium Tungsten | 50.0U ug/L 10.0U ug/L 5.0U ug/L 0.10U ug/L | A | bl |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Field Blank Data Qualification Summary - SDG R0904290**

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|--------|--------------------|------------------------------|--------|------|
| R0904290 | M-21B | Copper Tungsten | 10.0U ug/L 1.00U ug/L | A | bf |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Filter Blank Data Qualification Summary - SDG R0904290**

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|------------|------------------------------|--|--------|------|
| R0904290 | M-31ABDISS | Aluminum Tungsten Zinc | 50.0U ug/L 1.00U ug/L 10.0U ug/L | A | br |

Tronox Northgate Henderson

LDC #: 21991A4
 SDG #: R0904290
 Laboratory: Columbia Analytical Services

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 11/7/09
 Page: 1 of 1
 Reviewer: CR
 2nd Reviewer: W

METHOD: Metals (EPA SW 846 Method 6010B/6020/7000)

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: 8/3/09-8/4/09 |
| II. | ICP/MS Tune | A | |
| III. | Calibration | A | |
| IV. | Blanks | SW | |
| V. | ICP Interference Check Sample (ICS) Analysis | A | |
| VI. | Matrix Spike Analysis | A | MS |
| VII. | Duplicate Sample Analysis | SW | Dup |
| VIII. | Laboratory Control Samples (LCS) | A | LCS |
| IX. | Internal Standard (ICP-MS) | N | Not reviewed |
| X. | Furnace Atomic Absorption QC | N | Not utilized |
| XI. | ICP Serial Dilution | SW | |
| XII. | Sample Result Verification | N | |
| XIII. | Overall Assessment of Data | A | |
| XIV. | Field Duplicates | N | |
| XV. | Field Blanks | SW | FB=5, Filter Blank = MC-3B-FILT (506 W R0902886) |

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 | M-31AB | 11 | PPW | 21 | | 31 | |
| 2 | M-31ABDISS | 12 | | 22 | | 32 | |
| 3 | M-50B | 13 | | 23 | | 33 | |
| 4 | M-21B | 14 | | 24 | | 34 | |
| 5 | FB080409-GW | 15 | | 25 | | 35 | |
| 6 | M-31ABMS | 16 | | 26 | | 36 | |
| 7 | M-31ABDUP | 17 | | 27 | | 37 | |
| 8 | M-50BMS | 18 | | 28 | | 38 | |
| 9 | ↓ DUP | 19 | | 29 | | 39 | |
| 10 | | 20 | | 30 | | 40 | |

Notes: _____

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

All circled elements are applicable to each sample.

| Sample ID | Matrix | Target Analyte List (TAL) |
|-----------|--------|---|
| 1-5 | Water | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| OL: 6 | ↓ | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| ↓ 7 | ↓ | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| ↓ 8 | ↓ | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| ↓ 9 | ↓ | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| | | Analysis Method |
| ICP | W | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| ICP-MS | ↓ | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |
| GFAA | | Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Mn, Hg, Ni, Pt, K, Se, Ag, Na, Sr, Ti, Sn, Ti, W, U, V, Zn |

Comments: Mercury by CVAA if performed

VALIDATION FINDINGS WORKSHEET
 PB/ICB/CCB QUALIFIED SAMPLES

Soil preparation factor applied: NA
 Associated Samples: All

Reason Code: bl

Raise to RL unless noted

| Analyte | Maximum PB* (ug/L) | Maximum ICB/CCB* (ug/L) | Action Limit | RL | Associated Samples: 1-3 | | | | |
|---------|--------------------|-------------------------|--------------|------|-------------------------|------|------|------|-------------|
| | | | | | 1 | 2 | 3 | 4 | 5 |
| B | | 7.9 | | 50.0 | | | | | |
| Be | | 0.10 | | 0.30 | 0.20 | | | | |
| Cu | 0.9 | | | 10.0 | | 9.3 | | 5.9 | 0.8 |
| Cr | | 0.7 | | 5.0 | | | | | 0.9 |
| K | | 50 | | | | | | | |
| W | | 0.03 | | 1.00 | | 0.59 | 0.65 | 0.52 | 0.01 / 0.10 |

| Analyte | Maximum PB* (ug/L) | Maximum ICB/CCB* (ug/L) | Action Limit | RL | Associated Samples: 1-3 | | | | |
|---------|--------------------|-------------------------|--------------|------|-------------------------|-----|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 |
| Ba | | 1.9 | | | | | | | |
| Fe | | 5.7 | | 20.0 | | 9.5 | | | |
| Sr | | 0.3 | | | | | | | |

| Analyte | Maximum PB* (ug/L) | Maximum ICB/CCB* (ug/L) | Action Limit | RL | Associated Samples: 4-5 | | | | |
|---------|--------------------|-------------------------|--------------|----|-------------------------|---|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 |
| Ba | | 0.8 | | | | | | | |
| Sr | | 0.2 | | | | | | | |

Sample Concentration units, unless otherwise noted: ug/L @10x Associated Samples: 1

| Analyte | Maximum PB* (ug/L) | Maximum ICB/CCB* (ug/L) | Action Limit | RL | No Qualifiers |
|---------|--------------------|-------------------------|--------------|------|---------------|
| Na | | 346 | 346 | 3460 | |

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: 2, 3

| Analyte | Maximum PB* (ug/L) | Maximum ICB/CCB* (ug/L) | Action Limit | RL | No Qualifiers |
|---------|--------------------|-------------------------|--------------|----|---------------|
| Na | | 195 | | | |

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 21991A4
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET Field Blanks

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

METHOD: Trace Metals (EPA SW846 6010B/7000)
Were field blanks identified in this SDG? Y N N/A Reason Code: bf
Were target analytes detected in the field blanks? Y N N/A
Blank units: ug/L Associated sample units: ug/L
Sampling date: 8/4/09 Soil factor applied: NA
Field blank type: (circle one) Field Blank Rinsate / Other: Associated Samples: 4

| Analyte | Blank ID | Action Level | 4 | Sample Identification | | | | | | | | | | |
|---------|----------|--------------|-------------|-----------------------|--|--|--|--|--|--|--|--|--|--|
| B | 5 | | | | | | | | | | | | | |
| | 9.0 | | | | | | | | | | | | | |
| Cr | 0.9 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Cu | 0.8 | | 5.9 / 10.0 | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| W | 0.01 | | 0.52 / 1.00 | | | | | | | | | | | |
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LDC #: 21991A4
SDG #: R0904290
VALIDATION FINDINGS WORKSHEET
Field Blanks

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

METHOD: Trace Metals (EPA SW846 6010B/6020/7000)
 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: ug/L **Associated sample units:** ug/L
Sampling date: 5/21/09 Soil factor applied: NA
Field blank type: (circle one) Field Blank / Rinsate / Other: Filter Blank

Reason Code: br

Associated Samples: 2

| Analyte | | Blank ID | | Sample Identification | | | | | | | | | | | | | | | | | | | |
|---------|-------------------------------|----------|--------------|-----------------------|--|--|--|--|-------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | MC-3B-FILT (SDG# R0902886) | | Action Level | | | | | | | | | | | | | | | | | | | | |
| Al | 5.3 | | | 2 | | | | | | | | | | | | | | | | | | | |
| Sb | 0.03 | | | | | | | | | | | | | | | | | | | | | | |
| Ca | 116 | | 1160 | | | | | | | | | | | | | | | | | | | | |
| Mg | 2.3 | | | | | | | | | | | | | | | | | | | | | | |
| Mn | 0.2 | | | | | | | | | | | | | | | | | | | | | | |
| Mo | 1.7 | | | | | | | | | | | | | | | | | | | | | | |
| Sr | 0.2 | | | | | | | | | | | | | | | | | | | | | | |
| Ti | 0.7 | | | | | | | | | | | | | | | | | | | | | | |
| W | 0.06 | | | | | | | | 0.59 / 1.00 | | | | | | | | | | | | | | |
| Zn | 2.2 | | | | | | | | 1.4 / 10.0 | | | | | | | | | | | | | | |
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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 #: 21991A4
SDG #: See card

VALIDATION FINDINGS WORKSHEET

Duplicate Analysis

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

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A
Y N N/A

Was a duplicate sample analyzed for each matrix in this SDG?
Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤ 35% for soil samples? If no, see qualifications below. A control limit of ±R.L. (±2X R.L. for soil) was used for sample values that were <5X the R.L., including the case when only one of the duplicate sample values was <5X R.L. If field blanks were used for laboratory duplicates, note in the Overall Assessment.

LEVEL IV ONLY:
Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

| # | Duplicate ID | Matrix | Analyte | RPD (Limits) | Difference (Limits) | Associated Samples | Qualifications |
|---|--------------|--------|---------|--------------|----------------------|--------------------|----------------|
| | 7 | water | Pt | | 1.10 (<1.00) | 1-3 | JUSTIA (ld) |
| | | | Pt | | 1.11 (<2.00) (<1.00) | ↓ | |
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Comments:

LDC #: 2199149
SDG #: 10204790

Page: 1 of 1
Reviewer: CR
2nd Reviewer: LR

VALIDATION FINDINGS WORKSHEET ICP Serial Dilution

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

N N/A If analyte concentrations were > 50X the IDL, was an ICP serial dilution analyzed?

N N/A Were ICP serial dilution percent differences (%D) ≤ 10%?

N N/A Is there evidence of negative interference? If yes, professional judgement will be used to qualify the data.

LEVEL IV ONLY:

N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

| # | Diluted Sample ID | Matrix | Analyte | %D | Associated Samples | Qualifications |
|---|-------------------|--------|---------|------|--------------------|----------------|
| | 3 | Water | Al | 10.5 | 1-3 | 0105/1A (SD) |
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Comments:

Laboratory Data Consultants, Inc. Data Validation Report

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

Collection Date: September 14, 2009

LDC Report Date: November 25, 2009

Matrix: Soil/Water

Parameters: Metals

Validation Level: Stage 2B

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): R0905218

Sample Identification

| | |
|-----------------|--------------|
| EB091409-SO1 | SA42-10BMS |
| SA42-10B | SA42-10BDUP |
| SA42009-10B | RSAR6-37BMS |
| SA42-25B | RSAR6-37BDUP |
| SA42-38B | |
| SA43-10B | |
| SA43-25B | |
| SA43-43B | |
| SA44-10B | |
| SA44-25B | |
| SA44-42B | |
| RSAR6-37B | |
| RSAR6-25B | |
| RSAR6-0.5B | |
| RSAR6-9B | |
| RSAO8-43B | |
| RSAO8-11.5B | |
| RSAO8-21.5B | |
| EB091409-SO1MS | |
| EB091409-SO1DUP | |

Introduction

This data review covers 21 soil samples and 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010B, 6020, and 7000 for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Tungsten, Uranium, Vanadium, and Zinc.

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) 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.

Blanks are summarized in Section IV.

Field duplicates are summarized in Section XIV.

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. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

| Method Blank ID | Analyte | Maximum Concentration | Associated Samples |
|-----------------|---|--|-----------------------------------|
| PB (prep blank) | Tungsten | 0.02 ug/L | All water samples in SDG R0905218 |
| ICB/CCB | Aluminum Boron Cobalt Iron Thallium Tungsten | 3.0 ug/L 4.5 ug/L 0.6 ug/L 3.5 ug/L 0.002 ug/L 0.07 ug/L | All water samples in SDG R0905218 |
| PB (prep blank) | Aluminum Antimony Calcium Chromium Copper Iron Magnesium Manganese Strontium Tin Tungsten | 1.3 mg/Kg 0.5 mg/Kg 5.1 mg/Kg 0.10 mg/Kg 1.2 mg/Kg 2.2 mg/Kg 1.6 mg/Kg 0.04 mg/Kg 0.02 mg/Kg 3.6 mg/Kg 0.015 mg/Kg | All soil samples in SDG R0905218 |
| ICB/CCB | Molybdenum Strontium Tungsten | 0.80 ug/L 0.20 ug/L 0.106 ug/L | All soil samples in SDG R0905218 |

| Method Blank ID | Analyte | Maximum Concentration | Associated Samples |
|-----------------|--|---|--|
| ICB/CCB | Platinum Thallium | 0.008 ug/L 0.007 ug/L | SA42-10B SA42009-10B SA42-25B |
| ICB/CCB | Thallium | 0.006 ug/L | SA42-38B SA43-10B SA43-25B SA43-43B SA44-10B SA44-25B SA44-42B RSAR6-37B RSAR6-25B RSAR6-0.5B RSAR6-9B RSAO8-43B RSAO8-11.5B RSAO8-21.5B |
| ICB/CCB | Barium Magnesium Nickel Titanium | 2.00 ug/L 3.0 ug/L 0.70 ug/L 0.3 ug/L | SA42009-10B SA42-25B SA42-38B SA43-10B SA43-25B SA43-43B SA44-10B SA44-25B SA44-42B RSAR6-37B RSAR6-25B RSAR6-0.5B RSAR6-9B RSAO8-43B RSAO8-11.5B RSAO8-21.5B |
| ICB/CCB | Barium Iron Magnesium Manganese Nickel | 1.00 ug/L 6.0 ug/L 2.0 ug/L 0.70 ug/L 0.50 ug/L | SA42-10B |
| ICB/CCB | Iron Manganese | 5.0 ug/L 0.90 ug/L | SA42009-10B SA42-25B SA42-38B SA43-10B SA43-25B SA43-43B SA44-10B SA44-25B |

| Method Blank ID | Analyte | Maximum Concentration | Associated Samples |
|-----------------|-------------------|-----------------------|---|
| ICB/CCB | Iron Manganese | 4.0 ug/L 1.20 ug/L | SA44-42B RSAR6-37B RSAR6-25B RSAR6-0.5B RSAR6-9B RSAO8-43B RSAO8-11.5B RSAO8-21.5B |

Sample concentrations were compared to concentrations detected in the method blanks as required by the QAPP. No sample data was qualified with the following exceptions:

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|--------------|---|---|--|
| EB091409-SO1 | Aluminum Boron Tungsten | 14.0 ug/L 2.9 ug/L 0.03 ug/L | 50.0U ug/L 50.0U ug/L 0.10U ug/L |
| SA42-10B | Molybdenum Tin Tungsten Platinum | 0.22 mg/Kg 4.4 mg/Kg 0.091 mg/Kg 0.011 mg/Kg | 0.33U mg/Kg 10.9U mg/Kg 0.10U mg/Kg 0.10U mg/Kg |
| SA42009-10B | Molybdenum Tin Platinum | 0.28 mg/Kg 4.9 mg/Kg 0.011 mg/Kg | 0.33U mg/Kg 10.9U mg/Kg 0.11U mg/Kg |
| SA42-25B | Molybdenum Tin Platinum | 0.28 mg/Kg 4.6 mg/Kg 0.008 mg/Kg | 0.32U mg/Kg 10.7U mg/Kg 0.11U mg/Kg |
| SA42-38B | Antimony Tin | 0.8 mg/Kg 5.8 mg/Kg | 2.5U mg/Kg 12.7U mg/Kg |
| SA43-10B | Molybdenum Tin | 0.17 mg/Kg 4.9 mg/Kg | 0.32U mg/Kg 10.7U mg/Kg |
| SA43-25B | Antimony Tin | 0.7 mg/Kg 4.6 mg/Kg | 2.1U mg/Kg 10.5U mg/Kg |
| SA43-43B | Tin | 5.9 mg/Kg | 11.9U mg/Kg |
| SA44-10B | Molybdenum Tin | 0.24 mg/Kg 4.6 mg/Kg | 0.32U mg/Kg 10.7U mg/Kg |
| SA44-25B | Antimony Molybdenum Tin | 0.7 mg/Kg 0.21 mg/Kg 4.6 mg/Kg | 2.1U mg/Kg 0.31U mg/Kg 10.4U mg/Kg |

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|-------------|-----------------------------|---------------------------------------|--|
| SA44-42B | Antimony Tin | 0.9 mg/Kg 4.3 mg/Kg | 2.0U mg/Kg 9.8U mg/Kg |
| RSAR6-37B | Tin | 6.2 mg/Kg | 13.1U mg/Kg |
| RSAR6-25B | Antimony Tin | 0.8 mg/Kg 6.3 mg/Kg | 2.7U mg/Kg 13.4U mg/Kg |
| RSAR6-0.5B | Antimony Tin Tungsten | 0.5 mg/Kg 5.0 mg/Kg 0.069 mg/Kg | 2.1U mg/Kg 10.6U mg/Kg 0.11U mg/Kg |
| RSAR6-9B | Molybdenum Tin | 0.20 mg/Kg 5.0 mg/Kg | 0.33U mg/Kg 10.9U mg/Kg |
| RSAO8-43B | Tin | 5.6 mg/Kg | 11.8U mg/Kg |
| RSAO8-11.5B | Tin | 4.8 mg/Kg | 10.7U mg/Kg |
| RSAO8-21.5B | Tin | 5.2 mg/Kg | 10.7U mg/Kg |

Sample EB091409-SO1 was identified as an equipment blank. No metal contaminants were found in this blank with the following exceptions:

| Equipment Blank ID | Sampling Date | Analyte | Concentration | Associated Samples |
|--------------------|---------------|--|--|---|
| EB091409-SO1 | 9/14/09 | Aluminum Barium Boron Calcium Iron Lead Magnesium Manganese Potassium Sodium Strontium Tungsten Zinc | 14.0 ug/L 0.5 ug/L 2.9 ug/L 266 ug/L 45.1 ug/L 0.037 ug/L 37.9 ug/L 3.7 ug/L 60 ug/L 10.3 ug/L 1.6 ug/L 0.03 ug/L 3.8 ug/L | SA42-10B SA42009-10B SA42-25B SA42-38B SA43-10B SA43-25B SA43-43B SA44-10B SA44-25B SA44-42B RSAR6-37B RSAR6-25B RSAR6-0.5B RSAR6-9B |

Sample concentrations were compared to concentrations detected in the equipment blanks as required by the QAPP. No sample data was qualified with the following exceptions:

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|-------------|-------------------|--------------------------|------------------------------|
| SA42-10B | Boron Tungsten | 7.3 mg/Kg 0.091 mg/Kg | 10.9U mg/Kg 0.10U mg/Kg |
| SA42009-10B | Boron | 7.7 mg/Kg | 10.9U mg/Kg |
| SA43-10B | Boron | 8.6 mg/Kg | 10.7U mg/Kg |
| SA44-10B | Boron | 6.4 mg/Kg | 10.7U mg/Kg |
| SA44-25B | Boron | 8.4 mg/Kg | 10.4U mg/Kg |
| RSAR6-0.5B | Boron Tungsten | 6.1 mg/Kg 0.069 mg/Kg | 10.6U mg/Kg 0.11U mg/Kg |
| RSAR6-9B | Boron | 8.3 mg/Kg | 10.9U mg/Kg |

Samples FB072909-SO (from SDG R0904226) and FB082809-SO (from SDG R090894) were identified as field blanks. No metal contaminants were found in these blanks with the following exceptions:

| Field Blank ID | Sampling Date | Analyte | Concentration | Associated Samples |
|----------------|---------------|---|--|---|
| FB072909-SO | 7/29/09 | Aluminum Barium Calcium Copper Iron Lead Magnesium Manganese Sodium Strontium Titanium Tungsten Uranium Zinc | 8.1 ug/L 1.0 ug/L 582 ug/L 0.8 ug/L 12.1 ug/L 0.359 ug/L 28.4 ug/L 4.3 ug/L 160 ug/L 1.4 ug/L 0.5 ug/L 0.03 ug/L 0.006 ug/L 10.0 ug/L | SA42-10B SA42009-10B SA42-25B SA42-38B SA43-10B SA43-25B SA43-43B SA44-10B SA44-25B SA44-42B RSAR6-37B RSAR6-25B RSAR6-0.5B RSAR6-9B |
| FB082809-SO | 8/28/09 | Aluminum Calcium Lead Magnesium Manganese Sodium Strontium Zinc | 3.3 ug/L 17 ug/L 0.006 ug/L 5.0 ug/L 0.2 ug/L 39.2 ug/L 0.1 ug/L 1.0 ug/L | RSA08-43B RSA08-11.5B RSA08-21.5B |

Sample concentrations were compared to concentrations detected in the field blanks as required by the QAPP. No sample data was qualified with the following exceptions:

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|------------|----------|------------------------|------------------------------|
| SA42-10B | Tungsten | 0.091 mg/Kg | 0.10U mg/Kg |
| RSAR6-0.5B | Tungsten | 0.069 mg/Kg | 0.11U mg/Kg |

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

| Spike ID (Associated Samples) | Analyte | %R (Limits) | Flag | A or P |
|---|--------------------------|------------------------------------|--|--------|
| SA42-10BMS (SA42-10B SA42009-10B SA42-25B SA42-38B SA43-10B SA43-25B SA43-43B SA44-10B SA44-25B SA44-42B RSAR6-37B RSAR6-25B RSAR6-0.5B RSAR6-9B) | Antimony Tungsten | 34.0 (75-125) 44.8 (75-125) | J- (all detects) UJ (all non-detects) J- (all detects) UJ (all non-detects) | A |

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

| DUP ID (Associated Samples) | Analyte | RPD (Limits) | Difference (Limits) | Flag | A or P |
|--|---------|--------------|---------------------|---|--------|
| SA42-10BDUP (SA42-10B SA42009-10B SA42-25B SA42-38B SA43-10B SA43-25B SA43-43B SA44-10B SA44-25B SA44-42B RSAR6-37B RSAR6-25B RSAR6-0.5B RSAR6-9B) | Barium | 28.9 (≤20) | - | J (all detects) UJ (all non-detects) | A |

VIII. Laboratory Control Samples (LCS)

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

IX. Internal Standards

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

XII. Sample Result Verification and Project Quantitation Limit

All analytes reported below the PQL were qualified as follows:

| Sample | Finding | Flag | A or P |
|-----------------------------|--------------------------------------|-----------------|--------|
| All samples in SDG R0905218 | All analytes reported below the PQL. | J (all detects) | A |

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

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

XIV. Field Duplicates

Samples SA42-10B and SA42009-10B were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

| Compound | Concentration (mg/Kg) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|------------|-----------------------|-------------|------------------|------------------------|-------|--------|
| | SA42-10B | SA42009-10B | | | | |
| Aluminum | 11000 | 11300 | 3 (≤ 50) | - | - | - |
| Arsenic | 2.52 | 2.20 | - | 0.32 (≤ 0.54) | - | - |
| Barium | 166 | 187 | 12 (≤ 50) | - | - | - |
| Beryllium | 0.513 | 0.519 | 1 (≤ 50) | - | - | - |
| Boron | 7.3 | 7.7 | - | 0.4 (≤ 10.9) | - | - |
| Cadmium | 0.70 | 0.67 | 4 (≤ 50) | - | - | - |
| Calcium | 44200 | 31100 | 35 (≤ 50) | - | - | - |
| Chromium | 8.88 | 8.52 | 4 (≤ 50) | - | - | - |
| Cobalt | 7.3 | 7.6 | - | 0.3 (≤ 2.2) | - | - |
| Copper | 17.0 | 18.3 | 7 (≤ 50) | - | - | - |
| Iron | 13100 | 15100 | 14 (≤ 50) | - | - | - |
| Lead | 8.4 | 10.8 | 25 (≤ 50) | - | - | - |
| Magnesium | 14200 | 10800 | 27 (≤ 50) | - | - | - |
| Manganese | 295 | 318 | 8 (≤ 50) | - | - | - |
| Mercury | 0.014 | 0.005 | - | 0.009 (≤ 0.019) | - | - |
| Molybdenum | 0.22 | 0.28 | - | 0.06 (≤ 0.33) | - | - |

| Compound | Concentration (mg/Kg) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|-----------|-----------------------|-------------|------------------|------------------------|-------|--------|
| | SA42-10B | SA42009-10B | | | | |
| Nickel | 15.0 | 15.6 | 4 (≤ 50) | - | - | - |
| Platinum | 0.011 | 0.011 | - | 0 (≤ 0.11) | - | - |
| Potassium | 1970 | 2320 | 16 (≤ 50) | - | - | - |
| Sodium | 621 | 678 | 9 (≤ 50) | - | - | - |
| Strontium | 303 | 293 | 3 (≤ 50) | - | - | - |
| Thallium | 0.099 | 0.116 | - | 0.017 (≤ 0.022) | - | - |
| Tin | 4.4 | 4.9 | - | 0.5 (≤ 10.9) | - | - |
| Titanium | 729 | 832 | 13 (≤ 50) | - | - | - |
| Tungsten | 0.091 | 0.17 | - | 0.079 (≤ 0.17) | - | - |
| Uranium | 1.17 | 1.05 | 11 (≤ 50) | - | - | - |
| Vanadium | 37.6 | 41.2 | 9 (≤ 50) | - | - | - |
| Zinc | 30.7 | 35.1 | 13 (≤ 50) | - | - | - |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Data Qualification Summary - SDG R0905218**

| SDG | Sample | Analyte | Flag | A or P | Reason (Code) |
|----------|--|---|--|--------|--|
| R0905218 | SA42-10B SA42009-10B SA42-25B SA42-38B SA43-10B SA43-25B SA43-43B SA44-10B SA44-25B SA44-42B RSAR6-37B RSAR6-25B RSAR6-0.5B RSAR6-9B | Antimony Tungsten | J- (all detects) UJ (all non-detects) J- (all detects) UJ (all non-detects) | A | Matrix spike analysis (%R) (m) |
| R0905218 | SA42-10B SA42009-10B SA42-25B SA42-38B SA43-10B SA43-25B SA43-43B SA44-10B SA44-25B SA44-42B RSAR6-37B RSAR6-25B RSAR6-0.5B RSAR6-9B | Barium | J (all detects) UJ (all non-detects) | A | Duplicate sample analysis (RPD) (ld) |
| R0905218 | EB091409-SO1 SA42-10B SA42009-10B SA42-25B SA42-38B SA43-10B SA43-25B SA43-43B SA44-10B SA44-25B SA44-42B RSAR6-37B RSAR6-25B RSAR6-0.5B RSAR6-9B RSAO8-43B RSAO8-11.5B RSAO8-21.5B | All analytes reported below the PQL. | J (all detects) | A | Sample result verification (PQL) (sp) |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Laboratory Blank Data Qualification Summary - SDG R0905218**

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|--------------|---|--|--------|------|
| R0905218 | EB091409-SO1 | Aluminum Boron Tungsten | 50.0U ug/L 50.0U ug/L 0.10U ug/L | A | bl |
| R0905218 | SA42-10B | Molybdenum Tin Tungsten Platinum | 0.33U mg/Kg 10.9U mg/Kg 0.10U mg/Kg 0.10U mg/Kg | A | bl |
| R0905218 | SA42009-10B | Molybdenum Tin Platinum | 0.33U mg/Kg 10.9U mg/Kg 0.11U mg/Kg | A | bl |
| R0905218 | SA42-25B | Molybdenum Tin Platinum | 0.32U mg/Kg 10.7U mg/Kg 0.11U mg/Kg | A | bl |
| R0905218 | SA42-38B | Antimony Tin | 2.5U mg/Kg 12.7U mg/Kg | A | bl |
| R0905218 | SA43-10B | Molybdenum Tin | 0.32U mg/Kg 10.7U mg/Kg | A | bl |
| R0905218 | SA43-25B | Antimony Tin | 2.1U mg/Kg 10.5U mg/Kg | A | bl |
| R0905218 | SA43-43B | Tin | 11.9U mg/Kg | A | bl |
| R0905218 | SA44-10B | Molybdenum Tin | 0.32U mg/Kg 10.7U mg/Kg | A | bl |
| R0905218 | SA44-25B | Antimony Molybdenum Tin | 2.1U mg/Kg 0.31U mg/Kg 10.4U mg/Kg | A | bl |
| R0905218 | SA44-42B | Antimony Tin | 2.0U mg/Kg 9.8U mg/Kg | A | bl |
| R0905218 | RSAR6-37B | Tin | 13.1U mg/Kg | A | bl |
| R0905218 | RSAR6-25B | Antimony Tin | 2.7U mg/Kg 13.4U mg/Kg | A | bl |

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|-------------|-----------------------------|--|--------|------|
| R0905218 | RSAR6-0.5B | Antimony Tin Tungsten | 2.1U mg/Kg 10.6U mg/Kg 0.11U mg/Kg | A | bl |
| R0905218 | RSAR6-9B | Molybdenum Tin | 0.33U mg/Kg 10.9U mg/Kg | A | bl |
| R0905218 | RSAO8-43B | Tin | 11.8U mg/Kg | A | bl |
| R0905218 | RSAO8-11.5B | Tin | 10.7U mg/Kg | A | bl |
| R0905218 | RSAO8-21.5B | Tin | 10.7U mg/Kg | A | bl |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Equipment Blank Data Qualification Summary - SDG R0905218**

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|-------------|-------------------|------------------------------|--------|------|
| R0905218 | SA42-10B | Boron Tungsten | 10.9U mg/Kg 0.10U mg/Kg | A | be |
| R0905218 | SA42009-10B | Boron | 10.9U mg/Kg | A | be |
| R0905218 | SA43-10B | Boron | 10.7U mg/Kg | A | be |
| R0905218 | SA44-10B | Boron | 10.7U mg/Kg | A | be |
| R0905218 | SA44-25B | Boron | 10.4U mg/Kg | A | be |
| R0905218 | RSAR6-0.5B | Boron Tungsten | 10.6U mg/Kg 0.11U mg/Kg | A | be |
| R0905218 | RSAR6-9B | Boron | 10.9U mg/Kg | A | be |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Field Blank Data Qualification Summary - SDG R0905218**

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|----------|----------|------------------------------|--------|------|
| R0905218 | SA42-10B | Tungsten | 0.10U mg/Kg | A | bf |

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|------------|---------------|----------------|-------------------------------------|---------------|-------------|
| R0905218 | RSAR6-0.5B | Tungsten | 0.11U mg/Kg | A | bf |

Tronox Northgate Henderson

VALIDATION COMPLETENESS WORKSHEET

LDC #: 21991H4

SDG #: R0905218

Laboratory: Columbia Analytical Services

Stage 2B

Date: 11-25-09

Page: 4 of 1

Reviewer: CR

2nd Reviewer: W

METHOD: Metals (EPA SW 846 Method 6010B/6020/7000)

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: 9/14/09 |
| II. | ICP/MS Tune | A | |
| III. | Calibration | A | |
| IV. | Blanks | SW | |
| V. | ICP Interference Check Sample (ICS) Analysis | A | |
| VI. | Matrix Spike Analysis | SW | MS |
| VII. | Duplicate Sample Analysis | SW | DUP |
| VIII. | Laboratory Control Samples (LCS) | A | LCS |
| IX. | Internal Standard (ICP-MS) | N | Not reviewed |
| X. | Furnace Atomic Absorption QC | N | Not utilized |
| XI. | ICP Serial Dilution | A | |
| XII. | Sample Result Verification | N | |
| XIII. | Overall Assessment of Data | A | |
| XIV. | Field Duplicates | SW | (2,3) |
| XV. | Field Blanks | SW | EB=1, FB=1 (B072909-SO, B082809-SO) |

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

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

(SDG# R0901226) (SDG# R0901894)
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:
Soil water

| | | | | | | | | |
|----|--------------|---|------------------------|----|-----------------|---|----|-----|
| 1 | EB091409-SO1 | W | 11 SA44-25B | 21 | EB091409-SO1DUP | W | 31 | PBW |
| 2 | SA42-10B | S | 12 SA44-42B | S | 22 SA42-10BMS | S | 32 | PBS |
| 3 | SA42009-10B | ↓ | 13 RSAR6-37B | ↓ | 23 SA42-10BDUP | ↓ | 33 | |
| 4 | SA42-25B | ↓ | 14 RSAR6-25B | ↓ | 24 RSAR6-37BMS | ↓ | 34 | |
| 5 | SA42-38B | ↓ | 15 RSAR6-0.5B | ↓ | 25 RSAR6-37BDUP | ↓ | 35 | |
| 6 | SA43-10B | ↓ | 16 RSAR6-9B | ↓ | | | 36 | |
| 7 | SA43-25B | ↓ | 17 RSAO8-43B | ↓ | | | 37 | |
| 8 | SA43-43B | ↓ | 18 RSAO8-11.5B | ↓ | | | 38 | |
| 9 | SA44-10B | ↓ | 19 RSAO8-21.5B | ↓ | | | 39 | |
| 10 | SA44-25B | ↓ | 20 EB091409-SO1MS | W | | | 40 | |

Notes: _____

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES
 Reason Code: bl
 Soil preparation factor applied: 200x x 5xdlil
 Associated Samples: All Water

DC #: 21991H4
 SDG #: See Cover
 METHOD: Trace metals (EPA SW 846 Method 6010B/6020/7000)
 Sample Concentration units, unless otherwise noted: ug/L

| Analyte | Maximum PB ^a (mg/Kg) | Maximum PB ^a (ug/L) | Maximum ICB/CCB ^a (ug/L) | Action Limit | 1 | | | | | | | | | | | | | |
|---------|---------------------------------|--------------------------------|-------------------------------------|--------------|-------------|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Al | | | 3.0 | | 14.0 / 50.0 | | | | | | | | | | | | | |
| B | | | 4.5 | | 2.9 / 50.0 | | | | | | | | | | | | | |
| Co | | | 0.6 | | | | | | | | | | | | | | | |
| Fe | | | 3.5 | | | | | | | | | | | | | | | |
| Tl | | | 0.002 | | | | | | | | | | | | | | | |
| W | | 0.02 | 0.07 | | 0.03 / 0.10 | | | | | | | | | | | | | |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: All Soil

| Analyte | Maximum PB ^a (mg/Kg) | Maximum ICB/CCB ^a (ug/L) | Action Limit | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|---------|---------------------------------|-------------------------------------|--------------|--------------|-------------|-------------|------------|-------------|------------|------------|-------------|-------------|-----------|------------|------------|--------------|------------|------------|------------|------------|
| Al | 1.3 | | | | | | | | | | | | | | | | | | | |
| Sb | 0.5 | | | 0.8 / 2.5 | | | | | 0.7 / 2.1 | | | 0.7 / 2.1 | 0.9 / 2.0 | | 0.8 / 2.7 | | | | | |
| Ca | 5.1 | | | | | | | | | | | | | | | | | | | |
| Cr | 0.10 | | | | | | | | | | | | | | | | | | | |
| Cu | 1.2 | | | | | | | | | | | | | | | | | | | |
| Fe | 2.2 | | | | | | | | | | | | | | | | | | | |
| Mo | | 0.80 | | 0.22 / 0.33 | 0.28 / 0.33 | 0.28 / 0.32 | | 0.17 / 0.32 | | | 0.24 / 0.32 | 0.21 / 0.31 | | | | 0.20 / 0.33 | | | | |
| Mg | 1.6 | | | | | | | | | | | | | | | | | | | |
| Mn | 0.04 | | | | | | | | | | | | | | | | | | | |
| Sr | 0.02 | | 0.20 | | | | | | | | | | | | | | | | | |
| Sn | 3.6 | | | 4.4 / 10.9 | 4.9 / 10.9 | 4.6 / 10.7 | 5.8 / 12.7 | 4.9 / 10.7 | 4.6 / 10.5 | 5.9 / 11.9 | 4.6 / 10.7 | 4.6 / 10.4 | 4.3 / 9.8 | 6.2 / 13.1 | 6.3 / 13.4 | 5.0 / 10.6 | 5.0 / 10.9 | 5.6 / 11.8 | 4.8 / 10.7 | 5.2 / 10.7 |
| W | 0.015 | 0.106 | | 0.091 / 0.10 | | | | | | | | | | | | 0.069 / 0.11 | | | | |

| Analyte | Maximum PB ^a (mg/Kg) | Maximum PB ^a (ug/L) | Maximum ICB/CCB ^b (ug/L) | Action Limit | 2 | 3 | 4 |
|---------|---------------------------------|--------------------------------|-------------------------------------|--------------|--------------|--------------|--------------|
| Pt | | | 0.008 | | 0.011 / 0.10 | 0.011 / 0.11 | 0.008 / 0.11 |
| Tl | | | 0.007 | | | | |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 5-10, 12-19

| Analyte | Maximum PB ^a (mg/Kg) | Maximum PB ^a (ug/L) | Maximum ICB/CCB ^b (ug/L) | Action Limit | No Qualifiers |
|---------|---------------------------------|--------------------------------|-------------------------------------|--------------|---------------|
| Tl | | | 0.006 | | |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 3-10, 12-19

| Analyte | Maximum PB ^a (mg/Kg) | Maximum PB ^a (ug/L) | Maximum ICB/CCB ^b (ug/L) | Action Limit | No Qualifiers |
|---------|---------------------------------|--------------------------------|-------------------------------------|--------------|---------------|
| Ba | | | 2.00 | | |
| Mg | | | 3.0 | | |
| Ni | | | 0.70 | | |
| Tl | | | 0.3 | | |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 2

| Analyte | Maximum PB ^a (mg/Kg) | Maximum PB ^a (ug/L) | Maximum ICB/CCB ^b (ug/L) | Action Limit | No Qualifiers |
|---------|---------------------------------|--------------------------------|-------------------------------------|--------------|---------------|
| Ba | | | 1.00 | | |
| Fe | | | 6.0 | | |
| Mg | | | 2.0 | | |
| Mn | | | 0.70 | | |
| Ni | | | 0.50 | | |

Reason Code: bl

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Soil preparation factor applied: 200x x 5xdl
 Associated Samples: 3-10

DC #: 21991H4
 SDG #: See Cover
 METHOD: Trace metals (EPA SW 846 Method 6010B/6020/7000)
 Sample Concentration units, unless otherwise noted: mg/Kg

| Analyte | Maximum PB ^a (mg/Kg) | Maximum PB ^a (ug/L) | Maximum ICB/CCB ^a (ug/L) | Action Limit | No Qualifiers | | | | | |
|---------|---------------------------------|--------------------------------|-------------------------------------|--------------|---------------|--|--|--|--|--|
| Fe | | | 5.0 | | | | | | | |
| Mn | | | 0.90 | | | | | | | |

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: 12-19

| Analyte | Maximum PB ^a (mg/Kg) | Maximum PB ^a (ug/L) | Maximum ICB/CCB ^a (ug/L) | Action Limit | No Qualifiers | | | | | |
|---------|---------------------------------|--------------------------------|-------------------------------------|--------------|---------------|--|--|--|--|--|
| Fe | | | 4.0 | | | | | | | |
| Mn | | | 1.20 | | | | | | | |

Note: a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

VALIDATION FINDINGS WORKSHEET
Field Blanks

METHOD: Trace Metals (EPA SW846 6010B/7000)

Y **N** **N/A** Were field blanks identified in this SDG?
 Y **N** **N/A** Were target analytes detected in the field blanks?

Reason Code: be

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 9/14/09 **Soil factor applied:** 200x

Field blank type: (circle one) Field Blank / Rinsate / Other: EB **Associated Samples:** 2-10, 12-16

| Analyte | Blank ID | Sample Identification | | | | | | | | | | | | | | | | | |
|---------|----------|-----------------------|------------|------------|------------|------------|------------|------------|----|--|--|--|--|--|--|--|--|--|--|
| | | 1 | 2 | 3 | 6 | 9 | 10 | 15 | 16 | | | | | | | | | | |
| Al | 14.0 | | | | | | | | | | | | | | | | | | |
| Ba | 0.5 | | | | | | | | | | | | | | | | | | |
| B | 2.9 | 7.3 / 10.9 | 7.7 / 10.9 | 8.6 / 10.7 | 6.4 / 10.7 | 8.4 / 10.4 | 6.1 / 10.6 | 8.3 / 10.9 | | | | | | | | | | | |
| Ca | 266 | | | | | | | | | | | | | | | | | | |
| Fe | 45.1 | | | | | | | | | | | | | | | | | | |
| Pb | 0.037 | | | | | | | | | | | | | | | | | | |
| Mg | 37.9 | | | | | | | | | | | | | | | | | | |
| Mn | 3.7 | | | | | | | | | | | | | | | | | | |
| K | 60 | | | | | | | | | | | | | | | | | | |
| Na | 103 | | | | | | | | | | | | | | | | | | |
| Sr | 1.6 | | | | | | | | | | | | | | | | | | |
| W | 0.03 | 0.091 / 0.10 | | | | | | | | | | | | | | | | | |
| Zn | 3.8 | | | | | | | | | | | | | | | | | | |
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LDC #: 21991H4
 SDG #: See cover

VALIDATION FINDINGS WORKSHEET

Field Blanks

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

METHOD: Trace Metals (EPA SW846 6010B/7000)

Y Were field blanks identified in this SDG?
N Were target analytes detected in the field blanks?
N/A **Associated sample units:** mg/Kg

Blank units: ug/L **Associated sample units:** mg/Kg
Soil factor applied: 100X

Sampling date: 8/28/09 **Field Blank / Rinsate / Other:**
Field blank type: (circle one) Field Blank / Rinsate / Other:

Reason Code: bf

Associated Samples: 17-19

| Analyte | Blank ID | Action Level | No Qualifiers | Sample Identification | | | | | | | | | | | | | | | | |
|---------|---------------------------------|--------------|---------------|-----------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | FB082809-SO (SDG#: R0904894) | | | | | | | | | | | | | | | | | | | |
| Al | 3.3 | | | | | | | | | | | | | | | | | | | |
| Ca | 17 | | | | | | | | | | | | | | | | | | | |
| Pb | 0.006 | | | | | | | | | | | | | | | | | | | |
| Mg | 5.0 | | | | | | | | | | | | | | | | | | | |
| Mn | 0.2 | | | | | | | | | | | | | | | | | | | |
| Na | 39.2 | | | | | | | | | | | | | | | | | | | |
| Sr | 0.1 | | | | | | | | | | | | | | | | | | | |
| Zn | 1.0 | | | | | | | | | | | | | | | | | | | |
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LDC #: 21991HY
 SDG #: R090528

VALIDATION FINDINGS WORKSHEET
 Matrix Spike Analysis

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

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- N N/A Was a matrix spike analyzed for each matrix in this SDG?
- 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.
- N N/A Was a post digestion spike analyzed for ICP elements that did not meet the required criteria for matrix spike recovery?

LEVEL IV ONLY:

N (N/A) Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

| # | Matrix Spike ID | Matrix | Analyte | %R | Associated Samples | Qualifications |
|---|-----------------|--------|---------|------|--------------------|----------------|
| | 22 | soil | Sb | 34.0 | 2-10, 12-16 | J-105/A (cm) |
| | | | W | 44.8 | | |
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Comments:

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: Metals (EPA Method 6020/6010/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

| Compound | Concentration (mg/Kg) | | (<50) RPD | (mg/Kg) Difference | (mg/Kg) Limits | Qualifications (Parent Only) |
|------------|-----------------------|-------|--------------|-----------------------|-------------------|---------------------------------|
| | 2 | 3 | | | | |
| Aluminum | 11000 | 11300 | 3 | | | |
| Arsenic | 2.52 | 2.20 | | 0.32 | (<0.54) | |
| Barium | 166 | 187 | 12 | | | |
| Beryllium | 0.513 | 0.519 | 1 | | | |
| Boron | 7.3 | 7.7 | | 0.4 | (<10.9) | |
| Cadmium | 0.70 | 0.67 | 4 | | | |
| Calcium | 44200 | 31100 | 35 | | | |
| Chromium | 8.88 | 8.52 | 4 | | | |
| Cobalt | 7.3 | 7.6 | | 0.3 | (<2.2) | |
| Copper | 17.0 | 18.3 | 7 | | | |
| Iron | 13100 | 15100 | 14 | | | |
| Lead | 8.4 | 10.8 | 25 | | | |
| Magnesium | 14200 | 10800 | 27 | | | |
| Manganese | 295 | 318 | 8 | | | |
| Mercury | 0.014 | 0.005 | | 0.009 | (<0.019) | |
| Molybdenum | 0.22 | 0.28 | | 0.06 | (<0.33) | |
| Nickel | 15.0 | 15.6 | 4 | | | |
| Platinum | 0.011 | 0.011 | | 0 | (<0.11) | |
| Potassium | 1970 | 2320 | 16 | | | |

LDC#: 21991H4
 SDG#: See Cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

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

METHOD: Metals (EPA Method 6020/6010/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

| Compound | Concentration (mg/Kg) | | (<50) | (mg/Kg) | (mg/Kg) | Qualifications (Parent Only) |
|-----------|-----------------------|-------|-------|------------|----------|---------------------------------|
| | 2 | 3 | RPD | Difference | Limits | |
| Sodium | 621 | 678 | 9 | | | |
| Strontium | 303 | 293 | 3 | | | |
| Thallium | 0.099 | 0.116 | | 0.017 | (<0.022) | |
| Tin | 4.4 | 4.9 | | 0.5 | (<10.9) | |
| Titanium | 729 | 832 | 13 | | | |
| Tungsten | 0.091 | 0.17 | | 0.079 | (±0.17) | |
| Uranium | 1.17 | 1.05 | 11 | | | |
| Vanadium | 37.6 | 41.2 | 9 | | | |
| Zinc | 30.7 | 35.1 | 13 | | | |

Laboratory Data Consultants, Inc. Data Validation Report

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

Collection Date: September 15 through September 16, 2009

LDC Report Date: November 25, 2009

Matrix: Soil/Water

Parameters: Metals

Validation Level: Stage 2B

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): R0905260

Sample Identification

| | |
|--------------|-----------------|
| EB091509-SO1 | SA65009-0.5B |
| SA136-0.5B | EB091509-SO1MS |
| SA136-10B | EB091509-SO1DUP |
| SA136-25B | SA136-0.5BMS |
| SA136-40B | SA136-0.5BDUP |
| SA30-5B | SA153-25BMS |
| SA30-9B | SA153-25BDUP |
| SA30-25B | |
| SA30-38B | |
| SA153-10B | |
| SA153-25B | |
| SA153-38B | |
| SA172-10B | |
| SA172-25B | |
| SA172-40B | |
| EB091609-SO1 | |
| SA128-0.5B | |
| SA128-10B | |
| SA128-29B | |
| SA65-0.5B | |

Introduction

This data review covers 23 soil samples and 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010B, 6020, and 7000 for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Tungsten, Uranium, Vanadium, and Zinc.

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) 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.

Blanks are summarized in Section IV.

Field duplicates are summarized in Section XIV.

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. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

| Method Blank ID | Analyte | Maximum Concentration | Associated Samples |
|-----------------|---|--|-----------------------------------|
| PB (prep blank) | Tungsten | 0.02 ug/L | All water samples in SDG R0905260 |
| ICB/CCB | Aluminum Beryllium Boron Cobalt Strontium Titanium Thallium Tungsten | 2.9 ug/L 0.10 ug/L 4.5 ug/L 0.6 ug/L 0.3 ug/L 0.7 ug/L 0.002 ug/L 0.07 ug/L | All water samples in SDG R0905260 |
| PB (prep blank) | Aluminum Magnesium Manganese Nickel Tin | 1.0 mg/Kg 0.8 mg/Kg 0.04 mg/Kg 0.08 mg/Kg 4.0 mg/Kg | All soil samples in SDG R0905260 |
| ICB/CCB | Aluminum Barium Manganese Selenium Strontium | 4.0 ug/L 0.80 ug/L 0.30 ug/L 4.0 ug/L 0.10 ug/L | SA136-0.5B |

| Method Blank ID | Analyte | Maximum Concentration | Associated Samples |
|-----------------|--------------------|-----------------------|--|
| ICB/CCB | Barium Selenium | 0.40 ug/L 5.0 ug/L | SA153-25B SA153-38B SA172-10B SA172-25B SA172-40B SA128-0.5B SA128-10B SA128-29B SA65-0.5B SA65009-0.5B |
| ICB/CCB | Manganese | 0.10 ug/L | SA136-10B SA136-25B SA136-40B SA30-5B SA30-9B SA30-25B SA30-38B SA153-10B SA153-25B SA153-38B SA172-10B SA172-25B SA172-40B SA128-0.5B SA128-10B SA128-29B SA65-0.5B SA65009-0.5B |
| ICB/CCB | Tungsten | 0.103 ug/L | SA136-0.5B SA136-10B SA136-25B SA136-40B SA30-5B SA30-9B SA30-25B SA30-38B SA153-10B SA153-25B SA153-38B SA172-10B SA172-25B |
| ICB/CCB | Tungsten | 0.109 ug/L | SA172-40B SA128-0.5B SA128-10B SA128-29B SA65-0.5B SA65009-0.5B |

Sample concentrations were compared to concentrations detected in the method blanks as required by the QAPP. No sample data was qualified with the following exceptions:

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|--------------|--|--|--|
| EB091509-SO1 | Aluminum Boron Strontium Titanium Tungsten | 20.6 ug/L 3.8 ug/L 2.3 ug/L 1.0 ug/L 0.06 ug/L | 50.0U ug/L 50.0U ug/L 10.0U ug/L 10.0U ug/L 0.10U ug/L |
| EB091609-SO1 | Aluminum Boron Strontium Tungsten | 4.7 ug/L 3.2 ug/L 1.1 ug/L 0.08 ug/L | 50.0U ug/L 50.0U ug/L 10.0U ug/L 0.10U ug/L |
| SA136-0.5B | Tin | 4.5 mg/Kg | 11.0U mg/Kg |
| SA136-10B | Tin | 5.2 mg/Kg | 11.0U mg/Kg |
| SA136-25B | Tin | 5.0 mg/Kg | 11.0U mg/Kg |
| SA136-40B | Tin | 4.7 mg/Kg | 10.5U mg/Kg |
| SA30-5B | Tin | 8.1 mg/Kg | 10.6U mg/Kg |
| SA30-9B | Tin | 5.1 mg/Kg | 11.0U mg/Kg |
| SA30-25B | Tin | 5.1 mg/Kg | 11.0U mg/Kg |
| SA30-38B | Tin | 5.2 mg/Kg | 10.6U mg/Kg |
| SA153-10B | Tin | 4.9 mg/Kg | 10.8U mg/Kg |
| SA153-25B | Tin | 4.8 mg/Kg | 10.3U mg/Kg |
| SA153-38B | Tin | 5.3 mg/Kg | 11.2U mg/Kg |
| SA172-10B | Tin | 5.2 mg/Kg | 10.7U mg/Kg |
| SA172-25B | Tin | 4.2 mg/Kg | 10.5U mg/Kg |
| SA172-40B | Tin | 4.8 mg/Kg | 10.3U mg/Kg |
| SA128-10B | Tin Selenium | 5.0 mg/Kg 1.0 mg/Kg | 10.8U mg/Kg 4.3U mg/Kg |
| SA128-29B | Tin | 4.6 mg/Kg | 10.9U mg/Kg |

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|--------------|-----------------|------------------------|------------------------------|
| SA65-0.5B | Tin Selenium | 4.9 mg/Kg 0.8 mg/Kg | 10.6U mg/Kg 4.2U mg/Kg |
| SA65009-0.5B | Tin | 4.5 mg/Kg | 10.6U mg/Kg |

Samples EB091509-SO1 and EB091609-SO1 were identified as equipment blanks. No metal contaminants were found in these blanks with the following exceptions:

| Equipment Blank ID | Sampling Date | Analyte | Concentration | Associated Samples |
|--------------------|---------------|--|--|---|
| EB091509-SO1 | 9/15/09 | Aluminum Barium Boron Calcium Iron Lead Magnesium Manganese Sodium Strontium Titanium Tungsten Uranium Zinc | 20.6 ug/L 1.1 ug/L 3.8 ug/L 339 ug/L 95.3 ug/L 0.055 ug/L 63.3 ug/L 13.4 ug/L 77.1 ug/L 2.3 ug/L 1.0 ug/L 0.06 ug/L 0.008 ug/L 3.7 ug/L | SA136-0.5B SA136-10B SA136-25B SA136-40B SA30-5B SA30-9B SA30-25B SA30-38B SA153-10B SA153-25B SA153-38B SA172-10B SA172-25B SA172-40B |
| EB091609-SO1 | 9/16/09 | Aluminum Boron Calcium Iron Lead Magnesium Manganese Sodium Strontium Tungsten Uranium Zinc | 4.7 ug/L 3.2 ug/L 201 ug/L 16.5 ug/L 0.052 ug/L 22.1 ug/L 3.1 ug/L 113 ug/L 1.1 ug/L 0.08 ug/L 0.003 ug/L 1.4 ug/L | SA128-0.5B SA128-10B SA128-29B SA65-0.5B SA65009-0.5B |

Sample concentrations were compared to concentrations detected in the equipment blanks as required by the QAPP. No sample data was qualified with the following exceptions:

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|-----------|---------|------------------------|------------------------------|
| SA136-10B | Boron | 7.4 mg/Kg | 11.0U mg/Kg |
| SA136-25B | Boron | 6.9 mg/Kg | 11.0U mg/Kg |

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|--------------|---------|------------------------|------------------------------|
| SA30-5B | Boron | 5.6 mg/Kg | 10.6U mg/Kg |
| SA30-9B | Boron | 6.5 mg/Kg | 11.0U mg/Kg |
| SA30-25B | Boron | 9.6 mg/Kg | 11.0U mg/Kg |
| SA153-25B | Boron | 9.6 mg/Kg | 10.3U mg/Kg |
| SA172-10B | Boron | 4.7 mg/Kg | 10.7U mg/Kg |
| SA172-25B | Boron | 5.4 mg/Kg | 10.5U mg/Kg |
| SA128-10B | Boron | 6.1 mg/Kg | 10.8U mg/Kg |
| SA65-0.5B | Boron | 6.7 mg/Kg | 10.6U mg/Kg |
| SA65009-0.5B | Boron | 5.8 mg/Kg | 10.6U mg/Kg |

Sample FB072909-SO (from SDG R0904226) was identified as a field blank. No metal contaminants were found in this blank with the following exceptions:

| Field Blank ID | Sampling Date | Analyte | Concentration | Associated Samples |
|----------------|---------------|---|--|----------------------------------|
| FB072909-SO | 7/29/09 | Aluminum Barium Calcium Copper Iron Lead Magnesium Manganese Sodium Strontium Titanium Tungsten Uranium Zinc | 8.1 ug/L 1.0 ug/L 582 ug/L 0.8 ug/L 12.1 ug/L 0.359 ug/L 28.4 ug/L 4.3 ug/L 160 ug/L 1.4 ug/L 0.5 ug/L 0.03 ug/L 0.006 ug/L 10.0 ug/L | All soil samples in SDG R0905260 |

Sample concentrations were compared to concentrations detected in the field blanks as required by the QAPP. No sample data was qualified.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

| Spike ID (Associated Samples) | Analyte | %R (Limits) | Flag | A or P |
|--|-----------|----------------|--|--------|
| SA136-0.5BMS (All soil samples in SDG R0905260) | Antimony | 61.6 (75-125) | J- (all detects) UJ (all non-detects) | A |
| SA136-0.5BMS (All soil samples in SDG R0905260) | Manganese | 143.2 (75-125) | J+ (all detects) | A |

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results 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. Internal Standards

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

XII. Sample Result Verification and Project Quantitation Limit

All analytes reported below the PQL were qualified as follows:

| Sample | Finding | Flag | A or P |
|-----------------------------|--------------------------------------|-----------------|--------|
| All samples in SDG R0905260 | All analytes reported below the PQL. | J (all detects) | A |

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

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

XIV. Field Duplicates

Samples SA65-0.5B and SA65009-0.5B were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

| Compound | Concentration (mg/Kg) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|-----------|-----------------------|--------------|------------------|------------------------|-----------------|--------|
| | SA65-0.5B | SA65009-0.5B | | | | |
| Aluminum | 9670 | 8340 | 15 (≤ 50) | - | - | - |
| Arsenic | 2.16 | 2.23 | - | 0.07 (≤ 0.54) | - | - |
| Barium | 176 | 168 | 5 (≤ 50) | - | - | - |
| Beryllium | 0.461 | 0.474 | 3 (≤ 50) | - | - | - |
| Boron | 6.7 | 5.8 | - | 0.9 (≤ 10.6) | - | - |
| Cadmium | 0.34 | 0.17 | - | 0.17 (≤ 0.11) | J (all detects) | A |
| Calcium | 24200 | 24900 | 3 (≤ 50) | - | - | - |
| Chromium | 7.32 | 8.06 | 10 (≤ 50) | - | - | - |
| Cobalt | 8.4 | 8.4 | - | 0 (≤ 2.1) | - | - |
| Copper | 20.2 | 18.9 | 7 (≤ 50) | - | - | - |
| Iron | 17700 | 15800 | 11 (≤ 50) | - | - | - |
| Lead | 10.1 | 9.0 | - | 1.1 (≤ 2.1) | - | - |
| Magnesium | 10700 | 11000 | 3 (≤ 50) | - | - | - |
| Manganese | 463 | 429 | 8 (≤ 50) | - | - | - |
| Mercury | 0.010 | 0.014 | - | 0.004 (≤ 0.018) | - | - |

| Compound | Concentration (mg/Kg) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|------------|-----------------------|--------------|------------------|----------------------|-------|--------|
| | SA65-0.5B | SA65009-0.5B | | | | |
| Molybdenum | 0.32 | 0.43 | - | 0.11 (≤ 0.32) | - | - |
| Nickel | 17.4 | 18.6 | 7 (≤ 50) | - | - | - |
| Platinum | 0.012 | 0.012 | - | 0 (≤ 0.11) | - | - |
| Potassium | 2890 | 2430 | 17 (≤ 50) | - | - | - |
| Selenium | 0.8 | 0.7U | - | 0.1 (≤ 4.3) | - | - |
| Sodium | 550 | 561 | 2 (≤ 50) | - | - | - |
| Strontium | 153 | 128 | - | 25 (≤ 42.6) | - | - |
| Thallium | 0.115 | 0.128 | 11 (≤ 50) | - | - | - |
| Tin | 4.9 | 4.5 | - | 0.4 (≤ 10.6) | - | - |
| Titanium | 985 | 767 | 25 (≤ 50) | - | - | - |
| Tungsten | 0.19 | 0.13 | - | 0.06 (≤ 0.11) | - | - |
| Uranium | 0.872 | 0.919 | 5 (≤ 50) | - | - | - |
| Vanadium | 53.2 | 48.0 | 10 (≤ 50) | - | - | - |
| Zinc | 42.7 | 35.9 | 17 (≤ 50) | - | - | - |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Data Qualification Summary - SDG R0905260**

| SDG | Sample | Analyte | Flag | A or P | Reason (Code) |
|----------|--|-----------|--|--------|-----------------------------------|
| R0905260 | SA136-0.5B SA136-10B SA136-25B SA136-40B SA30-5B SA30-9B SA30-25B SA30-38B SA153-10B SA153-25B SA153-38B SA172-10B SA172-25B SA172-40B SA128-0.5B SA128-10B SA128-29B SA65-0.5B SA65009-0.5B | Antimony | J- (all detects) UJ (all non-detects) | A | Matrix spike analysis (%R) (m) |
| R0905260 | SA136-0.5B SA136-10B SA136-25B SA136-40B SA30-5B SA30-9B SA30-25B SA30-38B SA153-10B SA153-25B SA153-38B SA172-10B SA172-25B SA172-40B SA128-0.5B SA128-10B SA128-29B SA65-0.5B SA65009-0.5B | Manganese | J+ (all detects) | A | Matrix spike analysis (%R) (m) |

| SDG | Sample | Analyte | Flag | A or P | Reason (Code) |
|----------|--|--------------------------------------|-----------------|--------|---------------------------------------|
| R0905260 | EB091509-SO1 SA136-0.5B SA136-10B SA136-25B SA136-40B SA30-5B SA30-9B SA30-25B SA30-38B SA153-10B SA153-25B SA153-38B SA172-10B SA172-25B SA172-40B EB091609-SO1 SA128-0.5B SA128-10B SA128-29B SA65-0.5B SA65009-0.5B | All analytes reported below the PQL. | J (all detects) | A | Sample result verification (PQL) (sp) |
| R0905260 | SA65-0.5B SA65009-0.5B | Cadmium | J (all detects) | A | Field duplicates (Difference) (fd) |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Laboratory Blank Data Qualification Summary - SDG R0905260**

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|--------------|--|--|--------|------|
| R0905260 | EB091509-SO1 | Aluminum Boron Strontium Titanium Tungsten | 50.0U ug/L 50.0U ug/L 10.0U ug/L 10.0U ug/L 0.10U ug/L | A | bl |
| R0905260 | EB091609-SO1 | Aluminum Boron Strontium Tungsten | 50.0U ug/L 50.0U ug/L 10.0U ug/L 0.10U ug/L | A | bl |
| R0905260 | SA136-0.5B | Tin | 11.0U mg/Kg | A | bl |
| R0905260 | SA136-10B | Tin | 11.0U mg/Kg | A | bl |
| R0905260 | SA136-25B | Tin | 11.0U mg/Kg | A | bl |
| R0905260 | SA136-40B | Tin | 10.5U mg/Kg | A | bl |
| R0905260 | SA30-5B | Tin | 10.6U mg/Kg | A | bl |

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|--------------|-----------------|------------------------------|--------|------|
| R0905260 | SA30-9B | Tin | 11.0U mg/Kg | A | bl |
| R0905260 | SA30-25B | Tin | 11.0U mg/Kg | A | bl |
| R0905260 | SA30-38B | Tin | 10.6U mg/Kg | A | bl |
| R0905260 | SA153-10B | Tin | 10.8U mg/Kg | A | bl |
| R0905260 | SA153-25B | Tin | 10.3U mg/Kg | A | bl |
| R0905260 | SA153-38B | Tin | 11.2U mg/Kg | A | bl |
| R0905260 | SA172-10B | Tin | 10.7U mg/Kg | A | bl |
| R0905260 | SA172-25B | Tin | 10.5U mg/Kg | A | bl |
| R0905260 | SA172-40B | Tin | 10.3U mg/Kg | A | bl |
| R0905260 | SA128-10B | Tin Selenium | 10.8U mg/Kg 4.3U mg/Kg | A | bl |
| R0905260 | SA128-29B | Tin | 10.9U mg/Kg | A | bl |
| R0905260 | SA65-0.5B | Tin Selenium | 10.6U mg/Kg 4.2U mg/Kg | A | bl |
| R0905260 | SA65009-0.5B | Tin | 10.6U mg/Kg | A | bl |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Equipment Blank Data Qualification Summary - SDG R0905260**

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|-----------|---------|------------------------------|--------|------|
| R0905260 | SA136-10B | Boron | 11.0U mg/Kg | A | be |
| R0905260 | SA136-25B | Boron | 11.0U mg/Kg | A | be |
| R0905260 | SA30-5B | Boron | 10.6U mg/Kg | A | be |
| R0905260 | SA30-9B | Boron | 11.0U mg/Kg | A | be |

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|--------------|---------|------------------------------|--------|------|
| R0905260 | SA30-25B | Boron | 11.0U mg/Kg | A | be |
| R0905260 | SA153-25B | Boron | 10.3U mg/Kg | A | be |
| R0905260 | SA172-10B | Boron | 10.7U mg/Kg | A | be |
| R0905260 | SA172-25B | Boron | 10.5U mg/Kg | A | be |
| R0905260 | SA128-10B | Boron | 10.8U mg/Kg | A | be |
| R0905260 | SA65-0.5B | Boron | 10.6U mg/Kg | A | be |
| R0905260 | SA65009-0.5B | Boron | 10.6U mg/Kg | A | be |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Field Blank Data Qualification Summary - SDG R0905260**

No Sample Data Qualified in this SDG

Tronox Northgate Henderson

VALIDATION COMPLETENESS WORKSHEET

LDC #: 2199114

SDG #: R0905260

Laboratory: Columbia Analytical Services

Stage 2B

Date: 11-25-09

Page: 6 of 1

Reviewer: CR

2nd Reviewer: V

METHOD: Metals (EPA SW 846 Method 6010B/6020/7000)

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: 9/15/09-9/16/09 |
| II. | ICP/MS Tune | A | |
| III. | Calibration | A | |
| IV. | Blanks | SW | |
| V. | ICP Interference Check Sample (ICS) Analysis | A | |
| VI. | Matrix Spike Analysis | SW M S | |
| VII. | Duplicate Sample Analysis | A Dup | |
| VIII. | Laboratory Control Samples (LCS) | A LCS | |
| IX. | Internal Standard (ICP-MS) | N | Not reviewed |
| X. | Furnace Atomic Absorption QC | N | Not utilized |
| XI. | ICP Serial Dilution | A | |
| XII. | Sample Result Verification | N | |
| XIII. | Overall Assessment of Data | A | |
| XIV. | Field Duplicates | SW (20,21) | |
| XV. | Field Blanks | SW EB=1,16. FB=FB072909-SO (SP6A R0901226) | |

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: Soil/Water

| | | | | | | | | | | |
|----|--------------|---|----|--------------|---|----|-----------------|---|----|-----|
| 1 | EB091509-SO1 | W | 11 | SA153-25B | S | 21 | SA65009-0.5B | S | 31 | PBW |
| 2 | SA136-0.5B | S | 12 | SA153-38B | ↓ | 22 | EB091509-SO1MS | W | 32 | PBS |
| 3 | SA136-10B | ↓ | 13 | SA172-10B | ↓ | 23 | EB091509-SO1DUP | ↓ | 33 | |
| 4 | SA136-25B | ↓ | 14 | SA172-25B | ↓ | 24 | SA136-0.5BMS | S | 34 | |
| 5 | SA136-40B | ↓ | 15 | SA172-40B | ↓ | 25 | SA136-0.5BDUP | ↓ | 35 | |
| 6 | SA30-5B | ↓ | 16 | EB091609-SO1 | W | 26 | SA153-25BMS | ↓ | 36 | |
| 7 | SA30-9B | ↓ | 17 | SA128-0.5B | S | 27 | SA153-25BDUP | ↓ | 37 | |
| 8 | SA30-25B | ↓ | 18 | SA128-10B | ↓ | 28 | | | 38 | |
| 9 | SA30-38B | ↓ | 19 | SA128-29B | ↓ | 29 | | | 39 | |
| 10 | SA153-10B | ↓ | 20 | SA65-0.5B | ↓ | 30 | | | 40 | |

Notes: _____

VALIDATION FINDINGS WORKSHEET
 PB/ICB/CCB QUALIFIED SAMPLES

Soil preparation factor applied: 200x x 5xdl
 Associated Samples: All Water

| Analyte | Maximum PB ^a (mg/Kg) | Maximum PB ^a (ug/L) | Maximum ICB/CCB ^a (ug/L) | Action Limit | 1 | 16 |
|---------|---------------------------------|--------------------------------|-------------------------------------|--------------|-------------|-------------|
| Al | | | 2.9 | | 20.6 / 50.0 | 4.7 / 50.0 |
| Be | | | 0.10 | | | |
| B | | | 4.5 | | 3.8 / 50.0 | 3.2 / 50.0 |
| Co | | | 0.6 | | | |
| Sr | | | 0.3 | | 2.3 / 10.0 | 1.1 / 10.0 |
| Ti | | | 0.7 | | 1.0 / 10.0 | |
| Tl | | | 0.002 | | | |
| W | | 0.02 | 0.07 | | 0.06 / 0.10 | 0.08 / 0.10 |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: All Soil

| Analyte | Maximum PB ^a (mg/Kg) | Maximum ICB/CCB ^a (ug/L) | Action Limit | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---------|---------------------------------|-------------------------------------|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Al | 1.0 | | | | | | | | | | | | | | |
| Mg | 0.8 | | | | | | | | | | | | | | |
| Mn | 0.04 | | | | | | | | | | | | | | |
| Ni | 0.08 | | | | | | | | | | | | | | |
| Sn | 4.0 | | | 4.5 / 11.0 | 5.2 / 11.0 | 5.0 / 11.0 | 4.7 / 10.5 | 8.1 / 10.6 | 5.1 / 11.0 | 5.1 / 11.0 | 5.2 / 10.6 | 4.9 / 10.8 | 4.8 / 10.3 | 5.3 / 11.2 | 5.2 / 10.7 |

| Analyte | Maximum PB ^a (mg/Kg) | Maximum ICB/CCB ^a (ug/L) | Action Limit | 14 | 15 | 18 | 19 | 20 | 21 |
|---------|---------------------------------|-------------------------------------|--------------|------------|------------|------------|------------|------------|------------|
| Al | 1.0 | | | | | | | | |
| Mg | 0.8 | | | | | | | | |
| Mn | 0.04 | | | | | | | | |
| Ni | 0.08 | | | | | | | | |
| Sn | 4.0 | | | 4.2 / 10.5 | 4.8 / 10.3 | 5.0 / 10.8 | 4.6 / 10.9 | 4.9 / 10.6 | 4.5 / 10.6 |

| Analyte | Maximum PB ^a (mg/Kg) | Maximum PB ^a (ug/L) | Maximum ICB/CCB ^a (ug/L) | Action Limit | No Qualifiers |
|---------|---------------------------------|--------------------------------|-------------------------------------|--------------|---------------|
| Al | | | 4.0 | | |
| Ba | | | 0.80 | | |
| Mn | | | 0.30 | | |
| Se | | | 4.0 | | |
| S | | | 0.10 | | |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 11-15, 17-21

| Analyte | Maximum PB ^a (mg/Kg) | Maximum PB ^a (ug/L) | Maximum ICB/CCB ^a (ug/L) | Action Limit | No Qualifiers |
|---------|---------------------------------|--------------------------------|-------------------------------------|--------------|---------------|
| Ba | | | 0.40 | | 18 |
| Se | | | 5.0 | | 20 |
| | | | | | 1.0 / 4.3 |
| | | | | | 0.8 / 4.2 |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 3-15, 17-21

| Analyte | Maximum PB ^a (mg/Kg) | Maximum PB ^a (ug/L) | Maximum ICB/CCB ^a (ug/L) | Action Limit | No Qualifiers |
|---------|---------------------------------|--------------------------------|-------------------------------------|--------------|---------------|
| Mn | | | 0.10 | | |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 2-14

| Analyte | Maximum PB ^a (mg/Kg) | Maximum PB ^a (ug/L) | Maximum ICB/CCB ^a (ug/L) | Action Limit | No Qualifiers |
|---------|---------------------------------|--------------------------------|-------------------------------------|--------------|---------------|
| W | | | 0.103 | | |

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

| Analyte | Maximum PB ^a (mg/Kg) | Maximum PB ^a (ug/L) | Maximum ICB/CCB ^a (ug/L) | Action Limit | No Qualifiers | | | | | | |
|---------|---------------------------------|--------------------------------|-------------------------------------|--------------|---------------|--|--|--|--|--|--|
| W | | | 0.109 | | | | | | | | |

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

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 SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Field Blanks

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

METHOD: Trace Metals (EPA SW846 6010B/7000)

Y **N** **N/A**
 Were field blanks identified in this SDG?
 Y **N** **N/A**
 Were target analytes detected in the field blanks?

Reason Code: be

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 9/15/09 **Soil factor applied:** 200X
Field blank type: (circle one) Field Blank / Rinsate / Other: **FC**

Associated Samples: 2-15

| Analyte | Blank ID | Sample Identification | | | | | | | | | | | | | | |
|---------|----------|-----------------------|---|------------|------------|---|------------|------------|------------|---|------------|----|------------|------------|----|--|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | |
| Al | 20.6 | | | | | | | | | | | | | | | |
| Ba | 1.1 | | | | | | | | | | | | | | | |
| B | 3.8 | | | 7.4 / 11.0 | 6.9 / 11.0 | | 5.6 / 10.6 | 6.5 / 11.0 | 9.6 / 11.0 | | 9.5 / 10.3 | | 4.7 / 10.7 | 5.4 / 10.5 | | |
| Ca | 339 | | | | | | | | | | | | | | | |
| Fe | 95.3 | | | | | | | | | | | | | | | |
| Pb | 0.055 | | | | | | | | | | | | | | | |
| Mg | 63.3 | | | | | | | | | | | | | | | |
| Mn | 13.4 | | | | | | | | | | | | | | | |
| Na | 77.1 | | | | | | | | | | | | | | | |
| Sr | 2.3 | | | | | | | | | | | | | | | |
| Ti | 1.0 | | | | | | | | | | | | | | | |
| W | 0.06 | | | | | | | | | | | | | | | |
| U | 0.008 | | | | | | | | | | | | | | | |
| Zn | 3.7 | | | | | | | | | | | | | | | |

LDC #: 2199114
 SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Field Blanks

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

METHOD: Trace Metals (EPA SW846 6010B/7000)

N N/A Were field blanks identified in this SDG?

N N/A Were target analytes detected in the field blanks?

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 9/16/09 **Soil factor applied:** 200X

Field blank type: (circle one) Field Blank / Rinsate / Other: EQ

Reason Code: be

Associated Samples: 17-21

| Analyte | Blank ID | 16 | 18 | 20 | 21 | Sample Identification |
|---------|----------|------------|------------|------------|----|-----------------------|
| Al | 4.7 | | | | | |
| B | 3.2 | 6.1 / 10.8 | 6.7 / 10.6 | 5.8 / 10.6 | | |
| Ca | 201 | | | | | |
| Fe | 16.5 | | | | | |
| Pb | 0.052 | | | | | |
| Mg | 22.1 | | | | | |
| Mn | 3.1 | | | | | |
| Na | 113 | | | | | |
| Sr | 1.1 | | | | | |
| W | 0.08 | | | | | |
| U | 0.003 | | | | | |
| Zn | 1.4 | | | | | |

VALIDATION FINDINGS WORKSHEET
Field Blanks

METHOD: Trace Metals (EPA SW846 6010B/7000)

Y Were field blanks identified in this SDG?

N/A Were target analytes detected in the field blanks?

Y N/A **Associated sample units:** mg/Kg

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 7/29/09 **Soil factor applied:** 100x

Field blank type: (circle one) Field Blank / Rinsate / Other: _____

Reason Code: bf

Associated Samples: All Soil

| Analyte | Blank ID | Action Level | No Qualifiers | Sample Identification | | | |
|---------|---------------------------------|--------------|---------------|-----------------------|--|--|--|
| | FB072909-SO (SDG#: R0904226) | | | | | | |
| Al | 8.1 | | | | | | |
| Ba | 1.0 | | | | | | |
| Ca | 582 | 582 | | | | | |
| Cu | 0.8 | | | | | | |
| Fe | 12.1 | | | | | | |
| Pb | 0.359 | 0.359 | | | | | |
| Mg | 28.4 | 28.4 | | | | | |
| Mn | 4.3 | | | | | | |
| Na | 160 | | | | | | |
| Sr | 1.4 | | | | | | |
| Ti | 0.5 | | | | | | |
| W | 0.03 | | | | | | |
| U | 0.006 | | | | | | |
| Zn | 10.0 | 10.0 | | | | | |

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SDG#: See Cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 12 of 22
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: Metals (EPA Method 6020/6010/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

| Compound | Concentration (mg/Kg) | | (≤50) | (mg/Kg) | (mg/Kg) | Qualifications (Parent Only) |
|------------|-----------------------|-------|-------|------------|----------|---------------------------------|
| | 20 | 21 | RPD | Difference | Limits | |
| Aluminum | 9670 | 8340 | 15 | | | |
| Arsenic | 2.16 | 2.23 | | 0.07 | (<0.54) | |
| Barium | 176 | 168 | 5 | | | |
| Beryllium | 0.461 | 0.474 | 3 | | | |
| Boron | 6.7 | 5.8 | | 0.9 | (<10.6) | |
| Cadmium | 0.34 | 0.17 | | 0.17 | (<0.11) | Jdet/A (fd) |
| Calcium | 24200 | 24900 | 3 | | | |
| Chromium | 7.32 | 8.06 | 10 | | | |
| Cobalt | 8.4 | 8.4 | | 0 | (<2.1) | |
| Copper | 20.2 | 18.9 | 7 | | | |
| Iron | 17700 | 15900 | 11 | | | |
| Lead | 10.1 | 9.0 | | 1.1 | (<2.1) | |
| Magnesium | 10700 | 11000 | 3 | | | |
| Manganese | 463 | 429 | 8 | | | |
| Mercury | 0.010 | 0.014 | | 0.004 | (<0.018) | |
| Molybdenum | 0.32 | 0.43 | | 0.11 | (<0.32) | |
| Nickel | 17.4 | 18.6 | 7 | | | |
| Platinum | 0.012 | 0.012 | | 0 | (≤0.11) | |
| Potassium | 2890 | 2430 | 17 | | | |

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 SDG#: See Cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 2 of 2
 Reviewer: CP
 2nd Reviewer: L

METHOD: Metals (EPA Method 6020/6010/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

| Compound | Concentration (mg/Kg) | | (<50) RPD | (mg/Kg) Difference | (mg/Kg) Limits | Qualifications (Parent Only) |
|-----------|-----------------------|-------|--------------|-----------------------|-------------------|---------------------------------|
| | 20 | 21 | | | | |
| Selenium | 0.8 | 0.70 | | 0.1 | (<4.3) | |
| Sodium | 550 | 561 | 2 | | | |
| Strontium | 153 | 128 | | 25 | (<42.6) | |
| Thallium | 0.115 | 0.128 | 11 | | | |
| Tin | 4.9 | 4.5 | | 0.4 | (± 10.6) | |
| Titanium | 985 | 767 | 25 | | | |
| Tungsten | 0.13 | 0.13 | | 0.06 | (± 0.11) | |
| Uranium | 0.872 | 0.919 | 5 | | | |
| Vanadium | 53.2 | 48.0 | 10 | | | |
| Zinc | 42.7 | 35.9 | 17 | | | |

V:\FIELD DUPLICATES\FD_inorganic\2199114.wpd

Laboratory Data Consultants, Inc. Data Validation Report

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

Collection Date: September 18, 2009

LDC Report Date: November 25, 2009

Matrix: Soil/Water

Parameters: Metals

Validation Level: Stage 2B

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): R0905348

Sample Identification

EB091809-SO1
SA117-0.5B
SA117-9B
SA117-25B
SA117-41B
SA161-0.5B
SA161-10B
SA161-25B
SA161009-25B
SA161-37B
SA117-0.5BMS
SA117-0.5BDUP
SA117-9BMS
SA117-9BDUP

Introduction

This data review covers 13 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010B, 6020, and 7000 for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Tungsten, Uranium, Vanadium, and Zinc.

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) 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.

Blanks are summarized in Section IV.

Field duplicates are summarized in Section XIV.

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. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

| Method Blank ID | Analyte | Maximum Concentration | Associated Samples |
|-----------------|---|--|-----------------------------------|
| PB (prep blank) | Tungsten | 0.02 ug/L | All water samples in SDG R0905348 |
| ICB/CCB | Aluminum Beryllium Boron Cobalt Strontium Titanium Thallium Tungsten | 2.9 ug/L 0.10 ug/L 4.5 ug/L 0.6 ug/L 0.3 ug/L 0.7 ug/L 0.002 ug/L 0.07 ug/L | All water samples in SDG R0905348 |
| PB (prep blank) | Aluminum Chromium Iron Magnesium Manganese Mercury Selenium Strontium Tin | 0.8 mg/Kg 0.06 mg/Kg 1.0 mg/Kg 1.2 mg/Kg 0.02 mg/Kg 0.002 mg/Kg 0.9 mg/Kg 0.02 mg/Kg 3.3 mg/Kg | All soil samples in SDG R0905348 |
| ICB/CCB | Boron Magnesium Strontium | 3.0 ug/L 2.0 ug/L 0.10 ug/L | All soil samples in SDG R0905348 |

| Method Blank ID | Analyte | Maximum Concentration | Associated Samples |
|-----------------|---------------------|--------------------------|---|
| ICB/CCB | Barium Manganese | 0.50 ug/L 0.10 ug/L | SA161-0.5B |
| ICB/CCB | Manganese | 0.30 ug/L | SA117-0.5B SA117-9B SA117-25B SA117-41B SA161-10B SA161-25B SA161009-25B SA161-37B |
| ICB/CCB | Tungsten Uranium | 0.084 ug/L 0.037 ug/L | SA117-0.5B SA161-0.5B SA161-10B SA161-25B SA161009-25B SA161-37B |
| ICB/CCB | Tungsten | 0.083 ug/L | SA117-9B SA117-25B SA117-41B |

Sample concentrations were compared to concentrations detected in the method blanks as required by the QAPP. No sample data was qualified with the following exceptions:

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|--------------|--|--|--|
| EB091809-SO1 | Aluminum Boron Strontium Tungsten | 10.1 ug/L 2.9 ug/L 2.4 ug/L 0.06 ug/L | 50.0U ug/L 50.0U ug/L 10.0U ug/L 0.10U ug/L |
| SA117-0.5B | Boron Strontium Tin Mercury | 6.5 mg/Kg 161 mg/Kg 3.3 mg/Kg 0.013 mg/Kg | 10.6U mg/Kg 213U mg/Kg 10.6U mg/Kg 0.016U mg/Kg |
| SA117-9B | Boron Selenium Tin Mercury | 7.9 mg/Kg 1.0 mg/Kg 4.1 mg/Kg 0.015 mg/Kg | 10.8U mg/Kg 4.3U mg/Kg 10.8U mg/Kg 0.016U mg/Kg |
| SA117-25B | Boron Tin Mercury | 8.8 mg/Kg 3.8 mg/Kg 0.002 mg/Kg | 10.8U mg/Kg 10.8U mg/Kg 0.016U mg/Kg |
| SA117-41B | Boron Tin Mercury | 9.9 mg/Kg 4.4 mg/Kg 0.010 mg/Kg | 11.5U mg/Kg 11.5U mg/Kg 0.017U mg/Kg |

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|--------------|----------------------------|--|--|
| SA161-0.5B | Boron Tin | 5.6 mg/Kg 4.0 mg/Kg | 10.8U mg/Kg 10.8U mg/Kg |
| SA161-10B | Boron Tin Mercury | 10.0 mg/Kg 3.9 mg/Kg 0.010 mg/Kg | 10.7U mg/Kg 10.7U mg/Kg 0.015U mg/Kg |
| SA161-25B | Selenium Tin Mercury | 0.8 mg/Kg 3.6 mg/Kg 0.019 mg/Kg | 4.3U mg/Kg 10.8U mg/Kg 0.020U mg/Kg |
| SA161009-25B | Selenium Tin | 1.3 mg/Kg 4.3 mg/Kg | 4.3U mg/Kg 10.8U mg/Kg |
| SA161-37B | Tin Mercury | 3.7 mg/Kg 0.009 mg/Kg | 10.4U mg/Kg 0.021U mg/Kg |

Sample EB091809-SO1 was identified as an equipment blank. No metal contaminants were found in this blank with the following exceptions:

| Equipment Blank ID | Sampling Date | Analyte | Concentration | Associated Samples |
|--------------------|---------------|---|---|-------------------------------------|
| EB091809-SO1 | 9/18/09 | Aluminum Barium Boron Calcium Chromium Iron Lead Magnesium Manganese Potassium Sodium Strontium Tungsten Uranium Zinc | 10.1 ug/L 0.4 ug/L 2.9 ug/L 291 ug/L 0.8 ug/L 35.2 ug/L 0.086 ug/L 37.3 ug/L 5.6 ug/L 60 ug/L 134 ug/L 2.4 ug/L 0.06 ug/L 0.004 ug/L 6.2 ug/L | All soil samples in SDG R0905348 |

Sample concentrations were compared to concentrations detected in the equipment blanks as required by the QAPP. No sample data was qualified with the following exceptions:

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|------------|--------------------|------------------------|------------------------------|
| SA117-0.5B | Boron Strontium | 6.5 mg/Kg 161 mg/Kg | 10.6U mg/Kg 213U mg/Kg |

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|------------|---------|------------------------|------------------------------|
| SA117-9B | Boron | 7.9 mg/Kg | 10.8U mg/Kg |
| SA117-25B | Boron | 8.8 mg/Kg | 10.8U mg/Kg |
| SA117-41B | Boron | 9.9 mg/Kg | 11.5U mg/Kg |
| SA161-0.5B | Boron | 5.6 mg/Kg | 10.8U mg/Kg |
| SA161-10B | Boron | 10.0 mg/Kg | 10.7U mg/Kg |

Sample FB072909-SO (from SDG R0904226) was identified as a field blank. No metal contaminants were found in this blank with the following exceptions:

| Field Blank ID | Sampling Date | Analyte | Concentration | Associated Samples |
|----------------|---------------|---|--|----------------------------------|
| FB072909-SO | 7/29/09 | Aluminum Barium Calcium Copper Iron Lead Magnesium Manganese Sodium Strontium Titanium Tungsten Uranium Zinc | 8.1 ug/L 1.0 ug/L 582 ug/L 0.8 ug/L 12.1 ug/L 0.359 ug/L 28.4 ug/L 4.3 ug/L 160 ug/L 1.4 ug/L 0.5 ug/L 0.03 ug/L 0.006 ug/L 10.0 ug/L | All soil samples in SDG R0905348 |

Sample concentrations were compared to concentrations detected in the field blanks as required by the QAPP. No sample data was qualified with the following exceptions:

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|------------|-----------|------------------------|------------------------------|
| SA117-0.5B | Strontium | 161 mg/Kg | 213U mg/Kg |

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

| Spike ID (Associated Samples) | Analyte | %R (Limits) | Flag | A or P |
|--|----------------------------------|---|--|--------|
| SA117-0.5BMS (All soil samples in SDG R0905348) | Antimony Selenium Tungsten | 53.2 (75-125) 74.6 (75-125) 61.4 (75-125) | J- (all detects) UJ (all non-detects) | A |
| SA117-0.5BMS (All soil samples in SDG R0905348) | Manganese | 129.3 (75-125) | J+ (all detects) | A |

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

| DUP ID (Associated Samples) | Analyte | RPD (Limits) | Difference (Limits) | Flag | A or P |
|---|-------------------------------|--|---------------------|---|--------|
| SA117-0.5BDUP (All soil samples in SDG R0905348) | Calcium Nickel Titanium | 29.5 (≤ 20) 22.9 (≤ 20) 29.1 (≤ 20) | - - - | J (all detects) UJ (all non-detects) | A |

VIII. Laboratory Control Samples (LCS)

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

IX. Internal Standards

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

XII. Sample Result Verification and Project Quantitation Limit

All analytes reported below the PQL were qualified as follows:

| Sample | Finding | Flag | A or P |
|-----------------------------|--------------------------------------|-----------------|--------|
| All samples in SDG R0905348 | All analytes reported below the PQL. | J (all detects) | A |

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

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

XIV. Field Duplicates

Samples SA161-25B and SA161009-25B were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

| Compound | Concentration (mg/Kg) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|-----------|-----------------------|--------------|------------------|----------------------|-------|--------|
| | SA161-25B | SA161009-25B | | | | |
| Aluminum | 9580 | 10300 | 7 (≤ 50) | - | - | - |
| Antimony | 0.8 | 0.9 | - | 0.1 (≤ 2.2) | - | - |
| Arsenic | 10.9 | 9.98 | 9 (≤ 50) | - | - | - |
| Barium | 105 | 98.2 | 7 (≤ 50) | - | - | - |
| Beryllium | 0.278 | 0.269 | 3 (≤ 50) | - | - | - |
| Boron | 18.3 | 19.4 | - | 1.1 (≤ 10.8) | - | - |
| Cadmium | 0.24 | 0.22 | - | 0.02 (≤ 0.11) | - | - |
| Calcium | 22800 | 19800 | 14 (≤ 50) | - | - | - |
| Chromium | 46.3 | 47.7 | 3 (≤ 50) | - | - | - |

| Compound | Concentration (mg/Kg) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|------------|-----------------------|--------------|------------------|-----------------------|-------|--------|
| | SA161-25B | SA161009-25B | | | | |
| Cobalt | 4.1 | 4.0 | - | 0.1 (≤ 2.2) | - | - |
| Copper | 12.0 | 12.1 | 1 (≤ 50) | - | - | - |
| Iron | 9160 | 10500 | 14 (≤ 50) | - | - | - |
| Lead | 5.3 | 6.4 | - | 1.1 (≤ 2.2) | - | - |
| Magnesium | 20100 | 21600 | 7 (≤ 50) | - | - | - |
| Manganese | 103 | 110 | 7 (≤ 50) | - | - | - |
| Mercury | 0.019 | 0.019 | - | 0 (≤ 0.019) | - | - |
| Molybdenum | 0.41 | 0.50 | - | 0.09 (≤ 0.33) | - | - |
| Nickel | 9.96 | 10.7 | 7 (≤ 50) | - | - | - |
| Platinum | 0.009 | 0.007 | - | 0.002 (≤ 0.11) | - | - |
| Potassium | 2410 | 2640 | 9 (≤ 50) | - | - | - |
| Selenium | 0.8 | 1.3 | - | 0.5 (≤ 4.3) | - | - |
| Sodium | 10500 | 11100 | 6 (≤ 50) | - | - | - |
| Strontium | 1200 | 1020 | 16 (≤ 50) | - | - | - |
| Thallium | 0.164 | 0.163 | 1 (≤ 50) | - | - | - |
| Tin | 3.6 | 4.3 | - | 0.7 (≤ 10.8) | - | - |
| Titanium | 476 | 555 | 15 (≤ 50) | - | - | - |
| Tungsten | 0.22 | 0.19 | - | 0.03 (≤ 0.11) | - | - |
| Uranium | 6.38 | 5.88 | 8 (≤ 50) | - | - | - |

| Compound | Concentration (mg/Kg) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|----------|-----------------------|--------------|-----------------|---------------------|-------|--------|
| | SA161-25B | SA161009-25B | | | | |
| Vanadium | 32.2 | 35.3 | 9 (≤ 50) | - | - | - |
| Zinc | 21.7 | 23.2 | 7 (≤ 50) | - | - | - |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Data Qualification Summary - SDG R0905348**

| SDG | Sample | Analyte | Flag | A or P | Reason (Code) |
|----------|---|---|--|--------|--|
| R0905348 | SA117-0.5B SA117-9B SA117-25B SA117-41B SA161-0.5B SA161-10B SA161-25B SA161009-25B SA161-37B | Antimony Selenium Tungsten | J- (all detects) UJ (all non-detects) | A | Matrix spike analysis (%R) (m) |
| R0905348 | SA117-0.5B SA117-9B SA117-25B SA117-41B SA161-0.5B SA161-10B SA161-25B SA161009-25B SA161-37B | Manganese | J+ (all detects) | A | Matrix spike analysis (%R) (m) |
| R0905348 | SA117-0.5B SA117-9B SA117-25B SA117-41B SA161-0.5B SA161-10B SA161-25B SA161009-25B SA161-37B | Calcium Nickel Titanium | J (all detects) UJ (all non-detects) | A | Duplicate sample analysis (RPD) (ld) |
| R0905348 | SA117-0.5B SA117-9B SA117-25B SA117-41B SA161-0.5B SA161-10B SA161-25B SA161009-25B SA161-37B | All analytes reported below the PQL. | J (all detects) | A | Sample result verification (PQL) (sp) |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Laboratory Blank Data Qualification Summary - SDG R0905348**

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|--------------|--|--|--------|------|
| R0905348 | EB091809-SO1 | Aluminum Boron Strontium Tungsten | 50.0U ug/L 50.0U ug/L 10.0U ug/L 0.10U ug/L | A | bl |
| R0905348 | SA117-0.5B | Boron Strontium Tin Mercury | 10.6U mg/Kg 213U mg/Kg 10.6U mg/Kg 0.016U mg/Kg | A | bl |
| R0905348 | SA117-9B | Boron Selenium Tin Mercury | 10.8U mg/Kg 4.3U mg/Kg 10.8U mg/Kg 0.016U mg/Kg | A | bl |
| R0905348 | SA117-25B | Boron Tin Mercury | 10.8U mg/Kg 10.8U mg/Kg 0.016U mg/Kg | A | bl |
| R0905348 | SA117-41B | Boron Tin Mercury | 11.5U mg/Kg 11.5U mg/Kg 0.017U mg/Kg | A | bl |
| R0905348 | SA161-0.5B | Boron Tin | 10.8U mg/Kg 10.8U mg/Kg | A | bl |
| R0905348 | SA161-10B | Boron Tin Mercury | 10.7U mg/Kg 10.7U mg/Kg 0.015U mg/Kg | A | bl |
| R0905348 | SA161-25B | Selenium Tin Mercury | 4.3U mg/Kg 10.8U mg/Kg 0.020U mg/Kg | A | bl |
| R0905348 | SA161009-25B | Selenium Tin | 4.3U mg/Kg 10.8U mg/Kg | A | bl |
| R0905348 | SA161-37B | Tin Mercury | 10.4U mg/Kg 0.021U mg/Kg | A | bl |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Equipment Blank Data Qualification Summary - SDG R0905348**

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|------------|--------------------|------------------------------|--------|------|
| R0905348 | SA117-0.5B | Boron Strontium | 10.6U mg/Kg 213U mg/Kg | A | be |
| R0905348 | SA117-9B | Boron | 10.8U mg/Kg | A | be |
| R0905348 | SA117-25B | Boron | 10.8U mg/Kg | A | be |
| R0905348 | SA117-41B | Boron | 11.5U mg/Kg | A | be |
| R0905348 | SA161-0.5B | Boron | 10.8U mg/Kg | A | be |
| R0905348 | SA161-10B | Boron | 10.7U mg/Kg | A | be |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Field Blank Data Qualification Summary - SDG R0905348**

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|------------|-----------|------------------------------|--------|------|
| R0905348 | SA117-0.5B | Strontium | 213U mg/Kg | A | bf |

Tronox Northgate Henderson

LDC #: 21991K4
 SDG #: R0905348
 Laboratory: Columbia Analytical Services

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 11-25-09

Page: 1 of 1

Reviewer: CR
 2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6010B/6020/7000)

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: 9/18/09 |
| II. | ICP/MS Tune | A | |
| III. | Calibration | A | |
| IV. | Blanks | SW | |
| V. | ICP Interference Check Sample (ICS) Analysis | ↑ | |
| VI. | Matrix Spike Analysis | SW | MS |
| VII. | Duplicate Sample Analysis | SW | DUP |
| VIII. | Laboratory Control Samples (LCS) | A | LCS |
| IX. | Internal Standard (ICP-MS) | N | Not reviewed |
| X. | Furnace Atomic Absorption QC | N | Not utilized |
| XI. | ICP Serial Dilution | A | |
| XII. | Sample Result Verification | N | |
| XIII. | Overall Assessment of Data | A | |
| XIV. | Field Duplicates | SW | (8,9) |
| XV. | Field Blanks | SW | EB=1, FB= FB072909-SO(S06 & R010) 226 |

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: Soil/Water

| | | | | | | | | |
|----|--------------|----|----|---------------|---|----|----|-----|
| 1 | EB091809-SO1 | SW | 11 | SA117-0.5BMS | S | 21 | 31 | PBW |
| 2 | SA117-0.5B | S | 12 | SA117-0.5BDUP | ↓ | 22 | 32 | PBS |
| 3 | SA117-9B | | 13 | SA117-9BMS | | 23 | 33 | |
| 4 | SA117-25B | | 14 | SA117-9BDUP | ↓ | 24 | 34 | |
| 5 | SA117-41B | | 15 | | | 25 | 35 | |
| 6 | SA161-0.5B | | 16 | | | 26 | 36 | |
| 7 | SA161-10B | | 17 | | | 27 | 37 | |
| 8 | SA161-25B | | 18 | | | 28 | 38 | |
| 9 | SA161009-25B | | 19 | | | 29 | 39 | |
| 10 | SA161-37B | ↓ | 20 | | | 30 | 40 | |

Notes: _____

| Analyte | Maximum PB ^a (mg/Kg) | Maximum PB ^a (ug/L) | Maximum ICB/CCB ^a (ug/L) | Action Limit | 1 | | | | | | | | | | | | | |
|---------|---------------------------------|--------------------------------|-------------------------------------|--------------|-------------|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Al | | | 2.9 | | 10.1 / 50.0 | | | | | | | | | | | | | |
| Be | | | 0.10 | | | | | | | | | | | | | | | |
| B | | | 4.5 | | 2.9 / 50.0 | | | | | | | | | | | | | |
| Co | | | 0.6 | | | | | | | | | | | | | | | |
| Sr | | | 0.3 | | 2.4 / 10.0 | | | | | | | | | | | | | |
| Ti | | | 0.7 | | | | | | | | | | | | | | | |
| Tl | | | 0.002 | | | | | | | | | | | | | | | |
| W | | 0.02 | 0.7 | | 0.06 / 0.10 | | | | | | | | | | | | | |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: All Soil

| Analyte | Maximum PB ^a (mg/Kg) | Maximum ICB/CCB ^a (ug/L) | Action Limit | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---------|---------------------------------|-------------------------------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|------------|------------|
| Al | 0.8 | | | | | | | | | | | |
| B | | 3.0 | | 6.5 / 10.6 | 7.9 / 10.8 | 8.8 / 10.8 | 9.9 / 11.5 | 5.6 / 10.8 | 10.0 / 10.7 | | | |
| Cr | 0.06 | | | | | | | | | | | |
| Fe | 1.0 | | | | | | | | | | | |
| Mg | 1.2 | 2.0 | | | | | | | | | | |
| Mn | 0.02 | | | | | | | | | | | |
| Hg | 0.002 | | | 0.013 / 0.06 | 0.015 / 0.016 | 0.007 / 0.016 | 0.010 / 0.017 | 0.019 / 0.020 | 0.019 / 0.015 | 0.009 / 0.021 | | |
| Se | 0.9 | | | | 1.0 / 4.3 | | | | | 0.8 / 4.3 | 1.3 / 4.3 | |
| Sr | 0.02 | 0.10 | | 161 / 213 | | | | | | | | |
| Sn | 3.3 | | | 3.3 / 10.6 | 4.1 / 10.8 | 3.8 / 10.8 | 4.4 / 11.5 | 4.0 / 10.8 | 3.9 / 10.7 | 3.6 / 10.8 | 4.3 / 10.8 | 3.7 / 10.4 |

| Analyte | Maximum PB ^a (mg/Kg) | Maximum PB ^a (ug/L) | Maximum ICB/CCB ^a (ug/L) | Action Limit | No Qualifiers |
|---------|---------------------------------|--------------------------------|-------------------------------------|--------------|---------------|
| Ba | | | 0.50 | | |
| Mn | | | 0.10 | | |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 2, 5, 7-10

| Analyte | Maximum PB ^a (mg/Kg) | Maximum PB ^a (ug/L) | Maximum ICB/CCB ^a (ug/L) | Action Limit | No Qualifiers |
|---------|---------------------------------|--------------------------------|-------------------------------------|--------------|---------------|
| Mn | | | 0.30 | | |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 2, 6-10

| Analyte | Maximum PB ^a (mg/Kg) | Maximum PB ^a (ug/L) | Maximum ICB/CCB ^a (ug/L) | Action Limit | No Qualifiers |
|---------|---------------------------------|--------------------------------|-------------------------------------|--------------|---------------|
| W | | | 0.084 | | |
| U | | | 0.037 | | |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 3-5

| Analyte | Maximum PB ^a (mg/Kg) | Maximum PB ^a (ug/L) | Maximum ICB/CCB ^a (ug/L) | Action Limit | No Qualifiers |
|---------|---------------------------------|--------------------------------|-------------------------------------|--------------|---------------|
| W | | | 0.083 | | |

Note: a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element

VALIDATION FINDINGS WORKSHEET
Field Blanks

METHOD: Trace Metals (EPA SW846 6010B/7000)

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: ug/L **Associated sample units:** mg/Kg

Sampling date: 9/18/09 **Soil factor applied:** 200x

Field blank type: (circle one) Field Blank / Rinsate / Other: **EB**

Reason Code: be

Associated Samples: All Soil

| Analyte | Blank ID | Sample Identification | | | | | | |
|---------|----------|-----------------------|------------|------------|------------|------------|------------|-------------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Al | 10.1 | | | | | | | |
| Ba | 0.4 | | | | | | | |
| B | 2.9 | | 6.5 / 10.6 | 7.9 / 10.8 | 8.8 / 10.8 | 9.9 / 11.5 | 5.6 / 10.8 | 10.0 / 10.7 |
| Ca | 291 | | | | | | | |
| Cr | 0.8 | | | | | | | |
| Fe | 35.2 | | | | | | | |
| Pb | 0.086 | | | | | | | |
| Mg | 37.3 | | | | | | | |
| Mn | 5.6 | | | | | | | |
| K | 60 | | | | | | | |
| Na | 134 | | | | | | | |
| Sr | 2.4 | | 161 / 213 | | | | | |
| W | 0.06 | | | | | | | |
| U | 0.004 | | | | | | | |
| Zn | 6.2 | | | | | | | |

LDC #: 21991K4
 SDG #: See Cover

VALIDATION FINDINGS WORKSHEET

Field Blanks

METHOD: Trace Metals (EPA SW846 6010B/7000)

Y N N/A Were field blanks identified in this SDG?
 Y N N/A Were target analytes detected in the field blanks?

Reason Code: bf

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 7/29/09 **Soil factor applied:** 100x

Field blank type: (circle one) Field Blank Rinsate / Other: _____

Associated Samples: All Soil

| Analyte | Blank ID | Action Level | 2 | Sample Identification | | | | | | | | | | | | | |
|---------|---------------------------------|--------------|-----------|-----------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | FB072909-SO (SDG#: R0904226) | | | | | | | | | | | | | | | | |
| Al | 8.1 | | | | | | | | | | | | | | | | |
| Ba | 1.0 | | | | | | | | | | | | | | | | |
| Ca | 582 | 582 | | | | | | | | | | | | | | | |
| Cu | 0.8 | | | | | | | | | | | | | | | | |
| Fe | 12.1 | | | | | | | | | | | | | | | | |
| Pb | 0.359 | 0.359 | | | | | | | | | | | | | | | |
| Mg | 28.4 | 28.4 | | | | | | | | | | | | | | | |
| Mn | 4.3 | | | | | | | | | | | | | | | | |
| Na | 160 | | | | | | | | | | | | | | | | |
| Si | 1.4 | | 161 / 213 | | | | | | | | | | | | | | |
| Ti | 0.5 | | | | | | | | | | | | | | | | |
| W | 0.03 | | | | | | | | | | | | | | | | |
| U | 0.006 | | | | | | | | | | | | | | | | |
| Zn | 10.0 | 10.0 | | | | | | | | | | | | | | | |

LDC 21991K4
SDG#: See Cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 2
Reviewer: CR
2nd Reviewer: ✓

METHOD: Metals (EPA Method 6020/6010/7000)

Y N NA Were field duplicate pairs identified in this SDG?
 Y N NA Were target analytes detected in the field duplicate pairs?

| Compound | Concentration (mg/Kg) | | (≤50) | (mg/Kg) | (mg/Kg) | Qualifications (Parent Only) |
|------------|-----------------------|-------|-------|------------|----------|---------------------------------|
| | 8 | 9 | RPD | Difference | Limits | |
| Aluminum | 9580 | 10300 | 7 | | | |
| Antimony | 0.8 | 0.9 | | 0.1 | (-2.2) | |
| Arsenic | 10.9 | 9.98 | 9 | | | |
| Barium | 105 | 93.2 | 7 | | | |
| Beryllium | 0.278 | 0.269 | 3 | | | |
| Boron | 18.3 | 19.4 | | 1.1 | (-10.8) | |
| Cadmium | 0.24 | 0.22 | | 0.02 | (<0.11) | |
| Calcium | 22800 | 19800 | 14 | | | |
| Chromium | 46.3 | 47.7 | 3 | | | |
| Cobalt | 4.1 | 4.0 | | 0.1 | (-2.2) | |
| Copper | 12.0 | 12.1 | 1 | | | |
| Iron | 9160 | 10500 | 14 | | | |
| Lead | 5.3 | 6.4 | | 1.1 | (-2.2) | |
| Magnesium | 20100 | 21600 | 7 | | | |
| Manganese | 103 | 110 | 7 | | | |
| Mercury | 0.019 | 0.019 | | 0 | (≤0.019) | |
| Molybdenum | 0.41 | 0.50 | | 0.09 | (-0.33) | |
| Nickel | 9.96 | 10.7 | 7 | | | |
| Platinum | 0.009 | 0.007 | | 0.002 | (-0.11) | |

LDC#: 21991K4
 SDG#: See Cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 2 of 2
 Reviewer: CR
 2nd Reviewer: ✓

METHOD: Metals (EPA Method 6020/6010/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

| Compound | Concentration (mg/Kg) | | (≤50) | (mg/Kg) | (mg/Kg) | Qualifications (Parent Only) |
|-----------|-----------------------|-------|-------|------------|----------|---------------------------------|
| | 8 | 9 | RPD | Difference | Limits | |
| Potassium | 2410 | 2640 | 9 | | | |
| Selenium | 0.8 | 1.3 | | 0.5 | (- 4.3) | |
| Sodium | 10500 | 11100 | 6 | | | |
| Strontium | 1200 | 1020 | 16 | | | |
| Thallium | 0.164 | 0.163 | 1 | | | |
| Tin | 3.6 | 4.3 | | 0.7 | (- 10.8) | |
| Titanium | 47.8 | 55.5 | 15 | | | |
| Tungsten | 0.22 | 0.19 | | 0.03 | (- 0.11) | |
| Uranium | 6.36 | 5.88 | 8 | | | |
| Vanadium | 32.2 | 35.3 | 9 | | | |
| Zinc | 21.7 | 23.2 | 7 | | | |

V:\FIELD DUPLICATES\FD_inorganic\21991K4.wpd

Laboratory Data Consultants, Inc. Data Validation Report

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

Collection Date: September 21, 2009

LDC Report Date: November 19, 2009

Matrix: Soil

Parameters: Metals

Validation Level: Stage 2B

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): R0905387

Sample Identification

SA32-0.5B
SA32-9B
SA32-25B
SA32009-25B
SA32-37B
SA66-0.5B
SA66009-0.5B
SA66-10B
SA66-28B
SA129-10B
SA129-29B
RSAT4-0.5B
RSAT4-10B
RSAT4-25B
RSAT4-40B
RSAT4-53B
SA32-0.5BMS
SA32-0.5BDUP

Introduction

This data review covers 18 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010B, 6020, and 7000 for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Tungsten, Uranium, Vanadium, and Zinc.

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) 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.

Blanks are summarized in Section IV.

Field duplicates are summarized in Section XIV.

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. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

| Method Blank ID | Analyte | Maximum Concentration | Associated Samples |
|-----------------|--|--|---|
| PB (prep blank) | Aluminum Antimony Chromium Iron Magnesium Manganese Mercury Selenium Tin Tungsten | 0.9 mg/Kg 0.5 mg/Kg 0.07 mg/Kg 2.1 mg/Kg 0.7 mg/Kg 0.02 mg/Kg 0.003 mg/Kg 0.8 mg/Kg 3.8 mg/Kg 0.022 mg/Kg | All samples in SDG R0905387 |
| ICB/CCB | Barium Boron Magnesium Manganese Uranium | 0.50 ug/L 3.0 ug/L 2.0 ug/L 0.20 ug/L 0.037 ug/L | All samples in SDG R0905387 |
| ICB/CCB | Aluminum | 2.0 ug/L | SA129-29B RSAT4-0.5B RSAT4-10B RSAT4-25B RSAT4-40B RSAT4-53B |

| Method Blank ID | Analyte | Maximum Concentration | Associated Samples |
|-----------------|-----------------------|--------------------------|---|
| ICB/CCB | Beryllium Tungsten | 0.010 ug/L 0.056 ug/L | RSAT4-25B RSAT4-40B RSAT4-53B |
| ICB/CCB | Beryllium | 0.006 ug/L | SA32-0.5B SA32-9B SA32-25B SA32009-25B SA32-37B SA66-0.5B SA66009-0.5B SA66-10B SA66-28B SA129-10B SA129-29B RSAT4-0.5B RSAT4-10B |
| ICB/CCB | Strontium | 0.10 ug/L | SA32-0.5B SA129-29B RSAT4-0.5B RSAT4-10B RSAT4-25B RSAT4-40B RSAT4-53B |
| ICB/CCB | Tungsten | 0.054 ug/L | SA32009-25B SA32-37B SA66-0.5B SA66009-0.5B SA66-10B SA66-28B SA129-10B SA129-29B RSAT4-0.5B RSAT4-10B |
| ICB/CCB | Tungsten | 0.053 ug/L | SA32-0.5B SA32-9B SA32-25B |

Sample concentrations were compared to concentrations detected in the method blanks as required by the QAPP. No sample data was qualified with the following exceptions:

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|-----------|-----------------------------|-------------------------------------|---|
| SA32-0.5B | Antimony Tin | 1.6 mg/Kg 5.0 mg/Kg | 2.2U mg/Kg 11.0U mg/Kg |
| SA32-9B | Antimony Selenium Tin | 1.4 mg/Kg 1.0 mg/Kg 4.0 mg/Kg | 2.2U mg/Kg 4.4U mg/Kg 10.9U mg/Kg |

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|--------------|---|---|--|
| SA32-25B | Antimony Mercury Tin | 0.9 mg/Kg 0.009 mg/Kg 4.0 mg/Kg | 2.3U mg/Kg 0.021U mg/Kg 11.3U mg/Kg |
| SA32009-25B | Antimony Mercury Selenium Tin | 1.5 mg/Kg 0.010 mg/Kg 1.1 mg/Kg 3.9 mg/Kg | 2.2U mg/Kg 0.020U mg/Kg 4.5U mg/Kg 11.2U mg/Kg |
| SA32-37B | Antimony Mercury Selenium Tin | 1.9 mg/Kg 0.010 mg/Kg 0.9 mg/Kg 3.9 mg/Kg | 2.3U mg/Kg 0.022U mg/Kg 4.5U mg/Kg 11.2U mg/Kg |
| SA66-0.5B | Antimony Boron Tin | 1.3 mg/Kg 5.3 mg/Kg 5.5 mg/Kg | 2.2U mg/Kg 10.8U mg/Kg 10.8U mg/Kg |
| SA66009-0.5B | Antimony Boron Mercury Tin | 1.8 mg/Kg 6.8 mg/Kg 0.014 mg/Kg 4.9 mg/Kg | 2.2U mg/Kg 10.8U mg/Kg 0.019U mg/Kg 10.8U mg/Kg |
| SA66-10B | Antimony Boron Mercury Tin | 1.4 mg/Kg 7.4 mg/Kg 0.017 mg/Kg 3.8 mg/Kg | 2.2U mg/Kg 10.9U mg/Kg 0.019U mg/Kg 10.9U mg/Kg |
| SA66-28B | Antimony Mercury Tin | 1.4 mg/Kg 0.009 mg/Kg 3.8 mg/Kg | 2.0U mg/Kg 0.021U mg/Kg 10.2U mg/Kg |
| SA129-10B | Antimony Boron Tin | 1.8 mg/Kg 8.3 mg/Kg 4.2 mg/Kg | 2.2U mg/Kg 10.8U mg/Kg 10.8U mg/Kg |
| SA129-29B | Antimony Boron Mercury Selenium Tin | 1.5 mg/Kg 8.0 mg/Kg 0.010 mg/Kg 0.8 mg/Kg 3.7 mg/Kg | 2.3U mg/Kg 11.4U mg/Kg 0.019U mg/Kg 4.6U mg/Kg 11.4U mg/Kg |
| RSAT4-0.5B | Antimony Boron Tin | 1.1 mg/Kg 8.5 mg/Kg 3.5 mg/Kg | 2.1U mg/Kg 10.4U mg/Kg 10.4U mg/Kg |
| RSAT4-10B | Antimony Boron Tin | 1.8 mg/Kg 8.9 mg/Kg 3.4 mg/Kg | 2.1U mg/Kg 10.7U mg/Kg 10.7U mg/Kg |

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|-----------|----------------------------|---------------------------------------|---|
| RSAT4-25B | Antimony Boron Tin | 0.9 mg/Kg 9.2 mg/Kg 3.6 mg/Kg | 2.1U mg/Kg 10.6U mg/Kg 10.6U mg/Kg |
| RSAT4-40B | Antimony Mercury Tin | 1.1 mg/Kg 0.017 mg/Kg 4.2 mg/Kg | 2.4U mg/Kg 0.018U mg/Kg 12.0U mg/Kg |
| RSAT4-53B | Antimony Mercury Tin | 1.0 mg/Kg 0.011 mg/Kg 3.3 mg/Kg | 1.9U mg/Kg 0.017U mg/Kg 9.2U mg/Kg |

Samples FB072909-SO (from SDG R0904226) and FB080309-SO (from SDG R0904279) were identified as field blanks. No metal contaminants were found in these blanks with the following exceptions:

| Field Blank ID | Sampling Date | Analyte | Concentration | Associated Samples |
|----------------|---------------|---|--|--|
| FB072909-SO | 7/29/09 | Aluminum Barium Calcium Copper Iron Lead Magnesium Manganese Sodium Strontium Titanium Tungsten Uranium Zinc | 8.1 ug/L 1.0 ug/L 582 ug/L 0.8 ug/L 12.1 ug/L 0.359 ug/L 28.4 ug/L 4.3 ug/L 160 ug/L 1.4 ug/L 0.5 ug/L 0.03 ug/L 0.006 ug/L 10.0 ug/L | SA32-0.5B SA32-9B SA32-25B SA32009-25B SA32-37B SA66-0.5B SA66009-0.5B SA66-10B SA66-28B SA129-10B SA129-29B |
| FB080309-SO | 8/3/09 | Aluminum Barium Calcium Iron Lead Magnesium Manganese Sodium Strontium Titanium Tungsten Zinc | 18.6 ug/L 0.8 ug/L 113 ug/L 136 ug/L 0.042 ug/L 33.6 ug/L 7.5 ug/L 66.0 ug/L 1.0 ug/L 1.5 ug/L 0.04 ug/L 0.8 ug/L | RSAT4-0.5B RSAT4-10B RSAT4-25B RSAT4-40B RSAT4-53B |

Sample concentrations were compared to concentrations detected in the field blanks as required by the QAPP. No sample data was qualified.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

| Spike ID (Associated Samples) | Analyte | %R (Limits) | Flag | A or P |
|---|--------------------------|------------------------------------|--|--------|
| SA32-0.5BMS (SA32-0.5B SA32-9B SA32-25B SA32009-25B SA32-37B SA66-0.5B SA66009-0.5B SA66-10B SA66-28B SA129-10B SA129-29B) | Antimony Tungsten | 60.6 (75-125) 64.1 (75-125) | J- (all detects) UJ (all non-detects) J- (all detects) UJ (all non-detects) | A |

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

| DUP ID (Associated Samples) | Analyte | RPD (Limits) | Difference (Limits) | Flag | A or P |
|--|--|--|---------------------------------|---|--------|
| SA32-0.5BDUP (SA32-0.5B SA32-9B SA32-25B SA32009-25B SA32-37B SA66-0.5B SA66009-0.5B SA66-10B SA66-28B SA129-10B SA129-29B) | Calcium Copper Iron Lead Nickel Potassium Titanium | 33.3 (≤ 20) 24.2 (≤ 20) 21.1 (≤ 20) 23.2 (≤ 20) 27.7 (≤ 20) 22.6 (≤ 20) 22.6 (≤ 20) | - - - - - - - | J (all detects) UJ (all non-detects) | A |

VIII. Laboratory Control Samples (LCS)

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

IX. Internal Standards

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met with the following exceptions:

| Diluted Sample | Analyte | %D (Limits) | Associated Samples | Flag | A or P |
|----------------|--|--|--|---|--------|
| SA32-0.5BL | Aluminum Calcium Iron Manganese Nickel | 10.5 (≤10) 10.4 (≤10) 11.6 (≤10) 11.8 (≤10) 12.2 (≤10) | SA32-0.5B SA32-9B SA32-25B SA32009-25B SA32-37B SA66-0.5B SA66009-0.5B SA66-10B SA66-28B SA129-10B SA129-29B | J (all detects) UJ (all non-detects) | A |

XII. Sample Result Verification and Project Quantitation Limit

All analytes reported below the PQL were qualified as follows:

| Sample | Finding | Flag | A or P |
|-----------------------------|--------------------------------------|-----------------|--------|
| All samples in SDG R0905387 | All analytes reported below the PQL. | J (all detects) | A |

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

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

XIV. Field Duplicates

Samples SA32-25B and SA32009-25B and samples SA66-0.5B and SA66009-0.5B were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

| Compound | Concentration (mg/Kg) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|------------|-----------------------|-------------|------------------|------------------------|-------|--------|
| | SA32-25B | SA32009-25B | | | | |
| Aluminum | 10300 | 9610 | 7 (≤ 50) | - | - | - |
| Antimony | 0.9 | 1.5 | - | 0.6 (≤ 2.3) | - | - |
| Arsenic | 17 | 15.9 | 7 (≤ 50) | - | - | - |
| Barium | 82.1 | 103 | 23 (≤ 50) | - | - | - |
| Beryllium | 0.407 | 0.387 | 5 (≤ 50) | - | - | - |
| Boron | 23.8 | 21.1 | - | 2.7 (≤ 11.3) | - | - |
| Cadmium | 0.27 | 0.22 | - | 0.05 (≤ 0.11) | - | - |
| Calcium | 34400 | 37700 | 9 (≤ 50) | - | - | - |
| Chromium | 15.6 | 13.5 | 14 (≤ 50) | - | - | - |
| Cobalt | 4.4 | 5 | - | 0.6 (≤ 2.3) | - | - |
| Copper | 13.5 | 14.9 | 10 (≤ 50) | - | - | - |
| Iron | 9930 | 10900 | 9 (≤ 50) | - | - | - |
| Lead | 7.2 | 6.3 | - | 0.9 (≤ 2.3) | - | - |
| Magnesium | 18400 | 16700 | 10 (≤ 50) | - | - | - |
| Manganese | 195 | 206 | 5 (≤ 50) | - | - | - |
| Mercury | 0.009 | 0.01 | - | 0.001 (≤ 0.021) | - | - |
| Molybdenum | 1.01 | 1.14 | - | 0.13 (≤ 0.34) | - | - |
| Nickel | 10.5 | 11.3 | 7 (≤ 50) | - | - | - |
| Platinum | 0.011 | 0.011 | - | 0 (≤ 0.11) | - | - |
| Potassium | 5260 | 5090 | 3 (≤ 50) | - | - | - |

| Compound | Concentration (mg/Kg) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|-----------|-----------------------|-------------|------------------|----------------------|-------|--------|
| | SA32-25B | SA32009-25B | | | | |
| Selenium | 0.8U | 1.1 | - | 0.3 (≤ 4.5) | - | - |
| Sodium | 570 | 573 | 1 (≤ 50) | - | - | - |
| Strontium | 641 | 804 | 23 (≤ 50) | - | - | - |
| Thallium | 0.129 | 0.114 | 12 (≤ 50) | - | - | - |
| Tin | 4 | 3.9 | - | 0.1 (≤ 11.3) | - | - |
| Titanium | 519 | 546 | 5 (≤ 50) | - | - | - |
| Tungsten | 0.48 | 0.42 | - | 0.06 (≤ 0.11) | - | - |
| Uranium | 3.94 | 3.66 | 7 (≤ 50) | - | - | - |
| Vanadium | 35.2 | 39 | 10 (≤ 50) | - | - | - |
| Zinc | 25.6 | 25.6 | 0 (≤ 50) | - | - | - |

| Compound | Concentration (mg/Kg) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|-----------|-----------------------|--------------|------------------|----------------------|-------|--------|
| | SA66-0.5B | SA66009-0.5B | | | | |
| Aluminum | 6830 | 7000 | 2 (≤ 50) | - | - | - |
| Antimony | 1.3 | 1.8 | - | 0.5 (≤ 2.2) | - | - |
| Arsenic | 0.97 | 1.18 | - | 0.21 (≤ 0.54) | - | - |
| Barium | 219 | 169 | 26 (≤ 50) | - | - | - |
| Beryllium | 0.305 | 0.316 | 4 (≤ 50) | - | - | - |
| Boron | 5.3 | 6.8 | - | 1.5 (≤ 10.8) | - | - |
| Cadmium | 0.69 | 0.77 | 11 (≤ 50) | - | - | - |
| Calcium | 18700 | 16900 | 10 (≤ 50) | - | - | - |

| Compound | Concentration (mg/Kg) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|------------|-----------------------|--------------|------------------|-----------------------|-------|--------|
| | SA66-0.5B | SA66009-0.5B | | | | |
| Chromium | 5.2 | 6.48 | 22 (≤ 50) | - | - | - |
| Cobalt | 9.6 | 8.8 | - | 0.8 (≤ 2.2) | - | - |
| Copper | 37.2 | 35.8 | 4 (≤ 50) | - | - | - |
| Iron | 14700 | 15400 | 5 (≤ 50) | - | - | - |
| Lead | 334 | 350 | 5 (≤ 50) | - | - | - |
| Magnesium | 8590 | 9350 | 8 (≤ 50) | - | - | - |
| Manganese | 268 | 362 | 30 (≤ 50) | - | - | - |
| Mercury | 0.024 | 0.014 | - | 0.01 (≤ 0.019) | - | - |
| Molybdenum | 0.86 | 0.6 | - | 0.26 (≤ 0.32) | - | - |
| Nickel | 23.4 | 26.3 | 12 (≤ 50) | - | - | - |
| Platinum | 0.019 | 0.019 | - | 0 (≤ 0.11) | - | - |
| Potassium | 1420 | 1640 | 14 (≤ 50) | - | - | - |
| Sodium | 4310 | 2820 | 42 (≤ 50) | - | - | - |
| Strontium | 134 | 119 | - | 15 (≤ 43.2) | - | - |
| Thallium | 0.197 | 0.169 | 15 (≤ 50) | - | - | - |
| Tin | 5.5 | 4.9 | - | 0.6 (≤ 10.8) | - | - |
| Titanium | 1050 | 932 | 12 (≤ 50) | - | - | - |
| Tungsten | 0.14 | 0.17 | - | 0.03 (≤ 0.11) | - | - |
| Uranium | 1.22 | 1.11 | 9 (≤ 50) | - | - | - |
| Vanadium | 38.3 | 43.5 | 13 (≤ 50) | - | - | - |

| Compound | Concentration (mg/Kg) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|----------|-----------------------|--------------|-----------------|---------------------|-------|--------|
| | SA66-0.5B | SA66009-0.5B | | | | |
| Zinc | 42.4 | 40.2 | 5 (≤ 50) | - | - | - |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Data Qualification Summary - SDG R0905387**

| SDG | Sample | Analyte | Flag | A or P | Reason (Code) |
|----------|--|--|--|--------|--|
| R0905387 | SA32-0.5B SA32-9B SA32-25B SA32009-25B SA32-37B SA66-0.5B SA66009-0.5B SA66-10B SA66-28B SA129-10B SA129-29B | Antimony Tungsten | J- (all detects) UJ (all non-detects) J- (all detects) UJ (all non-detects) | A | Matrix spike analysis (%R) (m) |
| R0905387 | SA32-0.5B SA32-9B SA32-25B SA32009-25B SA32-37B SA66-0.5B SA66009-0.5B SA66-10B SA66-28B SA129-10B SA129-29B | Calcium Copper Iron Lead Nickel Potassium Titanium | J (all detects) UJ (all non-detects) | A | Duplicate sample analysis (RPD) (ld) |
| R0905387 | SA32-0.5B SA32-9B SA32-25B SA32009-25B SA32-37B SA66-0.5B SA66009-0.5B SA66-10B SA66-28B SA129-10B SA129-29B | Aluminum Calcium Iron Manganese Nickel | J (all detects) UJ (all non-detects) | A | ICP serial dilution (%D) (sd) |
| R0905387 | SA32-0.5B SA32-9B SA32-25B SA32009-25B SA32-37B SA66-0.5B SA66009-0.5B SA66-10B SA66-28B SA129-10B SA129-29B RSAT4-0.5B RSAT4-10B RSAT4-25B RSAT4-40B RSAT4-53B | All analytes reported below the PQL. | J (all detects) | A | Sample result verification (PQL) (sp) |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Laboratory Blank Data Qualification Summary - SDG R0905387**

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|--------------|---|--|--------|------|
| R0905387 | SA32-0.5B | Antimony Tin | 2.2U mg/Kg 11.0U mg/Kg | A | bl |
| R0905387 | SA32-9B | Antimony Selenium Tin | 2.2U mg/Kg 4.4U mg/Kg 10.9U mg/Kg | A | bl |
| R0905387 | SA32-25B | Antimony Mercury Tin | 2.3U mg/Kg 0.021U mg/Kg 11.3U mg/Kg | A | bl |
| R0905387 | SA32009-25B | Antimony Mercury Selenium Tin | 2.2U mg/Kg 0.020U mg/Kg 4.5U mg/Kg 11.2U mg/Kg | A | bl |
| R0905387 | SA32-37B | Antimony Mercury Selenium Tin | 2.3U mg/Kg 0.022U mg/Kg 4.5U mg/Kg 11.2U mg/Kg | A | bl |
| R0905387 | SA66-0.5B | Antimony Boron Tin | 2.2U mg/Kg 10.8U mg/Kg 10.8U mg/Kg | A | bl |
| R0905387 | SA66009-0.5B | Antimony Boron Mercury Tin | 2.2U mg/Kg 10.8U mg/Kg 0.019U mg/Kg 10.8U mg/Kg | A | bl |
| R0905387 | SA66-10B | Antimony Boron Mercury Tin | 2.2U mg/Kg 10.9U mg/Kg 0.019U mg/Kg 10.9U mg/Kg | A | bl |
| R0905387 | SA66-28B | Antimony Mercury Tin | 2.0U mg/Kg 0.021U mg/Kg 10.2U mg/Kg | A | bl |
| R0905387 | SA129-10B | Antimony Boron Tin | 2.2U mg/Kg 10.8U mg/Kg 10.8U mg/Kg | A | bl |
| R0905387 | SA129-29B | Antimony Boron Mercury Selenium Tin | 2.3U mg/Kg 11.4U mg/Kg 0.019U mg/Kg 4.6U mg/Kg 11.4U mg/Kg | A | bl |

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|------------|----------------------------|---|--------|------|
| R0905387 | RSAT4-0.5B | Antimony Boron Tin | 2.1U mg/Kg 10.4U mg/Kg 10.4U mg/Kg | A | bl |
| R0905387 | RSAT4-10B | Antimony Boron Tin | 2.1U mg/Kg 10.7U mg/Kg 10.7U mg/Kg | A | bl |
| R0905387 | RSAT4-25B | Antimony Boron Tin | 2.1U mg/Kg 10.6U mg/Kg 10.6U mg/Kg | A | bl |
| R0905387 | RSAT4-40B | Antimony Mercury Tin | 2.4U mg/Kg 0.018U mg/Kg 12.0U mg/Kg | A | bl |
| R0905387 | RSAT4-53B | Antimony Mercury Tin | 1.9U mg/Kg 0.017U mg/Kg 9.2U mg/Kg | A | bl |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Field Blank Data Qualification Summary - SDG R0905387**

No Sample Data Qualified in this SDG

LDC #: 21991L4
 SDG #: R0905387
 Laboratory: Columbia Analytical Services

Tronox Northgate Henderson
VALIDATION COMPLETENESS WORKSHEET
 Stage 2B

Date: 11-17-09
 Page: 6 of 1
 Reviewer: CR
 2nd Reviewer: W

METHOD: Metals (EPA SW 846 Method 6010B/6020/7000)

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: 9/21/09 |
| II. | ICP/MS Tune | A | |
| III. | Calibration | A | |
| IV. | Blanks | SW | |
| V. | ICP Interference Check Sample (ICS) Analysis | A | |
| VI. | Matrix Spike Analysis | SW MS | |
| VII. | Duplicate Sample Analysis | SW Dup | |
| VIII. | Laboratory Control Samples (LCS) | A LCS | |
| IX. | Internal Standard (ICP-MS) | N | Not reviewed |
| X. | Furnace Atomic Absorption QC | N | Not utilized |
| XI. | ICP Serial Dilution | SW | |
| XII. | Sample Result Verification | N | |
| XIII. | Overall Assessment of Data | A | |
| XIV. | Field Duplicates | SW (3,4), (6,7) | |
| XV. | Field Blanks | SW | FB=FB072909-S0, FB080309-S0 (506W R0904226), (506W R0904279) |

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:
 Soil

| | | | | | | |
|----|--------------|----|---------------|----|-----|----|
| 1 | SA32-0.5B | 11 | SA129-29B | 21 | PPS | 31 |
| 2 | SA32-9B | 12 | RSAT4-0.5B | 22 | | 32 |
| 3 | SA32-25B | 13 | RSAT4-10B | 23 | | 33 |
| 4 | SA32009-25B | 14 | RSAT4-25B | 24 | | 34 |
| 5 | SA32-37B | 15 | RSAT4-10B 40B | 25 | | 35 |
| 6 | SA66-0.5B | 16 | RSAT4-53B | 26 | | 36 |
| 7 | SA66009-0.5B | 17 | SA32-0.5BMS | 27 | | 37 |
| 8 | SA66-10B | 18 | SA32-0.5BDUP | 28 | | 38 |
| 9 | SA66-28B | 19 | | 29 | | 39 |
| 10 | SA129-10B | 20 | | 30 | | 40 |

Notes: _____

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

DC #: 21991L4
 DG #: See Cover
 METHOD: Trace metals (EPA SW 846 Method 6010B/6020/7000)
 Sample Concentration units, unless otherwise noted: mg/Kg

Reason Code: bl
 Soil preparation factor applied: 200x
 Associated Samples: 1-13

| Analyte | Maximum PB ^a (mg/Kg) | Maximum ICB/CCB ^a (ug/L) | Action Limit | No Quals. | | | | | | |
|---------|---------------------------------|-------------------------------------|--------------|-----------|--|--|--|--|--|--|
| Be | | 0.006 | | | | | | | | |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 1-11-16

| Analyte | Maximum PB ^a (mg/Kg) | Maximum ICB/CCB ^a (ug/L) | Action Limit | No Quals. | | | | | | |
|---------|---------------------------------|-------------------------------------|--------------|-----------|--|--|--|--|--|--|
| Sr | | 0.10 | | | | | | | | |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 4-13

| Analyte | Maximum PB ^a (mg/Kg) | Maximum ICB/CCB ^a (ug/L) | Action Limit | No Quals. | | | | | | |
|---------|---------------------------------|-------------------------------------|--------------|-----------|--|--|--|--|--|--|
| W | | 0.054 | | | | | | | | |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 1-3

| Analyte | Maximum PB ^a (mg/Kg) | Maximum ICB/CCB ^a (ug/L) | Action Limit | No Quals. | | | | | | |
|---------|---------------------------------|-------------------------------------|--------------|-----------|--|--|--|--|--|--|
| W | | 0.053 | | | | | | | | |

Note: a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 21991L4
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: CR
2nd Reviewer: W

METHOD: Trace Metals (EPA SW846 6010B/7000)

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: ug/L **Associated sample units:** mg/Kg

Sampling date: 8/3/09 **Soil factor applied:** 100x

Field blank type: (circle one) Field Blank / Rinsate / Other:

Reason Code: bf

Associated Samples: 12-16

| Analyte | Blank ID | Sample Identification | | | | | | | | | |
|---------|--------------------------------|-----------------------|--|--|-------|--|--|--|--|--|--|
| | FB080309-SO (SDG# R0904279) | | | | | | | | | | |
| Al | 18.6 | | | | | | | | | | |
| Ba | 0.8 | | | | | | | | | | |
| Ca | 113 | | | | 113 | | | | | | |
| Fe | 136 | | | | 136 | | | | | | |
| Pb | 0.042 | | | | 0.042 | | | | | | |
| Mg | 33.6 | | | | 33.6 | | | | | | |
| Mn | 7.5 | | | | 7.5 | | | | | | |
| Na | 66.0 | | | | | | | | | | |
| Sr | 1.0 | | | | | | | | | | |
| Ti | 1.5 | | | | | | | | | | |
| W | 0.04 | | | | | | | | | | |
| Zn | 0.8 | | | | | | | | | | |

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: Metals (EPA Method 6020/6010/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

| Compound | Concentration (mg/Kg) | | (<=50) RPD | (mg/Kg) Difference | (mg/Kg) Limits | Qualifications (Parent Only) |
|------------|-----------------------|-------|---------------|-----------------------|-------------------|---------------------------------|
| | 3 | 4 | | | | |
| Aluminum | 10300 | 9610 | 7 | | | |
| Antimony | 0.9 | 1.5 | | 0.6 | (<=2.3) | |
| Arsenic | 17.0 | 15.9 | 7 | | | |
| Barium | 82.1 | 103 | 23 | | | |
| Beryllium | 0.407 | 0.387 | 5 | | | |
| Boron | 23.8 | 21.1 | | 2.7 | (<=11.3) | |
| Cadmium | 0.27 | 0.22 | | 0.05 | (<=0.11) | |
| Calcium | 34400 | 37700 | 9 | | | |
| Chromium | 15.6 | 13.5 | 14 | | | |
| Cobalt | 4.4 | 5.0 | | 0.6 | (<=2.3) | |
| Copper | 13.5 | 14.9 | 10 | | | |
| Iron | 9930 | 10900 | 9 | | | |
| Lead | 7.2 | 6.3 | | 0.9 | (<=2.3) | |
| Magnesium | 18400 | 16700 | 10 | | | |
| Manganese | 195 | 206 | 5 | | | |
| Mercury | 0.009 | 0.010 | | 0.001 | (<=0.021) | |
| Molybdenum | 1.01 | 1.14 | | 0.13 | (<=0.34) | |
| Nickel | 10.5 | 11.3 | 7 | | | |
| Platinum | 0.011 | 0.011 | | 0 | (<=0.11) | |

LDC#: 21991L4
 SDG#: See Cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 2 of 4
 Reviewer: CR
 2nd Reviewer: W

METHOD: Metals (EPA Method 6020/6010/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

| Compound | Concentration (mg/Kg) | | (≤50) | (mg/Kg) | (mg/Kg) | Qualifications (Parent Only) |
|-----------|-----------------------|-------|-------|----------------------|----------------------|---------------------------------|
| | 3 | 4 | RPD | Difference | Limits | |
| Potassium | 5260 | 5090 | 3 | 170 CR | (≤) CR | |
| Selenium | 0.8U | 1.1 | | 0.3 | (≤4.5) | |
| Sodium | 570 | 573 | 1 | | | |
| Strontium | 641 | 804 | 23 | | | |
| Thallium | 0.129 | 0.114 | 12 | | | |
| Tin | 4.0 | 3.9 | | 0.1 | (≤11.3) | |
| Titanium | 519 | 546 | 5 | | | |
| Tungsten | 0.48 | 0.42 | | 0.06 | (≤0.11) | |
| Uranium | 3.94 | 3.66 | 7 | | | |
| Vanadium | 35.2 | 39.0 | 10 | | | |
| Zinc | 25.6 | 25.6 | 0 | | | |

V:\FIELD DUPLICATES\FD_inorganic21991L4.wpd

| Compound | Concentration (mg/Kg) | | (≤50) | (mg/Kg) | (mg/Kg) | Qualifications (Parent Only) |
|-----------|-----------------------|-------|---------------|------------|---------|---------------------------------|
| | 6 | 7 | RPD | Difference | Limits | |
| Aluminum | 6830 | 7000 | 2 | | | |
| Antimony | 1.3 | 1.8 | | 0.5 | (≤2.2) | |
| Arsenic | 0.97 | 1.18 | CR | 0.21 | (≤0.54) | |
| Barium | 219 | 169 | 26 | | | |
| Beryllium | 0.305 | 0.316 | 4 | | | |

LDC#: 21991L4
 SDG#: See Cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 3 of 4
 Reviewer: OR
 2nd Reviewer: W

METHOD: Metals (EPA Method 6020/6010/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

| Compound | Concentration (mg/Kg) | | (<50) RPD | (mg/Kg) Difference | (mg/Kg) Limits | Qualifications (Parent Only) |
|------------|-----------------------|-------|------------------------|-----------------------|-------------------|---------------------------------|
| | 6 | 7 | | | | |
| Boron | 5.3 | 6.8 | | 1.5 | (<10.8) | |
| Cadmium | 0.69 | 0.77 | 11 | | | |
| Calcium | 18700 | 16900 | 10 | | | |
| Chromium | 5.20 | 6.48 | 22 | | | |
| Cobalt | 9.6 | 8.8 | | 0.8 | (<2.2) | |
| Copper | 37.2 | 35.8 | 4 | | | |
| Iron | 14700 | 15400 | 5 | | | |
| Lead | 334 | 350 | 5 | | | |
| Magnesium | 8590 | 9350 | 8 | | | |
| Manganese | 268 | 362 | 30 | | | |
| Mercury | 0.024 | 0.014 | | 0.01 | (<0.019) | |
| Molybdenum | 0.86 | 0.60 | <u>38</u> <u>OR</u> | 0.26 | (<0.32) | |
| Nickel | 23.4 | 26.3 | 12 | | | |
| Platinum | 0.019 | 0.019 | | 0 | (<0.11) | |
| Potassium | 1420 | 1640 | 14 | | | |
| Sodium | 4310 | 2820 | 42 | | | |
| Strontium | 134 | 119 | | 15 | (<43.2) | |
| Thallium | 0.197 | 0.169 | 15 | | | |

LDC#: 21991L4
 SDG#: See Cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 4 of 4
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA Method 6020/6010/7000)

- N NA Were field duplicate pairs identified in this SDG?
- N NA Were target analytes detected in the field duplicate pairs?

| Compound | Concentration (mg/Kg) | | (≤50) | (mg/Kg) | (mg/Kg) | Qualifications (Parent Only) |
|----------|-----------------------|------|-------|------------|---------|---------------------------------|
| | 6 | 7 | RPD | Difference | Limits | |
| Tin | 5.5 | 4.9 | | 0.6 | (<10.8) | |
| Titanium | 1050 | 932 | 12 | | | |
| Tungsten | 0.14 | 0.17 | | 0.03 | (≤0.11) | |
| Uranium | 1.22 | 1.11 | 9 | | | |
| Vanadium | 38.3 | 43.5 | 13 | | | |
| Zinc | 42.4 | 40.2 | 5 | | | |

Laboratory Data Consultants, Inc. Data Validation Report

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

Collection Date: September 24 through September 25, 2009

LDC Report Date: November 18, 2009

Matrix: Water

Parameters: Metals

Validation Level: Stage 2B

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): R0905462

Sample Identification

M-89B
M-2AB
M-2009AB
FiltB092509-A2
M-89BMS
M-89BDUP
M-2ABMS
M-2ABDUP

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010B, 6020, and 7000 for Metals. The metals analyzed were Aluminum, Antimony, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Tungsten, Uranium, Vanadium, and Zinc.

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) 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.

Blanks are summarized in Section IV.

Field duplicates are summarized in Section XIV.

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. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

| Method Blank ID | Analyte | Maximum Concentration | Associated Samples |
|-----------------|--|---|-----------------------------|
| ICB/CCB | Antimony Boron Cobalt Copper Lead Manganese Sodium Strontium Thallium Tungsten Uranium | 0.050 ug/L 5.5 ug/L 0.5 ug/L 0.8 ug/L 0.007 ug/L 0.2 ug/L 149 ug/L 0.1 ug/L 0.007 ug/L 0.08 ug/L 0.004 ug/L | All samples in SDG R0905462 |

Sample concentrations were compared to concentrations detected in the method blanks as required by the QAPP. No sample data was qualified with the following exceptions:

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|--------|----------|------------------------|------------------------------|
| M-89B | Thallium | 0.185 ug/L | 0.200U ug/L |

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|----------------|---|--|--|
| M-2AB | Copper Manganese Thallium | 9.8 ug/L 1.6 ug/L 0.113 ug/L | 10.0U ug/L 5.0U ug/L 0.200U ug/L |
| M-2009AB | Copper Manganese Thallium | 9.9 ug/L 1.2 ug/L 0.117 ug/L | 10.0U ug/L 5.0U ug/L 0.200U ug/L |
| FiltB092509-A2 | Boron Lead Manganese Strontium Tungsten | 11.0 ug/L 0.006 ug/L 0.6 ug/L 0.2 ug/L 0.02 ug/L | 50.0U ug/L 0.020U ug/L 5.0U ug/L 10.0U ug/L 0.10U ug/L |

Sample FB080409-SO (from SDG R0904290) was identified as a field blank. No metal contaminants were found in this blank with the following exceptions:

| Field Blank ID | Sampling Date | Analyte | Concentration | Associated Samples |
|----------------|---------------|---|---|----------------------------|
| FB080409-SO | 8/4/09 | Boron Chromium Copper Tungsten | 9.0 ug/L 0.9 ug/L 0.8 ug/L 0.01 ug/L | M-89B M-2AB M-2009AB |

Sample concentrations were compared to concentrations detected in the field blanks as required by the QAPP. No sample data was qualified with the following exceptions:

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|----------|--------------------|------------------------|------------------------------|
| M-2AB | Copper Tungsten | 9.8 ug/L 0.82 ug/L | 10.0U ug/L 1.00U ug/L |
| M-2009AB | Copper | 9.9 ug/L | 10.0U ug/L |

Sample FiltB092509-A2 was identified as a filter blank. No metal contaminants were found in this blank with the following exceptions:

| Filter Blank ID | Sampling Date | Analyte | Concentration | Associated Samples |
|-----------------|---------------|---|---|-----------------------------------|
| FltB092509-A2 | 9/25/09 | Boron Calcium Lead Magnesium Manganese Sodium Strontium Tungsten Zinc | 11.0 ug/L 34 ug/L 0.006 ug/L 3.8 ug/L 0.6 ug/L 398 ug/L 0.2 ug/L 0.02 ug/L 3.6 ug/L | No associated samples in this SDG |

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results 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. Internal Standards

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met with the following exceptions:

| Diluted Sample | Analyte | %D (Limits) | Associated Samples | Flag | A or P |
|----------------|---------|------------------|----------------------------|---|--------|
| M-2ABL | Uranium | 21 (≤ 10) | M-89B M-2AB M-2009AB | J (all detects) UJ (all non-detects) | A |

XII. Sample Result Verification and Project Quantitation Limit

All analytes reported below the PQL were qualified as follows:

| Sample | Finding | Flag | A or P |
|-----------------------------|--------------------------------------|-----------------|--------|
| All samples in SDG R0905462 | All analytes reported below the PQL. | J (all detects) | A |

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

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

XIV. Field Duplicates

Samples M-2AB and M-2009AB were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

| Compound | Concentration (ug/L) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|-----------|----------------------|----------|-----------------|---------------------|-------|--------|
| | M-2AB | M-2009AB | | | | |
| Aluminum | 70.4 | 62.3 | - | 8.1 (≤ 50.0) | - | - |
| Barium | 50.8 | 51.3 | 1 (≤ 50) | - | - | - |
| Boron | 3290 | 3310 | 1 (≤ 50) | - | - | - |
| Calcium | 598000 | 603000 | 1 (≤ 50) | - | - | - |
| Chromium | 19900 | 19800 | 1 (≤ 50) | - | - | - |
| Copper | 9.8 | 9.9 | - | 0.1 (≤ 10.0) | - | - |
| Iron | 45.9 | 46.9 | - | 1 (≤ 20.0) | - | - |
| Magnesium | 333000 | 338000 | 1 (≤ 50) | - | - | - |

| Compound | Concentration (ug/L) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|------------|----------------------|----------|-----------------|------------------------|-------|--------|
| | M-2AB | M-2009AB | | | | |
| Manganese | 1.6 | 1.2 | - | 0.4 (≤ 5.0) | - | - |
| Molybdenum | 26 | 25.5 | 2 (≤ 50) | - | - | - |
| Nickel | 4.4 | 5.4 | - | 1 (≤ 2.0) | - | - |
| Platinum | 0.08 | 0.1 | - | 0.02 (≤ 1.00) | - | - |
| Potassium | 32800 | 32500 | 1 (≤ 50) | - | - | - |
| Sodium | 1960000 | 1910000 | 3 (≤ 50) | - | - | - |
| Strontium | 18300 | 18000 | 2 (≤ 50) | - | - | - |
| Thallium | 0.113 | 0.117 | - | 0.004 (≤ 0.200) | - | - |
| Tungsten | 0.82 | 1.08 | - | 0.26 (≤ 1.00) | - | - |
| Uranium | 19.5 | 18.8 | 4 (≤ 50) | - | - | - |
| Vanadium | 23.7 | 23.8 | 0 (≤ 50) | - | - | - |
| Zinc | 0.8 | 1.6 | - | 0.8 (≤ 10.0) | - | - |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Data Qualification Summary - SDG R0905462**

| SDG | Sample | Analyte | Flag | A or P | Reason (Code) |
|----------|--|---|---|--------|--|
| R0905462 | M-89B M-2AB M-2009AB | Uranium | J (all detects) UJ (all non-detects) | A | ICP serial dilution (%D) (sd) |
| R0905462 | M-89B M-2AB M-2009AB FiltB092509-A2 | All analytes reported below the PQL. | J (all detects) | A | Sample result verification (PQL) (sp) |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Laboratory Blank Data Qualification Summary - SDG R0905462**

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|----------------|---|--|--------|------|
| R0905462 | M-89B | Thallium | 0.200U ug/L | A | bl |
| R0905462 | M-2AB | Copper Manganese Thallium | 10.0U ug/L 5.0U ug/L 0.200U ug/L | A | bl |
| R0905462 | M-2009AB | Copper Manganese Thallium | 10.0U ug/L 5.0U ug/L 0.200U ug/L | A | bl |
| R0905462 | FiltB092509-A2 | Boron Lead Manganese Strontium Tungsten | 50.0U ug/L 0.020U ug/L 5.0U ug/L 10.0U ug/L 0.10U ug/L | A | bl |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Field Blank Data Qualification Summary - SDG R0905462**

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|----------|--------------------|---------------------------------|--------|------|
| R0905462 | M-2AB | Copper Tungsten | 10.0U ug/L 1.00U ug/L | A | bf |
| R0905462 | M-2009AB | Copper | 10.0U ug/L | A | bf |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Filter Blank Data Qualification Summary - SDG R0905462**

No Sample Data Qualified in this SDG

Tronox Northgate Henderson

LDC #: 21991M4

VALIDATION COMPLETENESS WORKSHEET

SDG #: R0905462

Stage 2B

Laboratory: Columbia Analytical Services

Date: 11/17/09

Page: 1 of 1

Reviewer: CR

2nd Reviewer: W

METHOD: Metals (EPA SW 846 Method 6010B/6020/7000)

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: 9/24/09 - 9/25/09 |
| II. | ICP/MS Tune | A | |
| III. | Calibration | A | |
| IV. | Blanks | SW | |
| V. | ICP Interference Check Sample (ICS) Analysis | A | |
| VI. | Matrix Spike Analysis | A | MS |
| VII. | Duplicate Sample Analysis | A | DUP |
| VIII. | Laboratory Control Samples (LCS) | A | LCS |
| IX. | Internal Standard (ICP-MS) | N | Not reviewed |
| X. | Furnace Atomic Absorption QC | N | Not utilized |
| XI. | ICP Serial Dilution | SW | |
| XII. | Sample Result Verification | N | |
| XIII. | Overall Assessment of Data | A | |
| XIV. | Field Duplicates | SW | (2,3) |
| XV. | Field Blanks | SW | Filter Blank = 4, FB = FB080409-GW (506# R0904200) |

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 | M-89B | 11 | FBW | 21 | | 31 | |
| 2 | M-2AB | 12 | | 22 | | 32 | |
| 3 | M-2009AB | 13 | | 23 | | 33 | |
| 4 | FiltB092509-A2 | 14 | | 24 | | 34 | |
| 5 | M-89BMS | 15 | | 25 | | 35 | |
| 6 | M-89BDUP | 16 | | 26 | | 36 | |
| 7 | M-2ABMS | 17 | | 27 | | 37 | |
| 8 | M-2ABDUP | 18 | | 28 | | 38 | |
| 9 | | 19 | | 29 | | 39 | |
| 10 | | 20 | | 30 | | 40 | |

Notes: _____

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Soil preparation factor applied: NA
 Associated Samples: All

Reason Code: bl

| Analyte | Maximum PB* (mg/Kg) | Maximum PB* (ug/L) | Maximum ICB/CCB* (ug/L) | Action Limit | Associated Samples | | | | |
|---------|---------------------|--------------------|-------------------------|--------------|--------------------|---------------|---------------|---|--|
| | | | | | 1 | 2 | 3 | 4 | |
| Sb | | | 0.050 | | | | | | |
| B | | | 5.5 | | | | 11.0 / 50.0 | | |
| Co | | | 0.5 | | | | | | |
| Cu | | | 0.8 | | 9.8 / 10.0 | | 9.9 / 10.0 | | |
| Pb | | | 0.007 | | | | 0.006 / 0.020 | | |
| Mn | | | 0.2 | | 1.6 / 5.0 | | 1.2 / 5.0 | | |
| Na | | | 149 | | | | | | |
| Sr | | | 0.1 | | | | 0.2 / 10.0 | | |
| Tl | | | 0.007 | | 0.185 / 0.200 | 0.113 / 0.200 | 0.117 / 0.200 | | |
| W | | | 0.08 | | | | | | |
| U | | | 0.004 | | | | 0.02 / 0.10 | | |

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: Metals (EPA Method 6020/6010/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

| Compound | Concentration (ug/L) | | (≤30) | Difference | Limits | Qualifications (Parent Only) |
|------------|----------------------|---------|-------|------------|----------|---------------------------------|
| | 2 | 3 | RPD | | | |
| Aluminum | 70.4 | 62.3 | | 8.1 | (≤50.0) | |
| Barium | 50.8 | 51.3 | 1 | | | |
| Boron | 3290 | 3310 | 1 | | | |
| Calcium | 598000 | 603000 | 1 | | | |
| Chromium | 19900 | 19800 | 1 | | | |
| Copper | 9.8 | 9.9 | | 0.1 | (≤10.0) | |
| Iron | 45.9 | 46.9 | | 1 | (≤20.0) | |
| Magnesium | 333000 | 338000 | 1 | | | |
| Manganese | 1.6 | 1.2 | | 0.4 | (≤5.0) | |
| Molybdenum | 26.0 | 25.5 | 2 | | | |
| Nickel | 4.4 | 5.4 | | 1 | (≤2.0) | |
| Platinum | 0.08 | 0.10 | | 0.02 | (≤1.00) | |
| Potassium | 32800 | 32500 | 1 | | | |
| Sodium | 1960000 | 1910000 | 3 | | | |
| Strontium | 18300 | 18000 | 2 | | | |
| Thallium | 0.113 | 0.117 | | 0.004 | (≤0.200) | |
| Tungsten | 0.82 | 1.08 | | 0.26 | (≤1.00) | |
| Uranium | 19.5 | 18.8 | 4 | | | |
| Vanadium | 23.7 | 23.8 | 0 | | | |

LDC#: 21991M4
SDG#: See Cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

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

METHOD: Metals (EPA Method 6020/6010/7000)

- N NA Were field duplicate pairs identified in this SDG?
- Y NA Were target analytes detected in the field duplicate pairs?

| Compound | Concentration (ug/L) | | (≤ 30) | Difference | Limits | Qualifications (Parent Only) |
|----------|----------------------|-----|---------------|------------|-----------------|---------------------------------|
| | 2 | 3 | RPD | | | |
| Zinc | 0.8 | 1.6 | | 0.8 | (≤ 10.0) | |

V:\FIELD DUPLICATES\FD_inorganic\21991M4.wpd

Laboratory Data Consultants, Inc. Data Validation Report

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

Collection Date: September 24 through September 25, 2009

LDC Report Date: December 21, 2009

Matrix: Soil/Water

Parameters: Metals

Validation Level: Stage 2B

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): R0905464

Sample Identification

| | |
|----------------|---------------|
| SA205-0.5B | SA208-0.5B |
| SA205-10B | SA208-7B |
| SA205-25B | SA205-0.5BMS |
| SA205-41B | SA205-0.5BDUP |
| SA84-0.5B | SA101-0.5BMS |
| SA84-10B | SA101-0.5BDUP |
| SA84009-10B | |
| SA84-25B | |
| SA84-43B | |
| EB092509-SO1A2 | |
| EB092509-SO2A4 | |
| SA101-0.5B | |
| SA101-10B | |
| SA101-25B | |
| SA101-42B | |
| SA121-0.5B | |
| SA121009-0.5B | |
| SA121-10B | |
| SA121-25B | |
| SA121-44B | |

Introduction

This data review covers 24 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010B, 6020, and 7000 for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Tungsten, Uranium, Vanadium, and Zinc.

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) 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.

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- 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.
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- 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. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

*IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

| Method Blank ID | Analyte | Maximum Concentration | Associated Samples |
|-----------------|--|---|-----------------------------------|
| PB (prep blank) | Boron Chromium | 2.4 ug/L 0.7 ug/L | All water samples in SDG R0905464 |
| ICB/CCB | Aluminum Barium Boron Calcium Cobalt Magnesium Manganese Molybdenum Strontium Thallium Tungsten Uranium | 2.1 ug/L 1.3 ug/L 2.0 ug/L 9.1 ug/L 0.7 ug/L 2.2 ug/L 0.5 ug/L 0.7 ug/L 0.1 ug/L 0.008 ug/L 0.08 ug/L 0.005 ug/L | All water samples in SDG R0905464 |
| PB (prep blank) | Antimony Chromium Tin | 0.8 mg/Kg 0.07 mg/Kg 3.6 mg/Kg | All soil samples in SDG R0905464 |
| ICB/CCB | Boron | 2.0 ug/L | All soil samples in SDG R0905464 |

| Method Blank ID | Analyte | Maximum Concentration | Associated Samples |
|-----------------|--------------------|------------------------|--|
| ICB/CCB | Barium Titanium | 0.80 ug/L 0.03 ug/L | SA101-10B SA101-25B SA101-42B SA121-0.5B SA121009-0.5B SA121-10B SA121-25B SA121-44B SA208-0.5B SA208-7B |
| ICB/CCB | Barium | 0.60 ug/L | SA205-10B SA205-25B SA205-41B SA84-0.5B SA84-10B SA84009-10B SA84-25B SA84-43B SA101-0.5B |
| ICB/CCB | Manganese | 0.10 ug/L | SA205-10B SA205-25B SA205-41B SA84-0.5B SA84-10B SA84009-10B SA84-25B SA84-43B SA101-0.5B SA101-10B SA101-25B SA101-42B SA121-0.5B SA121009-0.5B SA121-10B SA121-25B SA121-44B SA208-0.5B SA208-7B |
| ICB/CCB | Sodium | 30.0 ug/L | SA205-0.5B |
| ICB/CCB | Tungsten | 0.067 ug/L | SA121-0.5B SA121009-0.5B SA121-10B SA121-25B SA121-44B SA208-0.5B SA208-7B |

| Method Blank ID | Analyte | Maximum Concentration | Associated Samples |
|-----------------|-----------|-----------------------|--|
| ICB/CCB | Tungsten | 0.057 ug/L | SA205-0.5B SA205-10B SA205-25B SA205-41B SA84-0.5B SA84-10B SA84009-10B SA84-25B SA84-43B SA101-0.5B SA101-10B SA101-25B SA101-42B |
| ICB/CCB | Beryllium | 0.009 ug/L | SA121-25B |

Sample concentrations were compared to concentrations detected in the method blanks as required by the QAPP. No sample data was qualified with the following exceptions:

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|----------------|---|---|--|
| EB092509-SO1A2 | Aluminum Magnesium Manganese Strontium | 4.7 ug/L 11.2 ug/L 2.4 ug/L 0.6 ug/L | 50.0U ug/L 20.0U ug/L 5.0U ug/L 10.0U ug/L |
| EB092509-SO2A4 | Aluminum Boron Chromium Manganese Strontium Tungsten | 8.5 ug/L 2.1 ug/L 0.6 ug/L 4.7 ug/L 1.4 ug/L 0.02 ug/L | 50.0U ug/L 50.0U ug/L 5.0U ug/L 5.0U ug/L 10.0U ug/L 0.10U ug/L |
| SA205-0.5B | Antimony Boron Tin | 1.1 mg/Kg 7.9 mg/Kg 4.3 mg/Kg | 2.2U mg/Kg 10.9U mg/Kg 10.9U mg/Kg |
| SA205-10B | Antimony Boron Tin | 1.6 mg/Kg 6.9 mg/Kg 4.4 mg/Kg | 2.1U mg/Kg 10.4U mg/Kg 10.4U mg/Kg |
| SA205-25B | Antimony Boron Tin | 1.1 mg/Kg 8.0 mg/Kg 4.4 mg/Kg | 2.1U mg/Kg 10.4U mg/Kg 10.4U mg/Kg |
| SA205-41B | Antimony Tin | 1.2 mg/Kg 4.7 mg/Kg | 2.2U mg/Kg 10.9U mg/Kg |
| SA84-0.5B | Tin | 6.3 mg/Kg | 10.1U mg/Kg |

*Indicates change as the result of report review.
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| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|---------------|--------------------------|-------------------------------------|--|
| SA84-10B | Antimony Tin | 1.4 mg/Kg 4.3 mg/Kg | 2.1U mg/Kg 10.3U mg/Kg |
| SA84009-10B | Antimony Tin | 1.6 mg/Kg 4.5 mg/Kg | 2.1U mg/Kg 10.7U mg/Kg |
| SA84-25B | Antimony Tin | 1.1 mg/Kg 4.2 mg/Kg | 2.1U mg/Kg 10.3U mg/Kg |
| SA84-43B | Antimony Tin | 1.6 mg/Kg 4.3 mg/Kg | 2.3U mg/Kg 11.6U mg/Kg |
| SA101-0.5B | Antimony Tin | 1.5 mg/Kg 4.3 mg/Kg | 2.1U mg/Kg 10.3U mg/Kg |
| SA101-10B | Antimony Boron Tin | 1.3 mg/Kg 9.3 mg/Kg 4.5 mg/Kg | 2.1U mg/Kg 10.6U mg/Kg 10.6U mg/Kg |
| SA101-25B | Antimony Tin | 1.3 mg/Kg 4.9 mg/Kg | 2.4U mg/Kg 11.9U mg/Kg |
| SA101-42B | Antimony Tin | 1.0 mg/Kg 4.9 mg/Kg | 2.5U mg/Kg 12.6U mg/Kg |
| SA121-0.5B | Antimony Boron Tin | 1.9 mg/Kg 8.0 mg/Kg 4.1 mg/Kg | 2.1U mg/Kg 10.7U mg/Kg 10.7U mg/Kg |
| SA121009-0.5B | Boron Tin | 8.4 mg/Kg 4.7 mg/Kg | 10.8U mg/Kg 10.8U mg/Kg |
| SA121-10B | Antimony Tin | 1.4 mg/Kg 4.2 mg/Kg | 2.1U mg/Kg 10.7U mg/Kg |
| SA121-25B | Antimony Tin | 1.6 mg/Kg 4.7 mg/Kg | 2.2U mg/Kg 11.0U mg/Kg |
| SA121-44B | Antimony Tin | 1.0 mg/Kg 4.2 mg/Kg | 2.0U mg/Kg 10.2U mg/Kg |
| SA208-0.5B | Antimony Boron Tin | 1.8 mg/Kg 7.4 mg/Kg 4.6 mg/Kg | 2.1U mg/Kg 10.6U mg/Kg 10.6U mg/Kg |

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|----------|--------------------------|-------------------------------------|--|
| SA208-7B | Antimony Boron Tin | 1.4 mg/Kg 9.3 mg/Kg 4.4 mg/Kg | 2.2U mg/Kg 10.8U mg/Kg 10.8U mg/Kg |

Samples EB092509-SO1A2 and EB092509-SO2A4 were identified as equipment blanks. No metal contaminants were found in these blanks with the following exceptions:

| Equipment Blank ID | Sampling Date | Analyte | Concentration | Associated Samples |
|--------------------|---------------|---|--|---|
| EB092509-SO1A2 | 9/25/09 | Aluminum Calcium Iron Magnesium Manganese Potassium Sodium Strontium Tungsten Titanium Zinc | 4.7 ug/L 197 ug/L 8.8 ug/L 11.2 ug/L 2.4 ug/L 192 ug/L 112 ug/L 0.6 ug/L 0.78 ug/L 0.4 ug/L 6.4 ug/L | SA208-0.5B SA208-7B |
| EB092509-SO2A4 | 9/25/09 | Aluminum Boron Calcium Chromium Iron Lead Magnesium Manganese Mercury Potassium Sodium Strontium Titanium Tungsten Zinc | 8.5 ug/L 2.1 ug/L 298 ug/L 0.6 ug/L 29.2 ug/L 0.036 ug/L 30.6 ug/L 4.7 ug/L 0.03 ug/L 64 ug/L 83.6 ug/L 1.4 ug/L 0.5 ug/L 0.02 ug/L 2.1 ug/L | SA101-0.5B SA101-10B SA101-25B SA101-42B SA121-0.5B SA121009-0.5B SA121-10B SA121-25B SA121-44B |

Sample concentrations were compared to concentrations detected in the equipment blanks as required by the QAPP. No sample data was qualified with the following exceptions:

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|-------------|----------|------------------------|------------------------------|
| *SA208-0.5B | Tungsten | 0.14 mg/Kg | 0.14J+ mg/Kg |
| *SA208-7B | Tungsten | 0.27 mg/Kg | 0.27J+ mg/Kg |
| SA101-0.5B | Mercury | 0.012 mg/Kg | 0.018U mg/Kg |

*Indicates change as the result of report review.
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| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|---------------|------------------|--------------------------|------------------------------|
| SA101-10B | Boron Mercury | 9.3 mg/Kg 0.012 mg/Kg | 10.6U mg/Kg 0.018U mg/Kg |
| SA101-25B | Mercury | 0.018 mg/Kg | 0.020U mg/Kg |
| SA101-42B | Mercury | 0.004 mg/Kg | 0.018U mg/Kg |
| SA121-0.5B | Boron | 8.0 mg/Kg | 10.7U mg/Kg |
| SA121009-0.5B | Boron | 8.4 mg/Kg | 10.8U mg/Kg |
| SA121-10B | Mercury | 0.006 mg/Kg | 0.018U mg/Kg |
| SA121-25B | Mercury | 0.009 mg/Kg | 0.023U mg/Kg |
| SA121-44B | Mercury | 0.004 mg/Kg | 0.020U mg/Kg |

*Removed Boron for samples noted above.

Samples FB072909-SO (from SDG R0904226) and FB080309-SO (from SDG R0904279) were identified as field blanks. No metal contaminants were found in these blanks with the following exceptions:

| Field Blank ID | Sampling Date | Analyte | Concentration | Associated Samples |
|----------------|---------------|---|--|------------------------|
| FB072909-SO | 7/29/09 | Aluminum Barium Calcium Copper Iron Lead Magnesium Manganese Sodium Strontium Titanium Tungsten Uranium Zinc | 8.1 ug/L 1.0 ug/L 582 ug/L 0.8 ug/L 12.1 ug/L 0.359 ug/L 28.4 ug/L 4.3 ug/L 160 ug/L 1.4 ug/L 0.5 ug/L 0.03 ug/L 0.006 ug/L 10.0 ug/L | SA208-0.5B SA208-7B |

| Field Blank ID | Sampling Date | Analyte | Concentration | Associated Samples |
|----------------|---------------|-----------|---------------|--------------------|
| FB080309-SO | 8/3/09 | Aluminum | 18.6 ug/L | SA205-0.5B |
| | | Barium | 0.8 ug/L | SA205-10B |
| | | Calcium | 113 ug/L | SA205-25B |
| | | Iron | 136 ug/L | SA205-41B |
| | | Lead | 0.042 ug/L | SA84-0.5B |
| | | Magnesium | 33.6 ug/L | SA84-10B |
| | | Manganese | 7.5 ug/L | SA84009-10B |
| | | Sodium | 66.0 ug/L | SA84-25B |
| | | Strontium | 1.0 ug/L | SA84-43B |
| | | Titanium | 1.5 ug/L | SA101-0.5B |
| | | Tungsten | 0.04 ug/L | SA101-10B |
| | | Zinc | 0.8 ug/L | SA101-25B |
| | | | | SA101-42B |
| | | | | SA121-0.5B |
| | | | | SA121009-0.5B |
| | | | | SA121-10B |
| | | | | SA121-25B |
| | | | | SA121-44B |

Sample concentrations were compared to concentrations detected in the field blanks as required by the QAPP. No sample data was qualified.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

| Spike ID (Associated Samples) | Analyte | %R (Limits) | Flag | A or P |
|--|---|--|--|--------|
| SA205-0.5BMS (SA205-0.5B SA205-10B SA205-25B SA205-41B SA84-0.5B SA84-10B SA84009-10B SA84-25B SA84-43B SA101-0.5B SA101-10B SA101-25B SA101-42B SA121-0.5B SA121009-0.5B SA121-10B SA121-25B SA121-44B) | Antimony Manganese Selenium Tungsten | 49.4 (75-125) 60.5 (75-125) 74.9 (75-125) 70.1 (75-125) | J- (all detects) UJ (all non-detects) | A |
| SA205-0.5BMS (SA205-0.5B SA205-10B SA205-25B SA205-41B SA84-0.5B SA84-10B SA84009-10B SA84-25B SA84-43B SA101-0.5B SA101-10B SA101-25B SA101-42B SA121-0.5B SA121009-0.5B SA121-10B SA121-25B SA121-44B) | Titanium | 126.3 (75-125) | J+ (all detects) | A |

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

| DUP ID (Associated Samples) | Analyte | RPD (Limits) | Difference (Limits) | Flag | A or P |
|---|---|---|---|---|--------|
| SA205-0.5BDUP (SA205-0.5B SA205-10B SA205-25B SA205-41B SA84-0.5B SA84-10B SA84009-10B SA84-25B SA84-43B SA101-0.5B SA101-10B SA101-25B SA101-42B SA121-0.5B SA121009-0.5B SA121-10B SA121-25B SA121-44B) | Barium Calcium Chromium Manganese Sodium Strontium Titanium | 43.8 (≤ 20) 74.3 (≤ 20) 21.1 (≤ 20) 23.7 (≤ 20) 53.1 (≤ 20) - 21.7 (≤ 20) | - - - - - 130 mg/Kg (≤ 43.4) - | J (all detects) UJ (all non-detects) | A |

VIII. Laboratory Control Samples (LCS)

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

IX. Internal Standards

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met with the following exceptions:

| Diluted Sample | Analyte | %D (Limits) | Associated Samples | Flag | A or P |
|----------------|--|--|--|---|--------|
| SA205-0.5BL | Beryllium Iron Manganese Nickel | 12 (≤ 10) 11.8 (≤ 10) 10.6 (≤ 10) 13.0 (≤ 10) | SA205-0.5B SA205-10B SA205-25B SA205-41B SA84-0.5B SA84-10B SA84009-10B SA84-25B SA84-43B SA101-0.5B SA101-10B SA101-25B SA101-42B SA121-0.5B SA121009-0.5B SA121-10B SA121-25B SA121-44B | J (all detects) UJ (all non-detects) | A |

XII. Sample Result Verification and Project Quantitation Limit

All analytes reported below the PQL were qualified as follows:

| Sample | Finding | Flag | A or P |
|-----------------------------|--------------------------------------|-----------------|--------|
| All samples in SDG R0905464 | All analytes reported below the PQL. | J (all detects) | A |

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

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

XIV. Field Duplicates

Samples SA84-10B and SA84009-10B and samples SA121-0.5B and SA121009-0.5B were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

| Compound | Concentration (mg/Kg) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|----------|-----------------------|-------------|------------------|---------------------|-------|--------|
| | SA84-10B | SA84009-10B | | | | |
| Aluminum | 7260 | 9690 | 29 (≤ 50) | - | - | - |
| Antimony | 1.4 | 1.6 | - | 0.2 (≤ 2.1) | - | - |

| Compound | Concentration (mg/Kg) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|------------|-----------------------|-------------|------------------|------------------------|-------|--------|
| | SA84-10B | SA84009-10B | | | | |
| Arsenic | 3.81 | 3.77 | 1 (≤ 50) | - | - | - |
| Barium | 150 | 209 | 33 (≤ 50) | - | - | - |
| Beryllium | 0.512 | 0.462 | 10 (≤ 50) | - | - | - |
| Boron | 40.7 | 54.7 | - | 14 (≤ 10.7) | - | - |
| Cadmium | 0.12 | 0.19 | - | 0.07 (≤ 0.11) | - | - |
| Calcium | 26700 | 18800 | 35 (≤ 50) | - | - | - |
| Chromium | 7.68 | 7.62 | 1 (≤ 50) | - | - | - |
| Cobalt | 6.4 | 7.5 | - | 1.1 (≤ 2.1) | - | - |
| Copper | 15.9 | 18.8 | 17 (≤ 50) | - | - | - |
| Iron | 12400 | 15900 | 25 (≤ 50) | - | - | - |
| Lead | 8 | 9.1 | - | 1.1 (≤ 2.1) | - | - |
| Magnesium | 9200 | 9550 | 4 (≤ 50) | - | - | - |
| Manganese | 320 | 349 | 9 (≤ 50) | - | - | - |
| Mercury | 0.008 | 0.01 | - | 0.002 (≤ 0.016) | - | - |
| Molybdenum | 0.35 | 0.43 | - | 0.08 (≤ 0.32) | - | - |
| Nickel | 14.1 | 16.2 | 14 (≤ 50) | - | - | - |
| Platinum | 0.01 | 0.01 | - | 0 (≤ 0.11) | - | - |
| Potassium | 2000 | 2590 | 26 (≤ 50) | - | - | - |
| Sodium | 623 | 794 | 24 (≤ 50) | - | - | - |
| Strontium | 178 | 223 | 22 (≤ 50) | - | - | - |

| Compound | Concentration (mg/Kg) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|----------|-----------------------|-------------|------------------|----------------------|-------|--------|
| | SA84-10B | SA84009-10B | | | | |
| Thallium | 0.091 | 0.091 | - | 0 (≤ 0.021) | - | - |
| Tin | 4.3 | 4.5 | - | 0.2 (≤ 10.7) | - | - |
| Titanium | 543 | 764 | 34 (≤ 50) | - | - | - |
| Tungsten | 0.18 | 0.14 | - | 0.04 (≤ 0.11) | - | - |
| Uranium | 1.08 | 1.01 | 7 (≤ 50) | - | - | - |
| Vanadium | 33.1 | 46 | 33 (≤ 50) | - | - | - |
| Zinc | 29.6 | 33.7 | 13 (≤ 50) | - | - | - |

| Compound | Concentration (mg/Kg) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|-----------|-----------------------|---------------|------------------|----------------------|-------|--------|
| | SA121-0.5B | SA121009-0.5B | | | | |
| Aluminum | 8960 | 9010 | 1 (≤ 50) | - | - | - |
| Antimony | 1.9 | 2.2 | - | 0.3 (≤ 2.2) | - | - |
| Arsenic | 2.82 | 2.35 | 18 (≤ 50) | - | - | - |
| Barium | 172 | 188 | 9 (≤ 50) | - | - | - |
| Beryllium | 0.49 | 0.412 | 17 (≤ 50) | - | - | - |
| Boron | 8 | 8.4 | - | 0.4 (≤ 10.8) | - | - |
| Cadmium | 0.15 | 0.17 | - | 0.02 (≤ 0.11) | - | - |
| Calcium | 30100 | 28600 | 5 (≤ 50) | - | - | - |
| Chromium | 9.37 | 7.4 | - | 1.97 (≤ 2.2) | - | - |
| Cobalt | 7.4 | 7 | - | 0.4 (≤ 2.2) | - | - |
| Copper | 18 | 19.6 | 9 (≤ 50) | - | - | - |

| Compound | Concentration (mg/Kg) | | RPD (Limits) | Difference (Limits) | Flags | A or P |
|------------|-----------------------|---------------|------------------|------------------------|-------|--------|
| | SA121-0.5B | SA121009-0.5B | | | | |
| Iron | 15500 | 15700 | 1 (≤ 50) | - | - | - |
| Lead | 19.4 | 12.3 | 45 (≤ 50) | - | - | - |
| Magnesium | 9220 | 9530 | 3 (≤ 50) | - | - | - |
| Manganese | 355 | 387 | 9 (≤ 50) | - | - | - |
| Mercury | 0.043 | 0.041 | - | 0.002 (≤ 0.019) | - | - |
| Molybdenum | 0.9 | 0.82 | - | 0.08 (≤ 0.32) | - | - |
| Nickel | 15.5 | 16.2 | 4 (≤ 50) | - | - | - |
| Platinum | 0.011 | 0.009 | - | 0.002 (≤ 0.11) | - | - |
| Potassium | 2420 | 2340 | 3 (≤ 50) | - | - | - |
| Sodium | 487 | 481 | 1 (≤ 50) | - | - | - |
| Strontium | 202 | 195 | - | 7 (≤ 43.2) | - | - |
| Thallium | 0.122 | 0.089 | - | 0.033 (≤ 0.089) | - | - |
| Tin | 4.1 | 4.7 | - | 0.6 (≤ 10.8) | - | - |
| Titanium | 733 | 744 | 1 (≤ 50) | - | - | - |
| Tungsten | 0.23 | 0.18 | - | 0.05 (≤ 0.11) | - | - |
| Uranium | 0.875 | 0.766 | 13 (≤ 50) | - | - | - |
| Vanadium | 43 | 44.7 | 4 (≤ 50) | - | - | - |
| Zinc | 37 | 41.3 | 11 (≤ 50) | - | - | - |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Data Qualification Summary - SDG R0905464**

| SDG | Sample | Analyte | Flag | A or P | Reason (Code) |
|----------|--|---|--|--------|-----------------------------------|
| R0905464 | SA205-0.5B SA205-10B SA205-25B SA205-41B SA84-0.5B SA84-10B SA84009-10B SA84-25B SA84-43B SA101-0.5B SA101-10B SA101-25B SA101-42B SA121-0.5B SA121009-0.5B SA121-10B SA121-25B SA121-44B | Antimony Manganese Selenium Tungsten | J- (all detects) UJ (all non-detects) | A | Matrix spike analysis (%R) (m) |
| R0905464 | SA205-0.5B SA205-10B SA205-25B SA205-41B SA84-0.5B SA84-10B SA84009-10B SA84-25B SA84-43B SA101-0.5B SA101-10B SA101-25B SA101-42B SA121-0.5B SA121009-0.5B SA121-10B SA121-25B SA121-44B | Titanium | J+ (all detects) | A | Matrix spike analysis (%R) (m) |

| SDG | Sample | Analyte | Flag | A or P | Reason (Code) |
|----------|--|--|---|--------|---|
| R0905464 | SA205-0.5B SA205-10B SA205-25B SA205-41B SA84-0.5B SA84-10B SA84009-10B SA84-25B SA84-43B SA101-0.5B SA101-10B SA101-25B SA101-42B SA121-0.5B SA121009-0.5B SA121-10B SA121-25B SA121-44B | Barium Calcium Chromium Manganese Sodium Titanium | J (all detects) UJ (all non-detects) | A | Duplicate sample analysis (RPD) (Id) |
| R0905464 | SA205-0.5B SA205-10B SA205-25B SA205-41B SA84-0.5B SA84-10B SA84009-10B SA84-25B SA84-43B SA101-0.5B SA101-10B SA101-25B SA101-42B SA121-0.5B SA121009-0.5B SA121-10B SA121-25B SA121-44B | Strontium | J (all detects) UJ (all non-detects) | A | Duplicate sample analysis (Difference) (Id) |
| R0905464 | SA205-0.5B SA205-10B SA205-25B SA205-41B SA84-0.5B SA84-10B SA84009-10B SA84-25B SA84-43B SA101-0.5B SA101-10B SA101-25B SA101-42B SA121-0.5B SA121009-0.5B SA121-10B SA121-25B SA121-44B | Beryllium Iron Manganese Nickel | J (all detects) UJ (all non-detects) | A | ICP serial dilution (%D) (sd) |

| SDG | Sample | Analyte | Flag | A or P | Reason (Code) |
|----------|--|--------------------------------------|-----------------|--------|---------------------------------------|
| R0905464 | SA205-0.5B SA205-10B SA205-25B SA205-41B SA84-0.5B SA84-10B SA84009-10B SA84-25B SA84-43B EB092509-SO1A2 EB092509-SO2A4 SA101-0.5B SA101-10B SA101-25B SA101-42B SA121-0.5B SA121009-0.5B SA121-10B SA121-25B SA121-44B SA208-0.5B SA208-7B | All analytes reported below the PQL. | J (all detects) | A | Sample result verification (PQL) (sp) |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Laboratory Blank Data Qualification Summary - SDG R0905464**

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|----------------|---|--|--------|------|
| R0905464 | EB092509-SO1A2 | Aluminum Magnesium Manganese Strontium | 50.0U ug/L 20.0U ug/L 5.0U ug/L 10.0U ug/L | A | bl |
| R0905464 | EB092509-SO2A4 | Aluminum Boron Chromium Manganese Strontium Tungsten | 50.0U ug/L 50.0U ug/L 5.0U ug/L 5.0U ug/L 10.0U ug/L 0.10U ug/L | A | bl |
| R0905464 | SA205-0.5B | Antimony Boron Tin | 2.2U mg/Kg 10.9U mg/Kg 10.9U mg/Kg | A | bl |
| R0905464 | SA205-10B | Antimony Boron Tin | 2.1U mg/Kg 10.4U mg/Kg 10.4U mg/Kg | A | bl |
| R0905464 | SA205-25B | Antimony Boron Tin | 2.1U mg/Kg 10.4U mg/Kg 10.4U mg/Kg | A | bl |

*Indicates change as the result of report review.
SDG R0905464

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|---------------|--------------------------|--|--------|------|
| R0905464 | SA205-41B | Antimony Tin | 2.2U mg/Kg 10.9U mg/Kg | A | bl |
| R0905464 | SA84-0.5B | Tin | 10.1U mg/Kg | A | bl |
| R0905464 | SA84-10B | Antimony Tin | 2.1U mg/Kg 10.3U mg/Kg | A | bl |
| R0905464 | SA84009-10B | Antimony Tin | 2.1U mg/Kg 10.7U mg/Kg | A | bl |
| R0905464 | SA84-25B | Antimony Tin | 2.1U mg/Kg 10.3U mg/Kg | A | bl |
| R0905464 | SA84-43B | Antimony Tin | 2.3U mg/Kg 11.6U mg/Kg | A | bl |
| R0905464 | SA101-0.5B | Antimony Tin | 2.1U mg/Kg 10.3U mg/Kg | A | bl |
| R0905464 | SA101-10B | Antimony Boron Tin | 2.1U mg/Kg 10.6U mg/Kg 10.6U mg/Kg | A | bl |
| R0905464 | SA101-25B | Antimony Tin | 2.4U mg/Kg 11.9U mg/Kg | A | bl |
| R0905464 | SA101-42B | Antimony Tin | 2.5U mg/Kg 12.6U mg/Kg | A | bl |
| R0905464 | SA121-0.5B | Antimony Boron Tin | 2.1U mg/Kg 10.7U mg/Kg 10.7U mg/Kg | A | bl |
| R0905464 | SA121009-0.5B | Boron Tin | 10.8U mg/Kg 10.8U mg/Kg | A | bl |
| R0905464 | SA121-10B | Antimony Tin | 2.1U mg/Kg 10.7U mg/Kg | A | bl |
| R0905464 | SA121-25B | Antimony Tin | 2.2U mg/Kg 11.0U mg/Kg | A | bl |
| R0905464 | SA121-44B | Antimony Tin | 2.0U mg/Kg 10.2U mg/Kg | A | bl |

*Indicates change as the result of report review.
SDG R0905464

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|------------|--------------------------|--|--------|------|
| R0905464 | SA208-0.5B | Antimony Boron Tin | 2.1U mg/Kg 10.6U mg/Kg 10.6U mg/Kg | A | bl |
| R0905464 | SA208-7B | Antimony Boron Tin | 2.2U mg/Kg 10.8U mg/Kg 10.8U mg/Kg | A | bl |

***Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Equipment Blank Data Qualification Summary - SDG R0905464**

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|-----------|---------------|------------------|------------------------------|--------|------|
| *R0905464 | SA208-0.5B | Tungsten | 0.14J+ mg/Kg | A | be |
| *R0905464 | SA208-7B | Tungsten | 0.27J+ mg/Kg | A | be |
| R0905464 | SA101-0.5B | Mercury | 0.018U mg/Kg | A | be |
| R0905464 | SA101-10B | Boron Mercury | 10.6U mg/Kg 0.018U mg/Kg | A | be |
| R0905464 | SA101-25B | Mercury | 0.020U mg/Kg | A | be |
| R0905464 | SA101-42B | Mercury | 0.018U mg/Kg | A | be |
| R0905464 | SA121-0.5B | Boron | 10.7U mg/Kg | A | be |
| R0905464 | SA121009-0.5B | Boron | 10.8U mg/Kg | A | be |
| R0905464 | SA121-10B | Mercury | 0.018U mg/Kg | A | be |
| R0905464 | SA121-25B | Mercury | 0.023U mg/Kg | A | be |
| R0905464 | SA121-44B | Mercury | 0.020U mg/Kg | A | be |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Field Blank Data Qualification Summary - SDG R0905464**

No Sample Data Qualified in this SDG

Tronox Northgate Henderson

LDC #: 21991N4
 SDG #: R0905464
 Laboratory: Columbia Analytical Services

VALIDATION COMPLETENESS WORKSHEET
 Stage 2B

Date: 11/25/09
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6010B/6020/7000)

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: 9/24/09-9/25/09 |
| II. | ICP/MS Tune | A | |
| III. | Calibration | A | |
| IV. | Blanks | SW | |
| V. | ICP Interference Check Sample (ICS) Analysis | A | |
| VI. | Matrix Spike Analysis | SW | MS |
| VII. | Duplicate Sample Analysis | SW | DUP |
| VIII. | Laboratory Control Samples (LCS) | A | LCS |
| IX. | Internal Standard (ICP-MS) | N | Not reviewed |
| X. | Furnace Atomic Absorption QC | N | Not utilized |
| XI. | ICP Serial Dilution | SW | |
| XII. | Sample Result Verification | N | |
| XIII. | Overall Assessment of Data | A | |
| XIV. | Field Duplicates | SW | (6,7), (16,17) |
| XV. | Field Blanks | SW | EB=10,11. FB=FB060309-SO, FB072909-S |

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: Soil/Water

| | | | | | | | | | | |
|----|----------------|---|----|----------------|---|----|---------------|---|----|-----|
| 1 | SA205-0.5B | S | 11 | EB092509-SO2A4 | W | 21 | SA208-0.5B | S | 31 | PBW |
| 2 | SA205-10B | | 12 | SA101-0.5B | S | 22 | SA208-7B | ↓ | 32 | PBS |
| 3 | SA205-25B | | 13 | SA101-10B | | 23 | SA205-0.5BMS | ↓ | 33 | |
| 4 | SA205-41B | | 14 | SA101-25B | | 24 | SA205-0.5BDUP | ↓ | 34 | |
| 5 | SAB4-0.5B | | 15 | SA101-42B | | 25 | SA101-0.5BMS | ↓ | 35 | |
| 6 | SAB4-10B | | 16 | SA121-0.5B | | 26 | SA101-0.5BDUP | ↓ | 36 | |
| 7 | SA84009-10B | | 17 | SA121009-0.5B | | 27 | | | 37 | |
| 8 | SA84-25B | | 18 | SA121-10B | | 28 | | | 38 | |
| 9 | SA84-43B | | 19 | SA121-25B | | 29 | | | 39 | |
| 10 | EB092509-SO1A2 | W | 20 | SA121-44B | | 30 | | | 40 | |

Notes: _____

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES
 Soil preparation factor applied: 200x x 5x dil
 Associated Samples: All Water

Reason Code: bl

| Analyte | Maximum PB* (mg/Kg) | Maximum PB* (ug/L) | Maximum ICB/CCB* (ug/L) | Action Limit | 10 | | 11 | |
|---------|---------------------|--------------------|-------------------------|--------------|-------------|--|-------------|--|
| | | | | | | | | |
| Al | | | 2.1 | | 4.7 / 50.0 | | 8.5 / 50.0 | |
| Ba | | | 1.3 | | | | | |
| B | | 2.4 | 2.0 | | | | 2.1 / 50.0 | |
| Ca | | | 9.1 | | | | | |
| Cr | | 0.7 | | | | | 0.6 / 5.0 | |
| Co | | | 0.7 | | | | | |
| Mg | | | 2.2 | | 11.2 / 20.0 | | | |
| Mn | | | 0.5 | | 2.4 / 5.0 | | 4.7 / 5.0 | |
| Mo | | | 0.7 | | | | | |
| Sr | | | 0.1 | | 0.6 / 10.0 | | 1.4 / 10.0 | |
| Tl | | | 0.008 | | | | | |
| W | | | 0.08 | | | | 0.02 / 0.10 | |
| U | | | 0.005 | | | | | |

| Analyte | Maximum PB* (mg/Kg) | Maximum ICB/CCB* (ug/L) | Action Limit | Sample Concentration units, unless otherwise noted: mg/Kg | | | | | | | | | | | |
|---------|---------------------|-------------------------|--------------|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 12 | 13 | 14 |
| Sb | 0.8 | | | 1.1/2.2 | 1.6/2.1 | 1.1/2.1 | 1.2/2.2 | | 1.4/2.1 | 1.6/2.1 | 1.1/2.1 | 1.5/2.1 | 1.3/2.1 | 1.3/2.4 | |
| B | | 2.0 | | 7.9/10.9 | 6.9/10.4 | 8.0/10.4 | | | | | | | 9.3/10.6 | | |
| Cr | 0.07 | | | | | | | | | | | | | | |
| Sn | 3.6 | | | 4.3/10.9 | 4.4/10.4 | 4.4/10.4 | 4.7/10.9 | 6.3/10.1 | 4.3/10.3 | 4.5/10.7 | 4.2/10.3 | 4.3/11.6 | 4.3/10.3 | 4.5/10.6 | 4.9/11.9 |

| Analyte | Maximum PB* (mg/Kg) | Maximum ICB/CCB* (ug/L) | Action Limit | Sample Concentration units, unless otherwise noted: mg/Kg | | | | | | | | | | |
|---------|---------------------|-------------------------|--------------|---|----------|----------|----------|----------|----------|----------|----------|--|--|--|
| | | | | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | | | |
| Sb | 0.8 | | | 1.0/2.5 | 1.9/2.1 | | 1.4/2.1 | 1.6/2.2 | 1.0/2.0 | 1.8/2.1 | 1.4/2.2 | | | |
| B | | 2.0 | | 8.0/10.7 | 8.4/10.8 | | | | 7.4/10.6 | 9.3/10.8 | | | | |
| Cr | 0.07 | | | | | | | | | | | | | |
| Sn | 3.6 | | | 4.9/12.6 | 4.1/10.7 | 4.7/10.8 | 4.2/10.7 | 4.7/11.0 | 4.2/10.2 | 4.6/10.6 | 4.4/10.8 | | | |

Sample Concentration units, unless otherwise noted: mg/Kg

| Analyte | Maximum PB* (mg/Kg) | Maximum PB* (ug/L) | Maximum ICB/CCB* (ug/L) | Action Limit | Associated Samples: 13-22 | | | | | | | | | | |
|---------|---------------------|--------------------|-------------------------|--------------|---------------------------|--|--|--|--|--|--|--|--|--|--|
| | | | | | No Qualifiers | | | | | | | | | | |
| Ba | | | 0.80 | | | | | | | | | | | | |
| Ti | | | 0.03 | | | | | | | | | | | | |

Sample Concentration units, unless otherwise noted: mg/Kg

| Analyte | Maximum PB* (mg/Kg) | Maximum PB* (ug/L) | Maximum ICB/CCB* (ug/L) | Action Limit | Associated Samples: 2-9, 12 | | | | | | | | | | |
|---------|---------------------|--------------------|-------------------------|--------------|-----------------------------|--|--|--|--|--|--|--|--|--|--|
| | | | | | No Qualifiers | | | | | | | | | | |
| Ba | | | 0.60 | | | | | | | | | | | | |

| Analyte | Maximum PB* (mg/Kg) | Maximum PB* (ug/L) | Maximum ICB/CCB* (ug/L) | Action Limit | No Qualifiers |
|---------|---------------------|--------------------|-------------------------|--------------|---------------|
| Mn | | | 0.10 | | |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 1

| Analyte | Maximum PB* (mg/Kg) | Maximum PB* (ug/L) | Maximum ICB/CCB* (ug/L) | Action Limit | No Qualifiers |
|---------|---------------------|--------------------|-------------------------|--------------|---------------|
| Na | | | 30.0 | | |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 16-22

| Analyte | Maximum PB* (mg/Kg) | Maximum PB* (ug/L) | Maximum ICB/CCB* (ug/L) | Action Limit | No Qualifiers |
|---------|---------------------|--------------------|-------------------------|--------------|---------------|
| W | | | 0.067 | | |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 1-9, 12-15

| Analyte | Maximum PB* (mg/Kg) | Maximum PB* (ug/L) | Maximum ICB/CCB* (ug/L) | Action Limit | No Qualifiers |
|---------|---------------------|--------------------|-------------------------|--------------|---------------|
| W | | | 0.057 | | |

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 19

| Analyte | Maximum PB* (mg/Kg) | Maximum PB* (ug/L) | Maximum ICB/CCB* (ug/L) | Action Limit | No Qualifiers |
|---------|---------------------|--------------------|-------------------------|--------------|---------------|
| Be | | | 0.009 | | |

Note: a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 21991N4

SDG #: See Cover

VALIDATION FINDINGS WORKSHEET

Field Blanks

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

METHOD: Trace Metals (EPA SW846 6010B/7000)

N N/A Were field blanks identified in this SDG?

N N/A Were target analytes detected in the field blanks?

Blank units: ug/L Associated sample units: mg/Kg

Sampling date: 9/25/09 Soil factor applied: 200x

Field blank type: (circle one) Field Blank / Rinsate / Other: EB

Reason Code: be

Associated Samples: 21, 22

| Analyte | Blank ID | Sample Identification | | | |
|---------------|----------|-----------------------|--|---------|--|
| | | Action Level | 21 | 22 | |
| Al | 10 | | | | |
| Pb | 4.7 | | | | |
| Pb | | | | | |
| Ca | 197 | 394 | 7.4+10.6 ^{CE} 9.9+10.6 | | |
| Cr | | | | | |
| Fe | 8.8 | | | | |
| Pb | | | | | |
| Mg | 11.2 | | | | |
| Mn | 2.4 | | | | |
| K | 192 | | | | |
| Na | 112 | | | | |
| Sr | 0.6 | | | | |
| W | 0.78 | 1.56 | 0.14 J+ | 0.27 J+ | |
| Ti | 0.4 | | | | |
| Zn | 6.4 | | | | |

LDC #: 21991N4
 SDG #: See Cover

VALIDATION FINDINGS WORKSHEET

Field Blanks

Page: 1 of 1
 Reviewer: CRZ
 2nd Reviewer:

METHOD: Trace Metals (EPA SW846 6010B/7000)

N/A Were field blanks identified in this SDG?
 N/A Were target analytes detected in the field blanks?

Reason Code: be

Blank units: ug/L Associated sample units: mg/Kg

Sampling date: 9/25/09 Soil factor applied: 200x

Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: 12-20

| Analyte | Blank ID | Sample Identification | | | | | | | | | | | | | | | | |
|---------|----------|-----------------------|---------------|---------------|---------------|---------------|----|----|------------|----|----|------------|--|--|--|--|--|--|
| | | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | |
| Al | 8.5 | | | | | | | | | | | | | | | | | |
| Ba | | | | | | | | | | | | | | | | | | |
| B | 2.1 | | | 9.3 / 10.6 | | | | | 8.0 / 10.7 | | | 8.4 / 10.8 | | | | | | |
| Ca | 298 | | | | | | | | | | | | | | | | | |
| Cr | 0.6 | | | | | | | | | | | | | | | | | |
| Fe | 29.2 | | | | | | | | | | | | | | | | | |
| Pb | 0.036 | | | | | | | | | | | | | | | | | |
| Mg | 30.6 | | | | | | | | | | | | | | | | | |
| Mn | 4.7 | | | | | | | | | | | | | | | | | |
| Hg | 0.03 | | 0.012 / 0.018 | 0.012 / 0.018 | 0.018 / 0.020 | 0.004 / 0.018 | | | | | | | | | | | | |
| K | 64 | | | | | | | | | | | | | | | | | |
| Na | 83.6 | | | | | | | | | | | | | | | | | |
| Sr | 1.4 | | | | | | | | | | | | | | | | | |
| Ti | 0.5 | | | | | | | | | | | | | | | | | |
| W | 0.02 | | | | | | | | | | | | | | | | | |
| Zn | 2.1 | | | | | | | | | | | | | | | | | |

VALIDATION FINDINGS WORKSHEET
Field Blanks

LDC #: 21991N4
SDG #: See Cover

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

METHOD: Trace Metals (EPA SW846 6010B/7000)
 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: ug/L **Associated sample units:** mg/Kg
Sampling date: 7/29/09 **Soil factor applied:** 100x
Field blank type: (circle one) Field Blank / Rinsate / Other: Field Blank **Reason Code:** bf
Associated Samples: 21, 22

| Analyte | Blank ID | Action Level | No Qualifiers | Sample Identification | | | |
|---------|------------------------------|--------------|---------------|-----------------------|--|--|--|
| | FB072909-SO (SDG#: R0904226) | | | | | | |
| Al | 8.1 | | | | | | |
| Ba | 1.0 | | | | | | |
| Ca | 582 | 582 | | | | | |
| Cu | 0.8 | | | | | | |
| Fe | 12.1 | | | | | | |
| Pb | 0.359 | 0.359 | | | | | |
| Mg | 28.4 | 28.4 | | | | | |
| Mn | 4.3 | | | | | | |
| Na | 160 | | | | | | |
| Sr | 1.4 | | | | | | |
| Ti | 0.5 | | | | | | |
| W | 0.03 | | | | | | |
| U | 0.006 | | | | | | |
| Zn | 10.0 | 10.0 | | | | | |

LDC #: 21991N4
 SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Field Blanks

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

METHOD: Trace Metals (EPA SW846 6010B/7000)

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: ug/L Associated sample units: mg/Kg

Sampling date: 8/3/09 Soil factor applied: 100x

Field blank type: (circle one) Field Blank / Rinsate / Other:

Reason Code: bf

Associated Samples: 1-9, 12-20

| Analyte | Blank ID | Sample Identification | | | | | | | | | | | | | | | | | | | |
|---------|----------|--------------------------------|-----------------|---------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | FB080309-SO (SDG# R0904279) | Action Level | No Qualifiers | | | | | | | | | | | | | | | | | |
| Al | 18.6 | | | | | | | | | | | | | | | | | | | | |
| Ba | 0.8 | | | | | | | | | | | | | | | | | | | | |
| Ca | 113 | | 113 | | | | | | | | | | | | | | | | | | |
| Fe | 136 | | 136 | | | | | | | | | | | | | | | | | | |
| Pb | 0.042 | | 0.042 | | | | | | | | | | | | | | | | | | |
| Mg | 33.6 | | 33.6 | | | | | | | | | | | | | | | | | | |
| Mn | 7.5 | | 7.5 | | | | | | | | | | | | | | | | | | |
| Na | 66.0 | | | | | | | | | | | | | | | | | | | | |
| Sr | 1.0 | | | | | | | | | | | | | | | | | | | | |
| Ti | 1.5 | | | | | | | | | | | | | | | | | | | | |
| W | 0.04 | | | | | | | | | | | | | | | | | | | | |
| Zn | 0.8 | | | | | | | | | | | | | | | | | | | | |

LDC 21991N4
 SDG#: See Cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 4
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA Method 6020/6010/7000)

N N A Were field duplicate pairs identified in this SDG?
 N N A Were target analytes detected in the field duplicate pairs?

| Compound | Concentration (mg/Kg) | | (<=50) RPD | (mg/Kg) Difference | (mg/Kg) Limits | Qualifications (Parent Only) |
|------------|-----------------------|-------|---------------|-----------------------|-------------------|---------------------------------|
| | 6 | 7 | | | | |
| Aluminum | 7260 | 9690 | 29 | | | |
| Antimony | 1.4 | 1.6 | | 0.2 | (<=2.1) | |
| Arsenic | 3.81 | 3.77 | 1 | | | |
| Barium | 150 | 209 | 33 | | | |
| Beryllium | 0.512 | 0.462 | 10 | | | |
| Boron | 40.7 | 54.7 | | 14 | (<=10.7) | |
| Cadmium | 0.12 | 0.19 | | 0.07 | (<=0.11) | |
| Calcium | 26700 | 18800 | 35 | | | |
| Chromium | 7.68 | 7.62 | 1 | | | |
| Cobalt | 6.4 | 7.5 | | 1.1 | (<=2.1) | |
| Copper | 15.9 | 18.8 | 17 | | | |
| Iron | 12400 | 15900 | 25 | | | |
| Lead | 8.0 | 9.1 | | 1.1 | (<=2.1) | |
| Magnesium | 9200 | 9550 | 4 | | | |
| Manganese | 320 | 349 | 9 | | | |
| Mercury | 0.008 | 0.010 | | 0.002 | (<=0.016) | |
| Molybdenum | 0.35 | 0.43 | | 0.08 | (<=0.32) | |
| Nickel | 14.1 | 16.2 | 14 | | | |
| Platinum | 0.010 | 0.010 | | 0 | (<=0.11) | |

LDC#: 21991N4
 SDG#: See Cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 2 of 4
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA Method 6020/6010/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

| Compound | Concentration (mg/Kg) | | (<50) RPD | (mg/Kg) Difference | (mg/Kg) Limits | Qualifications (Parent Only) |
|-----------|-----------------------|-------|--------------|-----------------------|-------------------|---------------------------------|
| | 6 | 7 | | | | |
| Potassium | 2000 | 2590 | 26 | | | |
| Sodium | 623 | 794 | 24 | | | |
| Strontium | 178 | 223 | 22 | | | |
| Thallium | 0.091 | 0.091 | | 0 | (≤0.021) | |
| Tin | 4.3 | 4.5 | | 0.2 | (≤10.7) | |
| Titanium | 543 | 764 | 34 | | | |
| Tungsten | 0.18 | 0.14 | | 0.04 | (≤0.11) | |
| Uranium | 1.08 | 1.01 | 7 | | | |
| Vanadium | 33.1 | 46.0 | 33 | | | |
| Zinc | 29.6 | 33.7 | 13 | | | |

LDC#: 21991N4
 SDG#: See Cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 3 of 9
 Reviewer: [Signature]
 2nd Reviewer: _____

METHOD: Metals (EPA Method 6020/6010/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

| Compound | Concentration (mg/Kg) | | (≤50) | (mg/Kg) | (mg/Kg) | Qualifications (Parent Only) |
|------------|-----------------------|--------------|-------|------------|----------|---------------------------------|
| | <u>17/16</u> | <u>18/17</u> | RPD | Difference | Limits | |
| Aluminum | 8960 | 9010 | 1 | | | |
| Antimony | 1.9 | 2.2 | | 0.3 | (2.2≤) | |
| Arsenic | 2.82 | 2.35 | 18 | | | |
| Barium | 172 | 188 | 9 | | | |
| Beryllium | 0.490 | 0.412 | 17 | | | |
| Boron | 8.0 | 8.4 | | 0.4 | (≤10.8) | |
| Cadmium | 0.15 | 0.17 | | 0.02 | (≤0.11) | |
| Calcium | 30100 | 28600 | 5 | | | |
| Chromium | 9.37 | 7.40 | | 1.97 | (≤2.2) | |
| Cobalt | 7.4 | 7.0 | | 0.4 | (≤2.2) | |
| Copper | 18.0 | 19.6 | 9 | | | |
| Iron | 15500 | 15700 | 1 | | | |
| Lead | 19.4 | 12.3 | 45 | | | |
| Magnesium | 9220 | 9530 | 3 | | | |
| Manganese | 355 | 387 | 9 | | | |
| Mercury | 0.043 | 0.041 | | 0.002 | (≤0.019) | |
| Molybdenum | 0.90 | 0.82 | | 0.08 | (≤0.32) | |
| Nickel | 15.5 | 16.2 | 4 | | | |

LDC#: 21991N4
 SDG#: See Cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 4 of 4
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA Method 6020/6010/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

| Compound | Concentration (mg/Kg) | | (<50) RPD | (mg/Kg) Difference | (mg/Kg) Limits | Qualifications (Parent Only) |
|-----------|-----------------------|---------------------|--------------|-----------------------|-------------------|---------------------------------|
| | <u>17</u> <u>16</u> | <u>18</u> <u>17</u> | | | | |
| Platinum | 0.011 | 0.009 | | 0.002 | (≤0.11) | |
| Potassium | 2420 | 2340 | 3 | | | |
| Sodium | 487 | 481 | 1 | | | |
| Strontium | 202 | 195 | | 7 | (≤43.2) | |
| Thallium | 0.122 | 0.089 | | 0.033 | (≤0.089) | |
| Tin | 4.1 | 4.7 | | 0.6 | (≤10.8) | |
| Titanium | 733 | 744 | 1 | | | |
| Tungsten | 0.23 | 0.18 | | 0.05 | (≤0.11) | |
| Uranium | 0.875 | 0.766 | 13 | | | |
| Vanadium | 43.0 | 44.7 | 4 | | | |
| Zinc | 37.0 | 41.3 | 11 | | | |

Laboratory Data Consultants, Inc. Data Validation Report

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

Collection Date: August 24, 2009

LDC Report Date: December 21, 2009

Matrix: Soil

Parameters: Metals

Validation Level: Stage 2B

Laboratory: Columbia Analytical Services, Inc.

***Sample Delivery Group (SDG):** K0908207

Sample Identification

SA64-10BSPLP3
SA64-10BSPLP2
SA64-10BSPLP3MS
SA64-10BSPLP3DUP
SA64-10BSPLP2MS
SA64-10BSPLP2DUP

Samples in this SDG underwent SPLP extraction
*Corrected SDG throughout report

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010B, 6020, and 7000 for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Tungsten, Uranium, Vanadium, and Zinc.

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) 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.

Blanks are summarized in Section IV.

Field duplicates are summarized in Section XIV.

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. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

| Method Blank ID | Analyte | Maximum Concentration | Associated Samples |
|-----------------|---|---|--------------------|
| PB (prep blank) | Barium Boron Manganese Strontium Zinc | 0.040 mg/L 0.01 mg/L 0.0007 mg/L 0.0008 mg/L 0.007 mg/L | SA64-10BSPLP3 |
| PB (prep blank) | Barium Boron Copper Manganese Strontium Zinc | 0.030 mg/L 0.01 mg/L 0.003 mg/L 0.0018 mg/L 0.0008 mg/L 0.007 mg/L | SA64-10BSPLP2 |

Sample concentrations were compared to concentrations detected in the method blanks as required by the QAPP. No sample data was qualified with the following exceptions:

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|---------------|-----------------|-------------------------|------------------------------|
| SA64-10BSPLP3 | Barium Boron | 0.066 mg/L 0.05 mg/L | 0.066J+ mg/L 0.05J+ mg/L |

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|---------------|-------------------------|---------------------------------------|---|
| SA64-10BSPLP2 | Boron Copper Zinc | 0.09 mg/L 0.029 mg/L 0.027 mg/L | 0.09J+ mg/L 0.029J+ mg/L 0.027J+ mg/L |

No field blanks were identified in this SDG.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results 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. Internal Standards

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

XII. Sample Result Verification and Project Quantitation Limit

All analytes reported below the PQL were qualified as follows:

| Sample | Finding | Flag | A or P |
|-----------------------------|--------------------------------------|-----------------|--------|
| All samples in SDG K0908207 | All analytes reported below the PQL. | J (all detects) | A |

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

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

XIV. Field Duplicates

No field duplicates were identified in this SDG.

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Data Qualification Summary - SDG K0908207**

| SDG | Sample | Analyte | Flag | A or P | Reason (Code) |
|----------|--------------------------------|--------------------------------------|-----------------|--------|---------------------------------------|
| K0908207 | SA64-10BSPLP3 SA64-10BSPLP2 | All analytes reported below the PQL. | J (all detects) | A | Sample result verification (PQL) (sp) |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Laboratory Blank Data Qualification Summary - SDG K0908207**

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|---------------|-------------------------|---|--------|------|
| K0908207 | SA64-10BSPLP3 | Barium Boron | 0.066J+ mg/L 0.05J+ mg/L | A | bl |
| K0908207 | SA64-10BSPLP2 | Boron Copper Zinc | 0.09J+ mg/L 0.029J+ mg/L 0.027J+ mg/L | A | bl |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Field Blank Data Qualification Summary - SDG K0908207**

No Sample Data Qualified in this SDG

Tronox Northgate Henderson

LDC #: 2199104

VALIDATION COMPLETENESS WORKSHEET

SDG #: K0908207

Stage 2B

Laboratory: Columbia Analytical Services

Date: 11-17-09

Page: 1 of 1

Reviewer: CA

2nd Reviewer: W

METHOD: Metals (EPA SW 846 Method 6010B/6020/7000)

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: 8/24/09 |
| II. | ICP/MS Tune | A | |
| III. | Calibration | A | |
| IV. | Blanks | SW | |
| V. | ICP Interference Check Sample (ICS) Analysis | A | |
| VI. | Matrix Spike Analysis | A | MS |
| VII. | Duplicate Sample Analysis | A | DUP |
| VIII. | Laboratory Control Samples (LCS) | A | LCS |
| IX. | Internal Standard (ICP-MS) | N | Not reviewed |
| X. | Furnace Atomic Absorption QC | N | Not utilized |
| XI. | ICP Serial Dilution | A | |
| XII. | Sample Result Verification | N | |
| XIII. | Overall Assessment of Data | A | |
| XIV. | Field Duplicates | N | |
| XV. | 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: Soil

| | | | | | | | |
|----|------------------|----|-----|----|--|----|--|
| 1 | SA64-10BSPLP3 | 11 | GBW | 21 | | 31 | |
| 2 | SA64-10BSPLP2 | 12 | | 22 | | 32 | |
| 3 | SA64-10BSPLP3MS | 13 | | 23 | | 33 | |
| 4 | SA64-10BSPLP3DUP | 14 | | 24 | | 34 | |
| 5 | SA64-10BSPLP2MS | 15 | | 25 | | 35 | |
| 6 | SA64-10BSPLP2DUP | 16 | | 26 | | 36 | |
| 7 | | 17 | | 27 | | 37 | |
| 8 | | 18 | | 28 | | 38 | |
| 9 | | 19 | | 29 | | 39 | |
| 10 | | 20 | | 30 | | 40 | |

Notes: _____

| Analyte | Extraction PB* (mg/L) | Method PB* (mg/L) | Maximum ICB/CCB* (ug/L) | Action Limit | 1 | | | | | |
|---------|-----------------------|-------------------|-------------------------|--------------|----------|--|--|--|--|--|
| Ba | 0.040 | | | 0.4 | 0.066 J+ | | | | | |
| B | 0.01 | | | 0.1 | 0.05 J+ | | | | | |
| Mn | 0.0007 | | | 0.007 | | | | | | |
| Sr | 0.0008 | | | 0.008 | | | | | | |
| Zn | 0.007 | | | 0.07 | | | | | | |

Sample Concentration units, unless otherwise noted: mg/L Associated Samples: 2

| Analyte | Extraction PB* (mg/L) | Method PB* (ug/L) | Maximum ICB/CCB* (ug/L) | Action Limit | 2 | | | | | |
|---------|-----------------------|-------------------|-------------------------|--------------|----------|--|--|--|--|--|
| Ba | 0.030 | | | 0.3 | | | | | | |
| B | 0.01 | | | 0.1 | 0.09 J+ | | | | | |
| Cu | 0.003 | | | 0.03 | 0.029 J+ | | | | | |
| Mn | 0.0018 | | | 0.018 | | | | | | |
| Sr | 0.0008 | | | 0.008 | | | | | | |
| Zn | 0.007 | | | 0.07 | 0.027 J+ | | | | | |

Note: a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Laboratory Data Consultants, Inc. Data Validation Report

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

Collection Date: September 10 through September 16, 2009

LDC Report Date: November 18, 2009

Matrix: Soil

Parameters: Metals

Validation Level: Stage 4

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K0908748

Sample Identification

SA102-10BSPLP2
SA102-10BSPLP3
SA102-30BSPLP2
SA102-30BSPLP3
SA30-9BSPLP2
SA30-9BSPLP3
SA128-10BSPLP2
SA128-10BSPLP3
SA128-29BSPLP2
SA128-29BSPLP3
SA102-10BSPLP2MS
SA102-10BSPLP2DUP
SA102-10BSPLP3MS
SA102-10BSPLP3DUP
SA102-30BSPLP2MS
SA102-30BSPLP2DUP
SA102-30BSPLP3MS
SA102-30BSPLP3DUP

Samples in this SDG underwent SPLP extraction

Introduction

This data review covers 19 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010B, 6020, and 7000 for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Tungsten, Uranium, Vanadium, and Zinc.

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) 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.

Blanks are summarized in Section IV.

Field duplicates are summarized in Section XIV.

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. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

| Method Blank ID | Analyte | Maximum Concentration | Associated Samples |
|-----------------|--|---|--|
| PB (prep blank) | Barium Boron Calcium Magnesium Sodium Strontium Zinc | 0.169 mg/L 0.08 mg/L 0.09 mg/L 0.02 mg/L 0.47 mg/L 0.0041 mg/L 0.026 mg/L | SA102-10BSPLP2 SA102-30BSPLP2 SA30-9BSPLP2 SA128-10BSPLP2 SA128-29BSPLP2 |
| PB (prep blank) | Barium Boron Sodium Strontium Zinc | 0.067 mg/L 0.04 mg/L 0.24 mg/L 0.0014 mg/L 0.014 mg/L | SA102-10BSPLP3 SA102-30BSPLP3 SA30-9BSPLP3 SA128-10BSPLP3 SA128-29BSPLP3 |

Sample concentrations were compared to concentrations detected in the method blanks as required by the QAPP. No sample data was qualified with the following exceptions:

| Sample | Analyte | Reported Concentration | Modified Final Concentration |
|----------------|--------------------------------------|--|--|
| SA102-10BSPLP2 | Barium Boron Zinc | 0.528 mg/L 0.34 mg/L 0.051 mg/L | 0.528J+ mg/L 0.34J+ mg/L 0.051J+ mg/L |
| SA102-30BSPLP2 | Barium Boron Zinc | 0.722 mg/L 0.50 mg/L 0.142 mg/L | 0.722J+ mg/L 0.50J+ mg/L 0.142J+ mg/L |
| SA30-9BSPLP2 | Barium Boron Magnesium Zinc | 0.436 mg/L 0.11 mg/L 0.13 mg/L 0.017 mg/L | 0.436J+ mg/L 0.11J+ mg/L 0.13J+ mg/L 0.017J+ mg/L |
| SA128-10BSPLP2 | Barium Boron Zinc | 0.625 mg/L 0.13 mg/L 0.043 mg/L | 0.625J+ mg/L 0.13J+ mg/L 0.043J+ mg/L |
| SA128-29BSPLP2 | Barium Boron Zinc | 0.317 mg/L 0.12 mg/L 0.014 mg/L | 0.317J+ mg/L 0.12J+ mg/L 0.014J+ mg/L |
| SA102-10BSPLP3 | Barium Boron Zinc | 0.495 mg/L 0.26 mg/L 0.090 mg/L | 0.495J+ mg/L 0.26J+ mg/L 0.090J+ mg/L |
| SA102-30BSPLP3 | Barium Zinc | 0.605 mg/L 0.029 mg/L | 0.605J+ mg/L 0.029J+ mg/L |
| SA30-9BSPLP3 | Barium Boron Zinc | 0.455 mg/L 0.12 mg/L 0.019 mg/L | 0.455J+ mg/L 0.12J+ mg/L 0.019J+ mg/L |
| SA128-10BSPLP3 | Barium Boron Zinc | 0.594 mg/L 0.10 mg/L 0.023 mg/L | 0.594J+ mg/L 0.10J+ mg/L 0.023J+ mg/L |
| SA128-29BSPLP3 | Barium Boron Zinc | 0.320 mg/L 0.13 mg/L 0.018 mg/L | 0.320J+ mg/L 0.13J+ mg/L 0.018J+ mg/L |

No field blanks were identified in this SDG.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. 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. Internal Standards

All internal standard percent recoveries (%R) were within QC limits.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

XII. Sample Result Verification and Project Quantitation Limit

All sample result verifications were acceptable.

All analytes reported below the PQL were qualified as follows:

| Sample | Finding | Flag | A or P |
|-----------------------------|--------------------------------------|-----------------|--------|
| All samples in SDG K0908748 | All analytes reported below the PQL. | J (all detects) | A |

XIII. Overall Assessment of Data

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

XIV. Field Duplicates

No field duplicates were identified in this SDG.

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Data Qualification Summary - SDG K0908748**

| SDG | Sample | Analyte | Flag | A or P | Reason (Code) |
|----------|--|--------------------------------------|-----------------|--------|---------------------------------------|
| K0908748 | SA102-10BSPLP2 SA102-10BSPLP3 SA102-30BSPLP2 SA102-30BSPLP3 SA30-9BSPLP2 SA30-9BSPLP3 SA128-10BSPLP2 SA128-10BSPLP3 SA128-29BSPLP2 SA128-29BSPLP3 | All analytes reported below the PQL. | J (all detects) | A | Sample result verification (PQL) (sp) |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Laboratory Blank Data Qualification Summary - SDG K0908748**

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|----------------|--------------------------------------|--|--------|------|
| K0908748 | SA102-10BSPLP2 | Barium Boron Zinc | 0.528J+ mg/L 0.34J+ mg/L 0.051J+ mg/L | A | bl |
| K0908748 | SA102-30BSPLP2 | Barium Boron Zinc | 0.722J+ mg/L 0.50J+ mg/L 0.142J+ mg/L | A | bl |
| K0908748 | SA30-9BSPLP2 | Barium Boron Magnesium Zinc | 0.436J+ mg/L 0.11J+ mg/L 0.13J+ mg/L 0.017J+ mg/L | A | bl |
| K0908748 | SA128-10BSPLP2 | Barium Boron Zinc | 0.625J+ mg/L 0.13J+ mg/L 0.043J+ mg/L | A | bl |
| K0908748 | SA128-29BSPLP2 | Barium Boron Zinc | 0.317J+ mg/L 0.12J+ mg/L 0.014J+ mg/L | A | bl |
| K0908748 | SA102-10BSPLP3 | Barium Boron Zinc | 0.495J+ mg/L 0.26J+ mg/L 0.090J+ mg/L | A | bl |
| K0908748 | SA102-30BSPLP3 | Barium Zinc | 0.605J+ mg/L 0.029J+ mg/L | A | bl |

| SDG | Sample | Analyte | Modified Final Concentration | A or P | Code |
|----------|----------------|-------------------------|---|--------|------|
| K0908748 | SA30-9BSPLP3 | Barium Boron Zinc | 0.455J+ mg/L 0.12J+ mg/L 0.019J+ mg/L | A | bl |
| K0908748 | SA128-10BSPLP3 | Barium Boron Zinc | 0.594J+ mg/L 0.10J+ mg/L 0.023J+ mg/L | A | bl |
| K0908748 | SA128-29BSPLP3 | Barium Boron Zinc | 0.320J+ mg/L 0.13J+ mg/L 0.018J+ mg/L | A | bl |

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Metals - Field Blank Data Qualification Summary - SDG K0908748**

No Sample Data Qualified in this SDG

Tronox Northgate Henderson

VALIDATION COMPLETENESS WORKSHEET

LDC #: 21991P4

SDG #: K0908748

Laboratory: Columbia Analytical Services

Stage 4

Date: 11-17-09

Page: 1 of 1

Reviewer: CR

2nd Reviewer: W

METHOD: Metals (EPA SW 846 Method 6010B/6020/7000)

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: <u>9/10/09 - 9/16/09</u> |
| II. | ICP/MS Tune | A | |
| III. | Calibration | A | |
| IV. | Blanks | SW | |
| V. | ICP Interference Check Sample (ICS) Analysis | A | |
| VI. | Matrix Spike Analysis | A | <u>MS</u> |
| VII. | Duplicate Sample Analysis | A | <u>DUP</u> |
| VIII. | Laboratory Control Samples (LCS) | A | <u>LCS</u> |
| IX. | Internal Standard (ICP-MS) | A | |
| X. | Furnace Atomic Absorption QC | N | <u>Not utilized</u> |
| XI. | ICP Serial Dilution | A | |
| XII. | Sample Result Verification | A | |
| XIII. | Overall Assessment of Data | A | |
| XIV. | Field Duplicates | N | |
| XV. | 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: soil

| | | | | | | | |
|----|----------------|----|-------------------|----|------------|----|--|
| 1 | SA102-10BSPLP2 | 11 | SA102-10BSPLP2MS | 21 | <u>PBW</u> | 31 | |
| 2 | SA102-10BSPLP3 | 12 | SA102-10BSPLP2DUP | 22 | | 32 | |
| 3 | SA102-30BSPLP2 | 13 | SA102-10BSPLP3MS | 23 | | 33 | |
| 4 | SA102-30BSPLP3 | 14 | SA102-10BSPLP3DUP | 24 | | 34 | |
| 5 | SA30-9BSPLP2 | 15 | SA102-30BSPLP2MS | 25 | | 35 | |
| 6 | SA30-9BSPLP3 | 16 | SA102-30BSPLP2DUP | 26 | | 36 | |
| 7 | SA128-10BSPLP2 | 17 | SA102-30BSPLP3MS | 27 | | 37 | |
| 8 | SA128-10BSPLP3 | 18 | SA102-30BSPLP3DUP | 28 | | 38 | |
| 9 | SA128-29BSPLP2 | 19 | | 29 | | 39 | |
| 10 | SA128-29BSPLP3 | 20 | | 30 | | 40 | |

Notes: _____

Method:Metals (EPA SW 846 Method 6010/7000/6020)

| Validation Area | Yes | No | NA | Findings/Comments |
|---|-------------------------------------|--------------------------|--------------------------|-------------------|
| I. Technical holding times | | | | |
| All technical holding times were met. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Cooler temperature criteria was met. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| II. Calibration | | | | |
| Were all isotopes in the tuning solution mass resolution within 0.1 amu? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Were %RSD of isotopes in the tuning solution < 5%? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Were all instruments calibrated daily, each set-up time? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Were the proper number of standards used? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury and 85-115% for cyanide) QC limits? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Were all initial calibration correlation coefficients > 0.995? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| III. Blanks | | | | |
| Was a method blank associated with every sample in this SDG? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| IV. ICP Interference/Check Samples | | | | |
| Were ICP interference check samples performed daily? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Were the AB solution percent recoveries (%R) with the 80-120% QC limits? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| IV. Matrix spike/Matrix spike duplicate | | | | |
| 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. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 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. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL (+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were < 5X the RL. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| V. Laboratory control samples | | | | |
| Was an LCS analyzed for this SDG? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Was an LCS analyzed per extraction batch? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

LDC #: LM4115
 SDG #: secover

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
 Reviewer: CR
 2nd Reviewer: V

| Validation Area | Yes | No | NA | Findings/Comments |
|--|-----|----|----|-------------------|
| VI. Surface Atomic Absorption (SAA) | | | | |
| If MSA was performed, was the correlation coefficients > 0.995? | | | ✓ | |
| Do all applicable analyses have duplicate injections? (Level IV only) | | | ✓ | |
| For sample concentrations > RL, are applicable duplicate injection RSD values < 20%? (Level IV only) | | | ✓ | |
| Were analytical spike recoveries within the 85-115% QC limits? | | | ✓ | |
| VII. ICP Serial Dilutions | | | | |
| Was an ICP serial dilution analyzed if analyte concentrations were > 50X the IDL? | ✓ | | | |
| Were all percent differences (%Ds) < 10%? | ✓ | | | |
| Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data. | | ✓ | | |
| VIII. Internal Standards (EPA SW-846 Method 6020) | | | | |
| Were all the percent recoveries (%R) within the 30-120% of the intensity of the internal standard in the associated initial calibration? | ✓ | | | |
| If the %Rs were outside the criteria, was a reanalysis performed? | ✓ | | | |
| IX. Regional Quality Assurance and Quality Control | | | | |
| Were performance evaluation (PE) samples performed? | | ✓ | | |
| Were the performance evaluation (PE) samples within the acceptance limits? | | | ✓ | |
| X. Sample Result Verification | | | | |
| Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation? | ✓ | | | |
| XI. Overall Assessment of data | | | | |
| Overall assessment of data was found to be acceptable. | ✓ | | | |
| XII. Field Duplicates | | | | |
| Field duplicate pairs were identified in this SDG. | | ✓ | | |
| Target analytes were detected in the field duplicates. | | | ✓ | |
| XIII. Field Blanks | | | | |
| Field blanks were identified in this SDG. | | ✓ | | |
| Target analytes were detected in the field blanks. | | | ✓ | |

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

DC #: 21991P4
 SDG #: See Cover
 METHOD: Trace metals (EPA SW 846 Method 6010B/6020/7000)
 Soil preparation factor applied: NA
 Reason Code: bl
 Sample Concentration units, unless otherwise noted: mg/L
 Associated Samples: 1, 3, 5, 7, 9

| Analyte | Extraction PB ^a (mg/L) | Method PB ^a (mg/L) | Maximum ICB/CCB ^a (ug/L) | Action Limit | 1 | 3 | 5 | 7 | 9 |
|---------|-----------------------------------|-------------------------------|-------------------------------------|--------------|----------|----------|----------|----------|----------|
| Ba | 0.169 | | | 1.69 | 0.528 J+ | 0.722 J+ | 0.436 J+ | 0.625 J+ | 0.317 J+ |
| B | 0.08 | | | 0.8 | 0.34 J+ | 0.50 J+ | 0.11 J+ | 0.13 J+ | 0.12 J+ |
| Ca | 0.09 | | | 0.9 | | | | | |
| Mg | 0.02 | | | 0.2 | | | 0.13 J+ | | |
| Na | 0.47 | | | 4.7 | | | | | |
| Sr | 0.0041 | | | 0.041 | | | | | |
| Zn | 0.026 | | | 0.26 | 0.051 J+ | 0.142 J+ | 0.017 J+ | 0.043 J+ | 0.014 J+ |

Associated Samples: 2, 4, 6, 8, 10

| Analyte | Extraction PB ^a (mg/L) | Method PB ^a (ug/L) | Maximum ICB/CCB ^a (ug/L) | Action Limit | 2 | 4 | 6 | 8 | 10 |
|---------|-----------------------------------|-------------------------------|-------------------------------------|--------------|----------|----------|----------|----------|----------|
| Ba | 0.067 | | | 0.67 | 0.495 J+ | 0.605 J+ | 0.455 J+ | 0.594 J+ | 0.320 J+ |
| B | 0.04 | | | 0.4 | 0.26 J+ | | 0.12 J+ | 0.10 J+ | 0.13 J+ |
| Na | 0.24 | | | 2.4 | | | | | |
| Sr | 0.0014 | | | 0.014 | | | | | |
| Zn | 0.014 | | | 0.14 | 0.090 J+ | 0.029 J+ | 0.019 J+ | 0.023 J+ | 0.018 J+ |

Note: a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 21991P4
 SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
 Reviewer: GR
 2nd Reviewer:

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$\%R = \frac{\text{Found} \times 100}{\text{True}}$ Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
 True = concentration (in ug/L) of each analyte in the ICV or CCV source

| Standard ID | Type of Analysis | Element | Found (ug/L) | True (ug/L) | Recalculated | | Reported | | Acceptable (Y/N) |
|-------------|---------------------------------|---------|--------------|-------------|--------------|--|----------|--|------------------|
| | | | | | %R | | %R | | |
| ICV | ICP (Initial calibration) | Ba | 5.2 | 5.0 | 104 | | 104 | | Y |
| | GFAA (Initial calibration) | | | | | | | | |
| ICV | CVAA (Initial calibration) | Hg | 0.0051 | 0.0050 | 102 | | 102 | | Y |
| CCV4 | ICP (Continuing calibration) | Fe | 10.6 | 10.0 | 106 | | 106 | | J |
| | GFAA (Continuing calibration) | | | | | | | | |
| CCV2 | CVAA (Continuing calibration) | Hg | 0.0050 | 0.0050 | 100 | | 100 | | Y |
| ICV | ICP/MS (Initial calibration) | Pt | 0.0240 | 0.0250 | 96 | | 96 | | J |
| CCV2 | ICP/MS (Continuing calibration) | U | 0.025 | 0.025 | 100 | | 100 | | J |

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 #: 2199RP4
 SDG #: See cover

Page: 1 of 1
 Reviewer: CS
 2nd Reviewer: CS

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

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

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$$\%D = \frac{|I-SDR|}{I} \times 100$$

Where, I = Initial Sample Result (mg/L)
 SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

| Sample ID | Type of Analysis | Element | Found / S / I (units) | True / D / SDR (units) | Recalculated | | Reported | | Acceptable (Y/N) |
|-----------|---------------------------|---------|-----------------------|------------------------|---------------|---------------|----------|--|------------------|
| | | | | | %R / RPD / %D | %R / RPD / %D | | | |
| ISSAB | ICP interference check | Ni | 0.9279 | 1.000 | 93 | 93 | | | Y |
| LCS | Laboratory control sample | Sr | 10.23 | 10.00 | 102 | 102 | | | Y |
| 11 | Matrix spike | Sn | (SSR-SR) 10.670 | 10.00 | 107 | 107 | | | Y |
| 12 | Duplicate | Ba | 0.528 | 0.517 | 2.1 | 2.1 | | | Y |
| 1 | ICP serial dilution | Na | 275.10 | 284.55 | 3.4 | 3.4 | | | 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 #: 21991P4
 SDG #: seader

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

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

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

| | | | |
|----------|----------|------------|--|
| <u>Y</u> | <u>N</u> | <u>N/A</u> | Have results been reported and calculated correctly? |
| <u>Y</u> | <u>N</u> | <u>N/A</u> | Are results within the calibrated range of the instruments and within the linear range of the ICP? |
| <u>Y</u> | <u>N</u> | <u>N/A</u> | Are all detection limits below the CRDL? |

Detected analyte results for B were recalculated and verified using the following equation:

Concentration = $\frac{RD(FV)(Dil)}{(In. Vol.)(\%S)}$

Recalculation:

- RD = Raw data concentration
- FV = Final volume (ml)
- In. Vol. = Initial volume (ml) or weight (G)
- Dil = Dilution factor
- %S = Decimal percent solids

Raw Data: 0.2623 mg/L

| Sample ID | Analyte | Reported Concentration (mg/L) | Calculated Concentration (mg/L) | Acceptable (Y/N) |
|-----------|-----------|-------------------------------|---------------------------------|------------------|
| <u>2</u> | <u>As</u> | <u>0.01</u> | <u>0.01</u> | Y |
| | <u>Ba</u> | <u>0.495</u> | <u>0.495</u> | |
| | <u>B</u> | <u>0.26</u> | <u>0.26</u> | |
| | <u>Ca</u> | <u>2.15</u> | <u>2.16</u> | |
| | <u>Cr</u> | <u>2.010</u> | <u>2.011</u> | |
| | <u>Fe</u> | <u>0.01</u> | <u>0.01</u> | |
| | <u>Mg</u> | <u>4.25</u> | <u>4.25</u> | |
| | <u>K</u> | <u>2.0</u> | <u>2.0</u> | |
| | <u>Na</u> | <u>244</u> | <u>244</u> | |
| | <u>Sr</u> | <u>0.0567</u> | <u>0.0567</u> | |
| | <u>W</u> | <u>0.0204</u> | <u>0.0204</u> | |
| | <u>V</u> | <u>0.036</u> | <u>0.037</u> | |
| | <u>Zn</u> | <u>0.090</u> | <u>0.091</u> | |
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