

DRAFT

November 2, 2006

Ms. Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection Response to:
Standard Operating Procedures
dated September 2006

Dear Ms. Crowley,

The NDEP has received and reviewed Tronox's report identified above and provides comments in Attachment A. The document must be revised and resubmitted **by December 7, 2006**. The NDEP expects that these comments will be addressed, as necessary, during the implementation of the Phase A Source Area Work Plan. These comments should not delay the implementation of the aforementioned work plan.

If there are any questions please do not hesitate to contact me.

Sincerely,

Brian A. Rakvica, P.E.
Supervisor
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

Ms. Susan Crowley

5/17/2013

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CC: Jim Najima, NDEP, BCA, Carson City
Shannon Harbour, NDEP, BCA, Las Vegas
Todd Croft, NDEP, BCA, Las Vegas
Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W.,
Washington, D.C. 20036
Brenda Pohlmann, City of Henderson, PO Box 95050, Henderson, NV 89009
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5,
75 Hawthorne Street, San Francisco, CA 94105-3901
Rob Mrowka, Clark County Comprehensive Planning, PO Box 551741, Las Vegas, NV, 89155-
1741
Ranjit Sahu, BEC, 875 West Warm Springs Road, Henderson, Nevada 89015
Craig Wilkinson, TIMET, PO Box 2128, Henderson, Nevada, 89009-7003
Kirk Stowers, Broadbent & Associates, 8 West Pacific Avenue, Henderson, Nevada 89015
George Crouse, Syngenta Crop Protection, Inc., 410 Swing Road, Greensboro, NC 27409
Nick Pogoncheff, PES Environmental, 1682 Novato Blvd., Suite 100, Novato, CA 94947
Lee Erickson, Stauffer Management Company, 1800 Concord Pike, Hanby 1, Wilmington,
DE 19850-5437
Chris Sylvia, Pioneer Americas LLC, PO Box 86, Henderson, Nevada 89009
Paul Sundberg, Montrose Chemical Corporation, 3846 Estate Drive, Stockton, California
95209
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380,
Bainbridge Island, WA 98110

Attachment A

1. General comment, as discussed previously with TRX, the NDEP was expecting that this document would be referred to as Field Sampling Plan/ Standard Operating Procedures (FSP/SOP) and would discuss the elements of a FSP as detailed by the USEPA. NDEP provided TRX with a reference to an approved document that did this adequately (the BRC FSP/SOP). It is not clear to the NDEP why TRX chose to omit this section of the document. The revised document should address this issue.
2. General comment, by adopting BRC's SOPs as appears to have been done, there are now two different formats and writing styles. In general, the NDEP has found that the format used by BRC is preferable.
3. General comment, all SOPs would benefit by including a table of contents (EPA, 2001). This is consistent with the format used by BRC and referenced to TRX by the NDEP.
4. General comment, Health and Safety is a significant issue at the site and should be included as a major section rather than a subsection of the Purpose and Applicability (EPA, 2001). It would be the preference of the NDEP that TRX develop and maintain a stand alone Health and Safety Plan (HASP) which should be incorporated by reference. This HASP should address all aspects of the project and should not focus exclusively on the Phase A Source Area Investigation Work Plan.
5. General comment, all SOPs would benefit from the use of and inclusion of references, *e.g.*, SOP #7110-04020 and #7720-04020.
6. General comment, by adopting selected SOPs from BRC there are now duplicate descriptions for some procedures, *e.g.*, field documentation occurs in both the BRC SOPs and the Tronox Phase A Source Area Investigation Work Plan.
7. Table of contents, NDEP also referred TRX to the BRC FSP/SOP document because it is approved. Based on a review of the table of contents of both documents it appears that a number of additional SOPs need to be generated. Please describe TRX's schedule and approach to address this issue. If TRX believes that additional SOPs are not necessary, please discuss this matter. *Examples* follow:
 - a. Soil sampling for asbestos, to comply with the elutriator method.
 - b. Monitoring well design.
 - c. Drilling methods.
 - d. Borehole and well abandonment procedures.
 - e. Geological logging.
 - f. Field screening methods (radiological, X-ray fluorescence, etc.)
 - g. Geophysical methods.
8. SOP 7115-04020, the NDEP has the following comments:
 - a. Section 4.3.3, this section should cross-reference the reader to SOP 7315-04020. This applies to other sections of this SOP and likely applies to other SOPs. For example, section 4.3.5 of this SOP should cross-reference to SOP 7111-04020.
9. SOP 7116-04020, it is not clear to the NDEP that Geoprobe sampling is applicable at this site. Please discuss if TRX anticipates utilizing a Geoprobe at the site.
10. SOP 7124-04020, the NDEP has the following comments:

- a. Section 4.0 Method, this section lacks adequate description of calibration methods. If the calibration methods are not discussed in more detail, then the manufactures' manuals should be included as an attachment.
 - b. Section 5.2, please explain if oceanographic samples are expected to be collected at the Site.
 - c. Section 8.0 References, the two references listed are not used in the SOP.
11. SOP 7130-04020, the NDEP has the following comments:
- a. General comment, the NDEP suggests that a separate SOP be developed for the low flow purge and sampling method. This SOP should be written in accordance with applicable USEPA guidance. The NDEP has provided numerous comments on this issue to TRX in the past and these comments will not be repeated herein.
 - b. Section 3.0, please note that the NDEP generally does not approve of the use of bailers or Waterra pumps. These devices may have some limited applicability at the Site and should be discussed in detail with the NDEP prior to their use.
 - c. Section 3.0, it appears that TRX has not included the use of a PID or other suitable health and safety monitoring device as part of the list of "Required Materials". Please note that sites to the east and west of TRX have abandoned drilling and/or sampling efforts due to health and safety concerns detected by either a PID, FID, OVA or other such meter. TRX is strongly encouraged to review this issue.
 - d. Section 4.1, "Field instruments will be calibrated according to the requirements of." Insert for text crossed out "SOP 7124-04020 and/or the manufacturer's specifications."
 - e. Section 4.5, Free Product Determination, the NDEP does not recommend the use of product detection pastes as they can add chemicals to the groundwater.
 - f. Section 4.8.2, the high density plastic "Delrin" appears to have porosity issues associated with its extrusion and/or machining. The NDEP recommends this or similar products for single use only.
 - g. Section 4.9.1, pg 12 of 20, "...will be transferred to the appropriate containers directly for (sp?) the discharge source." For should be corrected to "from."
 - h. Section 4.9.3. "Groundwater samples requiring filtration prior to placement in sample containers can be placed in intermediate containers for subsequent filtration..." This procedure would, of course, exclude samples for either volatile or semi-volatile compounds.
 - i. Section 5.0 Quality Control.
 - i. QC sample types discussed does not include trip blanks.
 - ii. Discussion does not include QC sample collection frequency.
 - j. Two of the references for this section are quite dated (early 1980s); there has been a significant amount of research on ground water sampling techniques since then.
12. SOP 7131-04020, please note that field filtration should generally not be performed. The use of the low flow purge and sample methodology would likely eliminate the

need for this SOP. In addition, this SOP discusses the concept of “dissolved” contaminants but does not address colloidal transport. If TRX chooses to field filter a sample an unfiltered split sample must also be taken. If existing wells are a continuing problem (presenting elevated turbidity) these wells should be evaluated for repair or replacement.

13. SOP 7221-04020, additional comments may be provided on this SOP in the near future.
14. SOP 7315-04020, as discussed previously with TRX, this SOP should address the issue of the specific ionization potentials (IPs) that are expected at the site. These IPs should be utilized to select an appropriate lamp(s) for monitoring purposes.
15. SOP 7720-04020, the NDEP has the following comments:
 - a. It is not clear why TRX has chosen to include an SOP for slug tests but exclude all other forms of hydraulic testing.
 - b. This SOP does not contain any references. ASTM International has a publication titled *ASTM Standards on Determining Subsurface Hydraulic Properties and Ground Water Modeling* that covers a wide range of aquifer test methods.