

May 6, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection (NDEP) Response to:
Phase B Source Area Investigation Work Plan, Area I (Northern LOUs), Tronox LLC
Facility, Henderson, Nevada
Dated April 3, 2008

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's Phase B, Area I Sampling Analysis Plan (SAP) identified above and finds the document acceptable with the conditions and comments provided in Attachment A.

Errata sheets should be submitted based on the comments found in Appendix A. TRX should additionally provide an annotated response-to-comments (RTC) letter as part of the errata submittal. Alternately, in place of an RTC letter, TRX can discuss these comments with the NDEP in a meeting or via phone. Please advise the NDEP regarding the schedule for this submittal. Please note that it is NDEP's intent that TRX should be able to proceed with implementation of this SAP upon submittal of the erratum and RTC letter (or completion of meeting with NDEP in lieu of the RTC letter).

Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 extension 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:bar:sh

Attachments A and B

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Attachment A

1. General comment, it is the NDEP's understanding that the purpose of this work plan is to complete site characterization for Area I of the Site. It is the NDEP's understanding that the outputs of the implementation of this work plan will be: definition of decision units; definition of exposure areas; demonstration of the usability and adequacy of the data; completion of some degree of human health risk assessment; or collection of more data. If this is incorrect, please discuss with the NDEP. In future SAPs, please provide additional discussion on this issue.
2. General comment, TRX should note that the NDEP does not necessarily agree that the selected wells in the Appendix A LOU packets are representative of the up-gradient, cross-gradient, and/or down-gradient conditions at the corresponding LOU. It is noted, however, that the overall coverage of the groundwater sampling plan appears adequate.
3. General comment, TRX should clarify with the NDEP if a human health risk assessment (HHRA) work plan is going to be developed by TRX or if TRX is going to rely on the methodologies presented by others (e.g.: BRC's Section 9.0 of the approved *Closure Plan*). Please clarify this in all future SAPs in addition to providing clarification in the RTC for the Area I SAP.
4. General comment, TRX should clarify with the NDEP if the areas proposed for "continued use" are going to undergo a HHRA. If not, please explain what, if any, additional actions will be taken for these areas once site characterization is completed. Please clarify this in all future SAPs in addition to providing clarification in the RTC for the Area I SAP.
5. General comment, it is not clear that this SAP was developed with risk assessment as the output of the investigations. It is requested that future SAPs explicitly discuss this relationship and how the data that is being collected addresses the needs of a risk assessment. Please clarify this in all future SAPs in addition to providing clarification in the RTC for the Area I SAP.
6. Section 1.0, page 1-1, fourth paragraph, NDEP understands that deeper soils (greater than 10' bgs) may be investigated as part of the "Area" investigations for "Parcels" F, G, H and I. Please discuss this matter with the NDEP if this understanding is incorrect.
7. Section 1.1, page 1-3, TRX states that the USEPA Region IX PRGs may be used for a "screening level risk assessment". Per the NDEP's guidance under separate cover, please do not use the USEPA Region IX PRGs as they are not current. Region VI MSSSLs should be used instead.
8. Section 2.3.2, page 2-6, the NDEP has the following comments:
 - a. Regarding PCB analysis, please note the USEPA Method 1668 should be used for PCB congener analysis for any areas associated with trespass plumes from the west. Please advise the NDEP of any locations where this analysis will be completed, if applicable.
 - b. Regarding radionuclide analyses, please note, as discussed with TRX previously, it is expected that the radionuclide analyses will be consistent with the methods (and preparatory methods) used for the BRC/TIMET background data set.
9. Section 2.3.4.1, the NDEP has the following comments on proposed sample locations for SPLP analyses and physical analyses (Please provide errata sheets as necessary to address these comments in the Area I SAP. These comments should also be addressed in future SAP submittals.):

- a. TRX should add the following columns to the table at the bottom of page 2-7:
 - i. LOU Number
 - ii. Sample depth
 - iii. Expected soil type
 - iv. Analytes
 - v. Rationale
 - b. TRX has proposed using EPA Method 1312, extraction fluid #2 (reagent water at pH 5.00 ± 0.05). NDEP suggests that TRX additionally use EPA Method 1312, extraction method #3 (reagent water) for comparison by evaluating the following:
 - i. All soil wet chemistry for pH if wet chemistry was prepared with equivalent reagent grade water. (For worst case scenario, look for areas of known acid releases)
 - ii. All groundwater samples for pH.
 - c. The minimum sampling depth for the SPLP samples should be located below the source maximum depth (e.g. pond or landfill invert depth). The maximum depth for the SPLP samples should not be greater than the capillary fringe depth. Any samples located within the capillary fringe would potentially be in some state of equilibrium between the soil and liquid phases and therefore not representative of leachability.
 - d. NDEP suggests that TRX consider sampling different soil types for leachability.
 - e. NDEP has noted that two of the proposed sample locations proposed for SPLP analyses are located within the influence of the recharge trenches and that TRX has not provided any rationale for these SPLP sampling locations. NDEP suggests that no more than one boring if any be located in this area pending on TRX rationale for the collection of these SPLP samples.
 - f. The NDEP requests that the samples collected for geotechnical analysis be co-located with the samples collected for leaching characteristics. This will better facilitate any future fate and transport modeling.
 - g. NDEP suggests that geotechnical and leaching samples be collected for each LOU.
 - h. The NDEP requests that TRX discuss the anticipated future use of these samples with the NDEP prior to the collection of the SPLP samples.
10. Section 3, after a cursory review of this section, the NDEP has determined that this section should be excluded from this document. The topics discussed in this section are addressed in the Quality Assurance Project Plan (QAPP), which has been approved by the NDEP. TRX should remove Section 3 and reference the QAPP in future submittals. TRX should note that this Section was not reviewed by the NDEP and it is expected that the approved QAPP will dictate the project procedures.
 11. Section 3.3.2, page 3-3, as discussed with TRX previously, filtering of groundwater samples is not acceptable. If TRX complies with the SOP for low flow sampling, filtering should not be an issue. Failure to comply with the SOP will result in rejection of the data by the NDEP. If the referenced SOP includes filtering of groundwater samples, the SOP needs to be revised and resubmitted.
 12. Section 4, the NDEP suggests that this section removed and a meeting scheduled between TRX and NDEP after the receipt of the analytical data to discuss the statistical analyses that should be used to evaluate the collected data. In addition, the procedures for evaluating data adequacy and usability should be discussed with the NDEP.
 13. Section 5.0, page 5-1, TRX states that a final report will be developed and recommendations for additional work will be made. It is suggested that TRX instead discuss the data with the

NDEP and propose additional work as an addendum to this work plan. This is consistent with USEPA's recommended approaches for expedited site characterization.

14. Table 1, please note that the adequacy of the reporting limits in this table have not been reviewed by the NDEP as it is TRX's responsibility to insure that appropriate data is collected.
15. Table 2, Soil Sampling and Analysis Plan (SAP), the NDEP has the following comments (Please revise and resubmit this table. These comments should be additionally addressed in future SAP submittals.):
 - a. General comment, in future SAPs, TRX should closely review column "LOU Number" against the "Location Description and Characterized Area Rationale" column and the text and tables of the LOU packets for consistency. NDEP has noted several discrepancies in these columns and the LOU packets.
 - b. General comment, in future SAPs, TRX should review the Appendix A LOU packets to check that all LOUs that are associated with a specific boring are discussed in the "Location Description and Characterized Area Rationale" column for the corresponding boring.
 - c. General comment, organochlorine pesticides (OCPs) should be sampled to depth in all borings that OCP sampling has been indicated by TRX and/or requested by NDEP. All of Area I is underlain by a plume of organic contaminants that (at least partially) originates to the west of the TRX Site. It is noted that areas within the TRX Site may have also contributed to this plume.
 - d. General comment, TRX should note that the appropriate sampling depth for asbestos is the top 2 inches of soil (as indicated in the SOP).
 - e. General comment, TRX should revise the table to note that all samples within the 0-1' bgs interval will be collected from 0-0.5' bgs unless the area is paved. If the area is paved it is expected that the sample will be collected from a representative depth beneath the pavement. Alternately, if an unpaved area is within a reasonable distance the sample could simply be moved to the unpaved area.
 - f. General comment, NDEP does not believe that LOU 32 (Chromium and Perchlorate Groundwater Remediation Unit) needs to be separately characterized at this time as it is an active remediation area with no reported releases of untreated groundwater with detectable perchlorate or chromium concentrations. Additionally, all borings and groundwater monitoring wells proposed to characterize this LOU are associated with at least one other LOU.
 - g. SA66 and SA67, TRX has proposed this boring to evaluate LOU 5 – Beta Ditch, which is in Area II. LOU 5 is in Area II; therefore, there is not an Appendix A LOU packet available for review at this time. Additionally, these two borings are located adjacent to the Area I/Area II boundary. TRX should suspend advancement of these borings for inclusion in the Area II SAP so that NDEP can review the rationale and information included in the Appendix A LOU 5 packet for appropriateness of the proposed analytes and locations of these borings. Alternately, TRX can proceed with the installation of these borings if TRX believes that the analytical suites are sufficiently broad as to address both Areas sufficiently; however, the NDEP suggests that TRX add SVOC analysis to SA 66 and TPH-DRO/ORO analysis to SA67 for consistency with the area.
 - h. RSAN2 is not associated with LOU 35 according to the Appendix A LOU 35 packet and Table 5.

- i. The following borings should be advanced to the water table to be consistent with other borings. (If this depth is not feasible, TRX should supply justification/rationale for the difference in boring depth.): RSAL5, SA152, SA176, and SA189.
 - j. The following borings should include the corresponding analyses:
 - i. TPH-DRO/ORO: SA69, SA79, and SA82
 - ii. VOCs: SA79
 - iii. SVOCs: SA79 and SA82
 - iv. Organochlorine pesticides (OCPs): SA46, SA47, SA74, SA75, SA181, and SA183.
 - v. Asbestos: SA152
 - vi. PCBs: SA48, SA56, SA166, SA180
16. Table 3, Groundwater SAP, the NDEP has the following comments (Please revise and resubmit this table. These comments should be additionally addressed in future SAP submittals.):
- a. General comment, TRX should note that if the well screen is not know or cannot be determined, then the data collected from the corresponding well may not be useable. TRX should verify the well screen interval as part of the implementation of the SAP.
 - b. General comment, TRX should note that the proposed wells should not be screened across the entire water bearing zone (WBZ). NDEP suggests that the proposed wells be able to discretely sample both the alluvial aquifer and transitional Muddy Creek zones. Significant differences have been observed from samples collected from these two strata. NDEP acknowledges that this guidance differs from previous guidance, however, additional data has been received by the NDEP which supports this change.
 - c. General comment, TRX should review the Appendix A LOU packets to check that all LOUs that are associated with a monitoring well are discussed in the “Rationale” column for the corresponding monitoring well.
 - d. M-123, PCBs should be added to the sampling plan for this well per the text in LOU 35 Appendix A packet.
17. Tables 6 and 7, please note that these tables have not been reviewed by the NDEP as it is TRX’s responsibility to insure that appropriate data is collected. It is expected that these tables are consistent with the approved QAPP.
18. Figure 4, it is noted that wells that are designated as “dry” may be a function of the screened interval as deeper portions of the water table aquifer are likely saturated. For example, the transitional Muddy Creek formation or the upper portion of the Muddy Creek formation. This issue should be considered in future SAPs and reports.
19. Figure 5, Phase B Well Locations, TRX should update and resubmit this figure based on NDEP’s comments.
20. Plate A, TRX should update and resubmit this plate based on NDEP’s comments.
21. Appendix A, the NDEP has the following comments:
- a. General comment, TRX should check the legends of Figure 1 in each of the LOU packets for inclusion of all symbols used on each figure. For example, the following symbols should be defined: bold yellow dashed line, bold grey dashed line, solid thin black line, etc. Please address this in future SAPs.
 - b. General comment, TRX should review the NDEP’s comments for Figure 1 for each LOU and make appropriate changes to the Soil and Groundwater Sampling Plans (Table 2, Table 3, and Appendix A: Tables A and B). NDEP has provided Attachment B to this letter, which contains LOU maps with hand-noted revisions to illustrate NDEP’s

- comments. If TRX concurs with these changes, Plate A should be revised to reflect these changes. It is not necessary to revise and resubmit each Figure in Appendix A.
- c. General comment, NDEP has noted that the cation data from the Phase A Investigation were collected several months after the anion data. Please note that these data are not useable for cation/anion balance. Also, please contact the NDEP to explain this collection procedure as it is very atypical.
 - d. LOU 1, (Former) Trade Effluent Settling Ponds, the NDEP has the following comments:
 - i. Table A, please see the above comments for Table 2 as applicable.
 - ii. Table B, please see the above comments for Table 3 as applicable.
 - iii. Figure 1, the NDEP has the following comments:
 - 1. General comment, LOU 60 should be noted.
 - 2. SA79 should be relocated within the white-stained area located approximately 100 feet west-northwest from the originally proposed location of SA79.
 - 3. RSAI2 should be relocated within the white-stained area adjacent to the east of LOU 10 located approximately 230 feet north of the originally proposed location of RSAI2. This boring should be relocated to better characterize LOU 10.
 - 4. RSAI3 should be relocated to just south of LOU 10 to better characterize LOU 10.
 - e. LOU 2, Open Area South of the Trade Effluent Settling Ponds, the NDEP has the following comments:
 - i. Table A, please see the above comments for Table 2 as applicable.
 - ii. Figure 1, the NDEP has the following comments:
 - 1. SA134 should be added to this figure.
 - 2. SA15 marker should be added to this figure.
 - 3. M6A should be added to the groundwater sampling analysis plan for LOU 2.
 - f. LOU 10, On-Site Hazardous Waste Landfill (Closed) , the NDEP has the following comments:
 - i. Table A, please see the above comments for Table 2 as applicable.
 - ii. Figure 1, RSAI2 and RSAI3 should be relocated as discussed in the above LOU 1 comments.
 - g. LOU 22 and LOU 23, Ponds WC-West and WC-East, respectively, the NDEP has the following comments:
 - i. Table A, please see the above comments for Table 2 as applicable.
 - ii. Figure 1, the NDEP has the following comments:
 - 1. SA79 should be relocated as discussed in the above LOU 1 comments.
 - 2. RSAJ8 may be removed from the sampling plan. The NDEP believes that this boring is located too far cross-gradient from LOU 23 for characterization of this LOU.
 - 3. M-84 should be replaced with well M-86 in the groundwater sampling plan.
 - h. LOU 35, Truck Emptying/Dumping Site, the NDEP has the following comments:
 - i. Table A, please see the above comments for Table 2 as applicable.
 - ii. Figure 1, the NDEP has the following comments:
 - 1. An additional boring should be added in the large white-stained area near the northwest corner of LOU 35.
 - 2. An additional boring should be added in the large white-stained area south of SA09 near the western boundary of grid O-3.

3. SA166 should be located as discussed in the following LOU 60 comments.
- i. LOU 38, Former Satellite Accumulation Point AP-Laboratory, the NDEP has the following comments:
 - i. Table A, please see the above comments for Table 2 as applicable.
 - ii. Figure 1, RSAN3 should be relocated adjacent to the northern boundary of LOU #38 in order to place the boring in the down-gradient side of the site based on topography unless TRX has information/additional rationale for locating the boring adjacent to the western boundary of this LOU.
 - j. LOU 54, AP Plant Area Change House / Laboratory Septic Tank, the NDEP has the following comments:
 - i. Table A, please see the above comments for Table 2 as applicable.
 - ii. Figure 1, the NDEP has the following comments:
 1. TRX should indicate the location of the septic tank.
 2. SA85 should be located at the outlet for the septic tank.
 3. If the septic tank location is unknown, then TRX should advance three borings in this LOU to triangulate the approximate location of the septic tank.
 - k. LOU 58, AP Plant Area New Building D-1, the NDEP has the following comments:
 - i. Table A, please see the above comments for Table 2 as applicable.
 - ii. Figure 1, TRX should review the location of RSAL5 and relocate it as necessary. The aerial photograph seems to indicate the presence of structures on the proposed location for this boring.
 - l. LOU 60, Former Acid Drain System Segment, the NDEP has the following comments:
 - i. Table A, please see the above comments for Table 2 as applicable.
 - ii. Figure 1, the NDEP has the following comments:
 1. Borings RSAL4, SA50, SA82, SA134, SA166, and SA182, SA189 should be located directly over the former acid drain by using a backhoe or other similar equipment to locate the drain. NDEP requests that TRX locate the borings over joints in the former acid drain system if discovered.
 2. RSAJ3 should be relocated to the outlet of the former acid drain system.
 3. An additional boring should be located to the west of the outlet of the acid drain system approximately the same distance as SA202 is from the outlet to the east.
 - m. LOU 64, Koch Materials Company Site (Former Asphalt Batch Plant) , the NDEP has the following comments:
 - i. Table A, please see above comments for Table 2 as applicable.
 - ii. Figure 1, the NDEP has the following comments:
 1. SA46 should be relocated approximately 75 ft west of the eastern boundary and 90 ft north of the southern boundary of LOU 64.
 2. SA50 and SA182 should be located as discussed in the above LOU 60 comments.
 3. RSAO4 should be moved to the approximate location of former boring TS, BG.
 4. An additional sample should be located within the disturbed approximately square area between LOU 64 and LOU 35 (located to the south of the “pan handle” of LOU 64).

Attachment B