

July 21, 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 II (Central LOUs). Tronox LLC*  
*Facility, Henderson, Nevada*  
Dated June 27, 2008

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's Phase B, Area III 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 errata 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](mailto: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

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### Attachment A

1. General comment, NDEP has noted numerous typographic errors and cross-referencing errors in the text, tables, and figures of this document but will not list these in this response letter. TRX should review documents in greater detail and revise as necessary prior to submittal.
2. General comment, some site-wide changes to the sampling plan have been requested under separate cover. Please refer to separate letter dated July 21, 2008.
3. General comment, NDEP noted numerous errors in the Medium Specific Screening Levels (MSSLs), Maximum Contaminant Levels (MCLs), etc. listed in the tables of the main text and Appendix A LOU packages and notes the following (TRX should note that the following is not an exhaustive list):
  - a. TRX should review these values in greater detail and revise as necessary prior to the submittal of future documents.
  - b. The non-cancer endpoint MSSL for arsenic is used instead of the cancer endpoint MSSL.
  - c. TRX did not include the MSSL for titanium.
  - d. TRX did not include the MSSL for thallium.
  - e. TRX should use the values listed for the outdoor worker as these are more stringent. Indoor workers will be addressed using the indoor air pathway.
  - f. TRX should list the more stringent of the cancer versus non-cancer endpoint MSSLs for each contaminant.
4. Section 1.0, page 1-2, as noted previously, it is the NDEP's expectation that TRX will meet with the NDEP to discuss the format of the final Phase B Source Area Investigation Report prior to submittal.
5. Section 1.1, page 1-3, 4<sup>th</sup> paragraph, as noted previously, it is the NDEP's expectation that TRX will meet with the NDEP to discuss data usability prior to the submittal of the final Phase B Source Area Investigation Report.
6. Section 1.2, page 1-5, TRX lists the Phase A Investigation Results Report as a document of record. The NDEP did not approve this document but accepted the submittal of the Phase B SAPs in lieu of TRX submitting a revised Phase A Report. TRX should note that while the validated data presented in the Phase A Report was approved by the NDEP, the procedures/methodologies, recommendations, and conclusions in the Phase A Report were neither approved nor rejected by the NDEP.
7. Section 2.2.1, page 2-3, 2<sup>nd</sup> paragraph, TRX states that "If current operations do not exacerbate contamination, future closure may not require sampling for the full SRC list (i.e., if a chemical is not detected in the Phase B Investigation and is not a part of the process associated with the LOU, it may not be analyzed for at the time of closure)." The NDEP does not necessarily concur with this statement at this time and will review this issue at the time of closure.
8. Section 2.2.1, page 2-4, 3<sup>rd</sup> paragraph, TRX should include discussion on groundwater as a source of continuing soil contamination.
9. Section 2.3.2, page 2-6, 1<sup>st</sup> bullet, the NDEP has the following comments:
  - a. TRX should note that sampling for PCBs is necessary in several locations in Area II.
  - b. TRX should note that PCB analyses should include Aroclor and congener analyses.

- c. NDEP has added PCBs and TPH DRO/ORO analysis to any borings located in the vicinity of Western Area Power Administration (WAPA) property. Please see Table 2 comments.
10. Section 2.3.2, page 2-6, last bullet, TRX should note that cyanide sampling should be conducted at all sampling locations located west of column 6 of Plate A, not inclusive, per NDEP's comment in a June 18, 2008 response letter and TRX subsequent response to comments (RTCs) dated June 23, 2008.
11. Section 2.3.4.1, page 2-7, 1<sup>st</sup> paragraph, based on a review of Table 2, the Muddy Creek formation (Mcf) does not seem to be represented in the proposed geotechnical sampling.
12. Tables, the NDEP has the following comments:
- a. General comment, the List of Tables on page iii of the Contents and the actual Tables located in the Tables section are not consistent as follows:
    - i. Table 8 is not a List of Soil Screening Levels... but is the Summary of Well Completion Data.
    - ii. No Table 9 was located.
    - iii. All references in the text of the report to these two tables are erroneous.
  - b. Table 2, the NDEP has the following comments
    - i. TRX should submit errata pages for Table 2 that addresses the following comments for Table 2 and the comments for Appendix A as appropriate.
    - ii. TRX should add a column for PCB analysis.
    - iii. TRX should indicate in a footnote that platinum will be added to the analyses for boring SA126.
    - iv. The following borings should be advanced to the water table to be consistent with other borings. (If this depth is not feasible or practical, TRX should supply justification/rationale for the difference in boring depth.): SA122, SA151, SA155, SA167, SA170, SA173, SA179, and SA196.
    - v. The following borings should include the corresponding analyses:
      - 1. SVOCs: SA62, SA71, SA144, SA145, SA61, SA158, SA133, SA208, RSAS5, and SA31
      - 2. Cyanide, please see the following comments:
        - a. TRX should note that NDEP requested that "all borings located in Area 4 west of column 6 (not inclusive) and all borings associated with LOU 60 downstream of the LOU 63 conveyance piping junction" in the June 18, 2008 response letter to the Phase B Area IV SAP.
        - b. The following borings should include analysis for total cyanide: SA72, SA123, SA73, SA66, SA67, SA65, SA70, SA104, RSAM5, SA64, SA175, RSAM6, SA197, SA198, SA63, SA92, SA155, RSAM7, SA71, SA144, RSAM8, SA58, SA94, SA113, SA196, SA60, SA105, SA49, SA154, SA107, RSAN7, SA158, SA41, SA45, SA50, SA102, SA172, SA187, SA188, SA40, SA42, SA126, RSAQ6, SA30, SA32, SA125, SA161, and RSAR6
      - 3. PCBs: SA92, SA62, SA71, SA144, SA145, RSAM8, SA151, RSAN7, SA61, SA158, SA122, SA170, SA133, SA208, RSAS5, and SA31
      - 4. TPH DRO/ORO: SA70, SA104, SA64, SA175, SA198, SA155, SA71, SA49, SA107, SA122, SA170, and SA102

5. TPH GRO: SA131, SA128, SA70, SA104, SA129, RSAM5, SA175, SA86, SA92, SA155, RSAM7, SA71, SA144, RSAM8, SA49, SA154, SA107, RSAN7, SA158, SA50, SA53, SA102, SA51, RSAO6, and SA200
  6. 1,4 dioxane: SA133
  7. Organophosphorus Pesticides (OPPs): SASA131, SA66, SA67, SA128, SA70, SA104, SA129, SA175, SA86, SA92, SA155, SA71, SA165, SA49, SA154, SA107, RSAN7, SA158
- c. Table 3, the NDEP has the following comments:
- i. General comment, TRX should note that the NDEP does not necessarily agree that the selected wells are representative of the up-gradient, down-gradient and/or cross-gradient conditions as stated in the Appendix A LOU packets. The NDEP does note that the overall coverage of the groundwater sampling plan appears adequate.
  - ii. TRX should add analysis for 1,4-dioxane for all wells associated with this area.
  - iii. TRX has noted that well information for well M-2A has not been located. TRX should note that any data collected from this well without the well information may not be usable.
- d. Table 6, TRX should note that this table was not reviewed in detail by the NDEP as it is NDEP's assumption that this table is consistent with the approved QAPP.
- e. Table 7, TRX should note that this table was not reviewed in detail by the NDEP as it is NDEP's assumption that this table is consistent with the approved QAPP.
13. Figure 4, NDEP noted that the wells used in this figure are not the same as those listed for the Phase B site-wide groundwater investigation. TRX should at a minimum use these wells in the creation of this figure.
14. Plate A, update this plate to include the following comments to the Appendix A LOU packets that affect boring placement. TRX should additionally submit four copies of a revised map that includes NDEP's requested revisions for Areas I, II, III, and IV. These copies will be placed in each of the Phase B SAPs.
15. Appendix A, the NDEP has the following comments:
- a. LOU 5 (Beta Ditch), the NDEP has the following comments (please see the corresponding attached figure as necessary):
    - i. TRX should note the depth of this LOU and whether this will affect the comparison of the data collected within the Beta Ditch with the data collected for the rest of the Site (elevation difference in compared samples).
    - ii. The table in this Section of the Appendix does not address any of the off-Site sources that were disposed of in the Beta Ditch. This is a global comment which applies to all of the applicable area-specific CSMs that are in Appendix A. NDEP considered this issue during the review of the document and requested additional sampling, as appropriate.
    - iii. PCBs analysis should be added to all samples collected for LOU 5. (Please see above comment for Table 2 for specific borings.)
    - iv. SA129 should be moved to a location just downstream of where LOU 60 (Acid Drain System) crossed over LOU 5.
    - v. SA67 should be moved north to the bottom of LOU 5.
    - vi. SA69 (Area I) should include all analytical suites for consistency with LOU 5.

- vii. SA165 should be moved in the downstream direction to provide separation from the additional boring requested below. Please note that the sample should still be located well above the confluence of the Western Diversion Ditch and the main channel.
  - viii. One additional boring should be located at the outfall of LOU 59 (Storm Drain System). The analyses for this boring should include, perchlorate, metals (Phase A List), Hexavalent Chromium, TPH ORO/DRO, TPH GRO, VOCs, Wet Chemistry, Total Cyanide, OCPs, OPPs, SVOCs, Radionuclides, Dioxins/Furans, PCBs, and Asbestos
- b. LOU 7, 8, 9, 13, and 14 (Old Ponds P-2 and P-3, New Pond P-3, Ponds S-1, P-1 and associated conveyance piping), the NDEP has the following comments (please see the corresponding attached figure as necessary):
- i. TRX should check volume values reported. Volume calculation seems to be in error based on the small reported change in dimensions and the corresponding large increase in volume. If the volume is correct, please provide additional details (e.g.: was a large berm constructed?).
  - ii. SA53 should be moved to the soil stained area west of LOU 9.
  - iii. An additional boring should be located in LOU 8 near SB2-8.
  - iv. An additional boring should be located in LOU 7 in the vicinity of the observed wall stains.
  - v. An additional boring should be located in LOU 7 in the vicinity of the observed “white encrustments”.
- c. LOU 16, 17, 18, 19, 52, and 57 (AP Plant Area), the NDEP has the following comments (please see the corresponding attached figure as necessary):
- i. General comment, NDEP assumes that characterization of LOU 19, (AP-5 and AP-6) will occur after AP-5 has been decommissioned. NDEP will reserve commenting on these ponds until that time.
  - ii. LOU 57 piping (historic and current) should be indicated on this LOU figure. Please revise this figure for inclusion in the Phase B Investigation Report.
  - iii. SA65 should move to the area of depression observed off of the northeast corner of LOU 52.
- d. LOU 20 (Pond C-1 and Associated Piping in Area II):
- i. TRX reports that electrolytic wastes are associated with this LOU. Please add the following analyses to the borings associated with this LOU: PCB and SVOCs.
  - ii. Please provide the materials of construction of the cathodes.
  - iii. SA154 should be located as close as possible to the associated piping for this LOU.
- e. LOU 29 (Solid Waste Dumpsters)
- i. Please clarify whether SA122 is located on the concrete pad or in the gravel section between the pads.
  - ii. Due to the proximity of WAPA property, TRX should add the following analyses to the borings associated with this LOU: PCBs and TPH ORO/DRO.
- f. LOU 30 and 56 (AP Area – Pad 35 and Old Building D-1 Washdown), the NDEP has the following comments (please see the corresponding attached figure as necessary):
- i. SA173 should be moved east to be located within LOU 56.
  - ii. SA179 should be moved west to be located within LOU 56.
  - iii. SA123 should be moved to the north side of LOU 30.

- g. LOU 31 (Drum Recycling Area), SA72 should be moved to a location in the former drum storage area. (Please see the corresponding attached figure as necessary.)
- h. LOU 36 (Former Satellite Accumulation Point, Unit 3, Maintenance Shop), TRX should add the following analyses to the borings associated with this LOU: PCBs, SVOCs, and 1,4 dioxane.
- i. LOU 43, 11, 12, and 15 (Unit 4 Basement and Old Chlorate Plant Decommissioning, Sodium Chlorate Filter Cake Holding Area, Hazardous Waste Storage Area and Platinum Drying Unit), the NDEP has the following comments (please see the corresponding attached figure as necessary):
  - i. TRX should include the data for boring SA05 instead of SA07 in the historic data tables.
  - ii. TRX reports that electrolytic wastes are associated with this LOU. Please add the following analyses to the borings associated with this LOU: PCB and SVOCs.
  - iii. TRX should indicate in a footnote that platinum will be added to the analyses for boring SA126.
  - iv. SA126 should be moved to the west of LOU 15.
  - v. SA124 should be moved into LOU 11. If this is not feasible, please explain.
  - vi. SA 125 should be moved into LOU 12. If this is not feasible, please explain.
- j. LOU 45 (Diesel Storage Tanks), SA188 should be moved north to a location above LOU 60. (Please see the corresponding attached figure as necessary.)
- k. LOU 55 (Area Affected by July 1990 Fire), RSAL6 should be moved to the soil adjacent to the pad in the direction of drainage.
- l. LOU 59 (Storm Drain System Segment), the NDEP has the following comments (please see the corresponding attached figure as necessary):
  - i. General comment, the borings associated with this LOU should be located immediately adjacent to the storm drain system whenever possible.
  - ii. RSAQ5 should be moved north adjacent to LOU 59 in the vicinity of the southwest corner of ChemStar property.
  - iii. RSAR6 should be moved north adjacent to LOU 59 and over LOU 60.
  - iv. An additional boring should be located adjacent to LOU 59 at the 90 degree turn just south of ChemStar property.
  - v. An additional boring should be located adjacent to LOU 59 just north of ChemStar property, south of LOU 45 and over LOU 60.
  - vi. An additional boring should be located adjacent to LOU 59 just south of LOU 34 at the 90 degree turn just north of ChemStar property.
- m. LOU 60 (Former Acid Drain System), the NDEP has the following comments (please see the corresponding attached figure as necessary):
  - i. General comment, the borings associated with this LOU should be located directly above the former acid drain system whenever possible.
  - ii. General comment, for borings located above LOU 60, TRX should log the condition of the pipe, if possible, and collect a sample directly underneath the pipe. This sample may be substituted for the next proposed 10 foot interval in the Phase B SAPs, Table 2 (e.g. if the bottom of the Former Acid Drain System pipe was located at 8 fbg, then the sample should be collected directly underneath the pipe and not at 10 fbg). Please note that this comment additionally applies to the Phase B Area I and IV SAPs.