



STATE OF NEVADA  
Department of Conservation & Natural Resources  
DIVISION OF ENVIRONMENTAL PROTECTION

Brian Sandoval, Governor  
Leo M. Drozdoff, P.E., Director  
Colleen Cripps, Ph.D., Administrator

May 19, 2011

Jay A. Steinberg  
Nevada Environmental Response Trust  
35 East Wacker Drive, Suite 1550  
Chicago, IL 60601

Re: **Tronox LLC (TRX) Facility**  
**Nevada Environmental Response Trust (Trust) Property**  
**NDEP Facility ID #H-000539**  
Nevada Division of Environmental Protection (NDEP) Response to:  
*Closure and Post-Remediation Screening Health Risk Assessment Report for Parcels C, D, F, G and H, Tronox LLC, Henderson, Nevada*  
Dated: December 10, 2010

Dear Mr. Steinberg,

The NDEP has received and reviewed TRX's above-identified Deliverable and provides comments in Attachment A. A revised Deliverable should be submitted based on the comments found in Attachment A if the Trust decides to pursue no further action in these areas. Please advise the NDEP by **June 10, 2011** regarding whether the trust will continue to pursue no further action at the referenced Parcels and if so, please provide the schedule for this resubmittal. Additionally, if the Trust should decide to continue, an annotated response-to-comments letter should be provided as part of the revised Deliverable.

Please contact the undersigned with any questions at [sharbour@ndep.nv.gov](mailto:sharbour@ndep.nv.gov) or 775-687-9332.

Sincerely,

Shannon Harbour, P.E.  
Staff Engineer III  
Bureau of Corrective Actions  
Special Projects Branch  
NDEP-Carson City Office  
Fax: 775-687-8335

SH:wk:sh

EC: Jim Najima, Bureau of Corrective Actions, NDEP  
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Nick Pogoncheff, PES Environmental  
Lee Erickson, Stauffer Management Company  
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Kathryn Hoffmann, Clean Water Team  
Teri Copeland, Neptune and Company, Inc.  
Kurt Fehling, The Fehling Group, LLC  
Joanne Otani

CC: Lee Farris, BRC, 875 W. Warm Springs Road, Henderson, NV 89011  
Lee Erickson, Stauffer Management Company

## Attachment A

1. General comment, the health risk assessment (HRA) should present the cumulative incremental cancer risk (ILCR) and hazard index (HI) for all pathways (including inhalation of VOCs) for each of the three commercial/industrial receptors. Currently, the HRA only characterizes the VOC inhalation pathway by stating “Excess cancer risks associated with exposure of an indoor commercial worker to the COPCs in soil gas through inhalation of vapors in indoor air at the Parcels are at or below  $1 \times 10^{-6}$ , and hazard index values are well below 1”. Please revise as necessary.
2. General comment, the specific soil gas samples and their associated ILCR/HI should be provided in a table in the HRA. Alternately, the appropriate referencing and discussion should be added to the site-wide soil gas HRA.
3. Executive Summary, NDEP has the following comments:
  - a. Page 1, 2<sup>nd</sup> paragraph, TRX states that the parcels “have been successfully remediated”. However, several statements are provided in Section 3.0 that discuss areas that have not yet been remediated (see additional comments below). Please revise accordingly.
  - b. Page 1, 3<sup>rd</sup> paragraph, contrary to this paragraph, not all of the soil data collected as part of the initial and confirmation sampling effort were usable according to the Data Usability section (Section 4.2). Please revise accordingly.
  - c. Page 2, Soil to Groundwater Leaching, and pages 36-38, Section 5.3, NDEP has noted that two chemicals (alpha- and beta-BHC) failed the leaching screening analysis. Accordingly, these chemicals warrant further analysis. In addition, perchlorate is dismissed in the Executive Summary and at the end of Section 5.3 based upon the fact that it will be addressed as part of the site-wide groundwater and vadose zone evaluation. The Trust should note that, to date, the leaching pathway has not been fully assessed as necessary. Please revise accordingly.
4. Section 3.2, page 12, TRX states “Approximately, 8,345 square feet...remains to be remediated”; Section 3.3 Section 3.3, TRX states “Two small portions of proposed remediation areas in Parcel F were not scraped because of impediments...”; and Section 3.4, “Three small portions of proposed remediation areas in Parcel F were not scraped because of impediments...”). NDEP has the following comments:
  - a. Please clarify whether the sampling data for these areas are presented in the HRA as NDEP could not locate this data.
  - b. Please clarify whether the sampling data from these areas were included in the HRA ILCR and HI calculations.
5. Section 4.2, pages 15-22, NDEP has the following comments:
  - a. Table B1 (DVSR) should be used in this section.
  - b. Criterion IV, pages 20-22, In accordance with NDEP Guidance, a list of all rejected data, and otherwise unusable data (e.g. PAH data discussed on page 16) should be provided in a table in the HRA. Additionally, documentation should be provided, if appropriate, that clarifies that exclusion of these data from the HRA does not result in data gaps. If the rejection of data does result in a data gap, then discussion on how the data gap will be addressed should be included. Please revise as appropriate.
  - c. Criterion IV, page 21, 2<sup>nd</sup> paragraph, as a component of the precision evaluation, please discuss the field duplicate data for dioxins/furans (and any other relevant analytical suite)

in terms of uncertainties. This may also be a representativeness issue. As an example, see sample TSB-CJ-06-0 and TSB-CJ-06FD, Table C5

6. Section 5.1.3, page 26, the bullet for Construction Worker should include the sub-bullet "Outdoor inhalation of VOCs from Soil and Groundwater<sup>8,9</sup>."
7. Section 5.2.2, Evaluation of Site Concentrations Relative to Toxicity Screen, the NDEP provides the following comments:
  - a. Page 34, last bullet on page and Table 2, the text states that the maximum detected dioxin/furan TEQ concentration is 795 pg/g while Table 2 lists it at 765 pg/g. Please correct this discrepancy.
  - b. Page 35, 2nd bullet, according to NDEP guidance, surrogate toxicity values should be used for organic chemicals detected in site media that lack IRIS toxicity values. The following surrogates are suggested:

Site-Related Chemical	Toxicological Surrogate
Endrin aldehyde	Endrin
gamma-Chlordane	Chlordane
Di-n-octyl phthalate	Butyl benzyl phthalate
1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene

Because a reasonable surrogate has not been identified for octachlorostyrene, please discuss in the uncertainty analysis the impact of exclusion of this chemical in the HRA.

8. Section 5.3, Selection of Chemicals of Potential Concern Based on Potential Leaching to Groundwater, pages 37-38, for chemicals that are elevated over LBCLs, including perchlorate, please present groundwater data and/or other lines of evidence to support elimination of these chemicals as COPCs for the leaching pathway.
9. Section 5.5, Toxicity Assessment, page 45, and Table 12, Summary of Toxicity Criteria and Absorption Factors for Chemicals of Potential Concern, because California EPA toxicity values are used in the HRA (as referenced in Table 12), please update the hierarchy of sources accordingly for these values in Section 5.5.
10. Section 5.7, Uncertainty Analysis, pages 55-56, please discuss uncertainties associated with detected chemicals that were evaluated based on toxicological surrogates or not evaluated based on failure to identify a toxicological surrogate.
11. Section 5.8, Findings from the site-Wide Soil Gas HRA, please provide the maximum ILCR and HIs for the inhalation of vapors for each of the parcels in addition to those ILCRs and HIs calculated for this direct contact HRA. Alternately, please provide appropriate references to the site-wide soil gas HRA.
12. Table 2, Parcel Soil Data Results Summary – Organics and General Chemistry, NDEP provides the following comments:
  - a. Dibenz(a,h)anthracene is listed as having a detection frequency of 0% yet is also listed as having one detection above the BCL. Please rectify this discrepancy.
  - b. Footnote d, please note that this TPH screening value is not a BCL.
13. Table 8, Parcel Chemicals of Potential Concern (COPC) Selection, and Appendix B, DVSRs, the maximum detected concentration of HCB of 0.37 (TSB-CJ-05, Parcel C collected in 11/2007) could not be confirmed and Aroclor 1254 of 0.29 (TSB-FJ-06-02, parcel F in

- 6/2008) as the original laboratory analytical sheets could not be located in Appendix B. Please confirm that the laboratory sheets are included.
14. Figure 7, Conceptual site model diagram of potential human exposures – Parcels C, D, F, G, and H, NDEP provides the following comments:
    - a. Volatilization to indoor/outdoor air should be shown as a complete pathway for the construction worker. Please revise.
    - b. Please footnote boxes for volatilization to indoor/outdoor air to reference the Site-Wide Soil Gas Human Health Risk Assessment.
  15. Appendices, for future Deliverables, please include a table of contents listing the components (i.e. file names and descriptions of contents) of the appendices. For this HRA, the lab reports for all of the data summarized in Appendix C tables could not be located.
  16. Appendix C, Data Summary Tables, please add a footnote to these Tables indicating that the shaded cells indicate samples that have been removed and not included in the HRA.
  17. Appendix F, Risk Assessment Calculation Spreadsheets and Supporting Documentation, NDEP provides the following comments:
    - a. 4,4 DDD is included in the calculations but is not identified as a COPC. Please clarify this discrepancy.
    - b. Please note the following: the calculation spreadsheets appear to be correct based upon our random calculation checks. For future Deliverables, please note that the oral bioavailability value is not included in the calculations even though it is presented as an exposure parameter. Also, the percent contribution for the construction worker ILCR is not presented for all COPCs (“NA” is listed for many COPC when in fact it may be calculated). While these comments do not affect the calculations for this HRA, they are noted in the case that the spreadsheets are used as templates for future reports. Please correct this oversight in any future HRA submittals.