NEVADA DIVISION OF
ENVIRONMENTAL
PROTECTION

STATE OF NEVADA
Department of Conservation & Natural Resources
Brian Sandoval, Governor
Bradley Crowell, Director
Greg Lovato, Administrator

December 11, 2017

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: *Health Risk Assessment for Parcel H, Nevada environmental response trust site, Henderson, Nevada*

Dated: October 20, 2017

Dear Mr. Steinberg,

The NDEP has received and reviewed the Trust's above-identified Deliverable and provides comments in Attachment A. A revised Deliverable should be submitted **by 02/12/2018** based on the comments found in Attachment A. The Trust should additionally provide an annotated response-to-comments letter as part of the revised Deliverable.

Please contact the undersigned with any questions at wdong@ndep.nv.gov or 702-486-2850 x252.

Sincerely,

Dong

Weiquan Dong, P.E.
Bureau of Industrial Site Cleanup
NDEP-Las Vegas City Office

WD:cp

EC:
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Carlton Parker, NDEP BISC Las Vegas
Allan Delorme, Ramboll Environ
Alison Fong, U.S. Environmental Protection Agency, Region 9
Andrew Barnes, Geosyntec
Andrew Steinberg, Nevada Environmental Response Trust
Anna Springsteen, Neptune & Company Inc.
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Chinny Esakkiperumal, Olin Corporation
Chris Ritchie, Ramboll Environ
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Dan Pastor, P.E. TetraTech
Dave Share, Olin
Dave Johnson, LVVWD
Derek Amidon, Tetratech
Ebrahim Juma, Clean Water Team
Ed Modiano, de maximis, inc.
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Scott Bryan, Central Arizona Project
Steve Clough, Nevada Environmental Response Trust
Steven Anderson, LVVWD
Tanya O'Neill, Foley & Lardner L
Todd Tietjen, SNWA

Attachment A

1. Groundwater and Soil Gas Data. The text of the HRA for Parcel H both supports and alternatively discounts the use of groundwater data for the soil vapor evaluation throughout the document; including the Summary and Conclusions. An example from the Executive Summary (page ES-3) follows:
    1) "Shallow groundwater data was evaluated for the vapor intrusion pathway as a second line of evidence for the vapor migration. Shallow groundwater data collected after January 2006 within Parcel H were evaluated in the HRA. Potential exposure to groundwater was evaluated for future onsite indoor and outdoor commercial/industrial workers and construction workers via inhalation of vapors migrating from shallow groundwater to indoor air, outdoor air, and trench air. All VOCs detected in at least one shallow groundwater sample were selected as groundwater COPCs. A total of 23 VOCs were identified as groundwater COPCs for Parcel H."
    2) "Only soil gas samples were collected to support evaluation of the vapor intrusion pathway. The objectives of groundwater sampling at the Site have been primarily to characterize site-related chemicals (SRCs) in groundwater near suspected source areas and plume delineation; that is, no groundwater investigation was conducted to specifically provide data to evaluate the vapor intrusion pathway Shallow groundwater data was evaluated for the vapor intrusion pathway as a second line of evidence."
    3) In the conference call with NERT it was NDEP's intent that the soil gas evaluation would use multiple lines of evidence including both soil gas and groundwater monitoring data. It was not intended that groundwater would be a "second line of evidence" and subordinate to shallow soil gas as implied by the Deliverable. The NDEP understands that the groundwater data was collected over time (approximately 2006 through 2015) and was collected in accordance with NDEP approved sampling and analysis plans and analyzed following USEPA methods for VOCs and SVOCs.

   The Deliverable should be revised to address these inconsistencies and apparent conflicting position on the use of groundwater data as an additional line of evidence for vapor intrusion.

2. Executive Summary, page ES-3, last paragraph, last sentence. The Deliverable states: "Based on the risk levels presented herein, Ramboll Environ believes that the risk levels are acceptable for unrestricted future development at Parcel H." This statement should be clarified as the intent of the Deliverable is to support a restricted, commercial/industrial land use closure. Unrestricted is only applicable for residential closures.

3. Section 6.2.2.3, pages 78-79. The Deliverable states: "As discussed in Section 5.2.3, the Johnson and Ettinger (J&E) model has numerous assumptions and limitations, each of which may over- or under estimate the predicted indoor air concentration. In this case, site-specific soil physical parameters were used in the modeling, which should reduce the uncertainty in the model estimates." The soil samples listed in Table 5-11 were not specific to Parcel H; but, were all collected north of Parcel H and located in the facilities area and north of the facilities.

Please clarify location of the soil sample locations and include a map for reference relative to Parcel H and discuss why these parameters are applicable to Parcel H.

4. Table 5-9. Please clarify the use of two different values (0.158 and 0.076) for water filled porosity.

5. Appendix Q2/Q3 Soil Gas and Groundwater. Excel file with name JE_GW-SG_H. A check on Datenter, Chemprops, and Vlookup in the original J&E file veresus Datenter, Chemprops, and Vlookup (not tab labeled VLOOKUP – Original). Please double check that the default J&E physical and chemical parameters were used in the modeling as NDEP notes that the KOC values for chloroform and chlorobenzene appear to be incorrect as they are not model default values. Please check and verify chemical all properties using the original J&E Groundwater Advanced Model Version 3.1 dated Feb. 2004.

6. Section 5.2.2.3, page 57. The Deliverable states: "The soil property results (shown in Table 5-13) were used for modeling purposes and are the average of 15 site-specific values measured from 9-10 ft bgs." Please correct the reference as the data referred to herein is in Table 5-11 not Table 5-13.