NEVADA DIVISION OF
ENVIRONMENTAL
PROTECTION

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

October 30, 2018

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: *Unit 4 and 5 Building Investigation, Data Validation Summary Report and Electronic Data Deliverable and Associated EDD*

Dated: July 31, 2018

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 12/31/2018** 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 Weiqu

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

WD:cp

EC:
James Dotchin, NDEP BISC Las Vegas
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.
Betty Kuo Brinton, MWDH2O
Brenda Pohlmann, City of Henderson
Brian Waggle, Hargis + Associates

Carol Nagai, MWDH2O
Chinny Esakkiperumal, Olin Corporation
Chris Ritchie, Ramboll Environ
Chuck Elmendorf, Stauffer Management Company, LLC
Dan Pastor, P.E. TetraTech
Dave Share, Olin
Dave Johnson, LVVWD
David Parker, Central Arizona Water Conservation District
Derek Amidon, Tetratech
Ebrahim Juma, Clean Water Team
Ed Modiano, de maximis, inc.
Eric Fordham, Geopentech
Frederick Perdomo, AG Office
Gary Carter, Endeavour
George Crouse, Syngenta Crop Protection, Inc.
Harry Van Den Berg, AECOM
Jay Steinberg, Nevada Environmental Response Trust
Jeff Gibson, Endeavour
Jill Teraoka, MWDH2O
Joanne Otani
Joe Kelly, Montrose Chemical Corporation of CA
Joe Leedy, Clean Water Team
John Edgcomb, Edgcomb Law Group
John Pekala, Ramboll Environ
Kelly McIntosh,GEI Consultants
Kevin Fisher, LV Valley Water District
Kirk Stowers, Broadbent & Associates
Kirsten Lockhart, Neptune & Company Inc.
Kim Kuwabara, Ramboll Environ
Kurt Fehling, The Fehling Group
Kyle Gadley, Geosyntec
Kyle.Hansen, Tetratech
Lee Farris, BRC
Marcia Scully, Metropolitan Water District of Southern California
Maria Lopez, Water District of Southern California
Mark Duffy, U.S. Environmental Protection Agency, Region 9
Mark Paris, Landwell
Michael J. Bogle, Womble Carlyle Sandridge & Rice, LLP
Michael Long, Hargis +
Mickey Chaudhuri, Metropolitan Water District of Southern California
Nicholas Pogoncheff, PES Environmental, Inc.
Orestes Morfin, CAP
Paul Black, Neptune and Company, Inc.
Paul Hackenberry, Hackenberry Associates, LLC
Patti Meeks, Neptune & Company Inc.
Peggy Roefer, CRC
Ranajit Sahu, BRC
Richard Pfarrer, TIMET
Rick Kellogg, BRC
R9LandSubmit@EPA.gov
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

**DVSR Review:**

1. **Table 1, asbestos method:** This table identifies EPA-600-R (*Method for the Determination of Asbestos in Bulk Building Materials*) as the method used for the analysis of asbestos in soil. Section 3.2 of the NDEP *Guidance on Data Validation for Asbestos Data in Soils* (July 24, 2012) identifies USEPA Method 540-R-97-028 (USEPA 540R), which uses transmission electron microscopy, as the method employed at the BMI site for analyzing asbestos in soil. As assessment of the analysis method is part of data validation (Appendix I, Step 3 of *Guidance on Data Validation for Asbestos Data in Soils)*, the DVSR should note that the utilized method is not the standard BMI method, compare it to the standard BMI site method and discuss potential effects on the PARCCS parameters, especially comparability.

2. **Section 1, references:** *Guidance on Data Validation for Asbestos Data in Soils* (July 24, 2012) should also be listed as a validation reference.

3. **Section 1, analysis list:** Please add the reporting basis to the parameter name for phosphorus by method 365.3 (as P) or revise the parameter name to that identified in Table 1 (Phosphorus, Total).

4. **Section 1, sample counts:** Please list the number of samples presented in this DVSR in the text of Section 1.0.

5. **Table 1, sample counts:** Given the large number of samples presented in Table 2, please add two additional columns to Table 1 to list the number of aqueous and soil samples analyzed by each method.

6. **Section 1, validation stages:**

    a. Text in this section indicates that all samples were validated to at least Stage 2A; however, the asbestos results were validated to Stage 1, which is not detailed in Table 4. Stage 1 verification does not address all of the items discussed in the *Guidance on Data Validation for Asbestos Data in Soils.* Please review this document and reassess the asbestos data as necessary.
    b. No total organic carbon samples were validated to Stage 4. Please either validate an appropriate number to Stage 4 or add text to this section indicating this requirement was not met and the reason it was

7. **EDD, asbestos units and asbestos sensitivity units:** Per Section 3.5.4 of *Guidance on Data Validation for Asbestos Data in Soils* and item #5 of Appendix I, the analytical sensitivity should be consistent with the method and both represent the amount of airborne asbestos structures per gram of respirable dust or the number of structures per liter of air. The EDD fields result_units and asbestos_senstivity_unit are populated with "fibers" and "percent," respectively. Please review the requirements for this field and edit as necessary.

8. **Section 2.1, precision:** The text lists matrix interference as a possible cause of poor precision. As matrix interference generally affects both samples in a duplicate pair in the same manner, it is not usually listed as a cause for poor precision. Please consider revising this sentence.

9. **Section 2.3, blank contamination, next to last paragraph:** For clarity, consider revising the following sentence to include the underlined words: "Contaminants found in both the environmental sample and the blank sample are assumed to be laboratory artifacts if both values are less than the PQL or if a sample result and blank contaminant value are greater than the PQL and the sample result is less than 10 times the blank contaminant value."

10. **Section 3, general:** In order to give the reader an indication of the extent of qualifications applied, please add text to identify how many sample results were qualified for each issue (e.g. MS/MS RPD, field duplicate RPD, etc.). Also, please separately list the number of results rejected (e.g. LCS/LCSD recoveries for vinyl chloride). Some sections already contain this information (e.g., Sections 3.2.1, 3.2.2 and 3.2.6, etc.).

11. **Section 3.1.4, field duplicates:** Filtering the qualified data on the field duplicate reason code ("fd"), gives an odd number (235) of results. Has an extra result been qualified or is one qualification is missing?

12. **Section 3.1.4, field duplicate bias:** Eleven results qualified only for field duplicate RPD outliers have bias assigned to the result (J+). If bias was intended, please add text to this section to describe how the direction of the bias was determined.

13. **Section 3.2.1, calibration bias:** There are eleven detected VOC results qualified for calibration outliers (filter on reason code "c" and qualifier "J"). As the text indicates the VOCs were qualified for ICV or CCV recovery outliers, can bias be assigned to these results (even if %D was reported, bias could be assigned)?

14. **Section 3.2.2, MS/MSD recovery outliers and dilutions:** As currently worded, nominal dilutions could be used to dismiss a recovery outlier. Please identify at what level of dilution the spike was considered to be diluted out or discuss the professional judgement used. Also, as qualifications for MS/MSD recovery outliers were applied to results from dilutions of 5 to 1,000×, additional text describing when dilutions do not affect spike recovery would be useful.

15. **Section 3.2.3, qualifications for compounds not spiked in the LCS:** The text indicates that all results for phthalic acid, 1-methylnaphthalene and octochlorostyrene were qualified as the laboratory LCS was not spiked with these compounds. Results for these compounds in 16 samples are not qualified. Please review and either qualify these 48 results or revise the text to indicate that not all results were qualified.

16. **Section 3.2.7, tert-butyl alcohol identification:** The text indicates the validator qualified some tert butyl alcohol results as estimated (J) because only one ion and the retention time were used to make the compound identification. Per the EDD, the validator also qualified these results as tentatively identified (N). Although this is noted in Section 3.4, please add this information to the text in Section 3.2.7 where these qualifications are first mentioned.

17. **Section 3.3.1.1, laboratory blank qualifications:** The text states that 220 results were qualified for associated laboratory blank contamination. The EDD has 260 results with reason code "bl." Please check the EDD and text and correct as necessary.

18. **Section 3.5, completeness:** To illustrate that all methods met the 90% completeness goal, please present a table showing the completeness by analysis (as noted in Section 2.5).

19. **Section 3.6.2, internal standards:** The text notes that internal standards were used for metal (Method 6020) and volatile (Method 8260) analyses. Were internal standards also used for other analyses (e.g., dioxin, semivolatile, 8260SIM, etc.)?

**EDD Review**

1. In future EDDs, please use the parameter_id="7439-89-6 [3+]" for Ferric iron.

2. As an addition to DVSR comment #7, in the results table, the parameter "Asbestos" has results with result_units of "Fibers". Please verify that these units are correct.

3. In the results table, the "Asbestos" records have an analytical_suite of "PLM", which is not on the list of suites in the EDD guidance. Please verify that the analytical_suite should be updated to "ASB" for "asbestos".

4. The results table contains one record for chromium (sample U4U5-2-GW-90-6112015) where the final_validation_qualifier="R", but the detect_flag_fod and the detect_flag_ra are both "D". The detect flags should be consistent with the final_validation_qualifier.