



June 28, 2016

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: *PHASE 4*  
*GROUNDWATER MODEL REFINEMENT*

Dated: April 29, 2016

Dear Mr. Steinberg,

The NDEP has received and reviewed the Trust's above-identified Deliverable and finds that the document is acceptable with the following comments noted for the Administrative Record:

1. The idea using estimated catchment precipitation recharge as conceptual boundary flux for western and southern boundaries is acceptable but its assumption that all recharge from whole catchment from boundary to boundary is questionable because some of that recharge does not necessary follow the surface water flow network. This comment is confirmed by that the simulated boundary flux being reduced to 50% of the conceptual boundary flux of the western model boundary. Therefore, NDEP suggests that the catchment area contributing groundwater inflow from western boundary be redefined according to spatial distribution of mountain block and basin floor recharge and secondary recharge to the aquifers modeled in future model submission.
2. The elevation of Upper Muddy Creek Formation (UMCf) top has significant effects on groundwater flow as well as contaminant transport. NDEP requests that future work be expanded to include all area of Henderson Legacy Conditions. NDEP cautions that the elevation of UMCf top in Phase 4 model has some difference from it interpreted elevation when compared to adjacent companies. Interpretations of the top of UMCf should be based on the boring logs and in accordance with the NDEP guidance on Hydrogeologic and lithologic Nomenclature Unification (January 6, 2009).
3. The hydraulic conductivity distribution of Layer 1 in Figure 6a is quite different from the surface geology presented in Figure 1. Although the hydraulic conductivity distribution is simplified in the model, it should reflect general distribution pattern of the surface geology. NDEP suggests that NERT start its hydraulic property zones with the surface geological units and with the paleochannels identified;

4. The paleochannels are very important groundwater transport and contaminant pathways. The paleochannels used in the Phase 4 model are different from the paleochannels used by other companies within the Henderson Legacy Conditions area. NDEP made a suggestion to unify the paleochannels in the Phase II RI. The Phase 5 model should reflect the efforts on unifying the paleochannels within the HLC area made in the Phase II RI.
5. Figure 14—Simulated Groundwater elevation doesn't reflect observed drawdown due to the extraction of the pump-treat, which could be a result from the fact that the Phase 4 model is a steady status model. NERT is working on a transient flow and transport model and NDEP expects that the future model is capable of simulating observed drawdowns in each extraction well field considered.

Please contact the undersigned with any questions at [wdong@ndep.nv.gov](mailto:wdong@ndep.nv.gov) or 702-486-2850 x252.

Sincerely,



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  
Adam Baas, Edgcomb Law Group  
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  
Charles K. Hauser, Esq., Southern Nevada Water Authority  
Chris Ritchie, Ramboll Environ  
Chuck Elmendorf, Stauffer Management Company, LLC  
Dave Share, Olin  
David Johnson, Central Arizona Water Conservation District  
Dave Johnson, LVVWD  
Derek Amidon, Tetrattech  
Ebrahim Juma, Clean Water Team  
Ed Modiano, de maximis, inc.  
Eric Fordham, Geopentech  
Frank Johns, Tetrattech  
Gary Carter, Endeavour  
George Crouse, Syngenta Crop Protection, Inc.

Harry Van Den Berg, AECOM  
Jasmine Mehta, AG Office  
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 Pekala, Ramboll Environ  
Katherine Baylor, U.S. Environmental Protection Agency, Region 9  
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, Tetrattech  
Lee Farris, BRC  
Marcia Scully, Metropolitan Water District of Southern California  
Maria Lopez, Water District of Southern California  
Mark Paris, Landwell  
Michael J. Bogle, Womble Carlyle Sandridge & Rice, LLP  
Michael Long, Hargis + Associates  
Mickey Chaudhuri, Metropolitan Water District of Southern California  
Nicholas Pogoncheff, PES Environmental, Inc.  
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  
Scott Bryan, Central Arizona Project  
Steve Clough, Nevada Environmental Response Trust  
Tanya O'Neill, Foley & Lardner L  
Todd Tietjen, SNWA