



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

March 18, 2014

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: *Treatability Study Work Plan, In-Situ Soil Flushing Pilot, Revision 1, Nevada Environmental Response Trust Site, Henderson, Nevada*

Dated: December 27, 2013

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 04/18/2014** 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,

Weiqun Dong, P.E.
Special Projects Branch
Bureau of Corrective Actions
NDEP-Las Vegas City Office

WD:jd

EC: Greg Lovato, Bureau of Corrective Actions, NDEP
James Dotchin, NDEP, BCA LV
Dave Emme, NDEP
Adam Baas, Edgcomb Law Group
Allan Delorme, ENVIRON
Andrew Barnes, Geosyntec
Andrew Steinberg, Nevada Environmental Response Trust



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Andrew Barnes, Geosyntec
Andrew Steinberg, Nevada Environmental Response Trust
Betty Kuo, MWDH2O
Brenda Pohlmann, City of Henderson
Brian Waggle, Hargis + Associates
Cassandra Joseph, AG's Office
Catherine Sties, MWDH2O
Charles K. Hauser, Esq., Southern Nevada Water Authority
Chuck Elmendorf, Stauffer Management Company, LLC
Dave Share, Olin
David Johnson, Central Arizona Water Conservation District
Ebrahim Juma, Clean Water Team
Ed Modiano, de maximis, inc.
Eric Fordham, Geopentech
George Crouse, Syngenta Crop Protection, Inc.
Dave Share, Olin Co
Jay Steinberg, Nevada Environmental Response Trust
Jeff Gibson, AMPAC
Jill Teraoka, MWDH2O
Joanne Otani
Joe Kelly, Montrose Chemical Corporation of CA
Joe Leedy, Clean Water Team
Joe McGinley McGinley & Associates
John Pekala, Environcorp
Kirk Stowers, Broadbent & Associates
Kurt Fehling, The Fehling Group
Kyle Gadleym, Geosyntec
Lee Farris, BRC
Marcia Scully, Metropolitan Water District of Southern California
Mark Paris, Landwell
Matt Pocerlich, Neptune & Company Inc
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
Peggy Roefer, Southern Nevada Water Authority
Ranajit Sahu, BRC
Rebecca Shircliff, Neptune and Company, Inc.
Richard Pfarrer, TIMET
Rick Kellogg, BRC
Ron Zegers, Southern Nevada Water Authority
Scott Bryan, Central Arizona Project
Stephen Tyahla, U.S. Environmental Protection Agency, Region 9
Susan Crowley, Crowley Envirn.
Tanya O'Neill, Foley & Lardner LLP
Teri Copeland
Wayne Klomp, AG's Office

Attachment A

1. Section 1.2 Purpose and Objectives, page 2. Perchlorate mass within the groundwater plume was estimated and presented within the Remedial Investigation/Feasibility Study (RI/FS); however, no estimate appears to have been developed for the on-site soils. No data is presented that the proposed site is located in terms of perchlorate mass remaining in the soil column.
2. Section 2 Work Performed by Others, page 5, 2nd paragraph. There is a footnote that indicates that there were anomalies in the previous work by Prima. There is no indication of the degree of the anomalies and the effect on the conclusions. However, the subject Work Plan continues to reference and use the conclusions herein.
3. Section 3 Candidate Installation Location, page 6, 1st bullet. Soil comparison to a BCL is not an appropriate metric for evaluating the soil leaching to groundwater pathway.
4. Section 4.1 Local Geology, page 7, 1st paragraph. Site has been defined as the "NERT Site." A search of the All Wells database there are 709 wells installed by NERT. Please provide a reference for the 1,100 well counts mentioned herein.
5. Section 5.2 Laboratory Column Testing, page 9, last paragraph on page. What are the redox characteristics of the GWETS water as opposed to the stabilized Lake Mead water?
6. 5.2 Laboratory Column Testing, page 10, penultimate paragraph on page. The Deliverable states that "The progress of the wetting front will be monitored daily until break through. Once the flushing liquid breaks through at the bottom of the column, a sample will be collected and analyzed for the constituents listed in Table 1." The Work Plan states that the column tests will follow ASTM D4874-95; however, the ASTM reference states that the column is run in an up-flow mode. Please explain the contradiction.
7. Section 6.1.1, Flushing Volume, page 12. The logic used to jump from 4 volumes to 8 volumes is not clear.
8. Section 6.1.2, Hydraulic Loading, page 13. Green-Ampt equation should be capitalized and referenced.
9. Section 6.1.4 Potential Impacts to the GWTS, page 13, 2nd paragraph of the section. Please provide the data and calculations to support the estimated mass of perchlorate.
10. Section 6.1.4 Potential Impacts to the GWTS, page 13, 2nd paragraph of the section. The Work Plan states that "ENVIRON notes that this assumption is likely to significantly overestimate that rate at which perchlorate will leach from soils in the pilot system due to the issues discussed in Section 6.1.1 above." The reference to Section 6.1.1 should be Section 2.0, page 5.
11. Section 6.3 Permitting, page 16. What is the contingency plan for permitting if the pilot test runs past 180 days? What will trigger the need to apply for a major or minor permit modification, allowing for the timer required by NDEP for permit processing?
12. Appendix B. ENVIRON Standard Operating Procedures. The SOPs do not follow EPA QA/G-6, April 2007, EPA/600/B-07/001, Office of Environmental Information. The NDEP previously specified that the BMI Companies were to follow the EPA guidance.
13. Appendix C Groundwater Mounding Estimates. Table 1. QAL Soil Matrix Data at Similar Depths to the Proposed Soil Flushing Pilot. Please indicate basis for the porosity determination as reported herein, e.g., volumetric or gravimetric.
14. Appendix D IWF Perchlorate Removal Calcs. The calculated perchlorate mass loading is proportional to the thickness of groundwater mixing zone. Please justify why the 2 meter of the thickness of groundwater mixing zone was used.