



NEVADA DIVISION OF  
**ENVIRONMENTAL  
PROTECTION**

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

June 26, 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: *Phase 5 Transient  
Groundwater Flow Model, Response to Comments, Nevada Environmental Response  
Trust, Henderson, Nevada*

Dated: May 3, 2017

Dear Mr. Steinberg,

The NDEP has received and reviewed the Trust's above-identified Deliverable and finds that the document is acceptable. The following comments noted for the Administrative Record and NDEP expects that NERT makes its best effort to address these comments in next version model or Phase 6 model:

1. NERT will be collecting additional data on vertical gradients and will incorporate these data in a revised conceptual model in Phase 6 of the groundwater model.
2. NERT will refine the calibration of the vertical gradients in Phase 6 of the groundwater model. I concur that the calibration of vertical gradients **below** 200 ft bgs can be relaxed because contaminants have not reached this depth. If additional water quality data suggests that contaminants are at measureable concentrations below 200 ft bgs, then the calibration should emphasize matching vertical gradients at these depths.
3. NERT has agreed to include an explanation for the choice of the upgradient boundary condition and will at least consider other boundary types to improve model calibration. In addition, the vertical gradients at boundary condition locations will be revisited in Phase 6 of the groundwater model to be more consistent with field measurements.
4. NDEP concurs that the most effective approach is to only simulate recent and future chemical concentrations. Doing so will not require the results of the HYDRUS simulations which were only done to help improve the conceptual understanding of the system. There is still the challenge of specifying the initial conditions in the mobile and immobile phases. Phase 2 and 3 of the Remedial Investigation should provide additional concentration data to help with this effort.
5. NERT has already begun testing the impact of density effects on the flow system behavior and will include these results in Phase 6 of the model.

6. NERT will be subtracting precipitation from the ET estimates.
7. Please confirm that NERT reviewed permitted groundwater rights within the model domain to ensure that there are no other large pumping centers.
8. NERT will incorporate an assessment of the uncertainty in the recharge flux. This uncertainty may be important in terms of the simulated velocities within the model domain.
9. The authors will clarify the context for the term "anisotropy" in the Phase 6 modeling report.
10. The vertical conductivities will be revisited in Phase 6 of the model. The goal will be to achieve a calibration that is in agreement with both measured vertical conductivity and vertical hydraulic head gradients.
11. The stream package of Phase 5 model specifying the stream stage, as opposed to allowing the model to calculate stage based on streamflow, one cannot simulate contaminant mass moving into the wash and moving back out into the aquifer downgradient. It is important to simulate in detail chemical concentrations in Las Vegas Wash. However, it is difficult to simulate detailed concentrations within the Las Vegas Wash with the regional scale model such as Phase model. NDEP will research a solution to model contaminant mass moving into the wash and moving back out into the aquifer of the downgradient investigation area.

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

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