



STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor

Allen Bluggi, Director

Lee M. Drozdoff, P.E., Administrator

November 8, 2010

Matt Paque
Tronox LLC
PO BOX 268859
Oklahoma City, OK 73134

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539

Nevada Division of Environmental Protection (NDEP) Response to:
*Interim Approach for Unsaturated Zone Soil Remediation and Revised Work Plan to
Evaluate In Situ Soil Flushing of Perchlorate-Impacted Soil, Tronox LLC, Henderson,
Nevada*

Dated: October 8, 2010

Dear Mr. Paque,

The NDEP has received and reviewed TRX's above-identified Deliverable and provides comments in Attachment A. Please note that NDEP and TRX participated in a conference call on November 2, 2010 to discuss the additional information and clarification needed for NDEP to complete its review. The additional information should be submitted **by November 12, 2010** based on the comments found in Attachment A. TRX should additionally provide an annotated response-to-comments letter as part of this submittal.

On March 26, 2010, NDEP issued a response to the March Remediation Schedule that included comments on the schedule for perchlorate source control in regards to soil flushing studies including the statement the "TRX should note that source control of the perchlorate impacted soils needs to be demonstrated by December 31, 2010 per the December 14, 2009 FOAV and Order.". NDEP notes that the schedule included in this Deliverable does not meet the deadline for source control as required in the December 2009 Finding of Alleged Violation and Order.

Please be advised that NDEP will respond fully to this Deliverable after review of the requested information has been completed. Please contact the undersigned with any questions at sharbour@ndep.nv.gov or 775-687-9332.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Carson City Office
Fax: 775-687-8335



SH:sh

EC: Jim Najima, Bureau of Corrective Actions, NDEP
Greg Lovato, Bureau of Corrective Actions, NDEP
William Knight, Bureau of Corrective Actions, NDEP
Brenda Pohlmann, City of Henderson
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9
Mike Skromyda, Tronox LLC
Michael J. Foster, Tronox LLC
Keith Bailey, Environmental Answers LLC
Susan Crowley, Tronox LLC (Contractor)
Deni Chambers, Northgate Environmental
Brian Rakvica, McGinley and Associates
Joe McGinley, McGinley & Associates
Barry Conaty, Holland & Hart LLP
Ranajit Sahu, BRC
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Craig Wilkinson, TIMET
Kirk Stowers, Broadbent & Associates
Victoria Tyson, Tyson Contracting
George Crouse, Syngenta Crop Protection, Inc.
Nick Pogoncheff, PES Environmental
Lee Erickson, Stauffer Management Company
Michael Bellotti, Olin Corporation
Curt Richards, Olin Corporation
Paul Sundberg, Montrose Chemical Corporation
Joe Kelly, Montrose Chemical Corporation of CA
Jeff Gibson, AMPAC
Larry Cummings, AMPAC
Ebrahim Juma , Clean Water Team
Joe Leedy, Clean Water Team
Kathryn Hoffmann, Clean Water Team
Paul Hackenberry, Hackenberry Associates, LLC

CC: Susan Crowley, C/O Tronox LLC, PO Box 55, Henderson, NV 89009
Lee Farris, BRC, 875 W. Warm Springs Road, Henderson, NV 89011
Lee Erickson, Stauffer Management Company

Attachment A

1. Section 1.0, page 1, Introduction, last sentence, please describe how the assessment will be conducted, for example, literature review and/or laboratory testing.
2. Section 1.1, page 2, Objectives, 3rd bullet, based on the column test results, TRX should additionally analyze for the following: pesticides, anions, general minerals (ammonia), metals.
3. Section 2.2, page 4, Selected Pilot Test Conditions, TRX should expand this section to demonstrate the use of column test results to the evaluation and design of the *in-situ* application. NDEP has the following additional comments:
 - a. 2nd paragraph on page, the comparison of arsenic and chromium results to currently measured on-Site values should be made via a data table including the monitoring data.
 - b. 2nd paragraph on page, this paragraph should be expanded to include the use of column test results/findings beyond arsenic and chromium. All laboratory analytical data from the column tests should be evaluated via comparison with groundwater monitoring data and BCLs in a tabular format.
 - c. The NDEP notes several instances where the analytical detection limit is greater than the applicable BCL. Please evaluate and discuss in terms of impact to in-situ soil flushing.
 - d. The non-target analytes should also be evaluated in terms of potential impact to the existing groundwater treatment system.
4. Section 2.3, page 5, Design of Pilot Test Monitoring System, Figure 3 reference, TRX should include an additional groundwater monitoring well between PPT-MW-1 and PPT-MW-2.
5. Section 2.3, page 5, Design of Pilot Test Monitoring System, 3rd paragraph of section, NDEP remains concerned about the ability of these wells to collect infiltrating water during the test as previously indicated in the March 29, 2010 Work Plan review. Please attach the Tronox/NGEM RTCs dated May 27, 2010, which indicated the commitment for "active" collection of leachate samples.
6. Section 2.4, page 5, Pilot Test Monitoring Schedule, Table 2 reference, TRX should include the EPA RCRA 13 Priority Pollutant Metals (Sb, As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Ti, and Zn) in the groundwater monitoring plan.
7. Section 4.0, page 10, Future Work, 2nd paragraph, TRX should note that alternative water sources will require a complete analysis of SRCs.
8. Attachment 1, Appendix A, NDEP has the following comments:
 - a. Section 2.4.1, page 7, Addition of Water, please specify how many samples had insufficient volume for all the analyses.
 - b. Section 2.5, page 10, Analytical Methods, please identify the laboratories that do not have State of Nevada certification and what analytes were involved.
 - c. Section 2.5, page 12, Analytical Methods, Table 6 Analytical Methods, all the footnotes are not explained, please revise as necessary.
9. Attachment 2, Evaluation of Perchlorate Mass Distribution, NDEP has noted that this attachment discusses only perchlorate although both the column tests and the LSSL calculations (Northgate, 2010) found other chemicals that could potentially leach to groundwater. As stated above, TRX should evaluate all laboratory analytical data from the column tests in comparison with groundwater monitoring data and BCLs.