

Meeting Minutes

Project: Tronox (TRX)
Location: Conference Call
Time and Date: 9:30 AM, Friday, July 6, 2007
In Attendance: NDEP-BCA – Brian Rakvica, Shannon Harbour
Teri Copeland (for NDEP)
Neptune (for NDEP) – Paul Black
Tronox – Keith Bailey
ENSR (for TRX) – Dave Gerry, Elizabeth Perry, Lisa Bradley, Robert Kennedy

CC: Jim Najima, Susan Crowley, Paul Hackenberry, Todd Croft

1. The meeting was held to discuss a variety of topics including the Phase A Report and Phase B Work Plan.
2. TRX provided a number of draft tables and figures for discussion purposes via e-mail.
3. Vapor Intrusion, TRX supplied Tables 5.16 and Soil Gas for discussion purposes.
 - a. Table 5.16
 - i. Groundwater comparison levels for vapor intrusion pathway only.
 - ii. NDEP stated that footnotes (c) and (d) seem identical references. TRX to revise these footnotes to state that Beta-BHC is listed in the EPA, 2002 reference as being not sufficiently volatile and that Delta-BHC was not listed but determined not to be volatile by comparison of the definition in EPA, 2002.
 - iii. Groundwater to Indoor Air Comparison Level column contains levels from the USEPA 2002 Vapor Intrusion (VI) Guidance for selected chemicals. If a chemical has an MCL, then the MCL is listed instead (which is consistent with the USEPA guidance document for VI).
 - iv. TRX submitted a map illustrating the chemicals greater than their respective screening levels at each sampling point and proposed Phase B soil gas borings.
 - v. TRX noted that BRC will be responsible for characterizing the top 10 feet of the subsurface during their Phase II characterization work. TRX will be responsible for characterizing the subsurface greater than 10 feet below ground surface (bgs). TRX noted that several of the soil gas sampling locations are near select buildings.
 - vi. TRX stated that they have changed the depth of sample collection for soil gas from 5 ft bgs to 10 ft bgs per NDEP's comment during the June 28, 2007 conference call. **ACTION ITEM: NDEP to discuss depth of sampling internally and advise TRX.**
 - vii. **ACTION ITEM: TRX to find out whether duplicate samples were handled by selecting the maximum concentration or the average concentration of the duplicate samples.**
 - b. Table – Soil Gas
 - i. TRX proposed to use method TO 10 for pesticides to achieve lower detection limits for the soil gas samples. TRX stated that the volumes

required to achieve a detection limit of the Ambient Air PRG are very large for alpha-BHC and Heptachlor. These large volumes will be problematic because of the low flow rates that will need to be used. Teri suggested that TRX make an argument based on the CSM and simple partitioning to document that vapor intrusion is an insignificant pathway for these pesticides.

- ii. The NDEP stated that they would not object to this argument. Teri noted that the PRG ambient air PRGs consider residential exposure so are therefore very conservative for the industrial scenario.
 - iii. All arguments and rationale would need to be formalized in the final Risk Assessment for the site.
4. TRX noted that a separate table will be prepared for direct contact pathway.
5. Soil – Groundwater Pathway (Leaching), TRX supplied Tables 5-14 and Table EA-9 Soil Sample Results Greater Than Comparison Levels for Soil to Groundwater Pathway for discussion purposes.
- a. Table 5-14
 - i. PRGs (SSLs) used as screening levels if available. If no PRG was available then used site specific calculations (ssSSLs).
 - ii. TRX submitted a list of references used in the development of this table. NDEP requested copies of the references not authored by the EPA. TRX will supply at a minimum, the referenced pages of these sources.
ACTION ITEM.
 - iii. TRX used a DAF = 20 in the calculations for the site specific screening levels. TRX believes that a DAF of 20 is appropriate due to the lack of precipitation, the thickness of the vadose zone, and high groundwater flow. The NDEP pointed out that there have been many pipeline failures releasing large volumes of water into the subsurface. TRX noted that these pipelines cross many portions of the facility especially in the vicinity of the unit buildings.
 - iv. The NDEP suggested that a DAF = 1 be used in the screening calculations for this initial work. TRX will use DAF = 1 to calculate new screening levels to determine the impact on the number of required analytes. This item will be discussed at or before the next meeting. **ACTION ITEM.**
 - v. The NDEP noted that the soil to groundwater pathway is complete due to the continued presence of perchlorate and chromium in the groundwater. TRX stated that some chemicals have completed soil to groundwater pathways but that it hasn't been shown for all of the chemicals listed on this table.
 - vi. The NDEP noted that the state considers groundwater to be a receptor and hence the distance to a receptor is small.
 - vii. The NDEP noted that there has to be consistency across the complex and that a DAF of 1 has been used throughout the complex.
 - viii. The NDEP noted that whichever DAF value is selected, there should be text or a footnote providing the rationale for the selected value.
 - ix. The NDEP will not review this table until the DAF issue has been resolved.

- b. Table EA-9
 - i. Exposure Area (EA)-9 contains unit buildings 1 – 4. Sample collected from the Phase A borings that exceeded the screening levels from Table 5-14 were included on this table.
 - ii. TRX believes that Dimethoate and Beta-BHC have been adequately characterized.
6. Direct Contact Pathway, TRX supplied Tables 5-20A and Table EA06 Soil Sample Results Greater Than Comparison Levels for Direct Contact Pathways for discussion purposes.
 - a. Table 5-20A (soils)
 - i. Max Conc. > SSL column may be revised because of the DAF issue from Table 5-14.
 - ii. TRX to revise this table as necessary prior to next meeting. **ACTION ITEM.**
 - b. Table EA06
 - i. Teri will review this table and discuss hexachlorobenzene and chloroform with ENSR. This may require further explanation by ENSR. **ACTION ITEM.**
7. TRX discussed sampling density for the Phase II characterization.
 - a. NDEP stated that the sampling density was dependent on the level of contamination. The TRECO site demonstrated data adequacy statistically. The BMI Borrow Pit had a protocol developed to address data adequacy. The NDEP stated that data adequacy can only be determined after sampling. TRX stated that there are other methods for determining data adequacy. The NDEP will supply a copy of the Borrow Pit protocol to TRX. **ACTION ITEM.**
 - b. NDEP noted that sample density can be determined on an ad hoc basis, however, this must consider the data. Density should be biased towards areas of higher contamination.
8. NDEP noted that the revised histograms will need to be provided as part of the Phase A/B report/workplan.
9. Schedule:
 - a. ECA Phase A Report / Phase B Work Plan (report will include upgradient data and histograms of Phase A and upgradient data) – **August 27, 2007**
 - b. Semi-Annual Performance Report – **August 28, 2007**
 - c. Revised Groundwater Capture Work Plan – **August 28, 2007**
 - d. Upgradient Report (report will include histograms of upgradient data) – **September 2007**
10. Next Meeting: July 18, 2007, 9:00 AM – 5:00 PM PDT at Southern Nevada Water Authority offices, River Mountain Room, located at 1900 East Flamingo Rd., Las Vegas, NV