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NMED Hazardous Waste Bureau

February 10, 2005

Mr. David Cobrain
State of New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East
Building One
Santa Fe, New Mexico 87505-6303

Reference: Work Assignment No. 06110.290.0002; State of New Mexico Environment Department, Santa Fe, New Mexico; Human Health and Ecological Risk Assessment Support; Review of the Corrective Measure Study Report for Solid Waste Management Unit 16-021(c)-99, Task 2 Deliverable.

Dear Mr. Cobrain:

Enclosed please find the deliverable for the above-referenced work assignment. The deliverable consists of risk assessment review comments on the Los Alamos National Laboratory's (LANL) "Corrective Measure Study Report for Solid Waste Management Unit 16-021(c)-99," dated November 2003.

In the cover letter sent with the above document for review, Ms. Darlene Goering posed several questions. The following addresses her questions.

1. LANL compares data to regulatory screening levels during the RFI to determine which constituents are carried forward for the risk assessment. Why do they need to compare the same data again? Why is another round of screening necessary or is it? *The process used to determine the constituents of potential concern (COPCs) for the Corrective Measure Study (CMS) was a little difficult to follow. The Phase III Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) report presented risks for three areas" the Cañon de Valle source area, the Cañon de Valle alluvial area, and Martin Springs Canyon. The risk assessment concluded that unacceptable risks were only present in the Cañon de Valle source area. In the source area, the constituents that drove the risks (carcinogenic and noncarcinogenic) were RDX, TNT, and barium. The CMS retained these three constituents as COPCs. For the Cañon de Valle alluvial area and the Martin Springs area, since no COPCs resulted in unacceptable risks in the Phase III RFI, the CMS re-evaluated those original Phase III RFI COPCs to determine whether any constituent was present in*

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concentrations that could potentially pose a threat to regional groundwater. Thus an additional screening approach was applied to determine if any COPCs in the alluvial area or the Martin Springs area were of sufficient concentration to act as a source for regional groundwater contamination. This approach is acceptable.

2. Can frequency of detection be used in the CMS process to identify COPCs? *Applying frequency of detection in the CMS or a risk assessment should be the same. However, as with a risk assessment, a constituent should not be screened out based on frequency of detection if the chemical is expected to be present based upon available historical data. However, in the case of the CMS, the Phase III RFI showed that none of the COPCs resulted in unacceptable risk. Given that the goal of the CMS was to determine which COPCs could potentially threaten regional groundwater, the use of the frequency of detection is probably acceptable. This would account for dilution and uncertainties associated with migration to groundwater.*

3. If a constituent is detected above the media cleanup standard (MCS) but is determined to be naturally occurring, does the facility need to remediate? *The short answer to this is no. In the west, this problem occurs frequently, especially with the metal arsenic. If the facility adequately demonstrates that site concentrations are truly representative of natural background concentrations, the facility does not have to remediate.*

4. LANL proposes using NMWQCC standards as media cleanup levels for surface water, alluvial groundwater, and sediment (non-outfall area). Is this ok, even if an MCL exists for a constituent? *The more conservative of the two should apply. However, as the NMWQCC are based more on risk than technology where MCLs are based on technology and some risk, it would be anticipated that the NMWQCC standards would be more conservative. In reviewing the NMWQCC standards versus the MCLs, the NMWQCC were more conservative for all constituents except uranium. As uranium is not a major COPC, the use of the NMWQCC is appropriate.*

5. LANL developed risk-based media cleanup levels (developed during the Phase II) for RDX and TNT in soil (36.9 and 135 mg/kg, respectively). LANL proposes using NMWQCC standards for RDX and TNT in alluvial sediment. Why not use the same for both? *Without reviewing the Phase II RFI, it is anticipated that the cleanup levels proposed for soil were based on a construction scenario. Since no risks to the alluvial sediment were determined in the Phase III RFI, the cleanup levels were based upon what the highest level of contamination could exist without posing a threat to regional groundwater. This would most likely result in higher cleanup levels than those developed for direct exposure to soil.*

6. Proposed site media cleanup level for barium in the outfall area is the cancer risk MCS (10,000 mg/kg) to achieve an HI<1.0. Where does this value come from? *MCSs were estimated based on a combination of risk- and technology-based standards. This is acceptable for a CMS. However, upon completion of the*

corrective measures, confirmation sampling will need to be conducted and a final risk assessment demonstrating the effectiveness of the remediation will need to be conducted. Therefore, while not a requirement, it is in the best interest of the facility to base the MCS on risk-based numbers. In the source area, a MCS of 10,000 mg/kg was estimated for barium. It appears that a backwards risk calculation was conducted. The three COPCs in the source area are TNT, RDX, and barium. If confirmation sampling determined that the residual concentrations of TNT and RDX were right at the MCS, then what allowable concentration of barium could be present and still result in acceptable risks. The CMS presented this maximum barium concentration as 10,000 mg/kg. The proposed MCS for barium is between the NMED residential soil screening level (SSL) and the industrial worker SSL. However, the MCS may be high if a construction worker scenario is evaluated. A comment has been drafted asking for additional justification that an MCS of 10,000 mg/kg will be protective of a construction worker.

The document is formatted in Word. A draft of the deliverable was emailed to you on February 8, 2005 at David_Cobrain@nmenv.state.nm.us and to Ms. Darlene Goering at Darlene_Goering@nmenv.state.nm.us. A finalized hard (paper) copy of this deliverable will be sent via mail. If you have any questions, please call me at (303) 763-7188 or Ms. Paige Walton at (801) 451-2978.

Sincerely,

June K Dreith

June K. Dreith
Program Manager

Enclosure: Review Comments on the Corrective Measure Study Report for Solid Waste Management Unit 16-021(c)-99

cc: Ms. Darlene Goering, NMED
Ms. Paige Walton, TechLaw

TASK 3 DELIVERABLE

REVIEW COMMENTS ON THE CORRECTIVE MEASURE STUDY REPORT FOR SOLID WASTE MANAGEMENT UNIT 16-021(C)-99

Human Health and Ecological Risk Assessment Support

Submitted by:

TechLaw, Inc.
560 Golden Ridge Road
Suite 130
Golden, CO 80401-9532

Submitted to:

Mr. David Cobrain
State of New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East
Building One
Santa Fe, New Mexico 87505

In response to:

Work Assignment No. 06110.290

February 8, 2005

REVIEW COMMENTS ON THE CORRECTIVE MEASURE STUDY REPORT FOR SOLID WASTE MANAGEMENT UNIT 16-021(C)-99

General Comments

1. One of the comments on the Phase III Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) (Attachment 1, specific comment No. 1) indicated concern that results from ecological toxicity testing in the Cañon de Valle near the SWSC cut showed that high concentrations of RDX and silver in sediment may be impacting the system. In the response to this comment, it was indicated that hot spot removal would be addressed. However, the CMS does not address ecological impacts or whether the proposed remediation and cleanup levels will be protective of the ecological systems. In addition, the CMS does not address hot spot removal for silver and RDX in the sediment. Please provide a discussion of this issue.

Specific Comments

1. Section 3.2, Development of CMS COPCs, page 22. The text indicates that the Phase III RFI risk assessment showed acceptable risks outside of the source area soils. However, the Phase III risk assessment limited the evaluation of risk to a trail user in the areas outside of the source area (Cañon de Valle alluvial area and Martin Springs Canyon). As an environmental worker and construction worker were not evaluated for areas outside of the source area, all future land use for the Cañon de Valle alluvial area and Martin Springs Canyon must be limited to trail use. If Los Alamos anticipates that any construction of new buildings or other facilities may occur in these areas at some time in the future, additional risk analyses are warranted, and additional corrective action may be required. Please clarify Section 3.1, Current and Reasonably Foreseeable Future Land Use, to indicate that construction of new buildings and other facilities will be limited to the source area only and that the Cañon de Valle alluvial area and Martin Springs Canyon will be limited to trail use only.

2. Section 4.2.1, Identification of Risk-Based MCSs for Soil and Tuff in the Outfall Source Area, page 62. In the source area, a MCS of 10,000 mg/kg was estimated for barium. It appears that a backwards risk calculation was conducted. The three COPCs in the source area are TNT, RDX, and barium. If confirmation sampling determined that the average residual concentrations of TNT and RDX were right at the MCS, then what allowable average concentration of barium could be present and still result in acceptable risks. The CMS presented this average barium concentration as 10,000 mg/kg. The proposed MCS for barium appears reasonable for the environmental worker; however, the MCS may be high if a construction worker scenario is evaluated. In addition, risk assessments are not based upon on average concentration but rather the 95% upper confidence level (UCL) of the mean, which is greater than the average. Therefore, it appears, the MCS may have been

overestimated for barium. Demonstrate how an MCS for barium of 10,000 mg/kg will be protective of a construction worker.