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Mr. David Cobrain
New Mexico Environment Department (NMED)
Hazardous Waste Bureau
2905 Rodeo Park Dr. East
Building One
Santa Fe, NM 87505

RE: Evaluation of the Final RFI Work Plan, Parcel 9, Fort Wingate Depot Activity, Dated February 27, 2015

Dear Mr. Cobrain:

Attached please find draft technical review comments on the "Final RFI Work Plan, Parcel 9, Fort Wingate Depot Activity."

Please note that Table 5-2 provides summary of risk and hazard on a per sample basis and then provides total risk and hazard for the AOC as a whole. While presentation is a little unconventional in that risk and hazard is calculated on a per sample basis. The highlighted cells on the table represent the maximum detected concentrations, from which the site risks were estimated. While a little hard to follow, the risks and hazards appear to have been estimated correctly. There is some concern over the use of the x-ray fluorescence data, as noted in general comment 4.

If you or any of your staff have questions, please contact me at (801) 451-2864 or via email at paigewalton@msn.com.

Thank you,

Paige Walton
AQS Senior Scientist and Program Manager

cc: Vicky Baca, NMED (electronic)
Joel Workman, AQS (electronic)

Enclosure

**Draft Technical Review Comments on the “Final RFI Work Plan – Parcel 9
Fort Wingate Depot Activity, New Mexico”
February 2015**

GENERAL COMMENTS

1. Incremental (IM) sampling is proposed for delineating the nature and extent of explosives and metals in Areas of Concern (AOCs) 18 and 85 in Parcel 9. The Work Plan (Section 4.1.2) states that for metals, results will be compared to background levels presented in the *Soil Background Study and Data Evaluation Report Version 2* (Shaw, 2010). The data collected as part of the background study represent grab samples which are discrete data. Discrete sample results provides a measure of the distribution of concentrations in relatively small volumes of soil in a specified area, where IM samples provides measure of the distribution of mean concentrations, each of which is an estimate of the population mean for the entire decision unit. Due to the differences in attributes, a comparison of IM results to discrete background data should not be conducted. Comparison of an IM estimate of the mean to a discrete sample collected from soil representing background is likely to lead to decision errors in which one incorrectly concludes that the contaminant distribution on site is consistent with background conditions (refer to Chapter 4 ITRC Incremental Sampling Methodology: <http://www.itrcweb.org/>). It is recommended that background IM data be collected for comparison to the site IM data.
2. The work plan does not address how site risk will be conducted. For example, how will mixed data (discrete and incremental) be combined to assess overall risk at each site. Revise the work plan to address site risk, to include cumulative risk for each feature.
3. The work plan do not address ecological risk. Based on the description of the surface conditions, sufficient vegetation is present to sustain at least small game receptors. Revise the work plan to address how ecological risk will be determined.
4. Historical x-ray fluorescence (XRF) data were used in the risk evaluation. Section 5.2.2 states that “due to the inconsistent readings between the XRF and confirmation samples and the cost to prepare the XRF samples for better consistency with laboratory samples, the Army decided not to use XRF samples in future sampling events unless a more efficient preparation method is found. However, the XRF data were used in the screening analyses presented in Table 5-2 and were compared to background data, which are discrete laboratory results. Discuss the uncertainties associated with screening out XRF data in the risk assessment through the comparison to the background data and discuss whether the uncertainties in the XRF data likely under- or over-estimated risk and hazard.

SPECIFIC COMMENTS

1. Section 4.1.2, Sampling Data. The second bullet indicates that if arsenic concentrations are greater than the site-specific background level and considered above the range for background, then arsenic will be assessed using the NMED Residential Soil Screening Level (SSL) cancer endpoint for assessing risk. In this case, the incremental risk above background

would need to be calculated. The background risk based on the site-specific level of 5.6 mg/kg should be calculated. This value should be compared to the calculated total risk for arsenic in an uncertainty discussion. The incremental risk due to arsenic would be the difference between total risk and background risk. Section 4.1.2 should be revised to propose this approach and to explain how the comparison of arsenic concentrations to the range of arsenic background levels will be performed.

2. Section 5.3.2, Incremental Surface Soil Sampling of Igloo Drainage Areas. The proposed is acceptable but there is an inherent level of uncertainty. As the sampling will consist of collection of subsamples from both sides of the apron as well as across the road in the ditch, if the result comes back with elevation constituents, the location (side of apron or ditch) of elevated contamination is not known. In the event incremental sample data result in unacceptable risk, the work plan should include a step out approach for determining the specific area(s) of concern. It is suggested that discrete sampling may be warranted for step out sampling.
3. Table 5.2, Parcel 9 - AOC 18 (Igloo Block A) Risk/Hazard Screening for Historical Analytical Results. Please define the “****” notation for chromium.