



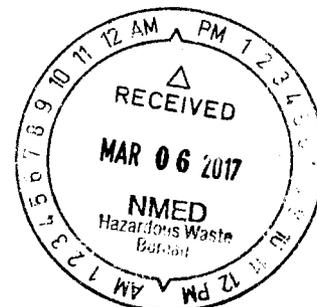
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February 28, 2017

DCN: NMED-2017-08

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



RE: Draft Technical Review Comments on the Final Technical Memorandum Risk Assessment Screening for Site OT-37 (AOC L) and Site OT-38 (SWMU 137) Holloman Air Force Base, New Mexico, dated February 2017

Dear Mr. Cobrain:

Attached please find draft technical review comments on the risk assessment portions of the *Final Technical Memorandum Risk Assessment Screening for Site OT-37 (AOC L) and Site OT-38 (SWMU 137)* for Holloman Air Force Base.

For OT-37, lead was detected in a single sample (OT-37-SS14-02) that exceeded the NMED screening level of 400 milligrams per kilogram (mg/kg). The text adds that an additional sample (SB-37-06) was collected in the near vicinity of the elevated location, providing sufficient lines of evidence to state that the elevated area is very localized and bound. Some additional evaluation of the historical sampling may be warranted to verify this statement.

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

Thank you,

Paige Walton
AQS Senior Scientist and Program Manager

Enclosure

cc: Brian Salem, NMED (electronic)
Joel Workman, AQS (electronic)

Final Technical Memorandum
Risk Assessment Screening for Site OT-37 (AOC L) and Site OT-38 (SWMU 137)
Holloman Air Force Base, New Mexico
Dated February 2017

Comments

1. Section 4.1.4.1 Comparison to Soil Screening Levels (pages 4-4 and 4-5). The text states that the, “screening-level cumulative residential risk estimate at OT-37 was 2E-05. However, when considering background arsenic levels, the site-related residential risk was 1E-05, which does not exceed the NMED target risk level of 1E-05.” For OT-38, the text stated that, “Similar to OT-37, the screening-level cumulative residential risk at OT-38 was 2E-05; but when considering background arsenic, was 1E-05, and the HI was less than one.” If an inorganic is determined to be present at levels above background and retained as a constituent of potential concern (COPC), risks due to background concentrations may not be factored out of the total risk. It must be assumed that the COPC is present at the site due to site activities unless site history can be used to demonstrate otherwise. Contributions to background may be addressed in the uncertainty section and presented as one line of evidence to address excess risk.

Rather than conducting the point comparison for arsenic (site maximum to the background reference value), a statistical evaluation to assess whether the site data are significantly different than background data should have been conducted. In reviewing the data provided in Appendix A, it is likely that the arsenic levels are not statistically different than background.

In addition, the NMED Soil Screening Guidance allows for calculation of a 95% upper confidence level of the mean (95UCL) when the site maximum results in excess risk. The 95UCL should have been calculated as a revised exposure point. Section 4.1.5.2 provides a 95UCL for OT-38 (2.69 mg/kg) and as noted, application of the revised EPC would have resulted in a total risk below the target risk level.

Further, the NMED soil screening level has been updated to account for the bioavailability of arsenic. The February 2017 screening levels (to be released this month) for arsenic are 7.72 mg/kg (residential) and 216 mg/kg (construction). Application of the 2017 screening levels would result in risk less than the NMED target risk level.

While the report does not provide a clear case that arsenic does not significantly contribute to overall site risk, it is agreed that site concentrations of arsenic at OT-37 and OT-38 would likely not result in excess risk.

2. Section 4.1.4.1.1 Evaluation of Lead. The average lead concentration was calculated using a select number of samples that were deemed to reasonably represent a residential footprint. While the 2007 guidance on the IEUBK model may recommend calculation of an average concentration, current NMED and EPA guidance for determining EPCs relies on the

statistical evaluation and determination of the 95UCL. In looking at the data, it is agreed that a revised EPC would likely result in a value less than the target level of 400 mg/kg.

3. Section 4.1.4.1.2 Evaluation of the Vapor Intrusion Pathway from VOCs in Soils. The technical memorandum provides lines of evidence indicating that only qualitative assessments of the vapor intrusion pathway for volatile organic compounds (VOCs) detected in soil at OT-37 and OT-38 are required. However, the memorandum further states for OT-37 that “based on the foregoing, it is concluded that there is no evidence of the persistence of VOCs in bulk soils and vapor intrusion from soil is an incomplete exposure pathway at OT-37”, and for OT-38, “based on the foregoing, it is concluded that there is no evidence of the persistence of VOCs in bulk soils and vapor intrusion from soil is an incomplete exposure pathway at OT-38.” Since VOCs were detected in soil, site history at both OT-37 and OT-38 does indicate historical presence of VOCs, and VOCs are present in groundwater associated with each site, the assertion that the vapor intrusion pathway is incomplete for soils is not adequately supported (and is inconsistent with Section 2.5.2.2 of the NMED Soil Screening Guidance). It is agreed that VOCs were minimally detected in soil and that while vapor intrusion from soil is a potentially complete pathway, the contribution of risk via vapor intrusion from residual VOCs in soils is minimal. Revise the technical memorandum accordingly.
4. Section 4.2.6 Tier 2 SLERA. 95UCLs were calculated using ProUCL. However, the input/output files were not provided. Revise the report to include the ProUCL files so that determination of how the UCLs were calculated and selected can be reviewed. In addition to providing the files, discuss how non-detects were handled.
5. Sections 4.1.5.1 OT-37 and 4.1.5.2 OT-38. The technical memorandum allows that the risks/hazards from the vapor intrusion pathway from VOCs in groundwater do not exceed target levels. For OT-37, it is allowed that risks from groundwater would not result in excess risk if combined with those from soil; a similar statement is not made for OT-38. Per Section 5.0 of the NMED Soil Screening Guidance, “site risks and hazard indices for any additional complete exposure pathway not included in the SSLs (e.g., vapor intrusion, ingestion of potentially contaminated produce/meat/dairy) should be added to the results of Equations 57 and 58.” Revise the report to include the total risks (inclusive of soil and groundwater/vapor exposure) for both OT-37 and OT-38.
6. Table 4-7a. For the Tier 1 ecological screening assessment, it is noted that the maximum concentration in soil from zero to 10 feet below ground surface (ft bgs) was applied for the horned lark and deer mouse. The NMED Soil Screening Guidance (Table 2.6) indicates that soil to a depth of only five ft bgs is required for these two receptors. In addition, the maximum detected concentrations applied as the exposure point concentrations occurred at depths greater than five ft bgs. Thus, the soil interval applied was conservative. Please note that in the February 2017 update to the NMED Soil Screening Guidance, the Tier 1 soil interval for non-burrowing receptors has been modified to reflect a soil interval of zero to one ft bgs.

7. The evaluation for residual levels of contamination in soil to migrate to groundwater was not conducted for either OT-37 or OT-38. This pathway is typically evaluated to determine if additional investigation is necessary to evaluate potential leaching and migration of contaminants from the vadose zone to groundwater in excess of NMED-specific tap water screening levels. Since the groundwater at these sites is not potable, total dissolved solids are in excess of 10,000 milligrams per Liter (mg/L), ingestion of groundwater is not a complete pathway. Revise the technical memorandum to include a discussion of the migration to groundwater pathway (note: a quantitative analysis is not required.)