



BILL RICHARDSON  
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Lieutenant Governor

NEW MEXICO  
ENVIRONMENT DEPARTMENT **ENTERED**

*Hazardous Waste Bureau*

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RON CURRY  
Secretary  
SARAH COTTRELL  
Deputy Secretary

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

October 12, 2010

Colonel Stephen A. Kimball, Commander  
27th Special Operations Mission Support Group  
110 E. Sextant Avenue, Suite 1091  
Cannon Air Force Base, New Mexico 88103

**RE: NOTICE OF DISAPPROVAL  
CORRECTIVE ACTION COMPLETE PROPOSALS  
(SWMUS 2, 4, 6, 10, 50, 72, 75, 81, 82, 96, 98, 102, 105 AND 125)  
CANNON AIR FORCE BASE, NEW MEXICO, JUNE 2010  
EPA ID #NM7572124454  
HWB-CAFB-08-006**

Dear Col. Clark:

The New Mexico Environment Department (NMED) has reviewed Cannon Air Force Base's (Permittee's), *Corrective Action Complete Proposals (SWMUs 2, 4, 6, 10, 50, 72, 75, 81, 82, 96, 98, 102, 105 and 125), Cannon Air Force Base, New Mexico* dated August 2010 (Proposal). NMED hereby disapproves the Proposal and provides the following comments.

1. Risks and hazards from vapor intrusion could not be duplicated by NMED using either the 2004 screening or advanced versions of the Johnson and Ettinger (J&E) model for bulk soil ([http://www.epa.gov/oswer/riskassessment/airmodel/johnson\\_ettinger.htm](http://www.epa.gov/oswer/riskassessment/airmodel/johnson_ettinger.htm)). A range of the general defaults along with a soil type of 'sand' as specified in the text were applied. The estimated risks and hazards appear to be consistently two to three orders of magnitude higher than those provided in the Proposal, Tables 3, 6, 7, 8, 9, 13, 14, 16, and, 17. In addition, it is not clear that some of the issues may be related to improper units [soil concentrations ( $\mu\text{g}/\text{kg}$  vs.  $\text{mg}/\text{kg}$ )] and/or appropriate risk levels (1E-05 vs. 1E-06)]. The Permittee must include all modeling spreadsheets used to calculate the risks and

hazards (every tab in the spreadsheet including 'DATAENTER', 'CHEMPROPS', 'INTERCALCS', 'RESULTS', and 'VLOOKUP').

2. The toxicity data applied in the J&E model are outdated and may not have been selected following the most current hierarchy of toxicological sources (refer to the NMED Soil Screening Guidance, December 2009). For example, the J&E modeling includes toxicity data for trichloroethylene taken from the 2002 Draft Vapor Intrusion Guidance, which were based on provisional National Center for Environmental Assessment (NCEA) data. NCEA data were not subject to peer review, and as such, have been dropped from the hierarchy of acceptable toxicity sources by the Environmental Protection Agency (EPA, <http://www.epa.gov/oswer/riskassessment/pdf/hhmemo.pdf>). Several changes to toxicity data for most of the constituents included in the J&E modeling have occurred. The J&E modeling should only be used to estimate concentrations in the air. All risk/hazard estimates should then be calculated using the most currently available toxicity data. The Permittee must ensure that current toxicological data are applied.
3. In Tables 6, 7, 13, and 14, the carcinogenic risk calculations (under the column entitled "Cumulative Risk Calculations") for each individual chemical were not determined correctly, as the data were not multiplied by the target risk level of 1E-05. The Permittee must revise the carcinogenic risk calculations in Tables 6, 7, 13 and 14.
4. Overall, total (cumulative) risks and hazards were not determined correctly for these sites. In some cases, a comparison to the SSLs was conducted, but risks/hazards were not determined. In other cases, risks/hazards were determined from comparison to SSLs, but the risks/hazards were not combined with those estimated for the indoor air exposure pathway. Following the methodology outlined in the 2009 NMED Soil Screening Guidelines, when there are multiple chemicals, total risk/hazard must be calculated and compared to the appropriate target risk/hazard level. This total risk must include all chemicals and all exposure pathways. The Permittee must revise cumulative risks and hazard calculations.
5. Tables 6 and 14 provide a comparison of site maximum concentrations to ecological screening levels; however, neither individual hazard quotients nor an overall hazard index is provided to demonstrate that the site does not pose ecological risk. The Permittee must provide an overall hazard index to demonstrate that SWMU 81 (Table 6) and SWMU 102 (Table 14) do not pose ecological risks.
6. Table 15 presents individual hazard quotients for ecological receptors; however, hazard indices are not provided for each receptor. Conservatively, total risk must account for the cumulative effect from all chemicals unless hazard indices based upon target organ analyses are provided. The Permittee must revise Table 15 to account for the cumulative effect from all chemicals or provide hazard indices based upon target organ analyses.

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The Permittee must submit a revised Proposal to NMED that addresses all of the comments included in this letter no later than November 15, 2010. The submittal must include an electronic copy with all changes presented in redline-strikeout in addition to the paper copies.

Please contact Pat Stewart at (505) 476-6059, should you have any questions.

Sincerely,



James Bearzi  
Chief  
Hazardous Waste Bureau

cc: J. Kieling, NMED HWB  
D. Cobrain, NMED HWB  
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