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RON CURRY
Secretary

SARAH COTTRELL
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

August 2, 2010

Colonel Stephen Clark
27th Special Operations Wing
100 South D.L. Ingram Boulevard
Cannon Air Force Base, New Mexico 88103-5214

**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 June 2010 (Proposal). NMED hereby disapproves the Proposal. The Permittee must address the following discrepancies in tabulated data or associated footnotes. The discrepancies are:

1. All human health risk evaluations in the Proposals were based on comparisons to the 2006 New Mexico Soil Screening Levels (SSLs). NMED conducted the review of data using the most recent SSLs (December 2009) and found that conclusions did not change significantly. The Permittee must use comparisons to the most recently available criteria.
2. The Permittee used the footnote "NMED Soil-to-Groundwater Screening Levels (NMED 2006) with a dilution attenuation factor (DAF) of 20 – NOT APPLICABLE TO THIS SITE" in all of the tables. The footnote is not correct. NMED SSLs were developed using

default parameter values representative of environmental conditions in New Mexico and utilize a DAF of 20 to determine if additional investigation is necessary to evaluate potential leaching and migration of contaminants from the vadose zone to groundwater. If, however, concentrations of contaminants exceed the generic DAF 20 values, the Permittee must calculate site-specific DAF values to determine if additional investigations are necessary. The Permittee may omit comparison to the generic DAF 20 values and present only site-specific DAF values for comparison.

3. Where chromium was detected in soil, the Permittee used SSL values for chromium III for comparison of concentrations of chromium in soil. In the absence of speciation of the elemental chromium, the Permittee must compare unspicuated chromium concentrations to the more conservative SSL values for chromium VI.
4. The Permittee uses the footnote "NMED Soil Screening Levels for the Construction Worker (NMED 2006) – NOT APPLICABLE TO THIS SITE" in tables 5, 6, and 7. Risks associated with all scenarios must be considered. The footnote is not correct unless the Permittee proposes Corrective Action Complete with Controls and ensures that no future construction will occur at the site.
5. The Permittee reported in Table 6 (SWMU 81) that 1,1,1-trichloroethane and ethylbenzene were detected in five surface soil samples. The frequency that 1,1,1-trichloroethane and ethylbenzene were detected in combined surface and subsurface soil is reported as six in Table 7 (SWMU 81). Results presented in two reports, RCRA Facility Investigation for 21 SWMUs (October 2007) and the Remedial Investigation Report for 18 SWMUs (October 1992), indicate that 1,1,1-trichloroethane was detected in six surface soil samples and that ethylbenzene was detected in four surface soil samples. Neither of these two contaminants was detected in subsurface soil.
6. Data presented in Table 7 (SWMU 81) indicate a total of 25 surface and subsurface samples were analyzed. Results presented in two reports, RCRA Facility Investigation for 21 SWMUs (October 2007) and the Remedial Investigation Report for 18 SWMUs (October 1992), indicate that only 22 surface and subsurface samples were analyzed.
7. The Permittee failed to multiply the total carcinogenic cumulative risk calculations by 10^{-5} to determine the cumulative cancer risk values in Tables 7 and 14.
8. Data reported in RCRA Facility Investigation for 21 SWMUs, October 2007, indicate that there were only four surface soil samples analyzed at SWMU 82. Table 8 in the Proposals indicates that five surface samples were analyzed. Xylene was detected in only one surface sample, not in two surface samples as indicated in Table 8.

9. Data reported in RCRA Facility Investigation for 21 SWMUs, October 2007, indicate that benzene was not detected in any soil sample collected at SWMU 82. Table 9 in the Proposals indicates detection of benzene in one sample and includes an erroneous maximum detected concentration. Toluene was detected in 35 samples. Table 9 in the Proposals indicates that toluene was detected in only 33 samples. However, the maximum detected concentration shown in the table is correct.
10. The Permittee failed to include the frequencies of detection, maximum detected concentrations and SSL values for the parent compound, chlordane in Tables 10 and 11. Chlordane was detected in six of eight surface soil samples and ten of 90 combined surface and subsurface samples. The maximum detected concentration was 7.0E-01 mg/kg, in a surface soil sample.
11. Tables 10 and 11 indicate that alpha-chlordane and gamma-chlordane were analyzed in eight surface soil samples and in 43 combined surface and subsurface samples. These two metabolites of chlordane were analyzed for and detected in only one surface soil sample.
12. The correct maximum detected concentration for toluene is 2.10E-03 and the correct maximum detected concentration for xylene is 1.3E-03. These values are reversed in Table 14.
13. The heading for the last column in Table 14 indicates those constituents with concentrations exceeding a screening level; background, human health and ecological. Only two constituents are indicated as exceeding a screening level; mercury and thallium. However, the maximum concentrations of cadmium and calcium also exceed background and arsenic exceeds the NMED residential soil SSL. The Permittee did not clarify why these constituents are not denoted as "yes" in the last column.
14. Two constituents detected in surface soil, xylene and ethylbenzene, are not included in Table 16. These two constituents are included in Table 17, but comparison data are missing in Table 17.
15. The Permittee presents, in all discussions, the conclusion that "impacts to groundwater were considered minimal because the depth to groundwater is greater than 250 feet." Depth to groundwater alone is not sufficient justification to exclude the potential for contaminants in soil to impact groundwater. The Permittee must provide comparison to NMED SSLs in the form of DAF of 20 or site-specific DAF values to evaluate potential leaching and migration of contaminants to groundwater.
16. Volatile organic compounds (VOCs) were detected at several of the sites. The derivation of NMED SSLs does not include risk/hazard associated with the vapor intrusion pathway (migration to indoor air). For the purposes of review and evaluation, NMED conducted

Col. Stephen Clark
August 2, 2010
Page 4

first tier evaluations of the vapor intrusion pathway for all sites in the Proposals where VOCs were detected. None of the detected VOCs exceeded risk-based indoor exposure soil concentrations. The Permittee must either provide justification as to why this pathway would result in minimal risk/hazard and not impact cumulative results or provide an analysis of this pathway (e.g., Johnson and Ettinger model).

The Permittee must submit a revised Proposal to NMED that addresses all of the comments included in this letter no later than September 30, 2010. The submittal must include an electronic copy with all changes presented in redline-strikeout in addition to the formal submittal.

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

Sincerely,

Handwritten signature of James Bearzi in cursive, followed by the word "for" in a smaller, less distinct script.

James Bearzi
Chief
Hazardous Waste Bureau

cc: J. Kieling, NMED HWB
D. Cobrain, NMED HWB
N. Dhawan, NMED HWB
P. Stewart, NMED HWB
H. Hanson, CAFB
File: CAFB 2010 and Reading