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RETURN RECEIPT REQUESTED

December 23, 2005

Colonel John D. Posner
Commander 27th Fighter Wing
100 D.L. Ingram Boulevard
Cannon Air Force Base, New Mexico 88103-5214

SUBJECT: NOTICE OF DEFICIENCY
FINAL CONSTRUCTION COMPLETION REPORT REMEDIAL
ACTION AT SWMU 101-SEWAGE LAGOONS
CANNON AIR FORCE BASE, NEW MEXICO
CANNON AIR FORCE BASE
EPA ID NO. NM7572124454
CAFB-05-006

Dear Colonel Posner:

The New Mexico Environment Department (NMED) has completed its review of Cannon Air Force Base's (CAFB's) 2005 "*Final Construction Completion Report Remedial Action*". NMED also reviewed CAFB's April 2001 *Revised Final Corrective Measures Study Report SWMU 101-Sewage Lagoons*, and the February 2003 *Final Work Plan for the closure of SWMU 101-Sewage Lagoons*". Before this report can be approved CAFB must supply additional information and clarification as follows.

General Comments

1. The purpose of the SWMU 101 remedial action is not clearly explained in the report. Although Section 2.3 (page 2-2) mentions the need to "prevent exposure to ecological

receptors” as the reason for constructing the engineered cover and biotic barrier, the specific ecological receptors and contaminants that present unacceptable risks are not identified. A wide range of parameters is listed in discussion of groundwater monitoring (page 2-2), and additional chemicals are identified in several reports of soil sample analyses (Appendix A). The purpose of the remedial action, however, is not described in any further detail. CAFB must identify the specific ecological receptors and hazardous constituents (and their concentrations), and any other factors that resulted in the decision to consolidate contaminated sludge and soil and to construct the cover system.

2. While the report provides a reasonably complete description of the construction of the corrective measure, design criteria are not provided. For example, the report does not provide required hydraulic conductivity and Unified Soil Classification System (USCS) classification of the soil barrier, thicknesses and tolerances of the soil barrier, biota barrier and erosion/vegetation layer, compaction requirements for sludge and contaminated soil from the North Lagoon. CAFB must provide a summary of the design criteria for the project.
3. The 6-inch thick erosion/vegetation soil cover is not separated from the biota barrier by soil or synthetic filter material. The absence of a filter raises the concern that soil may eventually infiltrate into the coarse broken concrete biota barrier. The infiltration of soil may occur whether or not the coarse or fine concrete biota barrier material was placed immediately below the erosion/vegetation soil cover. CAFB must explain or justify the lack of filter material or include one in the final design.
4. Future inspection, maintenance and protection of the cover system are not addressed in the report. Periodic mowing is apparently already occurring (photographs of the mowed cover are included in Appendix C), but erosion repair is not addressed. Exposure of the biota barrier could result in increased infiltration, reduced vegetation growth, and decreased evapotranspiration. Access restrictions described in the report are limited to fencing. If additional restrictions are proposed or have been implemented, such as warning signs, Commander’s Orders, or other forms of institutional controls, they must be identified and described.

Specific Comments

1.

Project Description (Section 3), page 3-1, paragraph 1; This section states that “the Sewage Lagoons cover system was designed to minimize potential threat to human health and the environment...”

NMED Comment: The statement in Section 3 indicates that a potential threat to human health would exist if the remedial action was not implemented. CAFB must identify the specific ecological receptors at risk, in addition to addressing human health.

5. **Nonconformance, page 3-6**

NMED Comment: This section states that no nonconformance reports were filed in regards to this project. This statement conflicts with the description of construction of the biota barrier in Section 3.1.6 (page 3-4), which states that half of the crushed concrete (16,000 cubic yards) did not meet the grain size requirements of Specification 02115. The discussion in Section 3.1.6 does not explain whether the grain size of this concrete was smaller or larger than specification. The referenced Field Change Request (FCR) No. 6 (in Appendix B of the Report) indicates that "fine material in the crushed concrete stockpile at SWMU 97" did not meet the specifications, but does not mention any size problems with "Keel material" (left over from runway work), which is proposed for use in FCR No. 9. Finally, Design Change Notice (DCN) No. 2 (in Appendix B of the Report), approving use of the undersized material from SWMU 97, states that "Changed specification will be reflected in record drawings and completion report". The changed specification is not mentioned in Section 3.1.6 or on the drawings provided in the Report (Figure 3-1, page 3-9), or elsewhere in the Report. CAFB must clarify why the SWMU 97 and Keel materials did not meet specification 02115, and explain how the specification was changed and any potential effects from using off specification material.

6. **Biota Barrier Construction, page 3-3**

NMED Comment: This section states that the first lift of the biota barrier layer consisted of the SWMU 97 and Keel materials, and the second lift was 3- to 6-inch crushed concrete from an unspecified offsite source. The Excavation and Handling Plan for Biota Barrier Layer (in Appendix A of the Report), however, states that the offsite material will be placed first, and the second lift will be the on-site (SWMU 97 and Keel) materials. This procedure is confirmed in DCN No. 2. CAFB must clarify the description of the upper and lower lifts of crushed concrete materials. If the current description in Section 3.1.6 is correct, this is an apparent nonconformance with the above plan and DCN No.2. The offsite source of crushed concrete must also be identified.

8. **Design Change Notice (DCN) Log, Appendix B, page B-1**

NMED Comment: DCN Nos. 1 and 3 identify additional changes in the project specifications that are not mentioned in the Report. CAFB must identify and describe these changes (i.e., eliminating the berm between the North and South Lagoons, and modification of soil permeability test conditions), and provide the reasons for their implementation.

Colonel John D. Posner

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9. **Previous Investigations and Evaluations, page 2-2, paragraph 1;** The report states that “Currently, groundwater monitoring is conducted annually at the Sewage Lagoons to comply with RCRA requirements.”

NMED Comment: The last reported groundwater data was presented in the report entitled *October 2002 Cannon Air Force Base, New Mexico RCRA Ground Water-Monitoring at Sewage Lagoons and at Landfill 5, Analytical Results of Samples Collected March 12-14 2002 and February 2005 Cannon Air Force Base, New Mexico RCRA Ground-Water Monitoring at Sewage Lagoons, Landfill 5, and Perimeter Wells Analytical Results for Samples Collected June 14-16, 2004*. CAFB must explain why there was no data collected for 2003.

CAFB must provide the information listed above within 90 days of receipt of this letter.

If you have any questions concerning this letter, please contact Tammy Diaz of my staff at 505-428-2552.

Sincerely,



James P. Bearzi

Chief

Hazardous Waste Bureau

BRZ:td

cc: *J. Kieling, NMED HWB
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File: Reading File & CAFB 2005 File