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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

May 10, 2007

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

**RE: NOTICE OF DISAPPROVAL
FINAL RCRA FACILITY INVESTIGATION REPORT ADDENDUM FOR
MELROSE BOMBING RANGE
CANNON AIR FORCE BASE, NEW MEXICO
EPA ID NO. NM5572124456-1
HWB-CAFM-03-001**

Dear Colonel West:

The New Mexico Environment Department (NMED) has reviewed Cannon Air Force Base's (the Permittee) response to the NMED's February 2006 Notice of Deficiency (NOD) on the *Final RCRA Facility Investigation Report Addendum for Melrose Bombing Range* (Addendum) dated February 2003. NMED has determined that the Permittee's response is technically deficient. The following response evaluation comment numbers correspond to the comment numbers in the Permittee's NOD response.

General Comments:

Comment 1

The Permittee partially addresses the issue presented in General Comment 1.

Based on a boring that was advanced to a total depth of 182 ft below ground surface (bgs), the Ogallala aquifer was determined not to be present in the area of solid waste management unit

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(SWMU) 117 and area of concern (AOC) 3 (SWMU 132). All wells at these sites were therefore installed at depths ranging from 42 to 50 ft bgs (i.e., in the localized shallow perched aquifer). The Permittee attribute the decline in the water level of the regional Ogallala Aquifer to a lack of precipitation over the last decade, although no data or additional discussion was offered to support this assertion. Such information is needed to clearly demonstrate that, because the regional Aquifer is not present in this area, sampling is not necessary. Such documentation may include the boring logs for the wells drilled to 182 ft bgs with information on the depths at which water was encountered or observed. Further, regional or local precipitation data can be correlated to the observed water levels of the regional Ogallala aquifer during the time period cited in the Permittee's response to illustrate the relationship between rainfall and water levels in the Ogallala Aquifer. In the absence of such information, the Permittee must conduct the prescribed sampling.

Comment 2

Information provided by the Permittee is adequate. No response needed.

Comment 3

Information provided by the Permittee is adequate. No response needed.

Comment 4

Information provided by the Permittee is adequate. No response needed.

Specific Comments:

Comment 1

The Permittee's response partially addresses the issues presented in Specific Comment 1.

The Permittee states that the map (Figure 2-5) included in the Addendum was "...out of date as a surface cleanup of the site was conducted in early 2002." No description of the cleanup activities was included with the response. The Permittee noted that invasive sampling was not conducted because of the potential for unexploded ordnance in this "...active area of the range." The Permittee further indicated that the data collected at AOC 1 (SWMU 130) and the physical condition of the site did not warrant the collection of additional samples. The response also included a revised map of AOC 1 (SWMU 130), labeled as Figure 2-4, which shows no debris within the area boundary and labels for the depression and each mound noted on the original Figure 2-5 as "Former Depression", "Former Mound", and "Former Mound", respectively.

No specific date for the cleanup of AOC 1 (SWMU 130), other than early 2002, was provided. The original Figure 2-5 depicting the locations of debris, two mounds, and a depression containing two drums, was dated April 9, 2002. However, there is no explanation of what

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prompted the cleanup of this area. While details of the cleanup effort were not furnished by the Permittee, the new map indicates that all the debris, the two drums, and the concrete (abbreviated CONC. in original Figure 2-5) tower bases were removed from AOC 1 (SWMU 130). Further, a comparison of original Figure 2-5 and new Figure 2-4 implies that the depression and the two mounds were eliminated during the cleanup. It is not known if any characterization of AOC 1 (SWMU 130) and/or the removed debris, mounds, and depression was conducted during the cleanup effort.

Neither the requested discussion on the impact of the lack of characterization of AOC 1 (SWMU 130) on the ecological risk assessment, nor the work plan for further investigation of the area were provided. The Permittee must provide a discussion regarding the impact of the lack of characterization at AOC 1 (SWMU 130) on the ecological risk assessment. As part of the discussion, the Permittee must specifically address whether this lack of characterization resulted in an underestimate or overestimate of the risks to ecological receptors.

The Permittee must submit a work plan for further investigation and characterization at AOC 1 (SWMU 130). The work plan must include information on any characterization and cleanup that was completed at AOC 1 (SWMU 130). The results of any previously-conducted visual inspections, field screenings, and/or sampling events must also be included in the work plan. The Permittee must describe the methods used and the rationale for removing the mounds and depression, and why the characterization of removed and disturbed soils was not conducted. The Permittee must also provide a plan for soil field screening and future collection of soil samples from the former mounds, former depression, and other areas where debris was present prior to the cleanup effort. This must include the locations of the discarded truck vehicle parts. At a minimum, two samples must be collected at the former depression, one at each of the discarded truck vehicle parts locations, one sample at the miscellaneous debris area, and four samples in the vicinity of the activities area. These locations are shown on Figure 2.5 provided as Attachment 1 to this document. Soil samples collected from the depression must be analyzed for RCRA metals, volatile organic compounds (VOCs) (SW-846 EPA 8260), diesel range organics (DRO) and explosives. All other samples shall be analyzed for DRO, RCRA metals, and explosive compounds. The work plan must include descriptions of the former mounds and depression, including proposed sampling locations at the former mounds if the mounds were identified as containing debris. The Permittee must include any photographs taken of these areas.

The Permittee must review Figure 2-4 and replace the appropriate Figure(s) in the Addendum as part of the response, if necessary.

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Comment 2

The information provided in the facility response is not of sufficient detail to eliminate the need for further investigation and characterization at AOC 2 (SWMU 131).

The work plan required by Specific Comment 2 was not provided. As stated in Specific Comment 2, NMED requires submittal of a work plan for further investigation and characterization at AOC 2 (SWMU 131). This work plan must include an expanded version of the information contained in the Permittee's response to Specific Comment 2. The plant species that exhibit patterns of sparse growth across the site must be identified. Photographs of those species illustrating this sparse growth pattern at other SWMUs and AOCs should be provided. If the lack of precipitation and the quality of soil are factors in the observed vegetation patterns, a discussion, supported by precipitation and soil property data, on the relationship among the three factors at AOC 2 (SWMU 131) should be included.

The Permittee must provide the date that AOC 2 (SWMU 131) was designated as an AOC and the date of installation of the three tanks used in current fuel storage and dispensing operations, including the type of fuel stored in the three tanks. Photographs of the area beneath and around the tanks and documentation of any leaks or staining must be included. If there is evidence of a leak, samples of the stained soil must be collected and analyzed for the compounds consistent with those stored in the tanks. Also, describe in detail any inspections and analyses performed (supported by available data) at AOC 2 (SWMU 131) since the submittal of the February 2003 RFI Report Addendum supporting the environmental characterization of the area.

In addition to the above, the work plan must provide for soil field screening and visual inspection of debris at the site. Unless information is furnished that suggests additional investigation and characterization in these areas is not necessary, test pits approximately 6 to 10 ft deep must be excavated at AOC 2 (SWMU 131) at the locations of the sparse or absent vegetation shown on Figure 2-6 of the Addendum to check for waste. Two samples from the east sparse vegetation area, one from each of the other three sparse vegetation areas, and two from the area where vegetation is absent must be collected. All soil samples collected from these areas shall be analyzed for RCRA metals, VOCs (EPA 8260), semi volatile organic compounds (SVOCs), PCBs, dioxins and furans. A map depicting the recommended sample locations (labeled as Figure 2-6) is provided as Attachment 2 to this document.

The Permittee must review Figure 2-5 and replace the appropriate Figure(s) in the Addendum as part of the response, if necessary.

Comment 3

The Permittee's response partially addresses the issues raised in Specific Comment 3.

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The screening assessment performed by the Permittee applied conservative assumptions, such as the maximum detected site concentrations, 100% availability of contaminants, and that the receptors only forage on the sites. Given these assumptions, it is not unexpected that risks above the target hazard index of one (1) were calculated. However, a more refined ecological assessment is warranted for the parameters listed in Table 3 of Specific Comment 3. The more refined analysis should include the use of the upper 95% confidence level (95% UCL), average ingestion/food consumption rates, incorporation of area use factors, and use of less conservative toxicity data, such as lowest observed adverse effects levels (LOAELs). The Permittee must provide a more refined (or second Tier) ecological assessment for those constituents that resulted in hazard quotients above ten (10). Note that the exclusion of aluminum and iron from the assessment, as detailed in the first paragraph of Specific Comment 3, is acceptable.

The Permittee must prepare a refined (or second Tier) ecological risk assessment for those SWMUs/AOCs, constituents, and environmental media listed in Table 3 below.

TABLE 3

SWMU/AOC	Surface Soil	Subsurface Soil
114	None	Arsenic, barium, chromium
115	Lead, copper	Chromium, lead
117	Lead	Barium
AOC 1 (SWMU 130)	Lead	None
AOC 2 (SWMU 131)	None	Chromium
AOC 3 (SWMU 132)	Arsenic, chromium, lead	Lead
AOC 4 (SWMU 133)	Lead	None

Comment 4

The Permittee's response does not adequately address Specific Comment 4.

Specific Comment 4 is focused on a circular area of vegetation observed in Photograph 19 of Appendix B of the February 2003 RFI Report Addendum (the area can also be seen in Photograph 20).

The Permittee must provide additional information on the investigation and characterization of the circular vegetation pattern shown in Photograph 19, Appendix B, of the Addendum. If this pattern is indicative of a certain plant species at the site, identify the species and provide photographic evidence of other areas where this circular pattern has been observed. The Permittee must discuss whether any biased sampling in and around the circular patterns was conducted. If sampling was conducted, provide the results of the analysis or provide the sample

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number for cross-reference in the Addendum. If sampling was not conducted and other lines of evidence do not obviate the need for additional investigation and characterization of this area, sampling must be proposed in the work plan for additional investigation and characterization of the circular area of vegetation at AOC 2 (SWMU 131). In addition, the Permittee must submit a revised AOC 2 (SWMU 131) description which contains a discussion of this area and the potential cause of the patterned vegetation.

Comment 5

The Permittee response partially addresses the issues raised in Specific Comment 5.

The Permittee's response indicates that a 95% upper tolerance limit (UTL) was used in the comparison of background concentrations. This is in accordance with NMED guidance. However, the response does not identify the distribution assumed for the data and the statistical test used in calculating the 95% UTL. The Permittee must provide the distribution assumptions and statistical test information requested in Specific Comment 5.

Comment 6

The Permittee's response partially addresses the issues raised in Specific Comment 6.

In general, except for phenanthrene, the information supplied by the Permittee supports the use of the toxic reference values (TRVs) for acetone (mouse), bis(2-ethylhexyl)phthalate, methyl ethyl ketone, manganese, and acetone (red tailed hawk) employed by the Permittee in the screening level ecological risk analysis performed at the facility. Some values are more conservative than those mentioned in Specific Comment 6 [e.g., acetone TRV for a mouse and, possibly, bis(2ethylhexyl)phthalate]; some were taken directly from the *Guidance for Assessing Ecological Risks Posed by Chemicals: Screening-Level Ecological Risk Assessment* (NMED 2000 guidance) [e.g., both acetone values]; and others were appropriately taken from the wildlife no observed adverse effect level (NOAEL) column of Table 12 from Sample *et al.* (e.g., methyl ethyl ketone, manganese). Throughout Appendix G, *Toxicity Reference Values (TRVs) from Appendix E EPA 1999b*, of the NMED 2000 guidance, benzo(a)pyrene is used as a surrogate for PAHs without established values. Thus, according to the NMED 2000 guidance, the TRV of 100 µg/mg/day for benzo(a)pyrene should be employed as a surrogate for phenanthrene in this screening-level risk analysis [use of benzo(a)anthracene as a surrogate may be appropriate in a refined analysis of ecological risks]. The Permittee must revise the screening level analysis to use benzo(a)pyrene rather than benzo(a)anthracene as a surrogate for phenanthrene.

Table B-52, *Toxicity Study Information and Toxicity Reference Values for Upper Trophic Level Assessment Endpoints*, requires clarification regarding the units associated with the numerical values listed in the table. The Dose and TRV columns of the table are both labeled as presenting values in units of milligrams per kilogram per day [mg/(kgBW·day)]. However, based on the

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numerical values presented, some entries appear to be in milligrams per kilogram per day, while others appear to be in units of micrograms per kilogram per day [$\mu\text{g}/(\text{kgBW}\cdot\text{day})$]. The Permittee must review the numerical values presented in Table B-52 and ensure that the units are correct and consistent with the units specified in the column headings. The Permittee must submit a revised Table B-52 for inclusion in the Addendum as a final determination on the suitability of the TRV values used by the Permittee cannot be made until the units in the table are reviewed and corrected.

Comment 7

The Permittee response adequately addresses the issue raised in Specific Comment 7.

The Permittee must address the comments provided in this letter, including the submittal of the required work plan, within 180 calendar days of the receipt of this letter.

If you have any questions concerning this letter, please contact Swarna Latha Vonteddu of my staff at (505) 476-6057.

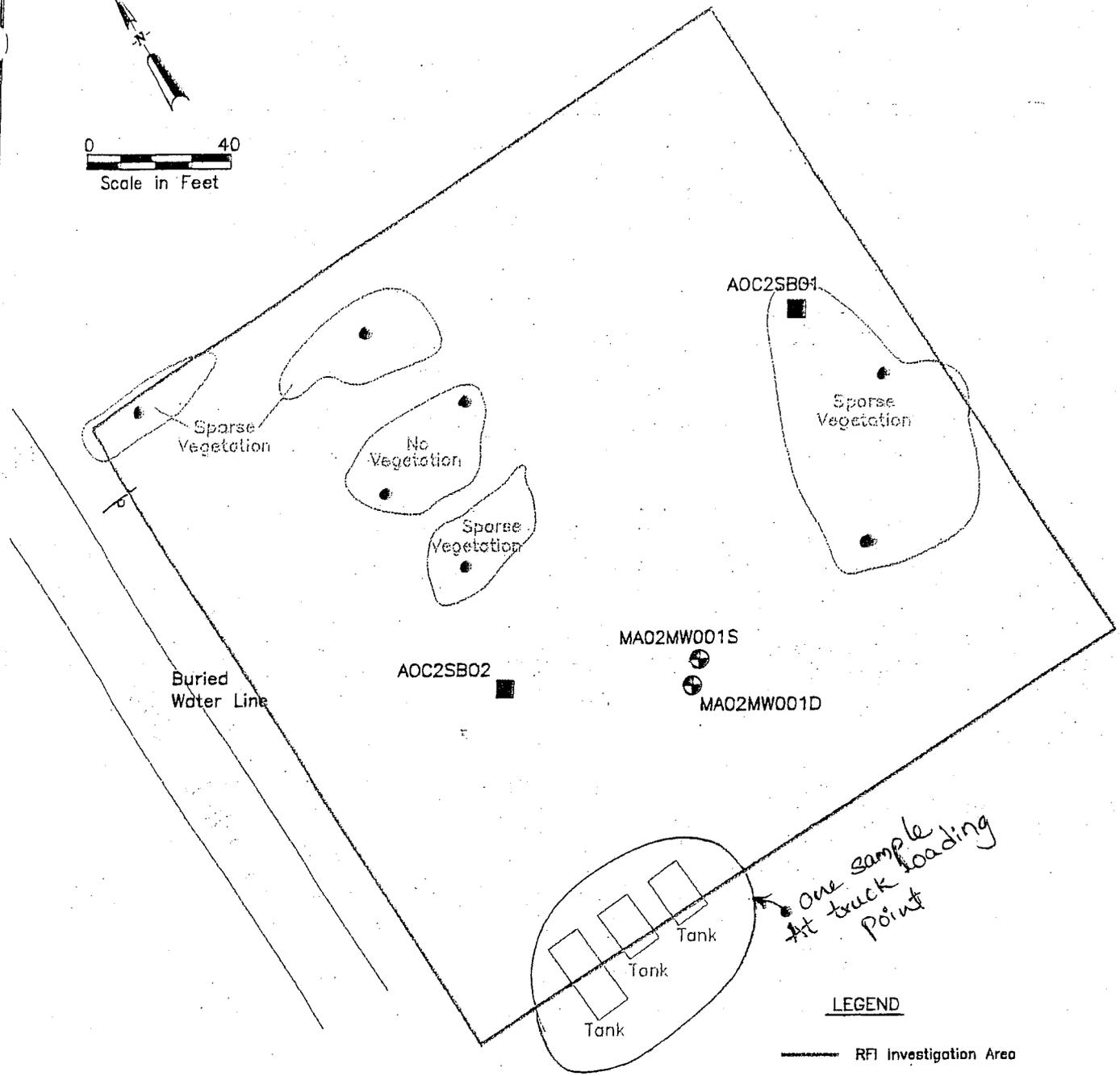
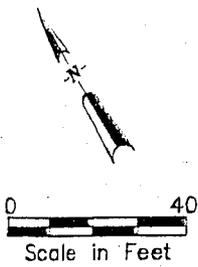
Sincerely,



James P. Bearzi
Chief
Hazardous Waste Bureau

JPB: sv

cc: J. Kieling, NMED HWB
D. Cobrain, NMED HWB
S. Vonteddu, NMED HWB
C. Frischkorn, NMED HWB
L. King, EPA Region 6 (6PD-N)
D. Timmons, CAFB
K. Doll, CAFB
File: CAFM (Melrose) 2007 and Reading
HWB-CAFM-03-001



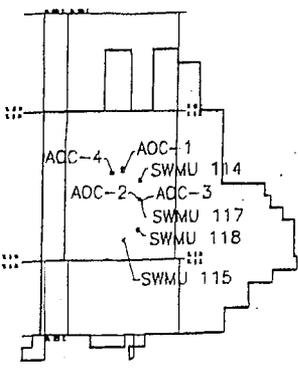
*One sample
At truck loading
point*

LEGEND

- RFI Investigation Area
- MA02MW001 Monitoring Well Location
- AOC2SB01 Soil Sample Location (2002)

Recommended Sampling location

INDEX MAP



TO: RFI INVESTIGATION AREA - Draft VST_IMAGES_2002.DWG
 2002 10 24 09:51
 PROJECT: WHEELER
 PLOT/UPDATE:

**FOSTER WHEELER
ENVIRONMENTAL CORPORATION**

DATE: 04/09/02
SCALE: 1:40
DRAWN: REP

**FIGURE 2-8
AOC-2 SITE MAP**

U.S. ARMY CORPS OF ENGINEERS, OMAHA DISTRICT
 MELROSE BOMBING RANGE
 CANNON AIR FORCE BASE