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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

June 21, 2018

Colonel Stewart A. Hammons
Commander, 27th Special Operations Wing
110 E. Alison Avenue, Suite 1098
Cannon Air Force Base
New Mexico 88103

**RE: DISAPPROVAL
SUPPLEMENTAL RCRA FACILITY INVESTIGATION REPORT AT FT008
CANNON AIR FORCE BASE, NEW MEXICO
EPA ID #NM7572124454
HWB-CAFB-17-008**

Dear Col. Hammons:

The New Mexico Environment Department (NMED) has received the Cannon Air Force Base (Permittee) *Supplemental RCRA Facility Investigation Report [RFI] at FT008 [Solid Waste Management Unit (SWMU) 107]* (Report), dated August 4, 2017. NMED has reviewed the Report and hereby issues this Disapproval. The Permittee must address the following comments.

GENERAL COMMENTS

1. Total Petroleum Hydrocarbon Hazard Quotient Calculation for FT008 (Fire Training Area No. 008)

NMED Comment: Hazard quotients for total petroleum hydrocarbons (TPH) were calculated and included in the risk screen evaluation for SWMU 107. The results of the TPH risk screen evaluation were included in Report Section 5.4.6, Evaluation of Petroleum Hydrocarbons, and Section 5.4.7, Refined Quantitative Risk Evaluation for Soil. TPH concentration data is typically utilized as qualitative information when evaluating contamination at any given site; therefore, a risk screen evaluation is not required for TPH

concentration data. Further evaluation of identified TPH impacts at a site is supported by the concentration data for chemicals of concern (COC) typically associated with the TPH contamination and the risk screen evaluation for any identified constituents of potential concern (COPCs). The provided risk screen evaluation results for TPH are qualitative contamination characterization information, that reflect the magnitude of residual TPH contamination documented at SWMU 107. No revisions to the Report are necessary.

2. Soil-to-Groundwater Pathway for Chemicals of Concern (COCs)

NMED Comment: The evaluation of the soil-to-groundwater pathway documented in the Report indicates that various organic and inorganic (metals) COC concentrations exceeded NMED's soil-to-groundwater screening levels. The soil-to-groundwater pathway was summarized in Report Section 5.2.1.3, Comparison to Risk-based SSL for a DAF [Dilution Attenuation Factor] of 20, Section 6.1.4, Groundwater, and Section 6.2, Conclusions and Recommendations. Information provided in Report Section 5.2.1.3 indicates COC concentrations in exceedance of NMED groundwater protective soil screening levels (SSLs) were identified at 20 to 25 feet below ground surface (bgs) at boring location C107-SB03 at the southeast corner of the previously completed source removal area. The sample results confirmed the presence of residual contamination previously identified at approximately 28 feet bgs during the source removal activities. Additional soil sample data collected at 30 and 40 feet bgs at boring location C107-SB03 indicated that the vertical extent of contamination was identified. Source removal previously completed at the site was reported to further limit the likelihood that remaining contamination poses a threat to groundwater.

However, the only discussion regarding the soil-to-groundwater pathway evaluation was in Report Section 6.2, Conclusions and Recommendations, which states that there is generally a reducing trend. Additionally, the decreasing concentration trend with respect to sample depth as a line of supporting evidence for an incomplete soil-to-groundwater pathway does not necessarily apply to metals concentrations reported in soils across the site. As an example, arsenic concentrations exceeded the NMED groundwater DAF of 20 from the ground surface to 50 feet bgs at various boring locations. Revise the Report to either include an assessment of the soil-to-groundwater pathway using site-specific dilution attenuation factors for identified COPCs, or include additional lines of evidence indicating that while residual contamination may be present above default soil-to-groundwater screening levels, the likelihood for impacts to groundwater is minimal.

3. Potential for Per- and Polyfluoroalkyl Substances (PFAS) Contamination at Fire Training Areas

NMED Comment: Per- and Polyfluoroalkyl Substances (PFAS) are emerging COCs. Potential PFAS of interest are perfluorooctyl sulfonate (PFOS) and perfluorooctanoic acid (PFOA). Currently, there are no soil screening levels for PFAS. NMED has only published tap water screening levels, which are provided in NMED's *Risk Assessment Guidance for Site Investigations and Remediation* (RA Guidance), Table A-1, NMED Soil Screening Levels (Table A-1). PFOS and PFOA are of potential concern where fire-suppression foams

have been used, such as at airfields and other places where petroleum-product-based fires are a risk. Report Section 2.2, FT008 Site Description, does not include a discussion of the use of fire suppressant foams at the site during fire training exercises. Revise Section 2.2 and any other affected Report sections to include a discussion of the use of fire suppressant foams at the site. Further evaluation of PFAS may be required at a later date, if additional regulatory screening levels are established.

4. Organization of Report Information Included as Figures and Tables

NMED Comment: Screening level cumulative risk and hazard indices tables which do not have specific table number designations were incorporated into the narrative portions of Report Section 5, Investigation Results. The revised Report must be restructured to include all respective tables at the end of each Report section. The tables must be clearly labeled, numbered, and referenced in corresponding Report sections.

SPECIFIC COMMENTS

5. Section 2.3.7, FT008 [Fire Training Area No. 008] Soil Remediation Report (ERM 2013), Page 2-12

Permittee Statement: “The objective of the project was to remove and properly dispose of all petroleum contaminated soils in excess of NMED SSLs at FT008. Based on the completion of the excavation, the site objective was determined to have been met and the site was recommended for “Site Closure”. At present NMED has not completed their review of this document.”

NMED Comment: NMED provided a September 13, 2013 *Approval Final Source Remediation Report Fire Training Area No. 8 (Solid Waste Management Unit 107)* (Source Remediation Report) response letter for the document prepared by ERM. Revise Section 2.3.7 to reflect NMED’s response to the Source Remediation Report.

6. Section 3.5.1, Preliminary Site Conceptual Exposure Models, Page 3-4

Permittee Statement: “Vapor intrusion pathways were considered incomplete for FT008 because there are no buildings currently located at the site and no buildings are planned in the future. Given that FT008 is currently within the fall out zone for the EOD [Explosive Ordinance Disposal] and there are no plans to change the location of the EOD, it is unlikely buildings will be constructed at FT008 in the foreseeable future. Therefore, vapor intrusion was considered incomplete and not evaluated further for FT008.”

NMED Comment: Due to the detection of volatile organic compounds (VOCs) in site soils at FT008, evaluation of the vapor intrusion exposure pathway is required in the revised Report. NMED’s evaluation of the reported concentration data indicates that VOCs were minimally detected in site soils, concentrations are decreasing with depth, VOCs are not significant risk drivers, and prior contamination source removal has been performed at the

site. Therefore, only a qualitative evaluation of the vapor intrusion exposure pathway is required. The vapor intrusion evaluation must be conducted in accordance with RA Guidance Section 2.5.2.2, Potentially Complete Pathway; Qualitative Discussion.

7. Section 3.5.4, Evaluation of Site Metals to Background, Page 3-5

Permittee Statement: “Step 2 Compare the range of detected site concentrations to the range of detected background concentrations. If the site range was within the range of detected background concentrations, then the site concentrations were considered to be background and no additional action was required. If the site range exceeded the background range, the metal was considered to exceed background.”

NMED Comment: RA Guidance Section 2.8.3.2, Comparison to Background-Discrete Samples does not allow for comparison of site COC concentration data to a background range. The RA Guidance only allows a two-sample hypothesis test statistical evaluation of COC concentration data to established background data. Only under certain circumstances is a comparison to a background range applicable. In such cases, NMED only allows a comparison to the background dataset range for identified COPCs if nature and extent of contamination has been defined and only when sufficient samples are not available to conduct a statistical analysis. NMED’s review of data provided in the Report indicates sufficient data are available to conduct the required statistical evaluation. Review of the background range comparison performed during the assessment indicates the evaluation of site concentration data to a background concentration range resulted in the screening out of arsenic as a COPC for the 0-to 10-foot bgs exposure interval. A statistical evaluation was completed for arsenic and thallium for surface soils (0-to 1-foot bgs) only. Revise the Report to include the additional required statistical evaluation or include arsenic as a COPC in the risk screen evaluation for the 0-to 10-foot bgs exposure interval. Revise Section 3.5.4 and all affected sections, tables, and appendices accordingly.

8. Section 5.2.1.1, Analytical Data Issues, Page 5-1 through 5-2

NMED Comment: The Permittee documented an issue with the labeling of VOCs samples collected at boring locations C107-SB43, C107-SB44, and C107-SB45. The issue was attributed to the labeling instruction provided by the laboratory for samples submitted for VOCs analysis. No sample identification issues were noted for the additional samples submitted for TPH, semi-volatile organic compounds (SVOCs), Target Analyte List (TAL) metals, and pesticide analysis for the boring locations. Despite the lack of sample identification information, the Permittee instructed the laboratory to perform the VOCs analysis on the submitted samples. Analytical results for the samples collected at each boring location indicated various VOCs (acetone, naphthalene, and isopropylbenzene) were detected at concentrations several orders of magnitude below applicable NMED SSL. However, the lack of sample identification information invalidates the reported concentration information. Therefore, resampling is required in order to validate the VOC analysis result information for the boring locations.

9. Section 5.2.1.3, Comparison to Risk-based SSLs for a DAF of 20, Page 5-3

Permittee Statement: “All detected VOCs were at concentrations below NMED risk-based SSL for a DAF of 20.”

NMED Comment: Review of the information provided in Report Table 5-2, Summary of Soil Sample Analytical Data-October 2016 indicates concentrations of 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and ethylbenzene exceeded respective groundwater protective DAF screening levels at boring location C107-SB03 for the 20 and 25 feet bgs sample intervals. Revise the statement and correct any affected sections accordingly.

10. Section 6.1.2, Analytical Results, Page 6-1

Permittee Statement: “The horizontal extent of TPH-DRO [Diesel Range Organics] is vertically delineated by the 10 and 20 feet bgs soil samples collected from soil boring C107-SB35, being below the NMED residential SSL for TPH-DRO. The horizontal extent of TPH-DRO contamination is delineated to the west by soil boring C107-SB34, the north by soil boring C107-SB30 and to the south by soil boring C107-SB40.”

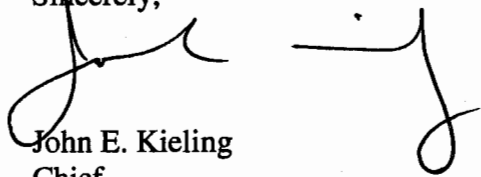
NMED Comment: Delineation of contamination to the east of soil boring C107-SB35 is required and may be completed during required resampling at soil boring locations C107-SB43, C107-SB44, and C107-SB45. Soil samples collected at this location must be analyzed for TPH (DRO and Oil Range Organics), VOCs, SVOCs, TAL metals, and pesticides. The additional sampling must adequately delineate any encountered contamination.

A work plan for the resampling of boring locations C107-SB43, C107-SB44, C107-SB45, and additional delineation of contamination east of boring C107-SB35 must be provided no later than **August 31, 2018**. The Permittee must submit a revised Report that addresses all comments contained in this Disapproval. In addition, the Permittee must include a response letter that cross-references where NMED’s numbered comments were addressed. The Permittee must also submit an electronic redline-strikeout version of the revised Report showing where all changes have been made to the Report. The revised Report must be submitted no later than **December 3, 2018**.

Col. Hammons
June 21, 2018
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If you have any questions regarding this letter, please contact Gabriel Acevedo at (505) 476-6043.

Sincerely,



John E. Kieling
Chief
Hazardous Waste Bureau

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