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DAIM-ODB

June 27, 2018

Mr. John Kieling
Chief, Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

RE: Response to August 22, 2017 Disapproval Letter, Final RCRA Facility Investigation Report, Parcel 7 Fort Wingate Depot Activity, McKinley County, NM EPA #NM6213820974, HWB-FWDA-17-003

Dear Mr. Kieling:

This letter is in response to your comments presented in the Disapproval Letter dated August 7, 2017 regarding the *RCRA Facility Investigation Report, Parcel 7* for the Fort Wingate Depot Activity (FWDA) under RCRA Permit USEPA ID No. NM6213820974 (March 30, 2017). The report has been revised to address each comment as described below and is being submitted under separate cover as *RCRA Facility Investigation Report, Parcel 7, Revision 1.0*, June 27, 2018. The revised report describes the investigation activities at Parcel 7 FWDA, McKinley County, New Mexico and is being submitted concurrently for tribal and regulatory review.

Copies of the disapproval letter and this response letter will be included within Appendix A of the revised report.

NMED Comment 1: Section 2, Table 2-1

VOCs, SVOCs, DRO, PCBs, TAL metals, dioxins/furans, explosives, perchlorate, nitrate, and cyanide are listed as target constituents for AOC 43 (Railroad Classification Yard) in Table 2-1. NMED's Comment 6 in the Approval with Modifications letter, dated January 31, 2014, directed the Permittee to include white phosphorus as an analyte for the AOC 43 soil evaluation. The Permittee did not analyze soil samples for white phosphorus. Collect samples at the same sampling locations to be analyzed for white phosphorus. Provide the results in the revised Report.

Army Response:

In subsequent discussions between NMED and the Army, it was agreed that it was not necessary to sample for white phosphorus. The correspondence between NMED and the Army is included in Appendix P of the report. Appendix P also contains documentation supporting this decision.

NMED Comment 2: Section 2, Figure 2-8

The figure is not legible. Provide an electronic image with higher resolution and submit the figure on 11x17 paper. Revise the Report accordingly.

Army Response

The figure has been revised and submitted as 11X17.

NMED Comment 3: Section 2.6, Human Health Risk Evaluation

Although the Permittee conducted the human health risk evaluation, ecological risks were not evaluated either qualitatively or quantitatively. The evaluation is a requirement of Section 7.5 of the Permit Attachment 7. The Permittee must use the most updated version of the NMED *Risk Assessment Guidance for Site Investigations and Remediation* (guidance) to evaluate ecological risk. Provide documentation that the pathways are incomplete or include evaluation of ecological risks in the revised Report. In addition, the soil-to-groundwater pathway was not evaluated. The evaluation is also required by the guidance. Provide documentation that the pathway is incomplete or include evaluation of the soil-to-groundwater pathway in the revised Report.

Army Response

The human health risk evaluation was revised to include assessment of the soil-to-groundwater pathway. Assessment of the soil to groundwater pathway was conducted using the current NMED risk guidance published in March 2017 (Revised).

An evaluation of ecological risk was also prepared and incorporated into the revised Report. The ecological risk evaluation was conducted using the current NMED risk guidance published in March 2017 (Revised).

NMED Comment 4 - Section 2.6, Human Health Risk Assessment

If the risk assessment is already in progress (e.g., started or being revised through comments), NMED allows the older version of the guidance to be followed. However, when the risk assessment has not begun, the use of the most current guidance at the time the work is conducted is appropriate. As such, the risk assessments should have been conducted following the 2017 guidance. While most of the components of the 2017 guidance are addressed in the Parcel 7 risk assessment, use of the 2017 guidance, and specifically the current soil screening levels (SSLs), would have resulted in fewer contaminants driving risk. It should be noted that use of a refined exposure point concentration alleviated the excess risk addressed in this Report. No response to this comment is required.

Army Response

The human health risk evaluation for the direct contact pathway was not revised, except where subsequent NMED comments pointed out errors that required correction.

NMED Comment 5 - Section 3.0 – POL WASTE DISCHARGE AREA

In NMED's Comment 1 in the *Approval with Modifications*, dated January 31, 2014, the Permittee was directed to provide information regarding the amount of clean fill utilized to cover the area and to explain how the base grade was determined and how sampling of native soils was conducted. The Permittee did not include the response in the Report. Revise the Report to include the requested information.

Army Response

Samples were collected to a depth of 2 feet in the area that was initially thought to be the POL discharge area. No indications of disposal were observed. After further review of historical documentation, the Army concluded that the former POL discharge area is located slightly southeast of the originally identified location. Three samples were collected in this area. Indications of petroleum stained soils were observed at this location. It appears that a thin layer of clean fill had been placed over the disposal area. This area is being further addressed under a separate scope of work.

NMED Comment 6 - Section 3.0 – POL WASTE DISCHARGE AREA

Wells FW-26 and TMW-25 are screened from 11 to 31 and 42.5 to 52.5 feet below ground surface (bgs), respectively, according to the *Facility Wide Monitoring Wells, Boring Logs & Well Construction Diagrams*, dated May 17, 2007. The depth to groundwater in well TMW-25, located approximately 350 feet southwest of well FW-26, was recorded as 38.93 feet bgs during March 2015 gauging event according to the *Groundwater Periodic Monitoring Report, January through June 2015*, dated October 2015. Therefore, the screened interval of well FW-26 may be too shallow to collect groundwater samples. A groundwater sample must be collected from the POL Waste Discharge Area. The Permittee must propose installation of a new well to replace well FW-26. Once the new well is installed, collect groundwater samples for VOCs, SVOCs, ORO, DRO, and TAL metals analyses. Recommend installation and sampling of a replacement monitoring well to evaluate for groundwater contamination for the POL Waste Discharge Area in the revised Report

Army Response

Groundwater is being evaluated as part of the Supplemental Northern Area Groundwater RFI. Additional wells will be installed near FW-26 to collect groundwater samples for all parameters requested by NMED. This statement was added to Section 3.2.2.

NMED Comment 7 - Section 3.0 – POL WASTE DISCHARGE AREA

Visual observation (e.g., odor and tar staining) is useful for initial assessment; however, it is not sufficient to define the extent of contamination. The Permittee must conduct a quantitative investigation (e.g., measurable characterization) to determine the lateral extent of contamination. Use field screening to select locations to collect soil samples for SVOCs, VOCs, TPH DRO and GRO, and TAL metals analyses to define the limits of contamination depicted in Figure 3-4. Revise the contamination boundary in Figure 3-4, if the soil analytical results contradict visual observation. In addition, the Permittee must determine the vertical extent of the contamination. A slight petroleum odor was detected at a depth of 5.25 feet bgs during the 2014 investigation. The odor indicates that the soil contamination may be present in deeper soils. Soil borings must be advanced at the locations where elevated DRO concentrations were detected (e.g., 0709POLSS008, 0709POLSS009, and 0709POLSS010). As described above, use field screening to select locations to collect soil samples to define the vertical extent of contamination. Revise the Report to propose submittal of a work plan to determine the volume of contaminated soil to be excavated, if necessary.

Army Response

The text in RFI report was revised to state that a separate work plan will be prepared that will evaluate the extent of impacted soil and subsequent removal. This statement was added to Section 3.8.

NMED Comment 8 - Section 3.0 – POL WASTE DISCHARGE AREA

While it is agreed that metal containers and metal strapping typically do not contain hexavalent chromium, the presence of elevated levels of copper adds uncertainty as to whether wood that had been treated with a chromated copper arsenate solution was burned at this site. The wood solution could result in hexavalent chromium being present. Additional lines of evidence (LOE) are needed to support the assumption that all the detected chromium is in the trivalent form. These types of LOE are provided to support the assertion that chemicals such as benzidine, n-nitrosodimethylamine, and n-nitroso-di-n-propylamine, among others, are not associated with these sites. Revise Sections 3.6.1 and 5.6.1 to include information that supports the assertion that hexavalent chromium is not present at SWMU 9 and AOC 43. Further, unless speciated data are available and/or sufficient LOE are provided to support an assumption of 100% trivalent chromium, the soil screening levels for total chromium should be applied in the risk assessments.

Army Response

Sections 3.6.1 and 5.6.1 were revised to provide additional lines of evidence that support hexavalent chromium is not expected to be present at SWMU 9 or AOC 43. The following lines of evidence were added as appropriate to the SWMU 9 and AOC 43 discussions about choosing chromium III as the surrogate for total chromium:

- 1. Arsenic and copper concentrations are consistent with background levels providing evidence that CCA treated products were not used or disposed.*
- 2. Railroad ties are not tinted with green suggesting CCA was not used to preserve the ties in the RCY.*
- 3. Hexavalent chromium is not stable in the environment in the presence of oxidizable organic matter and readily converts to chromium III (ATSDR, 2012).*
- 4. Chromium is a component in stainless steel products, alloys, metal finishes, tanning products, and pigments. The primary uses of chromium are in the metallurgical, refractory, and chemical industries, none of which occurred at FWDA (ATSDR, 2012). It is possible that some metals products containing chromium were disposed at FWDA, or that wood treated with CCA was used at FWDA, but the lack of metal products in soil and the lack of elevated arsenic and copper in soil, and the preference for hexavalent chromium to convert to chromium III demonstrate that low likelihood that hexavalent chromium is present.*

Speciated data are not available for SWMU 9 nor AOC 43, so the total chromium SSLs from the Revised March 2017 NMED risk guidance will be used in the revised risk evaluations to evaluate the soil to groundwater pathway.

NMED Comment 9 - Section 3.0 – POL WASTE DISCHARGE AREA

VOCs were detected in SWMU 9 and AOC 43. As such, the vapor intrusion pathway should have been evaluated. The 2012 NMED guidance allows that if vapor intrusion is a concern, the pathway should be addressed following EPA guidance. The 2017 guidance allows a tiered approach for evaluating this pathway. In looking at the data for each site, VOCs are detected at low levels, are not risk drivers, and therefore do not appear to be sources for additional contamination of VOCs. At a minimum, provide a qualitative discussion in the revised Report allowing that while the vapor intrusion pathway is potentially complete, it would not contribute to significant risk.

Army Response

The revised risk evaluation included a qualitative assessment of the vapor intrusion (VI) pathway for SWMU 9 and AOC 43. The VI pathway evaluation followed the tiered approach presented in Section 2.5.2 of the Revised March 2017 NMED risk guidance. The qualitative discussion provided lines of evidence to support that the VI pathway is potentially complete, but that it is not contributing to significant risk. We assumed that NMED also expected a VI evaluation to be conducted for SWMU 25 given that volatile analytes were detected, and so a VI evaluation was also prepared for SWMU 25.

NMED Comment 10 - Section 3.0 – POL WASTE DISCHARGE AREA

The site consists of two distinct areas; the area within the SWMU boundary and the area to the SE where stained soils were observed. Utilizing data from the area within the SWMU boundary to define an exposure concentration for the stained area effectively serves to dilute the contaminant concentrations. Two of the four samples associated with the stained area exceed the NMED SSL for lead, indicating a hotspot. The Permittee must define the extent of contamination in the stained area where elevated lead concentrations were observed and propose to remove soils containing contaminant concentrations that exceed the cumulative risk during the proposed Permittee Initiated Interim Measure for the POL area. See Comment 7. Revise the Report to propose definition of the extent of contamination at the lead hotspot and removal of the contaminated soils.

Army Response

The conclusions for SWMU 9 have been revised to propose delineation of the nature and extent of lead contamination, and removal and disposal of lead contaminated soils.

The human health risk evaluation was revised to evaluate risks to each distinct area separately. The ecological risk evaluation also considered each distinct area separately.

NMED Comment 11 - Section 4.0 – Table 4-2

Table 4-2 was not included with the electronic version of the Report. Include Table 4-2 (electronic version) in the revised Report. Since Table 4-2 is a critical component for review of this section of the Report, the section was not reviewed. The review of Section 4.0 will resume when Table 4-2 is submitted in the revised Report.

Army Response

This table has been included in the revised revision of the report.

NMED Comment 12 - Section 5.0 – Railroad Classification Yard

According to the NMED's Comment 6 in the Approval with Modifications, dated January 31, 2014, white phosphorus should have been included as an analyte. See Comment 1.

Army Response

In subsequent discussions between NMED and the Army, it was agreed that it was not necessary to sample for white phosphorus. The correspondence between NMED and the Army is included in Appendix P of the report. Appendix P also contains documentation supporting this decision.

NMED Comment 13 - Section 5.0 – Railroad Classification Yard

The manganese concentration detected in the sample collected at 0743RCYSS008DSO-0.0-0.5DSO is recorded as 535 mg/kg according to Table 5-1. Clarify the cause of discrepancy in the revised Report. If the discrepancy is caused by an error, the risk must be reevaluated based on the actual concentration. Revise the Report as necessary. If the discrepancy is caused by using the concentration of field duplicates, revise Table 5-1 to include all detections in field duplicates. If this is the case, no revision to the risk evaluation is necessary.

Army Response

The manganese concentration for sample 0743RCYSS008DSO-0.0-0.5DSO is correctly reported in Table 5-1 as 535 mg/kg. The error occurred in the text of Section 5.6.6.2 where the result for the duplicate sample of 1,100 mg/kg at location 0743RCYSS008DSO-0.0-0.5DSO was inadvertently used in the lines-of-evidence discussion. The lines-of-evidence discussion is still considered valid because the primary result of 535 mg/kg and the duplicate result of 1,100 mg/kg fall within the range of manganese detections of the background data set.

The risk evaluation tables were reviewed to determine if the duplicate result was used correctly. The maximum manganese concentration of 1,320 mg/kg was used in the initial cumulative risk evaluation so those results are correct. A 95% UCL was used for manganese in the refined risk evaluation. A review of the ProUCL input file indicates that duplicate results were eliminated from the risk evaluation without considering if they represented the greater of the two detections or the lower of the two non-detections for manganese, as well as other select metals, TPH-DRO, and total toxic equivalency for which 95% UCLs were calculated. Therefore, the ProUCL input file was modified to select the greater of the two detections, or the lower of the two detection limits, for each analyte having a UCL calculated. The 95% UCL increased slightly for each analyte for which a UCL was calculated, but did not change the outcome of the risk evaluation. The revised UCLs were used in the revised report.

If you have questions or require further information, please call me at (505) 721-9770.

Sincerely,

PATTERSON.MAR Digitally signed by
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