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ENVIRONMENT DEPARTMENT



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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

November 30, 2017

Mark Patterson  
BRAC Environmental Coordinator  
Fort Wingate Depot Activity  
13497 Elton Road  
North Lima, OH 44452

Steve Smith  
USACE  
CESWF-PER-DD  
819 Taylor Street, Room 3B06  
Fort Worth, TX 76102

**RE: DISAPPROVAL  
FINAL 2017 INTERIM FACILITY-WIDE GROUNDWATER MONITORING  
PLAN VERSION 10  
FORT WINGATE DEPOT ACTIVITY  
MCKINLEY COUNTY, NEW MEXICO  
EPA ID# NM6213820974  
HWB-FWDA-17-007**

Dear Messrs. Patterson and Smith:

The New Mexico Environment Department (NMED) is in receipt of the Fort Wingate Depot Activity (Permittee) *Final 2017 Interim Facility-wide Groundwater Monitoring Plan, Version 10* (Plan) dated October 2017. NMED has reviewed the Plan and hereby issues this Disapproval. The Permittee must address the following comments.

**1. Section 1.0, Introduction, lines 15-16, page 1-1**

**Permittee Statement:** "Responses to comments on Version 9 of the Interim Facility-wide GMP are presented in Appendix A."

**NMED Comment:** No documentation is included in Appendix A. The Plan cannot be approved without review of the responses to comments. Provide the documentation in the revised Plan.



**ENTERED**

*Schneider*

**2. Section 1.4, Data Quality Objectives, line 39, page 1-3**

**Permittee Statement:** “The FWDA boundary is the study boundary for facility-wide monitoring (Figure 1-2).”

**NMED Comment:** Figure 1-2 is *Project Organization Chart*. The Project Organization Chart is unnecessary. Provide the relevant reference in the revised Plan.

**3. Section 2.2, Previous Investigations, lines 18-20, page 2-2**

**Permittee Statement:** “To date, approximately 121 groundwater monitoring wells and 10 piezometers have been installed to characterize the nature and extent of contamination across FWDA.”

**NMED Comment:** In Executive Summary, lines 40-42, page ES-1, the Permittee also states, “[c]urrently, 117 groundwater monitoring wells have been installed to characterize the nature and extent of contamination from activities associated with the OB/OD Area and various Solid Waste Management Units (SWMUs) and Area of Concern.” Correct the discrepancy in the revised Plan.

**4. Section 3.5, Hydrogeology, lines 12-14, page 3-5**

**Permittee Statement:** “Reducing conditions are indicated where dissolved oxygen is less than 1.0 mg/L and are persistent in bedrock units and in some alluvial units. Reducing conditions are attributed to natural conditions present in formations with high organic matter content, such as clays and shales.”

**NMED Comment:** Reducing conditions result in degradation of some contaminants while other constituents become more toxic and mobile. The Permittee must assess fate and transport of each contaminant in the Facility wells and to develop a contaminant-specific data evaluation approach for monitoring and/or mitigating groundwater contamination. For example, dechlorination of 1,2-dichloroethane is favored under reducing conditions. Dissolved oxygen was detected at less than 1.0 mg/L in well MW18D in the April 2017 sampling event, suggesting the presence of reducing conditions in the vicinity of the 1,2-dichloroethane plume. Although the 1,2-dichloroethane concentration in the groundwater samples collected from well MW18D routinely exceeds the screening level, the plume may be attenuated in the future due to the reducing conditions. On the other hand, arsenic becomes more toxic and mobile under reducing conditions. Dissolved oxygen was detected at less than 1.0 mg/L in well TMW27, suggesting the presence of reducing conditions. The dissolved arsenic concentrations in the groundwater samples collected from well TMW27 routinely exceed the screening level, and the arsenic contamination may expand in the vicinity of well TMW27 in the future. Remedial actions may be necessary to address the





arsenic contamination. Provide a contaminant-specific data evaluation in Section 1.4, *Data Quality Objectives*, and optimize the groundwater monitoring program in the revised Plan.

**5. Section 3.5.1, Northern Area Alluvial Groundwater System, lines 21-23, page 3-5**

**Permittee Statement:** “The cistern was no longer in service by late 2013; however, groundwater elevations at monitoring well MW02 are still approximately 1.1 feet higher than elevations at MW01 and MW03. This may be the result of leakage from the installation water supply well or borehole.”

**NMED Comment:** Refer to Comment 4 in NMED’s August 7, 2017 *Disapproval Letter for Groundwater Periodic Monitoring Report January through June 2016*. Provide all available construction details for the water supply well (e.g., total depth, screened interval) in the submission of the upcoming *July – December 2017 Groundwater Monitoring Report*. Current information suggests that the water supply well has been reactivated. Clarify whether the water supply well is in use in the upcoming groundwater monitoring report.

**6. Section 3.5.2, Northern Area Bedrock Groundwater System, lines 34-37, page 3-5**

**Permittee Statement:** “Steep horizontal gradients from east to west (in particular, between monitoring wells TMW38 and TMW40D and between monitoring wells TMW17 and TMW37) indicate that a geologic structural feature impedes groundwater flow. Vertical offset of the sandstone layers in the bedrock aquifer by a fault or fracture zones may be present in this area and may impede groundwater flow.”

**NMED Comment:** Refer to Comment 5 in NMED’s August 7, 2017 *Disapproval Letter*. Acknowledge that the groundwater flow direction has not been fully characterized in the bedrock aquifer beneath the Workshop Area in the revised Plan.

**7. Section 3.8, Exposure pathways for Human and Ecological Receptors, line 30, page 3-10**

**Permittee Statement:** “Groundwater contaminant plumes have not been identified in areas where groundwater is less than 20 feet bgs.”

**NMED Comment:** Several metals concentrations have exceeded the screening criteria in wells having groundwater depths less than 20 feet bgs. Also, the nitrate, perchlorate, explosives, VOCs, and SVOCs have been detected at concentrations below the screening criteria in these wells. The data indicate that contamination is present in groundwater at depths less than 20 feet bgs. Revise or remove the statement from the revised Plan.

**8. Table 4-1, Groundwater Purge Method**

**NMED Comment:** Many wells currently monitored and sampled are not listed in Table 4-1 (e.g., TMW07). Revise the Plan to include all wells that are currently being monitored in Table 4-1.

**9. Section 5.1, Interim Groundwater Monitoring Analytical Program, line 18-20, page 5-1**

**Permittee Statement:** "For vinyl chloride, bis(2-ethylhexyl) phthalate, and phenol, the DL is sufficient to accurately assess potential contaminant concentrations. For hexachlorobenzene, the DL is sufficient to assess potential contaminant concentrations."

**NMED Comment:** The limit of quantification (LOQ) values are higher than the screening levels for these compounds according to Table 5-1, *Groundwater Screening Levels, Detection Levels, and Control Limits*. LOQ is the lowest concentration at which the analyte can not only be reliably detected, but also at which some predefined goals for bias and imprecision are met. Provide a basis for why the detection limits are sufficient to assess the contaminant concentrations in the revised Plan; otherwise, the Permittee must use other analytical methods or modify the current analytical methods to attain lower detection limits for these compounds. For example, lower detection limits may be achievable for most purgeable compounds (e.g., vinyl chloride) with the same analytical method when a larger sample is utilized. Similarly, a larger groundwater sample volume may be extracted for extractable compounds (e.g., bis(2-ethylhexyl) phthalate) to attain lower detection limits.

**10. In Section 5.2, Monitoring Location and Frequency, line 9, page 5-2**

**Permittee Statement:** "The Army does not propose to optimize the interim groundwater monitoring program at this time."

**NMED Comment:** Since the Permittee proposes no changes to the current groundwater monitoring program, the sampling plan shown in Table 5-3, *Groundwater Sampling Matrix* must be fully implemented; otherwise, the Permittee must provide an explanation for the deviations from the approved work plan in all future *Groundwater Periodic Monitoring Reports* in accordance with the Section 5.6, *Reporting*. Some groundwater analyses required by Table 5-3 have not been included in the recent sampling events; for instance, TPH-DRO, TPH-GRO, and SVOC analyses are required for the groundwater samples collected from well BGMW01 according to Table 5-3; however, the results of these analyses have not been reported in the recent groundwater monitoring reports. Conversely, although some groundwater analyses are not required by Table 5-3, groundwater samples have been collected from unassigned wells. For example, perchlorate, VOC, and SVOC analyses are not required for the groundwater samples collected from well BGMW02 according to Table 5-3; however, these analytical results have been reported in the recent groundwater



monitoring reports. Revise Table 5-3 to reflect the approved groundwater sampling plan. Provide a corrected Table 5-3, as well as the reference to the latest approved groundwater sampling matrix, in the revised Plan.

#### **11. Table 5-1, Groundwater Screening levels, Detection Levels, and Control Limits**

**NMED Comment:** Refer to Comment 9 in NMED's April 12, 2017 *Disapproval Letter for Final 2016 Interim Facility-Wide Groundwater Monitoring Plan, Version 9*. The NMED *Risk Assessment Guidance for Site Investigation and Remediation* (2017) includes a Tap Water Standard for perchlorate of 13.8 ug/L. The EPA Maximum Contaminant Level is 15 ug/L. Revise Table 5-1 accordingly in the Plan.

The Permittee must submit a revised Plan 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 Plan showing all changes that have been made to the Plan. The revised Plan must be submitted no later than **March 2, 2018**.

Should you have any questions, please contact Michiya Suzuki of my staff at (505) 476-6059.

Sincerely,



John E. Kieling  
Chief  
Hazardous Waste Bureau

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File: FWDA 2017 and Reading, Groundwater, FWDA-17-007