NEW MEXICO
ENVIRONMENT DEPARTMENT

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.env.nm.gov

SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

September 9, 2015

Mark Patterson
FWDA, BRAC Coordinator
P.O. Box 93
Ravenna, OH 44266

Steve Smith
USACE FWDA Program Manager
CESWF-PEC-EF
819 Taylor Street, Room 3A12
Fort Worth, TX 76102

RE: DISAPPROVAL
FINAL, 2015 INTERIM MEASURES FACILITY-WIDE GROUNDWATER MONITORING PLAN, REVISION 8
FORT WINGATE DEPOT ACTIVITY
MCKINLEY COUNTY, NEW MEXICO
EPA ID# NM6213820974
HWB-FWDA-15-012

Dear Messrs. Patterson and Smith,

The New Mexico Environment Department (NMED) has reviewed the *Final, 2015 Interim Measures Facility-Wide Groundwater Monitoring Plan, Version 8* (Plan), dated March 6, 2015 and supplemental information, dated April 28, 2015 for the Fort Wingate Depot Activity (Permittee). NMED has reviewed the Plan and hereby issues this Disapproval. The Permittee must address the following comments.

Comments:

1. Permittee Statement – Section ES.2.2.3 Revised Groundwater Monitoring Program, line 28-32, page ES-4. "Any analytical suites that have not been detected for four consecutive sampling events for a monitoring well are recommended to be removed (for that specific parameter) from the sampling program in accordance with the DQO process and sampling program rationale. Approval from the state will be obtained before implementing these recommendations."

NMED Comment:
This general guideline may only be used if the specific contaminant is not considered a constituent of potential concern (COPC) at the facility and has never been detected in a monitoring well. If a contaminant was detected historically and has also not been detected within a two year sampling period, then an assessment of fate and transport mechanisms must be conducted to define the nature and extent of contaminant. After assessment is completed a determination of whether it is appropriate to modify the groundwater sampling plan may be submitted to NMED for approval. See Comment 6.

2. **Permittee Statement – Section 1, Introduction, line 18-20, page 1-1.** "The Army requests that the Northern Area wells be sampled annually, with groundwater elevation measured twice a year."

NMED Comment:
Requests for a reduction in sampling frequency must be accompanied by specific and quantitative data submitted to NMED demonstrating a justification for a reduction. Revise this report to include supplemental data in support of a reduction in sampling frequency.

3. **Permittee Statement – Section 2.2.2 Groundwater Investigations at Building 6 UST Area – 1993-1995, lines 25-30, page 2-5.** "With apparent steady decline in the benzene levels, the USACE, Albuquerque District approached the NMED to suspend the investigation and any further requirements to install additional monitoring wells at this site. The NMED agreed that installation of additional monitoring wells was not needed at that time; however, a 2-year quarterly groundwater monitoring program was required to ensure that shallow groundwater quality has not been compromised (USACE, 1995b)."

NMED Comment:
The decline in benzene contamination was not adequately characterized. Concentrations at MW-20 appeared to be decreasing rather rapidly given the hydraulic conductivity of the soil in this area. From November 1994 to December 1994 the benzene decreased by approximately half (110 ug/L to 59 ug/L). Additionally, December 1994 to March 1995 it had decreased in concentration to 59 ug/l to 4.4 ug/L. Benzene is expected to have high mobility in soil with volatilization in moist soils being an important fate process. Therefore, further investigation regarding the extent of the contaminant is warranted. Future groundwater investigation must propose to install two monitoring wells to the west and down-gradient from MW-20 to assess fate of benzene.

4. **Permittee Statement – Section 2.2.9 Groundwater Investigation Report of the Eastern Landfill – 2005, lines 32-36, page 2-9.** "Several explosives, metals, pesticides, VOCs, SVOCs, nitrate, and nitrite were detected in these samples collected from the sampling event after well installation, with RDX, pesticides, and dissolved metals detected above screening levels initially. In 2014, the Eastern Landfill was removed and wells EMW01, EMW02, and EMW03, and EMW04 were abandoned as part of the Interim Measure. The report is currently under review by NMED (NMED, 2014)

NMED Comment:
Although the source of contamination was removed, groundwater was already impacted. The Permittee must investigate the nature and extent of the RDX, pesticides, and dissolved metals in groundwater. Therefore, future groundwater investigation must be proposed regarding the extent of the contamination in groundwater.

5. Permittee Statement – Section 4.5 Waste management Procedures, lines 4-7, page 4-16. "As required by federal and state law, liquid IDW samples from the 2008 and 2010 groundwater sampling events were submitted to an analytical laboratory to determine hazardous waste characteristics. Results from analytical testing showed that liquid IDW generated during these sampling events was non-hazardous. Therefore, purge water and decontamination water associated with the existing monitoring wells at the FWDA will be managed and disposed of by the procedures described below."

NMED Comment:
Provide a reference to the federal and state law for which only two sampling events (i.e., 2008 and 2010) would be sufficient for the characterization of liquid investigation derived waste (IDW) during groundwater sampling events. Generally, NMED requires IDW to be analyzed after each sampling event. This can be done using the laboratory analytical data from the groundwater samples collected during the field activities or a composite sample from individual containers. If IDW is determined to be a RCRA hazardous waste, then it is subject to the land disposal restrictions (LDRs). Revise this section of the Plan to state that the IDW will be characterized prior to disposal and provide the steps that will be taken in the event the IDW is hazardous. In addition, decontamination liquids may be hazardous, if contaminated equipment was cleaned during the field activities. Describe steps that will be taken to ensure the waste will be handled appropriately.

6. Permittee Statement – Section 5.2.1 Data Quality Objective Process, lines 9-12 (Step 7), page 5-4. "As a general guideline, if a contaminant in a well has not been detected in 2 years (4 consecutive sampling events), it will be recommended that the contaminant be removed from the sampling program for that well (pending NMED approval)."

NMED Comment:
This general guideline is not acceptable and will not be considered unless the contaminant is not considered to be a constituent of potential concern (COPC) at the facility and has never been detected in a monitoring well. If a contaminant was detected and has not been detected within a two year sampling period then an assessment of the nature and extent and dynamics of the contaminated groundwater must be characterized sufficiently to plan for further investigation or remediation activities. Revise the Plan to propose to conduct a complete characterization of groundwater contamination to investigate the three-dimensional extent of the contaminant plume in order to assess the mobility of the COPCs at the Facility.

7. Permittee Statement – 5.2.2 Interim Measures Facility-Wide Groundwater Monitoring Data Quality Objectives, (Develop a Decision Rule) and (Optimize the Design), page 5-5 and 5-6. "1. If COIs in a given analytical suite are detected at frequencies >15% at

concentrations above NMWQCC groundwater quality standards and EPA MCLs, it is recommended that the analytical suite be sampled in that particular well on a semi-annual basis. 2. If COIs in a given suite are detected at frequencies <15% at concentrations above the NMWQCC groundwater quality standards and EPA MCLs, such as SVOCs in the Northern Area, it is recommended that the analytical suite be sampled in that particular well every 2 years. 3. If COIs are detected at frequencies <1% at concentrations below the NMWQCC groundwater quality standards and EPA MCLs, such as pesticides, it is recommended that the analytical suite be sampled in that particular well every 5 years."

"Historical data will be used to re-evaluate the constituent groups to be analyzed and the sampling frequencies at each target well for both the OB/OD and Northern Areas in accordance with Section V.A.4 of the Permit (NMED, 2005/2014). If a constituent group has not been detected at a well for four consecutive sampling events, it will be recommended for it to be removed from the sampling program."

NMED Comment:
As stated in Section 5.3 of this Plan the low hydraulic conductivity in the Northern Area will serve to retard contaminant migration; therefore, when a contaminant is removed from an analytical suite due the lack of detection the Permittee must first ensure that the extent of contamination has been adequately characterized. In addition, a reduction in testing for a contaminant of interest (COI) based on the percentage is not acceptable during this interim phase of the groundwater monitoring program. The nature and extent of contamination must be adequately characterized prior to reducing the sampling frequency for any monitoring well. These data quality objectives (DQO) would be more appropriate in a later phase of the groundwater monitoring. Revise the text to state that a reduction in sampling of COIs will not occur until the site has been fully characterized and sufficient quantitative information will be produced in order to justify and demonstrate that such a reduction is warranted. This comment also applies to Section 5.3.1 Sampling Program Rationale. See Comments 1, 6 and 8.

8. Permittee Statement – Section 5.3 Interim Groundwater Monitoring Analytical Program, lines 11-20, page 5-8. "The Army recommends that the Northern Area wells move to an annual sampling frequency due to the large number of wells in this area that have been nondetect for multiple analytes over four consecutive sample events. Additionally, the low hydraulic conductivity in this area will serve to retard contaminant migration. Adjusting the sample frequency along with targeting select wells for specific sampling analysis are of central importance to maximizing the amount of relevant information (information required to effectively address the temporal and spatial objectives of monitoring program), while minimizing costs. Section 5.3.1 discusses the Interim Measures Facility-Wide GMP sampling rationale, including the specific chemical constituents to be analyzed and the proposed sampling frequency."

NMED Comment:
The Permittee must provide site specific information for NMED to consider the requested reduction in sampling frequency. The discussion provided in Section 5.3.1 regarding the sampling rationale must be supplemented with site specific data including an evaluation of the groundwater flow rates, groundwater quality (i.e., background levels), and mobility of the

COPCs for each monitoring well. The low hydraulic conductivity in this area must be verified in order to assess the nature and extent of contamination. This proposal oversimplifies groundwater flow and instead adequate data must be provided to demonstrate that plume migration is being evaluated effectively. This comment also applies to Section 5.3.3 Northern Area lines, 12-18, page 5-13. See Comments 1, 6 and 8.

9. Permittee Statement – Section 5.3.3 Northern Area, lines 12-18, page 5-13. "All recently installed wells are sampled semi-annually for explosives, nitrate, nitrite, perchlorate, dissolved TAL metals and mercury, total TAL metals and mercury, TCL VOCs, TCL SVOCs, pesticides, and TPH-GRO and TPH-DRO (wells associated with SWMU 45) for a minimum of four consecutive sampling events, although it is recommended that for future sampling events that new wells be sampled annually. If a parameter is not detected in a well after four consecutive sampling events, it will be recommended to be removed from the sampling schedule for that specific well."

NMED Comment:
As stated in Section 5.3 of this Plan the low hydraulic conductivity in the Northern Area will serve to retard contaminant migration; therefore, when a contaminant is removed from an analytical suite due the lack of detection the Permittee must first ensure that the extent of contamination has been adequately characterized. See comments 1, 6 and 8.

10. Permittee Statement – Section 5.3.3 Northern Area, line 28-30, page 5-13. "Due to the TNT Leaching beds scheduled for removal in 2015, monitoring wells Wingate 89, Wingate 90, Wingate 91 and FW26 will be plugged and abandoned. They will also be removed from the sampling program. These activities are subject to NMED approval."

NMED Comment:
The Permittee must revise the Plan to state that these wells will be plugged in accordance with 19.27.4 NMAC and a completed plugging and abandonment record must be filed with the state engineer and the permit holder no later than twenty days after completion. In addition, revise the text to include information regarding the TNT Leaching beds influence on these monitoring wells. Information regarding the reasons for plugging and abandonment also must be provided (e.g., are the wells dry, non-functioning etc.). When the TNT Leaching beds are removed it is important to monitor areas that may have been impacted.

The Permittee must submit a revised Plan to address all comments contained in this Disapproval. In addition, the Permittee must include a response letter that details where each comment was addressed, cross-referencing NMED's numbered comments. The Permittee must also submit an electronic redline-strikeout version of the revised Plan. The revised Plan must be submitted on or before **December 30, 2015**.

If you have any questions regarding this letter, please contact Vicky Baca at (505) 476-6059.

Sincerely,

John E. Kieling
Chief
Hazardous Waste Bureau

cc: Dave Cobrain, NMED, HWB
Neelam Dhawan, NMED, HWB
Kristen Vanhorn, NMED, HWB
Chuck Hendrickson, EPA-6PD-N
Tony Perry, Navajo Nation
Val Panteah, Governor, Pueblo of Zuni
Clayton Seoutewa, Southwest Region BIA
Rose Duwyenie, Navajo BIA
Judith Wilson, BIA
Eldine Stevens, BIA
Robin White, BIA
Christy Esler, Sundance Consulting, Inc.

File: FWDA 2015 and Reading
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