



**DEPARTMENT OF THE ARMY**  
FORT WINGATE DEPOT ACTIVITY  
P.O. BOX 268  
FORT WINGATE, NM 87316

January 4, 2016

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: Revised Interim Facility-Wide Groundwater Monitoring Plan, Fort Wingate Depot Activity**

Dear Mr. Kieling:

The purpose of this letter is to submit a revised Interim Facility-Wide Groundwater Monitoring Plan (Version 8, Revision 2) for groundwater sampling activities conducted as part of the Fort Wingate Depot Activity (FWDA) Environmental Restoration Program under permit RCRA Permit EPA ID No. NM6213820974. This revision addresses comments provided in the letter of disapproval dated September 9, 2015, reference letter #HWB-FWDA-15-012.

Comment Responses:

Comment #1:

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.

Army Response:

Comment Noted: Text will be revised to read "Analytes that have not been detected for four consecutive sampling events for a monitoring well are recommended to be

removed from the sampling program in accordance to the DQO process and sampling program rationale if the following conditions apply:

- a) The specific contaminant is not considered a constituent of potential concern (COPC) at the facility and
- b) Has never been detected in a monitoring well.

Army will continue with monitoring as approved in the original Periodic Monitoring Work Plan.

Comment #2:

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.

Army Response:

Noted: Text will be revised to remove the recommendation to change sampling frequency and will be removed throughout the report.  
Same as comment 8.

Comment #3:

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.

Army Response:

Comment Noted. Please notice section 2.2 is a list of previous groundwater investigations/reports. The cited text is summarizing the contents of an approved report that is part of the site's history and background.

However, the Army is already in the process of conducting further investigation into contamination throughout the site; see the Final Groundwater Supplemental RCRA Facility Investigation Work Plan, Revision 0 dated January 30, 2015.

Comment #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.

Army Response:

Comment Noted. Please note that the cited text describes a past investigation and report. The landfill was removed in 2014 per the approved work plan. Confirmation samples from the excavation and from the monitoring wells prior to abandonment showed no contamination. The subject paragraph will be revised to clarify the above statement. The forthcoming RFI Work Plan for the Northern groundwater plume is being revised to include identified data gaps.

Comment #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.

Army Response:

Comment Noted: Please be aware that NMED has approved IDW liquid to be stored in on-site tanks to evaporate (confirmed in approval letter dated 11/4/2010). The following text will be added to address characterization of waste, "The aqueous waste generated during groundwater sample activities will be containerized on-site and characterized using laboratory analytical data. Waste will be classified as either hazardous or non-hazardous using 40 CFR 261 guidelines. If the waste is classified as non-hazardous then the waste will be disposed via the evaporation tanks. If the waste is classified as a hazardous waste then it falls under RCRA regulations and must be managed on-site as such and be properly disposed by a qualified permitted facility. First, the appropriate hazardous waste disposal facility will be contacted. Secondly, a DOT certified hazardous waste transporter will collect the hazardous IDW and ship off site to the disposal facility within 90 days. Shipment volumes will be recorded on waste manifests and confirmation of receipt by the facility will be documented.

Comment #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.

Army Response:

Comment Noted: Text will be revised to read "As a general guideline, analytes 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 if the following conditions apply: if the specific contaminant is not considered a (COPC) or shows a decreasing trend at the facility and monitoring well. The Army will continue monitoring for approved analytes during the periodic monitoring program and full characterization of contaminant plumes are being addressed with a forthcoming RFI.

Comment #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.

**Army Response:**

In regards to "Develop a Decision Rule", text will be added as list item #4 that reads "If COIs are detected at a different frequency than historically detected, then a change in sampling frequency will be recommended. Recommendations for less frequent sampling will be made if the analyte is fully characterized."

In regards to "Optimize the Design", the text will be revised to read "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 if it is not a COPC and has never been detected in the monitoring well."

**Comment #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 non-detect 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.

Army Response:

Comment Noted: Text will be revised to remove the recommendation to change sampling frequency. It will be removed from the text throughout the report. Same as comment 2.

Comment #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.

Army Response:

Comment noted: the following text will be added- " 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 if the specific contaminant is not considered a constituent of potential concern at the facility and/or has never been detected in a monitoring well. A parameter that has been detected historically may also be removed from the sampling program after being undetected for four consecutive sampling events if the extent of contamination has been adequately characterized. Approval from the state will be obtained before implementing any recommendations."

Comment #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.

Army Response:

Comment Noted:

The well abandonment activities have since been approved by NMED (letter dated April 18, 2014) and the wells have been abandoned. Therefore, the text will be changed to "Monitoring wells Wingate 89, Wingate 90, Wingate 91, and FW26 have been plugged and abandoned because they have been unproductive/dry for several years. These activities have been approved by NMED in a letter dated April 18, 2014. The wells were abandoned in accordance with 19.27.4 New Mexico Administrative Code and in conjunction with the New Mexico Office of the State Engineer. A plugging and abandonment record was filed with the state engineer." Please note that Wingate wells 89, 90, 91 and FW26 are on the west side of the Administration area and are not near the TNT beds. TNT leaching beds removal is being handled under a separate investigation.

This monitoring plan will be sent to the New Mexico Environment Department, Hazardous Waste Bureau under separate cover by our contractor.

If you have questions or require further information please contact Saqib Khan, USACE 918-669-7374 (D) Saqib.Khan@usace.army.mil or me at 330-358-7312.

Sincerely,

Mark Patterson  
BRAC Environmental Coordinator

Enclosures

CF:

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Sharlene Begay Platero, Navajo Nation  
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Adrienne Gaziano, DOI  
FWDA AR – Fort Wingate Location  
FWDA AR – Ohio Location