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RYAN FLYNN  
Cabinet Secretary  
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Deputy Secretary

ENTERED

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

March 25, 2016

Colonel Eric H. Froehlich  
Base Commander  
377 ABW/CC  
2000 Wyoming Blvd. SE  
Kirtland AFB, NM 87117-5606

John Pike  
Director, Environmental Management Services  
377 MSG  
2050 Wyoming Blvd. SE, Suite 116  
Kirtland AFB, NM 87117-5270

**Re: BULK FUELS FACILITY EXPANSION OF THE DISSOLVED-PHASE PLUME  
GROUNDWATER TREATMENT SYSTEM DESIGN  
SOLID WASTE MANAGEMENT UNITS ST-106 AND SS-111  
KIRTLAND AIR FORCE BASE  
EPA ID#NM9570024423, HWB-KAFB-13-MISC**

Dear Colonel Froehlich and Mr. Pike:

The New Mexico Environment Department (NMED) is in receipt of the Kirtland Air Force Base (KAFB) (the Permittee) *Work Plan for Bulk Fuels Facility Expansion of the Dissolved-Phase Plume Groundwater Treatment System Design* (Work Plan), dated January 19, 2016. The work plan addresses activities to be performed at the Bulk Fuels Facility site, including:

- Installation of extraction well(s);
- Installation of observation and groundwater monitoring wells;
- Installation of well vaults and conveyance lines associated with new extraction well(s);
- Expansion of the existing Groundwater Treatment System (GWTS);
- Installation of regional injection well(s);
- Operation and maintenance of the GWTS; and
- Performance of groundwater monitoring.

Future revisions and updates of this Work Plan are anticipated to provide the required information on groundwater monitoring well design and installation; extraction well design and



installation; vault and conveyance line construction and installation; expansion of the groundwater treatment system (GWTS) and installation; and injection well location, design, and installation. The work plan tasks, procedures, and quality control are hereby approved with the following conditions:

1. Section 3.1.5 references depths below ground surface for the tops of screens in the data gap groundwater monitoring wells. Screens should be placed relative to the depth to groundwater, and not a standard depth below ground surface, so that wells adequately screen the shallow, intermediate, and deep intervals represented by other wells in the monitoring network.
2. Aquifer testing of the new extraction well(s) is required in order to continue refinement of the site conceptual model and understanding of aquifer characteristics. The Permittee must submit a separate work plan outlining aquifer testing procedures and analysis for NMED review and approval. This work plan must be submitted a minimum of 60 days prior to the planned start of aquifer testing.
3. The Work Plan needs to be updated to provide a discussion of procedures and decision making criteria that will be followed to determine if/when additional treatment equipment is necessary to augment the current GWTS. This discussion should specifically address manganese and iron. If changes to the GWTS are required, those changes shall be documented in revisions and updates to this Work Plan, submitted to the NMED for review and approval.
4. In addition to the design and installation of injection wells and the associated conveyance line, future revisions to this Work Plan shall also include design information on the effluent manifold to be used to distribute treated groundwater to the golf course and multiple injection wells (Section 3.1.8). Additionally, future revisions shall include the engineering detail on the Golf Course Tie-In Connection referenced in Section 3.1.8.2.
5. The NMED understands that the Air Force would like to use the treated water generated by the GWTS for dust suppression on base. The Air Force shall revise the subject Work Plan to describe the dust suppression mechanisms and application areas
6. Proposal of long-term monitoring, system optimization, and exit strategy are not appropriate for an interim measure and should be completed as part of the Corrective Measures Evaluation and Corrective Measures Implementation phases of the corrective action process. The Final Report referenced in Section 3.1.9 of the Work Plan should meet the permit requirements for an Interim Measure Report (Permit Section 6.2.2.2.12.5).
7. Groundwater monitoring well water levels must be gaged on a quarterly basis and not on a semi-annual basis. This information is vital to understanding changing aquifer conditions and to evaluating performance of the dissolved-phase plume collapse interim measure.
8. Section 3.1.10 (and other sections, as appropriate) will ultimately, if not now, need to address the following items, as discussed on February 17, 2016:
  - a. Discussion of discharge of treated water (e.g., land application, injection);
  - b. Reference to the measurement and reporting of effluent volumes and discharge locations; and
  - c. Discussion of aquifer monitoring activities associated with injection.

9. Table 3-6 shall be revised to include discharge permit DP-1839 as a regulatory driver for injection of treated groundwater.
10. Section 3.1.11.2 states that production wells will be sampled on a semiannual basis. Production wells must continue to be sampled on a monthly basis for EDB, benzene, toluene, ethylbenzene, and xylene.
11. Section 3.1.11.3 does not reflect the approved optimization of periodic monitoring. The Permittee should follow reporting requirements proposed in the *Technical Memorandum: Requested Optimization of Monitoring and Reporting, Second Phase, Bulk Fuels Facility Spill Site*, dated December 9, 2015 and approved on January 20, 2016.
12. Section 3.2.16 needs to be revised to clarify "periodic sampling" of extraction wells and to indicate that the sampling will comply with Ground Water Quality Bureau (GWQB) permit requirements.
13. The U.S. Geological Survey (USGS) is currently conducting a base-wide survey of groundwater monitoring wells. As part of the USGS survey, it is NMED understands that the USGS will develop a standard operating procedure (SOP) for the surveying of monitoring wells for KAFB. The NMED requests that the Permittee consider incorporation of the SOP into the survey procedures outlined in Section 3.2.20 of the work plan.
14. Mineralogy can be an indicator of depositional environment and a way to correlating geologic units across monitoring wells. The NMED requests that the Permittee consider including mineralogy in the geologist boring logs during groundwater monitoring well, observation well, and extraction well drilling and logging.
15. The NMED requests that the Permittee review and revise, as necessary, the investigation derived waste (IDW) categories in Section 8.1 of the work plan to better clarify the categories of waste anticipated and to better align them with the GWQB decision flow chart for disposal of IDW water. For example, based on technical discussions the NMED understands that the nonhazardous water category encompasses the following:
  - a. IDW water that is nondetect for all constituents;
  - b. IDW water that has detections of constituents that are below the New Mexico Water Quality Control Commission (NMWQCC) standards and/or U.S. Environmental Protection Agency (EPA) maximum contaminant levels (MCLs); and
  - c. IDW water that has constituent concentrations greater than NMWQCC standards and/or EPA MCLs but are not characteristic hazardous waste.As written, the text in Section 8.1 does not clearly indicate these three scenarios for IDW water and the plan for disposition.
16. The nonhazardous IDW water may be treated at the GWTS for discharge, as discussed in Section 8.1.1 provided that the Permittee obtain the necessary permissions from the NMED GWQB.
17. Figure 1-1 in the Quality Assurance Project Plan shows two injection well target areas near the Golf Course. The NMED has not received sufficient data to approve these areas for injection and requires that the figure be updated to remove them.

The NMED understands that the Air Force intends for this Work Plan to be a single source for details related to work conducted under the dissolved-phase plume collapse interim measure. As

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such, this Work Plan shall be updated, as necessary, to reflect changes resulting from new or modified permitting requirements; revisions to GWTS monitoring and contingency plans; and modifications to scope and detail of identified tasks. Future revisions to the work plan are subject to NMED review and approval. Please submit a revised Work Plan that addresses the conditions identified in this approval.

Should you have any questions regarding this letter please contact Ms. Diane Agnew at (505) 222-9555.

Sincerely,



Kathryn Roberts  
Director  
Resource Protection Division

KR/DM

cc: Col. T. Haught, KAFB  
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File: KAFB 2015 Bulk Fuels Facility Spill Library and Reading