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NMED  
Hazardous Waste Bureau

JAN 26 2015

Colonel Tom D. Miller  
377 ABW/CC  
2000 Wyoming Blvd SE  
Kirtland AFB, NM 87117-5000

Mr. John Kieling, Chief  
Hazardous Waste Bureau (HWB)  
New Mexico Environment Department (NMED)  
2905 Rodeo Park Road  
Santa Fe, New Mexico 87505

Dear Mr. Kieling

Kirtland Air Force Base (AFB) is pleased to submit *the Groundwater Extraction Pilot Implementation and Additional Plume Characterization Letter Work Plan, Addendum #2* for the Bulk Fuels Facility Spill, Solid Waste Management Units ST-106 and SS-111 for your review.

The attached Addendum #2 outlines the activities needed to install/implement the first of up to eight extraction wells for ethylene di-bromide (EDB) plume collapse and a temporary treatment system while also simultaneously installing its more permanent treatment facility at Kirtland AFB.

Please contact Mr. L. Wayne Bitner at (505) 853-3484 or [ludie.bitner@us.af.mil](mailto:ludie.bitner@us.af.mil) or Mrs. Victoria R. Branson at 505-846-6362 or [victoria.branson@us.af.mil](mailto:victoria.branson@us.af.mil) if you have any questions.

Sincerely

TOM D. MILLER, Colonel, USAF  
Commander

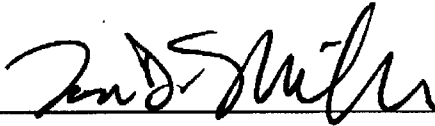
cc:  
NMED (Roberts) w/ attach  
NMED-HWB (Cobrain, McDonald) w/attach  
NMED (McQuillan, Longmire) w/attach  
NMED-PSTB (Reuter) w/attach  
NMED-OGC (Kendall) w/attach  
EPA Region 6 (King) w/attach

KAFB4213



**40 CFR 270.11  
DOCUMENT CERTIFICATION  
JANUARY 2015**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

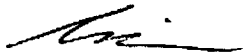


JAN 26 2015

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TOM D. MILLER, Colonel, USAF  
Commander, 377th Air Base Wing

This document has been approved for public release.



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KIRTLAND AIR FORCE BASE  
377th Air Base Wing Public Affairs



January 26, 2015

**Subject: Kirtland Air Force Base Bulk Fuel Facility – Groundwater Extraction Pilot Implementation and Additional Plume Characterization Letter Work Plan Addendum #2**

This Kirtland Air Force Base (AFB) Bulk Fuel Facility (BFF) Groundwater Extraction Pilot Implementation and Additional Plume Characterization Letter Work Plan Addendum #2 has been prepared by CB&I Federal Services LLC (CB&I) for the U.S. Army Corps of Engineers (USACE), Albuquerque District, under Contract No. W912DY-10-D-0014. This letter Work Plan Addendum #2 describes the Air Force's plan to achieve the New Mexico Environment Department (NMED) directive to begin treating EDB in the dissolved phase plume by the end of June, 2015 (letter dated January 15, 2015; NMED, 2015) using a temporary treatment system, while at the same time continuing to design and build the permanent treatment system as described in the Air Force letters of August 1, 2014 (NMED 2014a) and October 3, 2014 (NMED 2014b).

## **Proposed Approach**

### **Probe well**

The probe well (KAFB-106212) will be installed as described in the August 1, 2014 Work Plan. However, the sampling schedule will be accelerated as follows:

*August 1, 2014 Work Plan: Three bi-weekly sampling events (i.e., 0, 2, and 4 weeks) will be conducted to collect groundwater samples in triplicate, and the average EDB concentration among all nine samples will be used to make this determination [that the average EDB concentration is >0.05 µg/L].*

Proposed Approach: Three sampling events will be conducted on three successive days to collect groundwater samples in triplicate, and the average EDB concentration among all nine samples will be used to make the determination that the average EDB concentration is >0.05 µg/L (MCL).

If the average EDB concentration is at or above the MCL, another deeper probe well will be installed and sampled as described above. In this case, the remainder of this Work Plan Addendum #2 will be moot and a new schedule will be developed based on installation and sampling of the deeper probe well.

### **Extraction Well**

The extraction well (KAFB-106228) will be installed as described in the August 1, 2014 Work Plan, based on the geotechnical results from core samples in the probe well and NMED approval of the final design.

### **Conveyance Piping from Extraction Well and Well Vault**

August 1, 2014 Work Plan and Draft Basis of Design: The draft BoD describes the installation of two pipelines from the extraction well to the treatment system: the first pipeline will be sized for a minimum flow rate of 100 gpm and maximum flow rates of 200 gpm, and will service the extraction well (KAFB-106228). A second pipeline will be installed to handle approximately 600 gpm to service future extraction wells.

Proposed Approach: The first 100-200 gpm pipeline will be installed on an accelerated schedule, but with the same specifications (double-wall high-density polyethylene (HDPE) with leak detection system and automated shutdown of the extraction well pump if a leak is detected). The second pipeline will be installed at a later date and in a location that best serves the additional extraction wells to be installed.

Assumptions:

1. A Procurement Design Package will be developed to support procurement of the pipeline and well vault installation, rather than 50% and 100% designs. Review of this design package by USACE/AF/NMED will be completed within 3 days of receipt to maintain schedule and proceed with the pipeline procurement and construction. As-builts will be provided following the pipeline installation.
2. City of Albuquerque (CABQ) will base permits on the procurement design package level of detail, and ROE to run the pipeline down the alley and under Louisiana will be final before construction of the pipeline in alley starts (late March).

**Treatment System**

August 1, 2014 Work Plan: Design and construction of the groundwater treatment system as described in the work plan will continue as planned.

Proposed Approach: In order to meet the June 30, 2015 date, a temporary treatment system (using two or three granulated activated carbon canisters in lead-lag configuration) capable of treating up to 100 gpm of contaminated groundwater will be rented and placed on Kirtland AFB at the point where the pipeline from the extraction well enters the Base. The temporary treatment system will be very similar to the system used for the aquifer test at well KAFB-106157 in fall of 2013. Influent groundwater will be sampled prior to treatment. Like the fall 2013 system, treated groundwater will initially be held in baker tanks and sampled and analyzed on an expedited basis to demonstrate that effluent contaminant concentrations (primarily EDB) are below MCLs and the water can be re-infiltrated to the subsurface. The influent groundwater, water between the lead and lag canisters, and treated effluent will be sampled weekly for the first three weeks of operation, and monthly thereafter during operation of the system.

Assumptions:

1. A Procurement Design Package will be developed to support procurement of the temporary treatment system. Review of this design package by USACE/AF/NMED will be completed within 5 days of receipt to maintain schedule and proceed with the treatment system procurement and installation. Since this is a temporary system, as-builts will not be required.
2. Electrical supply will be from the existing 5 KV line or using a rented generator.

3. The temporary treatment system is expected to operate for approximately three months, until the permanent system is operational. It will be demobilized once the permanent system is ready to operate.

### **Re-infiltration of Treated Groundwater**

*August 1, 2014 Work Plan: Once the extracted water has been treated on Kirtland AFB property, the treated water will be pumped to an infiltration gallery and/or basin also located on Kirtland AFB property.*

Proposed Approach: After approval by NMED, the treated effluent water will be surface-applied on Kirtland AFB using sprinklers in Zia Park, as it was for the fall 2013 treatment system. The pumping rate for the extraction well will be up to 100 gpm, but during operation of the temporary system, it will be determined by the amount of water that can be re-infiltrated in Zia Park without creating any surface ponding.

#### Assumptions:

1. The Air Force will coordinate with the NMED GWQB to obtain the necessary permission to land-apply the treated water in Zia Park.
2. The Air Force has applied for an OSE change of water rights permit. The approval process is ongoing and is assumed to take 12 weeks.
3. The temporary treatment system will operate for approximately three months while the permanent system construction proceeds. It will be demobilized once the permanent system is ready to operate.

### **References**

NMED, 2015. *Notice of Violation Interim Groundwater Extraction and Additional Characterization Bulk Fuels Facility Spill Solid Waste Management Units ST-106 and SS-111 Kirtland Air Force Base EPA ID# NM9570024423, HWB-KAFB-14-MISC.* January 15, 2015.

USACE. 2014a. *Groundwater Extraction Pilot Implementation and Additional Plume Characterization Work Plan, Bulk Fuels Facility Spill, Solid Waste Management Units ST-106 and SS-111, Kirtland Air Force Base, Albuquerque, New Mexico.* Prepared by CB&I Federal Services LLC for the USACE Albuquerque District under USACE Contract No. W912DY-10-D-0014, Delivery Order 0002. August 1, 2014.

USACE. 2014b. *Groundwater Extraction Pilot Implementation and Additional Plume Characterization Work Plan Addendum, Bulk Fuels Facility Spill, Solid Waste Management Units ST-106 and SS-111, Kirtland Air Force Base, Albuquerque, New Mexico.* Prepared by CB&I Federal Services LLC for the USACE Albuquerque District under USACE Contract No. W912DY-10-D-0014, Delivery Order 0002. October 3, 2014.