



SUSANA MARTINEZ  
Governor  
JOHN A. SANCHEZ  
Lieutenant Governor

NEW MEXICO  
ENVIRONMENT DEPARTMENT

Harold Runnels Building  
1190 Saint Francis Drive (87505)  
P.O. Box 5469, Santa Fe, NM 87502-5469  
Phone (505) 827-0419 Fax (505) 827-0310  
[www.nmenv.state.nm.us](http://www.nmenv.state.nm.us)



RYAN FLYNN  
Cabinet Secretary  
BUTCH TONGATE  
Deputy Secretary

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

February 25, 2015

Colonel Tom D. Miller  
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: PILOT SOIL VAPOR EXTRACTION SHUTDOWN TEST WORKPLAN,  
BULK FUELS FACILITY SPILL  
SOLID WASTE MANAGEMENT UNITS ST-106 AND SS-111  
KIRTLAND AIR FORCE BASE  
EPA ID# NM9570024423, HWB-KAFB-15-MISC**

Dear Messrs. Colonel Miller and Pike:

The New Mexico Environment Department (NMED) is in receipt of the Kirtland Air Force Base (the Permittee) *Pilot SVE Shutdown Test Work Plan*, originally submitted on December 31, 2014 and revised on February 10, 2015, and referenced by KAFB-014-0057. Your work plan proposes to:

- Revise quarterly soil-vapor sampling and field analytical methods in accordance with discussions during the January 20, 2015 Vadose Zone Complex Site Initiative;
- Perform baseline sampling on all 287 soil vapor monitoring points for both field testing and laboratory analysis in accordance with revised quarterly protocol;
- Shut off the current catalytic oxidizer (CATOX) SVE system;
- Perform in-situ respiration testing and short-term and long-term rebound testing while the CATOX SVE system is shut down;
- Temporarily replace quarterly soil vapor monitoring with soil vapor monitoring designed specifically for the respiration and rebound testing;

- Resample all 287 soil vapor monitoring points, prior to resumption of SVE operations, for both field testing and laboratory analysis in accordance with the revised quarterly protocol;
- Resume SVE operations and future quarterly sampling; and
- Analyze data and report on the results of the in-situ respiration and rebound testing.

The Permittee's proposed work plan is consistent with EPA guidance and industry standards, and includes the following changes to the soil vapor monitoring protocol that resulted from the January 20, 2015 Vadose Zone Complex Site Initiative:

1. All soil vapor monitoring and SVE points will be securely capped to prevent exhalation of soil vapor gas or inhalation of atmospheric air due to barometric pressure increases or decreases.
2. Soil vapor purging will be reduced from 10 casing volumes to one casing volume to prevent readings that may not be representative of the monitored soil interval.
3. The Horiba field instrument will be properly calibrated at the start, middle and end of each work day.

The Permittee's proposed work plan is hereby approved with the following conditions:

1. The first bulleted work plan objective shall be as follows:  
"Calculated in-situ biodegradation of residual fuel hydrocarbon through respiration testing at selected SVM points. Respiration testing examines oxygen (O<sub>2</sub>) utilization to assess aerobic biodegradation occurring throughout the BFF SVE monitoring network. The results will show: areas where residual fuel hydrocarbons are aerobically biodegrading, areas where the volatile fraction of the fuel hydrocarbon has been depleted, or was low to begin with, but biodegradation of the non-volatile jet fuel constituents is continuing, and areas where volatile fuel hydrocarbon fraction is not detectable, where residual fuel contamination may or may not be in proximity, and biodegradation is either not ongoing or is occurring at rates that would not benefit from active aeration."
2. Vacuum/pressure shall be measured with a vacuum gauge, in accordance with the March 2011 Vadose Zone Investigation Work Plan, Appendix F, rather than with the Horiba instrument.
3. The Permittee shall, by March 9, 2015, submit a map showing the locations of the 12 soil vapor monitoring wells (with a total of 31 depths to be monitored) that will be used for the long-term rebound testing.
4. The Permittee shall conduct a detailed (statistical and chemical) comparison of field measurements with laboratory analyses and shall assess the suitability or uncertainty of using field test results for purposes described in the work plan, including any qualifications or limitations of using such data.

5. The Permittee shall submit the final report of the in-situ respiration and rebound testing, complete with all data, interpretations and conclusions, including the field-lab data comparison, within 120 days after resumption of SVE operations.

NMED technical staff will assist you and your contractor in any way possible to achieve these interim measures.

If you have any questions, please contact me at 505-827-2855.

Sincerely,



Kathryn Roberts  
Director  
Resource Protection Division

KR/DM

cc: Col. T. Haught, KAFB  
D. Wilson, KAFB  
B. Gallegos, AEHD  
F. Shean, ABCWUA  
L. King, EPA-Region 6 (6PD-N)

File: KAFB 2014 Bulk Fuels Facility Spill and Reading

