



BILL RICHARDSON  
Governor

DIANE DENISH  
Lieutenant Governor

NEW MEXICO **ENTERED**  
ENVIRONMENT DEPARTMENT

*Hazardous Waste Bureau*

2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6303  
Phone (505) 476-6000 Fax (505) 476-6030  
[www.nmenv.state.nm.us](http://www.nmenv.state.nm.us)



RON CURRY  
Secretary

SARAH COTTRELL  
Deputy Secretary

Ready for  
mail  
12-23-10

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

December 23, 2010

Colonel Robert L. Maness  
Base Commander  
377 ABW/CC  
2000 Wyoming Blvd. SE  
Kirtland AFB, NM 87117-5606

Mr. John Pike  
Director, Environmental Management Section  
377 MSG/CEANR  
2050 Wyoming Blvd., Suite 116  
Kirtland AFB, NM 87117-5270

**RE: NOTICE OF DISAPPROVAL  
CRITICAL DATA SUBMISSION, OCTOBER 5, 2010  
BULK FUELS FACILITY SPILL  
KIRTLAND AIR FORCE BASE  
EPA ID# NM9570024423, HWB-KAFB-10-029**

Dear Col. Maness and Mr. Pike:

The New Mexico Environment Department (NMED) has reviewed the document *Submission of Critical Data, per the NMED Letter Dated August 6, 2010 (Page 26, Items #7.i. through ix.)*. The subject submittal, with cover letter dated October 5, 2010, is the U. S. Air Force's (Permittee's) response to Part 2, Items #7i-ix of the August 6, 2010, Notice of Disapproval (NOD) issued by the NMED for the Interim Measures, Vadose Zone, and Groundwater Investigation Work Plans for the Bulk Fuels Facility Spill (SWMUs ST-106 and SS-111). The NMED has determined that the subject contains numerous deficiencies identified herewith that require correction.

**Comment 1** – Part 2, Item 7.i of the NOD directed the Permittee to submit tables in electronic format (Excel™) showing the locations (x, y, z), sampling points, and maximum depths of all soil borings and vapor and groundwater monitoring wells.

Table C.3, submitted in response to Item #7.i, does not list the all of the required information for several of the groundwater monitoring wells. For example, the measuring points and the top and bottom screen depths (feet below ground surface) for groundwater production wells KAFB-3, KAFB-15, KAFB-16, VA Hospital 2 Well, and the 2819 Ridgecrest Well are identified as "Not



Available/Not Applicable.” Also, the total depths for the VA Hospital 2 Well, and the 2819 Ridgecrest Well (a private well) are listed as “Not Available/Not Applicable.” All of the required information is not only applicable, but crucial for site characterization. The Permittee did not provide an explanation as to why the information could not be obtained or was not applicable.

Table C.3 does not list the all of the required information for soil borings. For example, Table C.3 indicates that the total depths of soil borings ST-106-SB-01 through ST-106-SB-21, 106B, 106C, 1951FR, BLDG-1032, BLDG-1048 are “Not Available/Not Applicable.” Furthermore, sampling depths are not provided for any of the borings listed in Table C.3. Again, all of the required information is applicable and crucial for site characterization. The Permittee did not provide an explanation as to why the information could not be obtained or was not applicable.

It strains credulity that a number of soil borings/trenches (18 each, FFES-SB-01 through FFES-SB-10 and FFES-TP-1 through FFES-TP-8) have the exact same ground-surface elevation, and many of the estimated values for eastings/northings are listed with more significant figures than those purported to represent actual survey data. NMED suspects that the Permittee does not actually survey the ground-surface elevation at soil boring locations, and instead has estimated elevations using a topographic map. The ground-surface elevations of all soil borings must be surveyed to improve the accuracy of the data.

Revise the table by adding the missing data and correcting any data that may be erroneous or inaccurate.

**Comment 2** – The table submitted in response to Item #7.i for groundwater and soil-vapor monitoring wells and soil borings lists horizontal locations in either of two data. Only one datum must be used to describe the locations for all borings/wells. Locations must be reported as eastings/northings based on New Mexico State Plane Coordinate System, Central Zone, NAD 83 Datum.

Revise the table by converting NAD 27 data to NAD 83 data.

**Comment 3** – Part 2, Item 7.ii of the NOD directed the Permittee to submit survey plats for all wells. Survey plats are required because the Permittee has in the past supplied conflicting information with respect to the locations (eastings/northings/measuring points) of groundwater monitoring wells at KAFB.

In response to Item #7.ii, the Permittee submitted a survey plat showing groundwater and soil-vapor monitoring wells from a registered surveyor dated May 26, 2010. An additional map dated September 27, 2010 was also provided, but was not prepared by a professional surveyor and is not a survey plat. The locations and coordinates for six wells shown on the September map are not shown on the survey plat (specifically the six wells are KAFB-10613, KAFB-10614, KAFB-10617, KAFB-10618, KAFB-10619 and KAFB-10620). Additionally, production wells KAFB-3, KAFB-15, KAFB-16, and the VA Hospital 2 Well are also not shown on the survey plat.

Submit a survey plat showing the locations of and coordinates for KAFB-10613, KAFB-10614, KAFB-10617, KAFB-10618, KAFB-10619, KAFB-10620, KAFB-3, KAFB-15, KAFB-16, and the VA Hospital 2 Well.

**Comment 4** – A comparison of the coordinates from the surveyor plat mentioned in Comment 3 with Table C.3 shows discrepancies between the horizontal and vertical coordinates of some wells. For example, the measuring points and northings/eastings for wells KAFB-1061 through KAFB-1068 and KAFB-3411, and possibly the northing/easting of well KAFB-10628 do not match between the survey plat and Table C.3.

Correct the discrepancies and submit the revised map or table or both with the correct information.

**Comment 5** – There are wells listed in Table C.3 that are not included on the survey plat (*See* Comment 3). In addition to the wells mentioned in Comment 3, the 2819 Ridgecrest Well is also missing from the survey plat.

**Comment 6** – In the response to 7.i and 7.ii, Well KAFB-3411 was surveyed using NAD 83 datum according to the survey plat but its coordinates are presented in NAD 27 on Table C.3. Confirm if the NAD 27 coordinates are equivalent to the NAD 83 coordinates, and if necessary, convert and, as appropriate, correct the coordinates for the well to those under NAD 83.

**Comment 7** – Part 2, Item 7.iii of the NOD directed the Permittee to submit tabulated data in electronic format (Excel™) and graphs showing hydrocarbons (HC) and trends of major hazardous constituent (such as benzene, toluene, ethylene dibromide, xylenes, naphthalene, ethyl benzene, and lead) concentrations versus time for soil vapor and groundwater for each soil-vapor and groundwater monitoring well, as applicable.

Only four graphs were submitted in response to #7.iii. The four graphs, representing soil-gas levels at wells KAFB-1065, KAFB-1066, KAFB-1068, and an unknown location at ST-106 show concentrations only for ethylbenzene, benzene, toluene, and xylene.

The Permittee must submit all the required graphs showing concentrations of HC, benzene, toluene, ethylene dibromide, xylenes, naphthalene, ethyl benzene, and lead for all soil vapor and groundwater monitoring wells to the extent that such information is available to the Permittee. Where data do not exist to produce a graph for a given well, indicate so in the response. Indicate on Table C.3 the location from which ST-106 data is derived.

**Comment 8** – Part 2, Item 7.iv of the NOD directed the Permittee to submit tabulated data in electronic format (Excel™) and graphs showing trends of total petroleum hydrocarbons (TPH) and major hazardous constituent (such as benzene, toluene, ethylene dibromide, xylenes, naphthalene, ethylbenzene, and lead) concentrations versus time for groundwater for each groundwater monitoring well. None were submitted.

The Permittee must submit all the required graphs showing concentrations of TPH, benzene, toluene, ethylene dibromide, xylenes, naphthalene, ethyl benzene, and lead for all groundwater monitoring wells to the extent that such information is available to the Permittee. Where data do not exist to produce a graph for a given well, indicate so in the response.

**Comment 9** – Part 2, Items 7.v and 7.vi of the NOD directed the Permittee to submit cross-sections showing geology.

The geologic cross-sections submitted are simplified to the point that they cannot be used to evaluate the geology of the site. It is not even clear that they are based on actual data. Flaws with the cross-sections include, but are not limited to:

- A. They do not show the specific locations where geologic samples were obtained in the subsurface;
- B. They do not show the lithologic data obtained from the samples;
- C. They do not show the water table;
- D. They do not clearly indicate the distance/direction that borings shown on the cross sections are projected (the word “offset” is not the same as “projected”);
- E. Elevation, not depth below ground surface, is normally shown on the vertical scale;
- F. The geologic units between cross-sections that intersect do not always match; and
- G. The geologic interpretation is overly simplified with no attempt to differentiate major units or show marker beds.

On December 17, 2010, NMED staff met with Tom Cooper of Shaw Environmental and Infrastructure Group to discuss how to improve the cross-sections so that they show meaningful information and detail.

The Permittee must submit revised cross-sections that correct the deficiencies noted above, and make improvements as discussed with Mr. Cooper.

**Comment 10** – Part 2, Items 7.vii of the NOD directed the Permittee to submit cross-sections showing concentrations of major hazardous constituents in soil.

The cross-sections submitted in the subject document only show contour lines of TPH in soil. While TPH is useful as a screening tool for a site, it is not a hazardous constituent for which the risk to human health and the environment can be estimated. The cross-sections should have shown hazardous constituents including benzene, toluene, ethylene dibromide, xylenes, naphthalene, ethyl benzene, and lead.

Additionally, data values are not posted, the water table is not shown, and the cross-sections suffer from many of the same problems noted in Comment 9 above and conveyed to Mr. Cooper.

The Permittee must submit revised cross-sections that correct the deficiencies noted above, and make improvements as discussed with Mr. Cooper.

**Comment 11** – Part 2, Items 7.viii of the NOD directed the Permittee to submit cross-sections showing concentrations of major hazardous constituents in soil vapor.

The cross-sections submitted in the subject document show only contour lines of TPH in soil vapor; as indicated in Comment 10, TPH is not a hazardous constituent. The cross-sections should have shown hazardous constituents including benzene, toluene, ethylene dibromide, xylenes, naphthalene, ethyl benzene, and lead.

Additionally, data values are not posted, the water table is not shown, and the cross-sections suffer from many of the same problems noted in Comment 9 above. Furthermore, the title on each cross-section is incorrect; each erroneously refers to TPH in soil instead of TPH in soil vapor.

The Permittee must submit revised cross-sections that correct the deficiencies noted above, and make improvements as discussed with Mr. Cooper.

**Comment 12** – Part 2, Items 7.ix of the NOD directed the Permittee to submit cross-sections showing concentrations of major hazardous constituents in groundwater.

The cross-sections submitted in the subject document only show EDB and Benzene. NMED does not consider EDB and Benzene to be the only two major hazardous constituents that have been released into the environment from the Bulk Fuels Facility Spill (*see* Comments 10 and 11).

None of the cross-sections indicate where the LNAPL plume is present. Additionally, the cross-sections suffer from several of the same problems noted in Comment 9.

The Permittee must submit revised cross-sections that correct the deficiencies noted above, and make improvements as discussed with Mr. Cooper.

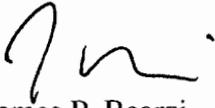
### **Direction**

The Permittee must address the comments herein and submit the required information and revisions to the NMED in the quarterly report that is due no later than **February 28, 2011**. The Permittee must also submit a written response that accompanies the quarterly report that includes a table that details where all revisions specified in this letter are found in the report and that cross-references NMED's numbered comments in this letter. Additionally, all submittals (including maps and tables) must be in the form of two paper copies and one electronic copy in accordance with Permit Section 1.36 of the Permittee's Hazardous Waste Treatment Facility Operating Permit (July 15, 2010).

Col. Maness and Mr. Pike  
December 23, 2010  
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Please contact William Moats of my staff at (505) 222-9551 should you have any questions.

Sincerely,



James P. Bearzi  
Chief  
Hazardous Waste Bureau

cc: J. Kieling, NMED HWB  
W. Moats, NMED, HWB  
W. McDonald, NMED, HWB  
S. Brandwein, NMED, HWB  
B. Olson, NMED, GWQB  
B. Swanson, NMED, GWQB  
L. King, EPA-Region 6 (6PD-N)  
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