



NEW MEXICO
ENVIRONMENT DEPARTMENT



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MEMORANDUM

TO: Dave Cobrain, Manager, Permits Management Program

THROUGH: William Moats, Albuquerque Group Manager, Permits Management Program

FROM: William McDonald, Albuquerque Group, Permits Management Program,
Environmental Specialist

SUBJECT: **REVIEW OF KAFB'S GROUNDWATER EXTRACTION WELL KAFB-106157, AQUIFER TESTING WORK PLAN, BULK FUELS FACILITY SPILL, SOLID WASTE MANAGEMENT UNITS ST-106 AND SS-111, OCTOBER 2013**

DATE: November 12, 2013

This memorandum is in response to the official submittal of the document entitled *Groundwater Extraction Well KAFB-106157, Aquifer Testing Work Plan, Bulk Fuels Facility Spill, Solid Waste Management Units ST-106 and SS-111*, dated October 2013, hereinafter referred to as the Work Plan. The Work Plan follows the submittal of various previous draft versions of the Work Plan, some of which were reviewed by HWB staff.

HWB personnel have espoused the same deficiencies with the draft versions of the Work Plan; some of these deficiencies have been addressed to some degree. However, the Work Plan still contains at least one significant deficiency so serious that the Work Plan, as currently written, should be rejected by the NMED.

On page 2-7, concerning the constant rate test, the Work Plan states "If no drawdown is observed in any of the observation wells, then only the data from the pumping test will be used." And, in Section 2.2, the Permittee says "If no drawdown is observed in observation wells by this time, NMED will be contacted to discuss the data collected to date and any further actions. Additionally, valuable data can still be gained from a single well test. If no drawdown is observed in the observation wells, then drawdown in the pumping well, combined with a known drawdown of 0.0 feet at the distance to the nearest [observation] well, can be used to constrain the aquifer transmissivity and estimate the capture zone."

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This is not acceptable if the purpose of the test is to acquire the most accurate information on aquifer characteristics for the BFFS project. The Work Plan states in the Executive Summary that the aquifer test will be conducted "to evaluate conditions in the aquifer". If no drawdown is observed then capture radius and aquifer characteristics such as transmissivity and specific yield cannot be fully evaluated or evaluated using the best method, and if only one observation well has drawdown, anisotropy cannot be evaluated.

NMED previously stated in Comment #22 of its letter of March 31, 2011, and in Comment #1 of its letter of September 25, 2013, "if appreciable drawdown is not observed for at least one observation well for a given pumping test, and taking other actions fail to produce appreciable drawdown, at least one observation well closer to the pumping well must be installed, and the pumping test for the well repeated. The location of new observation wells must be approved by NMED prior to their installation." If drawdown is not observed, there is no need to first contact the NMED to discuss the data and determine the next action. The answer from HWB will merely be the same -- repeat the constant rate test in a manner that will produce observable drawdown.

Furthermore, the Permittee was also required to discuss what would constitute appreciable drawdown for NMED's consideration.

Additionally the Permittee was informed that "adequate capture of the plume must be demonstrated with empirical data derived from water-level measurements showing the presence of a groundwater divide..." Clearly this directive cannot be met with analysis of only the pumping well data, casting doubt of the efficacy of a remedial measure involving pump and treat and/or plume capture.

Other deficiencies that need to be addressed by the Permittees are:

1. The Work Plan does not describe how the results of the tests will be reported.
2. The Work Plan contains no information on what security measures will be taken to ensure that the public does not become exposed to contaminated groundwater.