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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

September 9, 2016

Adam Kusmak
Chief, Installation Flight Management
49th CES/CEI
550 Tabosa Avenue
Holloman AFB, NM 88330

**RE: DISAPPROVAL
FINAL INTERIM MEASURES REPORT, GROUP 1 FORMER SEPTIC
SYSTEM: TU904 (BUILDING 1194), HOLLOWAN AIR FORCE BASE, NEW
MEXICO, JULY 2016
HOLLOWAN AFB, EPA ID# NM6572124422
HWB-HAFB-16-017**

Dear Mr. Kusmak:

The New Mexico Environment Department (NMED) has reviewed the above referenced document (the Report) submitted by Holloman Air Force Base (the Permittee) on July 7, 2016. The Report recommends, based on the results of the investigations and remedial activities conducted at site TU904 since 2012, that no further action be required. NMED disagrees with this recommendation and issues this Disapproval for the reasons discussed below.

1. The Report recommended that no further action be required for site TU904 and that it not be added to Table A of Appendix 4-A (sites requiring corrective action) of the Permittee's Hazardous Waste Facility Operating Permit (the Permit) as an Area of Concern (AOC). Due to the groundwater contamination existing at the site and the requirement for additional groundwater monitoring as discussed below, it will be included in the ongoing permit modification process by being added to Table A of Appendix 4-A of the Permit as an Area of Concern (AOC) requiring corrective action. It will be designated as AOC-1194.
2. A qualitative, as opposed to a quantitative, risk assessment was performed to identify potential receptors and the pathways by which these receptors may be affected. The risk assessment determined that inhalation of volatile organic compounds (VOCs), specifically

trichloroethylene (TCE) in groundwater via vapor intrusion to the indoor air of Building 1194, was the only complete exposure pathway for the current/future on-site worker. NMED agrees with this determination. Of concern, however, is the second paragraph of Section 5.2.3 on Page 5-2 of the Report which provides an inaccurate representation of NMED's July 2015 *Risk Assessment Guidance for Investigations and Remediation* (RAGIR) criteria for when a qualitative evaluation of the vapor intrusion pathway is appropriate. The criteria that more accurately describes the conditions of site TU904 are shown in the first full paragraph on Page 52 of the RAGIR, as follows:

In addition, if volatile and toxic compounds were present at a site but the source(s) and associated contaminated soil have been removed and the following criteria have been met, only a qualitative assessment of the vapor intrusion pathway will be required:

- *Confirmation sampling indicates removal of the source with minimal volatile and toxic compounds detected in soil/soil gas or groundwater data,*
- *Concentrations are below screening levels (i.e., VISLs for soil-gas and/or groundwater; Table A-3),*
- *No evidence to suggest dense/sinking vapors, and*
- *Concentrations decrease with depth.*

The conditions of the first, third and fourth bulleted criteria have been met. Regarding the second bullet, the qualitative assessment of the vapor intrusion pathway found that the industrial/occupational Vapor Intrusion Screening Level (VISL) for TCE in groundwater (24.3 micrograms per liter [$\mu\text{g/L}$]) was not exceeded in any of the 20 groundwater samples collected in 2015. The highest TCE result was 16.1 $\mu\text{g/L}$. However, the residential VISL for TCE in groundwater (5.16 $\mu\text{g/L}$) was exceeded in four of the samples, ranging from 6.86 $\mu\text{g/L}$ to 16.1 $\mu\text{g/L}$. Therefore, the results meet the qualitative assessment screening level criteria for industrial/ occupational groundwater VISLs for TCE but do not meet the TCE screening level criteria for residential groundwater VISLs.

3. As per Comment #1 above, this site is being added to Table A of Appendix 4-A of the Permit. Since the results of the qualitative assessment for vapor intrusion do not meet the TCE screening level criteria for residential groundwater VISLs, this site only qualifies for a qualitative assessment if the Permittee intends to accept a future determination of No Further Action/Corrective Action Complete With Controls to prevent the potential for future residential use. This would move the site from Table A to Table C of the Permit (sites with corrective action complete with controls). If the Permittee intends to move this site to Table B of the Permit (sites with corrective action complete without controls) after the completion of the monitoring required in Comment #4 below, a quantitative risk assessment may be performed to better determine the residential risk associated with vapor intrusion pathway. In contrast, the results of the bi-annual monitoring may show that the concentration of TCE has decreased sufficiently to conduct another qualitative assessment.
4. The U.S. Air Force, under its Emerging Issues Program, has acknowledged that there is a

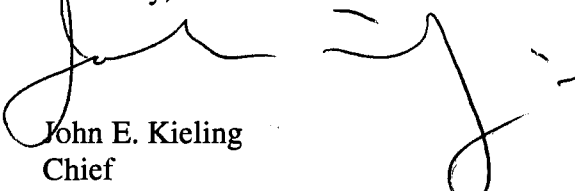
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known co-occurrence of 1,4-dioxane with TCE in chlorinated solvent-related groundwater contamination plumes. TCE is the major contributor to the groundwater contamination at site TU904 and there is no historical evidence of analyzing for the presence of 1,4-dioxane. Therefore, the Permittee shall submit a groundwater Monitoring Plan that includes analyses of 1,4-dioxane using EPA Method 8270C SIM, VOCs using EPA Method 8260B, and total dissolved solids. This Monitoring Plan shall include four bi-annual sampling events (two per year for two years) from the following 17 permanent monitoring wells at the site: TU-904-MW-01, MW02, MW03, MW04, MW06, MW07, MW08, MW10, MW11, MW13, MW14, MW15, MW16, MW17, MW18, MW20 and MW21. The following 4 outlying, upgradient wells will not require sampling: TU904-MW05, MW09, MW12 and MW19. The reporting limit for 1,4-dioxane shall not exceed 1 µg/L. All 21 permanent wells shall be gauged for water level measurements at the time of sampling. After the first year of monitoring, NMED will determine if the frequency and locations of sampling and analysis need to be revised.

The Permittee shall submit the required groundwater Monitoring Plan to NMED by **October 28, 2016**. The Monitoring Plan must include a plan for the performance of either a quantitative or qualitative residential risk assessment for the vapor intrusion pathway, as needed.

If you have any questions regarding this letter, please contact Mr. David Strasser of my staff at (505) 222-9526.

Sincerely,



John E. Kieling
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
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