



SUSANA MARTINEZ  
Governor  
JOHN A. SANCHEZ  
Lieutenant Governor

State of New Mexico  
ENVIRONMENT DEPARTMENT

ENTERED



*Hazardous Waste Bureau*

2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6313  
Phone (505) 476-6000 Fax (505) 476-6030  
[www.env.nm.gov](http://www.env.nm.gov)

BUTCH TONGATE  
Cabinet Secretary  
J. C. BORREGO  
Deputy Secretary

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

June 27, 2018

Mr. Adam Kusmak  
Chief, Installation Management Flight  
49<sup>th</sup> CES/CEI  
550 Tabosa Avenue  
Holloman AFB, NM 88330-8458

**RE: DISAPPROVAL  
FINAL INTERIM MEASURES REPORT ADDENDUM NO. 1, GROUP 1  
FORMER SEPTIC SYSTEM: TU904 (AREA OF CONCERN 1194),  
DECEMBER 2017  
HOLLOMAN AIR FORCE BASE, EPA ID# NM6572124422  
HWB-HAFB-18-002**

Dear Mr. Kusmak:

The New Mexico Environment Department (NMED) has reviewed the above referenced Interim Measures Report Addendum (Report) submitted by Holloman Air Force Base (Permittee) and received on January 4, 2018. The Report recommends that the site be granted corrective action complete without controls status. The NMED disagrees with this recommendation and issues this Disapproval for the reasons discussed below.

The Report was submitted in response to NMED's September 9, 2016 Notice of Disapproval (NOD) for the *Final Interim Measures Report, Group 1 Former Septic System: TU904 (Area of Concern 1194), July 2016*. This 2016 report did not meet all the requirements for providing a qualitative risk assessment of the vapor intrusion pathway. In addition, some additional monitoring was required by NMED. The subject Report includes the additional monitoring data as well as a quantitative risk assessment of the vapor intrusion pathway.

Figure 4-3 of the Report shows the trichloroethylene (TCE) plume in groundwater. The highest concentration of TCE was observed in monitoring well MW13 at 21 micrograms per liter ( $\mu\text{g/L}$ ),

which exceeds the 5 µg/L cleanup level. The plume has migrated to the southwest, with the next two highest groundwater detections being down-gradient in MW15 (13 µg/L) and MW18 (7.9 µg/L). The TCE result for all fourteen of the other monitoring wells was less than 5 µg/L. TCE results have increased from 15 µg/L in November 2014 to 21 µg/L in July 2017 in MW13. TCE concentrations in all other monitoring wells have either decreased or generally remained stable over that period.

The Report indicates that the 1194 septic tank system (Building 1194, the drain line, and the associated septic tank) is the source for the TCE. However, the location of MW13 is cross-gradient and approximately 60 feet to the northwest of the reported source. It is possible that there was a break in the drain line from Building 1194, the location for which is shown as approximate on Figure 4-3, and contamination followed preferential pathways created by underground utilities and/or natural geological features. Another explanation may be the presence of another source area that has yet to be identified near MW13. Additional evaluation of the site history and historical data must be conducted to ensure all potential source area(s) have been identified. A camera survey of the drain line has the potential to identify a break(s) in the line as the source for groundwater contamination.

Soil vapor analysis from nine soil vapor points (VP01 – VP09) in March and August 2017 revealed that chloroform was present above the residential vapor intrusion screening level (VISL) of 40.7 micrograms per cubic meter (µg/m<sup>3</sup>) at one vapor point (VP-06 at 56 µg/m<sup>3</sup>) and present just below the residential VISL at VP05 at 35 µg/m<sup>3</sup>. Both vapor points are located near MW13. Chloroform concentrations at VP06 increased from 54 µg/m<sup>3</sup> in March 2017 to 56 µg/m<sup>3</sup> in August 2017 and increased at VP05 from 26 µg/m<sup>3</sup> in March to 35 µg/m<sup>3</sup> in August. Chloroform did not approach the residential VISL from any other vapor points.

A quantitative risk assessment was conducted using the highest detected results in the soil gas data. The Report indicates that only contaminants associated with TCE should be evaluated in the risk assessment. However, given the uncertainty about the source area(s), all detected constituents must be retained, including chloroform. As noted in the Report, chloroform is a commonly detected compound in soil gas when associated with treated drinking water lines. However, chloroform is also associated with refrigerants, solvents, and reagents and other compounds. Sufficient lines of evidence have not been provided to completely rule out chloroform as potentially being site related.

The cumulative risks for all detected constituents provided in Table 5-1 of the Report shows that the site meets industrial risk but exceeds the carcinogenic risk target level for residential receptors. The overall risk is driven by the presence of chloroform. Per the NMED Soil Screening Guidance, if risk is exceeded using the maximum detected concentrations, refinement and additional lines of evidence may be provided. It is suggested that statistical analysis of the data be conducted, possibly using spatial and temporal variations to derive an upper confidence level on the mean as the exposure point concentration. Evaluation of a site-specific attenuation factor may also be useful in looking at site refinements.

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The risk assessment will require additional evaluation pending consideration of nature and extent (see below) and additional source areas. As currently reported, the site does not meet the criteria for corrective action complete.

NMED's September 9, 2016 NOD also required that a monitoring plan be submitted to include four bi-annual sampling events (two per year for two years) and seventeen monitoring wells analyzing the groundwater for volatile organic compounds (VOCs), 1,4-dioxane and total dissolved solids (TDS). The Permittee submitted an Interim Measures Work Plan for the subject Report proposing four bi-annual sampling events, which NMED approved on August 29, 2017. To date, only one year (two events) of sampling has been reported and the Report does not recommend further sampling events. The Permittee shall conduct one more year of bi-annual sampling analyzing for VOCs and TDS. 1,4-dioxane was not detected in the first two sampling events and can be excluded from future events.

The Permittee must submit a revised Interim Measures Report that addresses all comments contained in this Disapproval, including the results of the second year of bi-annual sampling. The Permittee must include a response letter that cross-references where NMED's comments were addressed. The Permittee must also submit an electronic redline-strikeout version of the revised Report showing where all changes have been made. The revised Report must be submitted no later than **December 31, 2019**.

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  
C. Amindyas, NMED HWB  
D. Strasser, NMED HWB  
P. Walton, AQS  
C. Schick, HAFB  
S. Dorton, HAFB  
C. Hendrickson, EPA Region 6 (6MM-RC)  
L. King, EPA Region 6 (6MM-RC)

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