



AQS, Inc.  
2112 Deer Run Drive  
South Weber, Utah 84405

(801) 476-1365

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Mr. David Cobrain  
New Mexico Environment Department (NMED)  
Hazardous Waste Bureau  
2905 Rodeo Park Dr. E/Bldg 1  
Santa Fe, NM 87505

2017  
NMED  
Hazardous Waste Bureau

RE: Technical Review of the Supplemental *RCRA Facility Investigation Report at FT008*,  
Cannon Air Force Base (CAFB), dated June 2017.

Dear Mr. Cobrain:

Attached, please find technical review comments on the risk assessments conducted as part of  
CAFB's, *Supplemental RCRA Facility Investigation Report at FT008*, dated June 2017.

Section 3.5.1 states that, "Vapor intrusion pathways were considered incomplete for FT008 because there are no buildings currently located at the site and no buildings are planned in the future. Given that FT008 is currently within the fall out zone for the EOD and there are no plans to change the location of the EOD, it is unlikely buildings will be constructed at FT008 in the foreseeable future. Therefore, vapor intrusion was considered incomplete and not evaluated further for FT008." Since volatile organics were detected, and an evaluation of the vapor pathway was not conducted, additional land use restrictions would be required to prevent construction and occupation of any structures within the footprint of FT008. At some point in time, if treatment of energetics ceases and clearance of the kick out area is conducted, the risk assessment would require re-evaluation prior to construction of any buildings. A comment could be drafted recommending additional controls be included in the recommendations section of the report preventing occupation of structures pending evaluation of the vapor intrusion pathway. However, in reviewing the data, it appears only a qualitative assessment is needed (per Section 2.5.2 of the NMED Soil Screening Guidance) to address this pathway as volatile organics were minimally detected, concentrations decrease with depth, concentrations are not significant risk drivers, and there has been source removal. In lieu of another land use control, a comment has been drafted recommending the evaluation of the vapor intrusion pathway.

Per- and Polyfluoroalkyl Substances (PFAS) chemicals are an emerging chemical of concern. Two PFAS of particular interest are perfluorooctyl sulfonate (PFOS) and perfluorooctanoic acid (PFOA). Currently, there are no screening levels for soil for PFAS but there are tap water screening levels (included in the 2017 NMED Soil Screening Guidance). PFOS and PFOA are a concern in that there are a primary chemical in fire-suppression foams used at airfields and other places where petroleum-product-based fires are a risk. The site description does not indicate if such foams were used as part of the training exercises. If these foams were used, it is possible that PFOS and PFOA may be present in soil and/or have migrated to groundwater. NMED may

wish to consider whether data are needed to characterize soil and/or groundwater for these contaminants.

For the assessment of the soil-to-groundwater pathway, a few organics and several metals exceeded screening levels. The most interesting of these data were for organics detected around 20-15 feet below ground surface (bgs) in boring C107-SB03. As noted in Figure 4-1, this boring is located on the edge of the 2013 source removal area. The purpose of this boring (Table 4-1) was to confirm or refute the historical contamination identified at 28 feet bgs. The C107-SB03 data confirm the presence of contamination. The deeper samples (30 and 40 ft bgs) were either non-detect or showed lower concentrations. Thus, contamination has not vertically migrated, and extent is defined. Given that there has been source removal, it is unlikely that these contaminants will pose a future threat to groundwater. A comment has been drafted requesting a discussion of this potential.

Based on the results of the risk assessments, the recommendation is for land use controls limiting the site to light industrial use only. Given the elevated risks along with the location of the site within the kick out for treatment of energetics, it is agreed that the site does not meet corrective action complete without control.

If you have any questions, please contact me at (801) 451-2864 or via email at [pwalton@aqsnnet.com](mailto:pwalton@aqsnnet.com).

Thank you,



Paige Walton  
AQS Senior Scientist and Program Manager

cc: Gabriel Acevedo, NMED (electronic)  
Joel Workman, AQS (electronic)

**Technical Review of the Supplemental RCRA Facility Investigation Report at FT008,  
Cannon Air Force Base (CAFB), dated June 2017**

**Comments**

1. A hazard quotient was determined for total petroleum hydrocarbons (TPH). Typically, a quotient is not calculated, but rather the site data are compared to the TPH screening levels. It is noted that the use of the quotient provides reference for the magnitude of exceedance.
2. For the assessment of the soil-to-groundwater pathway, a few organics and several metals exceeded screening levels. The results are summarized in Sections 5.2.1.3, 6.1.4, and 6.2. The most interesting of these data were for organics detected around 20-15 feet below ground surface (bgs) in boring C107-SB03. As noted in Figure 4-1, this boring is located on the edge of the 2013 source removal area. The purpose of this boring (Table 4-1) was to confirm or refute the historical contamination identified at 28 feet bgs. The C107-SB03 data confirm the presence of contamination. The deeper samples (30 and 40 ft bgs) were either non-detect or showed lower concentrations. Thus, contamination has not vertically migrated, and extent is defined. Given that there has been source removal, it is unlikely that these contaminants will pose a future threat to groundwater. However, the only discussion of the potential for future impacts to groundwater is in Section 6.2, which states that there is a generally reducing trend. It is noted that this trend does not necessarily apply to metals. Revise the report to either include a revised assessment for the soil-to-groundwater pathway using site-specific dilution attenuation factors, or include lines of evidence indicating that while residual contamination may be present above default soil-to-groundwater screening levels, the likelihood for impact to groundwater is minimal.
3. Section 3.5.1, page 3-4. This section states that, “Vapor intrusion pathways were considered incomplete for FT008 because there are no buildings currently located at the site and no buildings are planned in the future. Given that FT008 is currently within the fall out zone for the EOD and there are no plans to change the location of the EOD, it is unlikely buildings will be constructed at FT008 in the foreseeable future. Therefore, vapor intrusion was considered incomplete and not evaluated further for FT008.” Since volatile organics were detected, and an evaluation of the vapor pathway was not conducted, additional land use restrictions would be required to prevent construction and occupation of any structures within the footprint of FT008. At some point in time, if treatment of energetics ceases and clearance of the kick out area is conducted, the risk assessment would require re-evaluation prior to construction of any buildings. Additional controls could be included in the recommendations section preventing occupation of structures pending evaluation of the vapor intrusion pathway. However, in reviewing the data, it appears only a qualitative assessment is needed (per Section 2.5.2 of the NMED Soil Screening Guidance) to address this pathway as volatile organics were minimally detected, concentrations decrease with depth, concentrations are not significant risk drivers, and there has been source removal. In lieu of another land use control, it is recommended that the evaluation of the vapor intrusion pathway be included in the report.

4. Section 3.5.4, page 3-5. Step 2 of the site attribution analysis includes comparison of the range of site concentrations to the range of detected background concentrations. The NMED SSG does not allow for comparison of site data to the range of background. As noted in Section 2.8.3.2 of the SSG, if the maximum site concentration is greater than the background reference value, a two-sample hypothesis test should be used to compare the data distributions. Under certain circumstances, comparison to the range may be applicable. NMED will allow the comparison to the background dataset range for the identification of COPCs if nature and extent has been defined and only when sufficient samples are not available to conduct a statistical analysis. For FT008, sufficient data are available to statistically compare datasets. It is noted that arsenic for the 0-10 foot soil range was the only inorganic screened out due to comparisons with the background range. Statistical comparisons for arsenic and thallium were conducted for the other soil intervals. Either revise the assessment to statistically demonstrate that arsenic is similar to background for the 0-10 foot soil interval, or include arsenic as a contaminant of potential concern in the risk assessment. It is noted that inclusion of arsenic will not change the results of the risk assessment (based on use of the 2017 NMED screening level).