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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
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Transmitted via e-mail

April 2, 2015

MEMORANDUM

FROM: Laurie King
Section Chief
Federal Facilities Section (6PD-F)

TO: Dennis McQuillan
Resource Protection Division
New Mexico Environment Department

RE: **Final Basis of Design – Mid-Plume Pump and Treat System, Bulk Fuels Facility Spill, Solid Waste Management Units ST-106 and SS-111, Kirtland Air Force Base, Albuquerque, New Mexico, March 20, 2015**

The United States Environmental Protection Agency (EPA) has reviewed the above referenced report. As requested by the New Mexico Environment Department (NMED), the EPA provides the following comments.

Final Basis of Design – Mid-Plume Pump and Treat System

1. Section 2.1 Phase 1 - Groundwater Extraction Well KAFB-106228 states "the extraction well will be 8 inches in diameter and screened from 15 feet above the water table to approximately 60 feet below the water table…". This equates to 75 feet of screen. The Groundwater Extraction Pilot Implementation and Additional Plume Characterization Letter Work Plan Addendum #3 dated March 19, 2015 states the following concerning the extraction well construction: "one hundred linear feet of 304 stainless steel high-flow wire-wrap screen will be installed from 440 feet bgs to 540 feet bgs…". Please correct this inconsistency.
2. Section 2.3 Phase 3 – Groundwater Treatment System Equipment – Please include details on where sample ports will be installed within the system. Also denote the sample ports on Figure 2 Process Flow Diagram.
3. Section 2.3 Phase 3 – Groundwater Treatment System Equipment – Treatment for manganese was required during the fall 2013 aquifer test. While concentrations of manganese are considerably lower in the area of planned extraction well 106228, the concentration in 10622, about 300 feet west of 106228, was 270 ug/L during the third quarter of 2014, exceeding the 200 ug/L NMED groundwater protection standard. The future addition of extraction wells to the system may result in increased manganese concentrations. Suggest proactively including optional manganese treatment in the Basis of Design to demonstrate that manganese treatment can be incorporated into the treatment system, if necessary.
4. Section 2.4 Phase 4 – Groundwater Treatment System Process Building and Infrastructure – Figure 3 shows a sump within the treatment building interior, but no mention of the sump is found in the text. Please provide additional details regarding the sump (capacity, outlet, etc.).
5. Figure 2 Process Flow Diagram – The untreated water feed tank (TK-110) shows a vent to atmosphere (stream no. 14). The table shows that stream no. 14 is "treated water storage tank vent". Please correct this mislabeling.

General Comments

6. The Basis of Design does not mention appropriate pipeline integrity testing. Will details of the testing be included in a future document?
7. Suggest including a statement in the Basis of Design concerning the preparation of an operation and maintenance (O&M) manual for NMED approval. The O&M manual should include procedures for analytical testing, carbon exchange, carbon reactivation/replacement, backwashing (if applicable), filter exchange, management of potential biofouling, etc.
8. The Basis of Design includes no provisions for backwashing the carbon beds. Backwashing is typically used to remove fines or "fluff" the beds to mitigate channeling or other potential causes of early breakthrough. The pre-filters will preclude clogging due to fine particulates in the influent. Has the potential need for backwashing been considered and deemed unnecessary? If so, suggest stating that in the Basis of Design.
9. Would there be any value in connecting the GAC treatment building to the sanitary sewer system and POTW, or proactively installing sub-slab infrastructure enabling a potential future connection?
10. The EPA understands that potable use of the treated water is not currently a consideration. However, we recognize that water management is a significant engineering issue, especially as flow rates approach 800 gpm or more. Additionally, future changes in water supply demands could result in a need for additional potable water on-base. If not already incorporated into the treatment system design, consideration should be given to designing the treatment system to be compatible with potable use.

If you have any questions concerning these comments, please contact Paul Torcoletti at 214-665-6494 or at *torcoletti.paul@epa.gov* or Tara Hubner at 214-665-7246 or at *hubner.tara@epa.gov*.