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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

February 21, 2019

Tim Davis
Chief, Environmental Officer
National Aeronautics and Space Administration
White Sands Test Facility
P.O. Box 20
Las Cruces, NM 88004-0020

Attention of: RE-18-045

**RE: SECOND DISAPPROVAL
SMALL ARMS FIRING RANGES (SWMUS 29-31)
REMEDY COMPLETION REPORT
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHNSON SPACE CENTER WHITE SANDS TEST FACILITY
DOÑA ANA COUNTY, NEW MEXICO
EPA ID #NM08800019434
HWB-NASA-17-006**

Dear Mr. Davis:

The New Mexico Environment Department (NMED) has received the National Aeronautics and Space Administration Johnson Space Center White Sands Test Facility (Permittee) *Revised Small Arms Firing Ranges (SWMU [Solid Waste Management Unit] 29-31) Remedy Completion Report* (Report) dated March 30, 2018. NMED has reviewed the Report and hereby issues this Disapproval. The Permittee must address the following comments.

GENERAL COMMENTS

1. Required Risk Assessment

NMED Comment: The risk assessments for SWMUs 29, 30, and 31 must be completed and submitted with the revised Report. The risk assessment must address the soil-to-groundwater pathway evaluation and the evaluation for human health and ecological receptors. The revised Report conclusions and recommendations must be supported by the results of the risk assessment.

2. Use of Current NMED Risk Assessment Guidance and Soil Screening Levels

NMED Comment: NMED's 2015 Risk Assessment Guidance for Site Investigations and Remediation (RA Guidance) is cited throughout the Report. The most current RA Guidance and NMED soil screening levels (SSLs) and United States Environmental Protection Agency Regional Screening Levels must be used during the risk assessment and screening level evaluations documented in the revised Report. Revise all affected sections of the Report accordingly.

SPECIFIC COMMENTS

3. Section 3.4, Site Conceptual Exposure Model, Page 5

Permittee's Statement: "Environmental conditions at WSTF [White Sands Test Facility] are not considered conducive to dissolution of lead and subsequent migration to groundwater. Current groundwater chemical analytical data indicate that WSTF groundwater, including groundwater monitored near the firing ranges and pumped from the NASA WSTF water supply wells located downgradient, is not contaminated with the COPCs [constituents of potential concern] identified for this ACM [accelerated corrective measures]."

NMED Comment: This statement does not provide sufficient evidence to demonstrate that historical and residual levels of contamination in soil have not, or will not, pose a risk to groundwater. While additional information is provided in Section 3.5.1, Problems and Objectives, which includes a statement supporting the relative immobility of the COPCs in soil, the risk assessment must include an evaluation of the soil-to-groundwater pathway. The soil-to-groundwater pathway must be evaluated in accordance with RA Guidance Section 4.0, Migration of Contaminants to Groundwater. The required evaluation must include a point-to-point comparison of COPC concentrations to appropriate soil-to-groundwater screening levels. In addition to the comparison, additional lines of evidence must be provided to address the potential for migration of COPCs to groundwater, to include removal actions, vertical profile of contamination with respect to depth to groundwater, physical/chemical parameters of the COPCs, and lack of a liquid source. Revise the Report accordingly.

4. Section 3.5.1, Problems and Objectives, Pages 5 through 6

Permittee's Statement: "The problem statement for the remedy completion of SWMUs 29-31 is: confirm that soil beneath, and where applicable downgradient, of the three historical firing ranges does not contain hazardous constituents at concentrations above regulatory limits as a result of past activities."

NMED Comment: A screening level comparison is only adequate to assess nature and extent of residual contamination. Risk-based closure for SWMUs 29, 30, and 31 must include an evaluation of cumulative risk as required by RA Guidance Section 5.0, Use of the SSLs. The risk assessment must be completed to support any conclusion that overall risk/hazard meets the criteria for a corrective action complete status determination. Completion of the risk assessment is also critical to identifying the need for additional investigation, cleanup activities, or risk evaluation at each SWMU. Therefore, in addition to the results of the screening level evaluation, the revised Report conclusions and recommendations must also be supported by the results of the risk assessment for each SWMU. Revise the Report accordingly.

5. Section 3.5.4, Performance of Acceptance Criteria, Page 6

Permittee's Statement: "Following completion of corrective measures, final confirmation soil sampling as directed by NMED, final updating of the RCR [Remedy Completion Report], and any subsequent site restoration activities, a "Corrective Action Complete" status determination for each of the firing ranges will be requested. The request will be provided as a separate submittal and will be accompanied by the risk screenings performed in accordance with the current version of the NMED Risk Assessment Guidance for Site Investigations and Remediation."

NMED Comment: Complete risk assessment for SWMUs 29, 30, and 31 must be submitted with the revised Report. A "Corrective Action Complete" status determination request may be submitted following approval of the Report and supporting risk assessment demonstrating that no unacceptable risk remains at the site. Revise the statement and all affected sections of the Report accordingly.

6. Section 4.5.3.3, Manual Removal of Ammunition Scraps and Fragments, Page 15

Permittee's Statement: "Soil that passed through the sieve was scanned with the metal detector to confirm the removal of ammunition scraps and fragments before being returned to the excavation."

NMED Comment: In order to confirm that residual contamination does not remain at each designated SWMU grid cell, discrete confirmation samples must be collected at representative areas or locations where munitions and debris were removed. All confirmation sampling locations for all grid cells must be depicted on the associated figures in the revised Report.

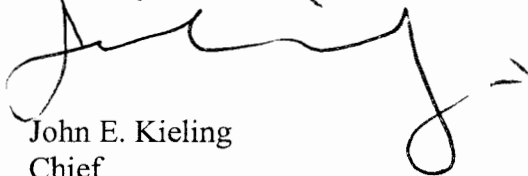
7. Section 5.2, Chemical Analytical Results, Pages 21 through 22

NMED Comment: The inorganic (metals) background evaluation was only conducted for arsenic. Review of concentration data indicates several other metals had maximum detections above established WSTF background upper tolerance limits. Therefore, the risk assessment must either include metals above background as COPCs in the evaluation of cumulative risk/hazard or a site attribution analysis for all metals above background reference levels must be completed to support the conclusion that metals concentrations at each SWMU are reflective of background conditions. NMED's guidance for inorganic background evaluation is outlined in RA Guidance Section 2.8.3.2, Comparison to Background-Discrete Samples. Revise the Report accordingly.

The Permittee must submit a revised Report that addresses all comments contained in this Disapproval. In addition, the Permittee must include a response letter that cross-references where NMED's numbered comments were addressed. The Permittee must also submit an electronic redline-strikeout version of the revised Report showing where all changes have been made to the Report. The revised Report must be submitted no later than **December 31, 2019**.

If you have any questions regarding this letter, please contact Gabriel Acevedo at (505) 476-6043.

Sincerely,



John E. Kieling
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
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