



Michelle Lujan Grisham
Governor

Howie C. Morales
Lt. Governor

**NEW MEXICO
ENVIRONMENT DEPARTMENT**

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



James C. Kenney
Cabinet Secretary

Jennifer J. Pruett
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

October 8, 2019

Timothy J. 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-18-181

**RE: DISAPPROVAL
600 AREA BUREAU OF LAND MANAGEMENT OFF-SITE SOIL PILE
(SWMU 16) REVISED INVESTIGATION REPORT
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHNSON SPACE CENTER WHITE SANDS TEST FACILITY
DOÑA ANA COUNTY, NEW MEXICO
EPA ID #NM08800019434
HWB-NASA-16-002**

Dear Mr. Davis:

The New Mexico Environment Department (NMED) has received the National Aeronautics and Space Administration White Sands Test Facility (Permittee) *600 Area Bureau of Land Management Off-Site Soil Pile (SWMU 16) Revised Investigation Report* (Report), dated December 21, 2019. NMED has reviewed the Report and hereby issues this Disapproval. The Permittee must address the following comments.

COMMENTS

1. Section 7.0, Risk Screening, Page 17

Permittee Statement: “For the Soil-to-Groundwater exposure scenario, the NMED established both risk-based SSLs [Soil Screening Levels] (DAF [dilution attenuation factor] of 20) and MCL [maximum contaminant level] or WQCC [New Mexico Water Quality Control Commission]-based SSLs (DAF of 20). For analytes with a risk-based SSL, the maximum concentration was divided by the SSL, multiplied by 10^{-5} to establish the individual constituent risk, then all individual risks were summed to determine the cumulative site risk. For analytes with an MCL or WQCC-based SSL, the maximum concentration was divided by the SSL, multiplied by 1 to establish the unity ratio, then all ratios were summed to determine if the combined sum of ratios exceed the target unity (1.0).”

NMED Comment: As clarification, evaluation of the soil-to-groundwater pathway only requires a point-to-point comparison of soil contaminant concentrations to NMED’s soil-to-groundwater soil screening levels (SSLs) for a Dilution Attenuation Factor (DAF) of 20 to determine if additional investigation is necessary to evaluate potential leaching and migration of contaminants from the vadose zone to groundwater (see NMED’s 2019 *Risk Assessment Guidance for Site Investigations and Remediation* (RA Guidance), Sections 4.9 and 5.0). If exceedances of soil-to-groundwater SSLs are identified during evaluation of constituents of potential concern (COPCs), then multiple lines of evidence must be provided to support any conclusion that migration of COPCs is not occurring at the 600 Area Bureau of Land Management Off-Site Soil Pile. Examples of acceptable lines of evidence supporting an incomplete pathway are outlined in RA Guidance Section 4.9, Summary of the Migration to Groundwater Pathway SL-SSLs [leachate-based SSLs]. Risk and hazard indices are only calculated for the human health exposure pathway for each identified site receptor, as outlined in RA Guidance Section 5.0, Use of the SSLs. For the soil-to-groundwater pathway evaluation, only include the point-to-point evaluation and any supporting lines of evidence for an incomplete pathway determination in the revised Report. Revise the Report accordingly.

2. Section 7.5, Total Lead, Page 19

NMED Comment: As clarification, only a point-to-point comparison of reported soil lead concentrations to respective receptor SSLs is required for evaluation of lead. Calculation of hazard quotients (HQs) are not required for evaluation of lead. Omit the HQ calculation for total lead included with the risk screen evaluation documented on Tables 7.5, 7.6, 7.8, 7.10, and 7.11 for the residential, construction worker, and industrial exposure scenarios. Discuss the results of the point-to-point screening level evaluation for lead for human health in the revised Report. Revise the Report accordingly.

3. Section 7.8, Ecological Screening, Page 20

NMED Comment: The Tier 1 ecological risk screening assessment documented in the Report indicated adverse risk for all identified site receptors (plants, deer mouse, and horned lark). Typically, when results of the Tier 1 analysis exceed risk a Tier 2 risk evaluation is completed. However, Section 9.0, Recommendations, indicates that the Permittee intends to remove the 600 Area Bureau of Land Management Off-Site Soil Pile and collect confirmation sample data as a corrective measure. Based on the Report recommendations, further analysis of the ecological pathway is not required at this time. However, a complete ecological risk evaluation must be included in the risk assessment for the corrective measure. The ecological risk assessment presented in the corrective measures report must comply with the risk assessment requirements outlined in RA Guidance Volume II, Soil Screening Guidance for Ecological Risk Assessments. No revisions to the Report are required.

4. Table 7.4, Residential Scenario-Cancer-UCL [Upper Confidence Level] 95, Page 39

NMED Comment: A typographical error was noted in the reported UCL for Nitrate+Nitrite (4.84.E+02 mg/kg). The correct UCL concentration value is 4.84E+02 mg/kg. Correct the error in the revised Report.

5. Table 7.5, Residential Scenario Non-Cancer Maximum Concentrations, Page 40

NMED Comment: The reported maximum concentration for acetone for the non-cancer residential receptor exposure scenario (1.40E-02 mg/kg) does not appear to have been updated with respect to data collected during the September and October 2018 soil resampling events for VOCs. Reevaluate all reported concentration data and ensure that the risk evaluation for the residential, industrial/occupational, and construction worker exposure scenarios includes the updated resampled analytical data set for VOCs. Revised the Report accordingly.

6. Table 7.12, Soil to Groundwater Scenario-Maximum Concentrations, Page 47

NMED Comment: A discrepancy was noted for the soil-to-groundwater SSL for a DAF of 20 listed for toluene (1.21E+00 mg/kg) on the table. The soil-to-groundwater SSL listed in NMED's RA Guidance is 1.21E+01 mg/kg. Correct the discrepancy in the revised Report.

7. Table 7.13, Soil to Groundwater Scenario-UCL [Upper Confidence Level], Page 48

NMED Comment: A discrepancy was noted for the soil-to-groundwater Risk Based SSL for a DAF of 20 listed for acetone (49.8E+01 mg/kg). The correct soil-to-groundwater SSL is 4.98E+01 mg/kg. Correct the discrepancy in the revised Report.

8. Table 7.14, Total Petroleum Hydrocarbons, Page 49

NMED Comment: Ensure that the maximum reported total petroleum hydrocarbons gasoline range organics concentrations reported on the table are updated to reflect data collected during the September and October 2018 resampling events. Update the Report accordingly.

The Permittee must submit a revised Report that addresses all of the comments contained in this letter. In addition, the Permittee must include a response letter that identifies where NMED's comments were addressed. The Permittee must also submit an electronic redline-strikeout version of the revised Report showing where all changes were made to the Report. The revised Report must be submitted to NMED 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
B. Wear, NMED HWB
G. Acevedo, NMED HWB
L. King, EPA Region 6 (6LCRRC)
A. Sanchez, NASA WSTF
J. Williams, NASA WSTF

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