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Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

May 24, 2016

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-15-125

**RE: APPROVAL WITH MODIFICATIONS
SWMUs 1, 3, AND 15 INVESTIGATION REPORT (100 AREA BURN PIT, 100
AREA CONTAINER STORAGE AREA, AND 600 AREA BURN PIT)
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION JOHNSON
SPACE CENTER WHITE SANDS TEST FACILITY
DOÑA ANA COUNTY, NEW MEXICO
EPA ID #NM08800019434
HWB-NASA-15-015**

Dear Mr. Davis:

The New Mexico Environment Department (NMED) has received the National Aeronautics and Space Administration (NASA) White Sands Test Facility (WSTF) (Permittee) submittal titled, *SWMUs 1, 3, and 15 Investigation Report (100 Area Burn Pit, 100 Area Container Storage Area, and 600 Area Burn Pit)* (Report), dated November 19, 2015 and received November 30, 2015. NMED has reviewed the Report and hereby issues this approval with the following modifications.

Modifications:

1. Section 4.5.1, Sample/Auger Refusal

Permittee's Comment: "Boring 100-SB-19 experienced refusal at approximately 3 [foot] ft [below ground surface] bgs, and the 3 ft to 4 ft sample could not be collected. A second attempt was made adjacent to (within approximately 1 ft) the original soil boring at 100-SB-19 with soil boring refusal again at approximately 3 ft, precluding the collection of a sample. Under the conditions of refusal, for waste management purposes, soil samples were collected from the soil cuttings as a composite sample from the accumulation container immediately following boring advancement."

NMED Comment: The Permittee's statement appears to be incorrect. The soil boring log indicates sample refusal was documented at the 8 ft to 10 ft bgs sample interval, with no sample collected. The field notes indicate samples were collected and submitted for laboratory analysis from the 3 ft to 5 ft bgs sample interval; at the 18 ft to 20 ft bgs sample interval; and at the 28 ft to 30 ft bgs sample interval, for boring 100-SB-19. The soil sample analytical reports indicate analytical results were reported for all submitted samples. However, the composite sample analytical results are the only results reported in Appendix A, Data Summary Tables for this boring location. Correct the discrepancies in the affected Report sections or clarify the statement.

2. Section 6.3 Comparison of Observed Constituents of Concern Concentrations to Regulatory Criteria

Permittee's Comment: "Dichloromethane (methylene chloride) was detected in 15 boreholes at all sampling depth intervals. There is no screening level for this constituent."

NMED Comment: The current NMED Soil Screening Levels (SSL) listed in NMED's Risk Assessment Guidance for Site Investigations and Remediation (RA Guidance) dated July 2015 and the December 2014 version of the guidance document list a residential SSL for methylene chloride of 409 milligrams per kilogram (mg/kg); an industrial/occupational SSL of 5,130 mg/kg; and a construction worker SSL of 1,210 mg/kg. The 2012 version of the RA Guidance also included SSLs for methylene chloride. The Permittee must review the analytical results and correct the Report to reflect screening with the current screening level for methylene chloride.

3. Data Summary Tables

NMED Comment: Various discrepancies were noted during the review of the Appendix A, Data Summary Tables.

- a. The Permittee must utilize the current July 2015 RA Guidance screening levels and the most current Environmental Protection Agency (EPA) Regional Screening Levels (RSLs) for all contaminants of concern (COCs) for all submittals. The source(s) of

the screening levels must be clearly cited in the tables and the text of the Report.

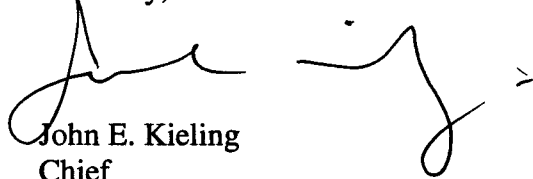
- b. It is unclear where the NMED SSLs listed in Appendix A, Data Summary Tables, for hydrazine, monomethylhydrazine (MMH), and 1, 1-dimethylhydrazine (UDMH) were obtained. The Permittee must utilize the July 2015 NMED RA Guidance residential SSL for hydrazine anhydride (1.78 mg/kg) for screening reported hydrazine concentrations. The most current Environmental Protection Agency (EPA) Regional Screening Levels (RSLs) for the residential exposure scenario must be utilized for MMH (1.4 mg/kg) and UDMH (5.7E-2 mg/kg).
- c. NMED SSLs are available for 1,4-dioxane and 2,3,7,8-Tetrachlorodibenzofuran (2,3,7,8-TCDF). Correct the Appendix A, Data Summary Tables, to reflect the applicable screening levels.
- d. The Data Summary Tables include a discrepancy in sample numbering for samples collected at 100-SB-26. Data Summary Table sample designations are listed as 1506121330-1347 (3-5 feet bgs), 1506121402-1408 (8-10 feet bgs), 1506121441-1501 (18-20 feet bgs), and 1506121500-1556 (28-30 feet bgs). Field note and boring log samples designations are listed as 1506120813-0832, 1506120847-0900, 1506120934-0948, and 1506161012-1018, respectively. Resolve the discrepancy and correct the affected Report sections.
- e. Complete analytical data appears to have not been reported in the tables for various dioxin and furan concentrations that were detected in soil samples (e.g., 100-SB-29 at 3 ft to 5 ft bgs, and 8 ft to 10 ft bgs; 100-SB-20 at 8 ft to 10 ft bgs; and 100-SB-21 at 8 ft to 10 ft bgs). Review the laboratory analytical data reports and revise the Data Summary Tables for the dioxin and furan analytical results for completeness.
- f. Although review of the results for dioxins and furans do not appear to indicate a risk to human health or the environment, the Permittee must address dioxin and furan concentrations in the Report. NMED RA Guidance, Section 2.1, "Human Health Basis", provides the guidance for screening concentrations of dioxins and furans. Review the July 2015 RA Guidance and re-evaluate the reported dioxin and furans concentrations for potential impacts to human health. Include a brief discussion in the revised Report of the risk screen evaluation results.

Although the noted discrepancies in the report do not appear to change the conclusions of the investigation, the Permittee must revise the relevant sections of the Report to address NMED's comments and provide replacement pages where changes were made. The replacement pages must be accompanied by a response letter that cross references NMED's numbered comments and the Permittee's response along with an electronic redline strikeout version of the Report text that shows where all the changes were made. The replacement pages must be submitted no later than **August 31, 2016**.

Mr. Davis
May 24, 2016
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If you have any questions regarding this letter, please contact Gabriel Acevedo at (505) 476-6043.

Sincerely,

A handwritten signature in black ink, appearing to read "John E. Kieling". The signature is fluid and cursive, with a large initial "J" and "K".

John E. Kieling
Chief

Hazardous Waste Bureau

cc: N. Dhawan, NMED HWB
D. Cobrain, NMED HWB
B. Wear, NMED HWB
G. Acevedo, NMED HWB
L. King, EPA 6PD-N
M. Zigmond, NASA WSTF

File: NASA WSTF 2016 and Reading, NASA-15-015