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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

FEB 06 2020

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-19-119

**RE: APPROVAL WITH MODIFICATIONS
NASA WSTF PERIODIC MONITORING REPORT SECOND QUARTER 2019
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHNSON SPACE CENTER WHITE SANDS TEST FACILITY
DOÑA ANA COUNTY, NEW MEXICO
EPA ID #NM08800019434
HWB-NASA-19-014**

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) *NASA WSTF Periodic Monitoring Report – Second Quarter 2019 (PMR)*, dated July 30, 2019. NMED has completed review of the PMR and hereby issues this Approval with the following modifications.

MODIFICATION

1. Section 5.1.3.1, Extraction and Injection Well Flow Rates and Specific Capacities, Page 7

Permittee Statement: “While in operation during the reporting period specific capacities for wells PFI [Plume Front Injection]- 2, 3, and 4 were within their typical ranges.”

NMED Comment: Specific capacities reported for PFI-1, 2, and 4 are significantly outside their reported specific capacity ranges for the reporting period and the prior three reporting quarters. Generally, specific capacities have been outside of respective ranges for PFI-1, 2, and 4 since at least January 2017. Additionally, information provided in Section 5.1.3, Extraction and Injection Well Performance, indicated that excessive gravel was noted during backflushing of PFI-1 and is potentially attributable to a well screen or casing integrity issue. Although the Permittee has indicated that the current productivity of the PFTS extraction well field is more than sufficient to meet the demands of the remediation system and within current typical ranges, a general declining trend in specific capacities for extraction and injection wells over the last five monitoring years is evident and must be addressed. To address the identified issues, the Permittee must implement a program of remediation system well investigation, evaluation, rehabilitation, and repair, as necessary, to address declining specific capacities at various remediation system wells and the potential well integrity issue at PFI-1. Any necessary remediation system extraction or injection well abandonment and replacement must be proposed in a respective work plan for NMED approval following well investigation and evaluation. Address the comment in a response letter and provide replacement pages as necessary.

2. Section 6.4, Summary of Source Area Investigations, Pages 17 through 24

NMED Comment: Provide updated information regarding the groundwater dye tracer investigation conducted at the 200 and 600 Areas at White Sands Test Facility (WSTF). Information provided in the 2018 Second Quarter PMR indicated that National Aeronautics and Space Administration (NASA) was developing a summary report documenting the findings of the investigation. A report documenting the groundwater dye tracer investigation has not been submitted to NMED for review. The Permittee must submit a report documenting the investigation to NMED for review no later than **July 31, 2020**. Address the comment in the response letter and include the additional information in the groundwater dye tracer report.

3. Section 7.1, Groundwater Monitoring and Related Projects, Page 24

NMED Comment: The Permittee’s April 2019 *Monthly Environmental Activity Report* indicated that attempts to sample monitoring wells 200-KV-150, BLM-2-630, BLM-17-550 were unsuccessful due to operational performance issues. Discuss the monitoring well

performance issues and any planned activities to address the issues in the PMR. All identified issues noted during sampling of wells for the monitoring period must also be reported in the respective PMR. Address the comment in the response letter, include the additional information in the PMR, and provide replacement pages.

4. Figure 6.5, Plume Front Groundwater Elevations and Trichloroethene Concentrations for the Reporting Period, Page 46

NMED Comment: Two consecutive contours depicted on the figure are labeled as 4038 feet. This was noted near the mapped location of extraction well PFE-4A. Review the figure groundwater elevation contours and ensure they are representative of the corresponding groundwater data and are accurately labeled. The discrepancy was also noted on Figure 6.1. Address the comment in the response letter and provide replacement figures.

5. Table 4.2, Groundwater Elevation Data, Pages 54 through 57

NMED Comment: Groundwater elevation data listed for monitoring wells BLM-3-182, BLM-36, BLM-38, BLM-39, BLM-40-517, BLM-41-420, BLM-6-488, BLM-9-419, BW-1-268, BW-3-180, JER-1, JER-2, JP-1-424, JP-2-447, MPE-2, MPE-3, MPE-4, MPE-5, MPE-7, NASA 10, NASA 3, NASA 4, NASA 5, NASA 6, NASA 8, PFE-1-PZ, PFE-3-PZ, PFE-4, PFE-6, PL-10, PL-1-486, PL-2-504, PL-3-453, PL-4-464, PL-6, PL-7, PL-8, ST-2-466, ST-3-486, ST-4-481, ST-5-481, ST-7, WB-14, WB-5, WW-1-452, WW-3, and WW-5 do not correspond to groundwater contour intervals at the well locations on Figures 4.1, 6.1, 6.2, and 6.5. The groundwater elevations for these wells also do not correlate with prior data reported for the wells. Review all groundwater elevation data provided on the table, ensure that the data are accurate, correct any data discrepancies, revise the table and any affected PMR sections and figures, and provide replacement pages.

6. Table 5.1, PFTS and MPITS [Mid-Plume Interception and Treatment System] Operational Status for Reporting Period, Pages 58

NMED Comment: Table information indicates the PFTS operated for 30 of 30 days during April 2019; however, Table 5.2 PFTS and MPITS System Shutdowns for the Reporting Period, indicates the PFTS was shutdown for a period of three days (April 26th to April 29th). Revise the table information to reflect the three-day shutdown period or correct the Table 5.2 information. Address the comment in the response letter, revise the table and any other affected PMR section and table information, and provide replacement pages.

7. Table 5.2, PFTS and MPITS System Shutdowns for the Reporting Period, Pages 59 through 60

NMED Comment: Address the following Table 5.2 comments:

- a. The reported shutdown and restart dates for the PFTS for April 26th through 29th are transposed on the table. Correct the table information to reflect the correct order of dates for system shutdown and restart.
- b. Correct the transcription error for the listed February 20, 2019 restart date for the MPITS.

Address the comments in the response letter, revise any affected PMR section and table information, and provide replacement pages.

8. Table 5.4, PFTS Extraction and Injection Well Flow Rates for Reporting Period, Page 62

NMED Comment: Table 5.4 issues must be addressed as follows:

- a. The operational percentage of the well design flow rate for PFE-2 was incorrectly reported as 97%. The actual operational percentage for the well based on the table flow rate data is 90%. Address the comment in the response letter and provide a replacement table with the corrected data.
- b. The overall percentage of the well design flow rate for PFI-2 was incorrectly reported as 63%. The actual overall percentage of well design is 96% based on table flow rate data. Address the comment in the response letter and provide a replacement table with the corrected data.

9. Appendix E, Time Concentration Plots

NMED Comment: As provided in NASA's January 22, 2020 *Response to Approval with Modification of NASA WSTF Periodic Monitoring Report for First Quarter 2019*, the Permittee must continue to report and track low-level N-nitrosodimethylamine (NDMA) detections on the Appendix E table and figure. Ensure that all Appendix E table data and figure information is accurate and complete. Update the PMR accordingly and provide replacement pages.

The Permittee must provide replacement pages that address NMED's modifications. In addition, a response letter that cross-references where each of the modifications were addressed must be provided. The response letter and replacement pages must also be provided as electronic copies. Electronic copies of the redline-strikeout version of the PMR and the revised PMR must also be submitted to NMED no later than **April 10, 2020**.

A report documenting the 200 and 600 Area groundwater dye tracer investigation must be submitted to NMED for review no later than **July 31, 2020**.

This approval is based on the information presented in the document as it relates to the objectives of the work identified by NMED at the time of review. Approval of this document does not constitute agreement with all information or every statement presented in the document.

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

Sincerely,



Kevin Pierard
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
B. Wear, NMED HWB
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L. King, EPA Region 6 (GLCRRC)
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