

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
White Sands Test Facility
P.O. Box 20
Las Cruces, NM 88004-0020



June 14, 2022

Reply to Attn of: RE-22-074

Mr. Rick Shean, Bureau Chief
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

Subject: NASA White Sands Test Facility (WSTF) Monthly Environmental Activity Report
for May 2022

Enclosed is the NASA White Sands Test Facility (WSTF) Monthly Environmental Activity Report for May 2022. This reporting format includes an Executive Summary that provides important events/observations as Enclosure 1, a paper copy of the report as Enclosure 2, and a CD-ROM with the report in PDF as Enclosure 3.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions or comments concerning this submittal, please contact Amanda Skarsgard of my staff at 575-571-9668.

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For: Timothy J. Davis
Chief, Environmental Office

3 Enclosures

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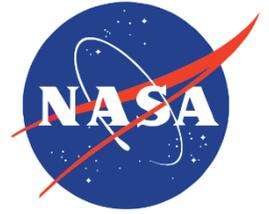
Mr. Gabriel Acevedo
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

Executive Summary

The following summarizes important information associated with NASA White Sands Test Facility (WSTF) environmental program activities in May 2022:

- NASA completed shipments of hazardous waste, asbestos waste, and solid waste in May 2022.
- NASA sampled 40 of 40 groundwater monitoring wells scheduled for May 2022 and scheduled 31 groundwater monitoring wells for sampling in May 2022.
- NASA operated the Mid-plume Interception and Treatment System on 31 of 31 days in April 2022 and treated 0.96 acre-feet of contaminated groundwater and 5,349 gallons of investigation-derived waste (IDW).
- NASA operated the Plume Front Treatment System on 27 of 31 days in May 2022 and treated 66.0 acre-feet of contaminated groundwater. NASA completed scheduled maintenance at the PFTS.
- NASA continues follow-on activities associated with the recent perched groundwater investigation. NASA also continued extraction of perched groundwater at monitoring well 600-G-138.
- NASA continued developing the NMED-required investigation work plan for the newly identified SWMU in the 500 Area (former oxidizer burner).
- NASA continued project planning for several monitoring well projects.
- NASA submitted four documents to the NMED Hazardous Waste Bureau in May 2022.
- There were no reportable non-compliance issues in May 2022.

National Aeronautics and Space Administration



Monthly Environmental Activity Report
May 2022

Report Deadline: June 15, 2022

NASA Johnson Space Center White Sands Test Facility
Monthly Environmental Activity Report

May 2022

NM8800019434

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For: Timothy J. Davis
Chief, Environmental Office

Date

National Aeronautics and Space Administration

Johnson Space Center
White Sands Test Facility
12600 NASA Road
Las Cruces, NM 88012
www.nasa.gov/centers/wstf

www.nasa.gov

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1.0 Waste Management Activities

1.1 NASA completed the following waste shipments in May 2022.

Date	Shipped To	Type of Waste	No. of Containers	Amount of Waste	Disposition
5/17/22	Corralitos Landfill, Las Cruces, NM	Asbestos	1	28 kg	Landfill (Special ACM Cell)
5/17/22	Corralitos Landfill, Las Cruces, NM	Solid Waste	4	2,017 kg	Landfill
5/31/22	US Ecology, Beatty, NV	Hazardous Waste	3	278 kg	Macroencapsulation, Solidification, or Off-site Management

- NMED is reviewing the Response to Approval with Modifications Closure Certification Report for the NASA WSTF Fuel Treatment Unit (FTU) (August 31, 2020).

2.0 Environmental Monitoring

2.1 NASA performed sampling at 40 of 40 groundwater monitoring wells or zones scheduled for sampling in May 2022, in accordance with the approved Groundwater Monitoring Plan (GMP). Initial sampling of well WW-4 after installation of the new Water FLUTE sampling system was postponed from April to May due to resource availability. Previous deviations from the planned sampling schedule are described below and have been reported to NMED in previous monthly reports:

- Wells 400-IV-123 (scheduled for sampling in January 2022), BLM-1-435 (scheduled for sampling in April 2021), PL-3-453 (scheduled for sampling in December 2020), and 400-C-118 (scheduled for sampling in November 2020) have not been sampled because the water levels are not sufficient for sampling.
- Well NASA 9, scheduled for sampling in October 2020, cannot be sampled because access to the screened interval was prevented by the intrusion of roots into the well casing and screen. NASA evaluated the monitoring well and has determined that it should be abandoned. NMED approved the 2021 GMP with a modification that required submittal of a work plan to replace well NASA 9 no later than April 29, 2022. NASA submitted the work plan for well replacement on April 29, 2022.
- Well BLM-28-515, scheduled for sampling in July 2019, cannot be sampled because of sampling system issues described in previous monthly reports. NASA plans to abandon and replace this well (Section 3.17).

2.2 NASA performed other regulatory groundwater sampling requirements as scheduled and as allowed by operational status. NASA did not sample wells PFE-1, PFE-3, and MPE-9 because they were not operational due to equipment failure.

2.3 NASA developed the June 2022 groundwater sampling schedule and plans to sample 31 groundwater monitoring wells or zones based on GMP requirements.

3.0 Corrective Actions/Investigations

3.1 Mid-plume Interception and Treatment System Operations

Days Operated	Average Flow Rate (gpm)	Volume Extracted and Treated (acre-feet)	Volume of Groundwater Discharged to Infiltration Basin (acre-feet)	Volume of IDW Treated and Discharged to the Infiltration Basin (gallons)
31 of 31	7.7	0.96	0.96	5,349

Shutdown Date	Restart Date	Shutdown Status	Discussion
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There were no shutdowns of the MPITS in May 2022.

3.2 Plume Front Treatment System Operations

Days Operated	Average Flow Rate (gpm)	Volume Extracted/ Treated (acre-feet)	Volume Injected (acre-feet)	Volume Discharged to Grade (acre-feet)	Volume Discharged to Modu-Tank (acre-feet)
27 of 31	561	66.0	65.09	0.33	0.23

Shutdown Date	Restart Date	Shutdown Status	Discussion
4/21/22	5/5/22	Planned	NASA shut the system down for scheduled maintenance.
5/22/22	5/23/22	Planned	NASA shut the system down to repair two UV lamps.

3.3 200 Area Investigation

- NMED is reviewing the *NMED Disapproval Response for 200 Area and 600 Area Vapor Intrusion Assessment Report* (January 30, 2020).

3.4 400 Area

- NMED is reviewing the *Response to Disapproval of 400 Area Supplemental Groundwater and Soil Vapor Monitoring Plan* (July 14, 2021), the *NASA WSTF 400 Area Closure Investigation Report – NMED Third Disapproval Response* (July 27, 2021), and the *Response to Disapproval of 300 Area Supplemental Abbreviated Drilling Work Plan* (July 14, 2021).

3.5 600 Area Perched Groundwater Extraction Pilot Test and Investigation

- In May 2022, NASA extracted approximately 175 gallons of perched groundwater from monitoring well 600-G-138 in accordance with NMED’s March 1, 2013 *Approval Time*

Extension for Implementation of the Perched Groundwater Extraction Pilot Test at the 600 Area. Groundwater elevation measurements indicate there is approximately 2.98 feet of perched groundwater within this well. Extracted groundwater was containerized for treatment at the Mid-plume Interception and Treatment System (MPITS) and discharged in accordance with DP-1255.

- NASA performed initial groundwater the new conventional monitoring wells 600A-001-GW and 600A-002-GW in accordance with the current NMED-approved GMP. NASA continued developing the perched groundwater investigation report that is due to NMED by June 30, 2022.
- NASA prepared and submitted the *Request for a “Contained-in” Determination for Contaminated Media Associated with the 600 Area Perched Groundwater Abbreviated Investigation Work Plan* on March 22, 2022. NMED approved the request and granted a “no longer contained in determination” on April 18, 2022. It is anticipated that the soil cuttings generated from the drilling activities will be disposed of in the June 2022 timeframe.

3.6 SWMUs 2, 8, and 34 and AOC 51 (Wastewater Lagoons)

- NMED is reviewing the *NASA White Sands Test Facility (WSTF) 200 Area Wastewater Lagoons Closure (SWMU 8) Investigation Report* (November 25, 2019), the *NASA White Sands Test Facility (WSTF) 600 Area Wastewater Lagoons Closure (SWMU 34) Investigation Report* (November 26, 2019), the *NASA White Sands Test Facility (WSTF) 100 Area Wastewater Lagoons Closure (SWMU 2) Investigation Report* (August 3, 2020), and the *NASA White Sands Test Facility (WSTF) STGT Wastewater Lagoons Closure (AOC 51) Investigation Report* (October 13, 2020).

3.7 SWMU 10 (200 Area Hazardous Waste Transmission Lines [HWTL])

- NMED is reviewing the *Response to Second Disapproval of NASA WSTF 200 Area HWTL (SWMU 10) Investigation Report and Risk Assessment Report* (March 4, 2022).

3.8 SWMU 16 (600 Area BLM Off-site Soil Pile)

- NMED is reviewing the *Accelerated Corrective Measures Work Plan for the NASA WSTF SWMU 16 (600 Area BLM Off-Site Soil Pile)* (September 28, 2021).

3.9 SWMUs 21-27 (Septic Tanks)

- NMED is reviewing the *Response to Second Disapproval of NASA White Sands Test Facility (WSTF) Septic Tanks (SWMUs 21-27) Investigation Report* (May 18, 2021).

3.10 SWMUs 29-31 (Small Arms Firing Ranges)

- NMED is reviewing the *Response to Second Disapproval Small Arms Firing Ranges (SWMUs 29-31) Remedy Completion Report and Risk Assessment Report* (August 3, 2020).

3.11 SWMU 33 (Test Stand 302 Cooling Water Pond)

- NMED disapproved the *SWMU 33 Historical Investigation Summary and Investigation Work Plan* (August 17, 2020) on May 9, 2022 and directed NASA to address 13 comments and submit a revised work plan no later than September 15, 2022.

3.12 SWMU 47 (500 Area Fuel Storage)

- NMED is reviewing the *Response to Second Disapproval of 500 Area Fuel Storage (SWMU 47) Investigation Work Plan* (June 29, 2021).

- 3.13 SWMU 49 (700 Area Landfill)
- NMED is reviewing the *700 Area Landfill Closure (SWMU 49) Phase I Investigation Report* (April 29, 2022).
- 3.14 SWMU 50 (TDRS Diesel Release)
- NMED is reviewing the *Response to Disapproval of First Tracking Data Relay Satellite System (TDRSS) Diesel Release (SWMU 50) Investigation Report and Risk Screen Evaluation Report* (November 9, 2020).
- 3.15 SWMU 52 (Second TDRS UST)
- NMED is reviewing the *Response to Disapproval of NASA WSTF Second TDRSS Underground Storage Tank (SWMU 52) Release Assessment Report* (April 26, 2022).
- 3.16 Newly Identified SWMU Near 500 Area (Former Oxidizer Burner)
- NASA continued developing an investigation work plan for the former oxidizer burner in the 500 Area. The unit will be identified as a SWMU in the Permit at an appropriate time. The work plan is due to NMED no later than August 31, 2022.
- 3.17 Groundwater Monitoring Well Abandonment, Installation, and Reconfiguration
- NMED is reviewing the *NASA WSTF Westbay Well Reconfiguration Work Plan for Wells PL-7, PL-8, PL-10, ST-5, and WW-3* (April 29, 2021).
 - NASA continued planning for the abandonment of well BLM-28 in accordance with NMED's January 10, 2022 approval of the *Well Abandonment Work Plan for Well BLM-28* (April 29, 2021).
 - NASA continued planning the reconfiguration of well BW-4 as described in the *Response to Approval with Modifications of NASA WSTF Well Reconfiguration Work Plan for Well BW-4* (March 8, 2022).
 - NASA continued planning for well installation activities in accordance with NMED's May 2022 approval of the *NASA WSTF Work Plan for Drilling and Installation of Monitoring Well 600B-001-GW* (BLM-28 replacement; August 31, 2021) and the *Work Plan for Drilling and Installation of Monitoring Well 600C-001-GW at the NASA White Sands Test Facility (WSTF)* (deeper well adjacent to BLM-10-517; August 31, 2021).
 - NASA continued planning for the abandonment of wells 200-SG-2 and 200-SG-3 in accordance with NMED's January 10, 2022 approval of the *Well Plugging Plan of Operations for Multipoint Soil Vapor Groundwater Monitoring Wells 200-SG-2 and 200-SG-3* (November 30, 2021).
- 3.18 Targeted Mobile Remediation Process (TMRP)
- NMED is reviewing the *NASA WSTF Targeted Mobile Remediation Process Pilot Test Report* (March 8, 2022).
 - NASA continued project planning and procurement activities for the small soils investigation to be performed at well ST-1-541 in accordance with the NMED-approved *Well ST-1-541 Contaminated Groundwater Release Abbreviated Investigation Work Plan* (June 3, 2021).
- 3.19 Groundwater Data Representativeness Evaluation
- NMED is reviewing the *Abbreviated Investigation Work Plan for Groundwater Data Representativeness, Phase 2: FLUTE Well Evaluation* (November 2, 2021).

3.20 Dye Tracer Test Investigation

- NASA continued evaluating NMED's comments in the April 5, 2022 approval with modifications of the *Report on Tracer Testing in the 200/600 Areas and Mid-plume Constriction Area* (August 31, 2020).

3.21 Site-wide Geophysics Investigation

- NASA and the off-site geophysics subcontractor completed the passive seismic field survey in the WSTF Plume Front area in February 2022. Geophones were deployed across a 1 x 2-mile area that incorporates the Plume Front remediation wells, footprint of the westernmost groundwater plume, and the Western Boundary Fault Zone. The subcontractor continued passive seismic data download, processing, and reporting in May 2022. NASA expects to receive initial data from the subcontractor in June 2022 and process the data for inclusion in the site-wide geophysical investigation report that will be submitted to NMED in the fall of 2022.

4.0 Non-compliance Issues

The NASA Hazardous Waste Permit requires that other non-compliance conditions be reported to NMED. There were no instances of other non-compliance conditions during this reporting period that require notification under the Permit. The criteria for non-compliance reporting in this report (as defined by 40 CFR 270.30 (l)(10) and EPA interpretations at RCRA Faxbacks 13142 and 13686) would be any non-compliance with permit conditions that is not classified as minor recordkeeping, reporting, and similar oversights that were corrected once discovered. Additionally, there were no issues meeting the previously defined criteria (minor items immediately corrected) that were part of a repeating pattern of non-compliance.

5.0 Documents Submitted

5.1 Documents submitted to the Hazardous Waste Bureau in May 2022

- NASA submitted the revised *2022 Soil Vapor Risk Based Concentrations (RBC) Memorandum* on May 10, 2022.
- NASA submitted the *Fee Assessment for the Targeted Mobile Remediation Process Pilot Test Report* on May 24, 2022.
- NASA submitted the *Request for 30-day Extension of Hazardous Waste Accumulation Time Limit* by email on May 27, 2022.
- NASA submitted the *Contingency Plan (Permit Attachment 3) Annual Update Submission - Hazardous Waste Permit No. NM8800019434* on May 31, 2022.

5.2 Pertinent documents submitted to other NMED bureaus in May 2022

- NASA submitted the *Opacity Observation Report (Units 6,7,8,17)* to the Air Quality Bureau on May 9, 2022.
- NASA submitted the *Completion of Public Notice Requirements for NASA White Sands Test Facility (WSTF) Discharge Permit Renewal and Modification Application for Discharge Plan (DP)-1255* to the Ground Water Quality Bureau on May 10, 2022.
- NASA submitted the *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units – 40 CFR Part 60, Subpart Dc (NSPS Dc) Notification of Initial Startup* to the Air Quality Bureau on May 23, 2022.

- NASA submitted the *Written Release Notification* to the Ground Water Quality Bureau on May 31, 2022.
- 5.3 Status of documents previously submitted to the NMED Hazardous Waste Bureau for which additional correspondence was recorded in May 2022
- NASA submitted the *NASA WSTF RCRA Permit Renewal Application* on June 5, 2019. NASA received NMED's August 13, 2020 *Administrative Completeness Determination* via email on August 14, 2020. NASA submitted the *Administrative Completeness Determination and Fee Assessment for NASA White Sands Test Facility RCRA Permit Renewal Application* on August 31, 2020. This submittal informs NMED that NASA is coordinating electronic payment of the \$70,000 permit renewal fee, to be transferred at a later date. NASA submitted the *Administrative Completeness Determination and Fee Assessment NASA White Sands Test Facility RCRA Permit Renewal Application* on October 2, 2020. NMED notified NASA on May 25, 2022 that the Draft Permit was available for review and public comment on the NMED website.
 - NASA submitted the *NASA WSTF 300 Area Test Stand 302 Cooling Water Pond (SWMU 33) Investigation Work Plan (IWP) and Historical Information Summary (HIS)* on August 17, 2020. NASA received NMED's September 22, 2020 fee assessment for review of the plan on October 13, 2020 and provided the \$15,000 review fee on October 28, 2020. NMED disapproved the work plan on May 9, 2022 and directed NASA to address 13 comments and submit a revised work plan no later than September 15, 2022.
 - NASA submitted the *NASA White Sands Test Facility (WSTF) Background Groundwater Study Investigation Work Plan* on February 18, 2021. NASA received NMED's April 8, 2021 fee assessment and invoice for review of the work plan and provided the \$5,000 review fee on April 21, 2021. NMED disapproved the work plan on May 10, 2022 and directed NASA to address two comments and submit a revised work plan no later than July 29, 2022.
 - NASA submitted the *NASA White Sands Test Facility Monitoring Well ST-1-541 Contaminated Groundwater Release Abbreviated Investigation Work Plan* on June 3, 2021. NASA received NMED's July 15, 2021 assessment and invoice for review of the plan and provided the \$5,000 review fee on August 17, 2021. NMED approved the work plan on April 25, 2022 and directed NASA to perform the investigation and submit an investigation work plan no later than November 28, 2022.
 - NASA submitted the *NASA WSTF Work Plan for Drilling and Installation of Monitoring Well 600B-001-GW* on August 31, 2021. NASA received NMED's October 14, 2021 fee assessment and invoice for review of the plan and provided the \$2,000 review on October 28, 2021. NMED approved the work plan with modifications on April 25, 2022 and directed NASA to submit a well completion report no later than April 28, 2023.
 - NASA submitted the *Work Plan for Drilling and Installation of Monitoring Well 600C-001-GW at the NASA White Sands Test Facility (WSTF)* on August 31, 2021. NASA received NMED's October 14, 2021 fee assessment and invoice for review of the plan and provided the \$2,000 review on October 28, 2021. NMED approved the work plan with modifications on April 25, 2022 and directed NASA to submit a well completion report no later than April 28, 2023.
 - NASA submitted the *NASA WSTF Targeted Mobile Remediation Process Pilot Test Report* on March 8, 2022. NASA received NMED's April 27, 2022 fee assessment and invoice for review of the report and provided the \$10,000 review fee on May 24, 2022.