

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



December 10, 2014

Reply to Attn of: RE-14-134

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

Subject: WSTF Monthly Environmental Activity Report for November 2014

Enclosed is the WSTF Monthly Environmental Activity Report for November 2014. 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 known violations.

If you have any questions or comments concerning this submittal, please contact Tim Davis of my staff at 575-524-5024.

A handwritten signature in blue ink, appearing to read "Radel Bunker-Farrar".

Radel Bunker-Farrar
Chief, Environmental Office

3 Enclosures

cc:

Ms. Vicky Baca
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

Mr. Baird Swanson (*CD only)
Ground Water Quality Bureau
New Mexico Environment Department
5500 San Antonio Drive NE
Albuquerque, NM 87109

Executive Summary

The following summarizes important information associated with NASA White Sands Test Facility (WSTF) environmental program activities in November 2014:

- NASA completed shipments of hazardous and universal wastes in November 2014.
- NASA performed sampling at 21 of 45 groundwater monitoring wells and completed all required groundwater remediation system sampling scheduled for November 2014.
- The Plume Front Treatment System operated on 21 of 30 days in November 2014 at an average flow rate of 740 gallons per minute. The PFTS extracted and treated approximately 63.4 acre-feet of groundwater.
- The Mid-plume Interception and Treatment System operated on 11 of 30 days in November 2014 and treated approximately 0.71 acre-feet of groundwater and investigation-derived waste.
- NASA continued the evaluation of chemical analytical data from 200 Area soil and bedrock core samples collected during the Phase II investigation and continued preparation of the investigation report. NASA also began evaluating chemical analytical data from soil vapor and groundwater samples collected at monitoring wells in the 100, 200, and 600 Areas.
- NASA continued post-introduction sampling required for the 200/600 Area and MPCA groundwater dye tracer test and submitted samples to the off-site laboratory for analysis.
- NASA continued project planning associated with the Investigation Work Plan for the 100 Area Burn Pit (SWMU 1), the 100 Area Container Storage Area (SWMU 3), and the 600 Area Burn Pit (SWMU 15).
- NASA continued development of the Historical Information Summaries and Investigation Work Plans for the 200 Area Hazardous Waste Transmission Line (SWMU 10), the 600 Area BLM Off-site Pile (SWMU 16), and three small arms firing ranges (SWMUs 29-31).
- NASA continued planning for the investigation and removal of several WSTF septic tanks and the investigation and closure of the WSTF wastewater lagoons.
- NASA extracted 197 gallons of perched contaminated groundwater from monitoring well 600-G-138 in November 2014.
- NASA submitted several documents to NMED in November 2014, including a fee payment for the annual unit audit, fee assessments for the second quarter PMR and annual RSMP update, a request for sample schedule variance, a request for additional time to implement the lagoon investigation, and the 2014 Waste Minimization Plan.
- During November 2014, NASA continued a project to upgrade the sanitary sewer at WSTF and connect to the City of Las Cruces sewer system.
- There were no reportable non-compliance issues in November 2014.



National Aeronautics and
Space Administration

Monthly Environmental Activity Report

November 2014

Submitted December 12, 2014

NM8800019434

NASA Johnson Space Center White Sands Test Facility

12600 NASA Road Las Cruces, New Mexico 88012

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

November 2014

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Radel Bunker-Farrar

Chief, Environmental Office

12-10-14

Date

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- During November 2014, NASA continued a project to upgrade the sanitary sewer at WSTF and connect to the City of Las Cruces sewer system.
- There were no reportable non-compliance issues in November 2014.

1.0 Waste Management Activities

- 1.1 NASA completed a shipment of universal waste to the Big Green Box in Anaheim, California on November 5, 2014. The shipment consisted of a 28-pound (13 kg) box of lithium ion/lithium metal batteries and a 27-pound (12 kg) box of NiCad batteries. The batteries will be recycled.
- 1.2 NASA completed a shipment of hazardous waste to Veolia in Henderson, Colorado on November 19, 2014. The shipment consisted of seven containers with 260 pounds (118 kg) of hazardous waste and one intermediate bulk container with 2,596 pounds (1,180 kg) of hazardous waste.

2.0 Environmental Monitoring

- 2.1 Because of previous delays in groundwater sampling caused by resource limitations inflicted by other labor-intensive field projects, primarily the groundwater dye tracer test, anomalous NDMA evaluation, and Westbay well conversion effort, groundwater sampling scheduled for November 2014 was not completed. NASA performed sampling at 21 of 45 groundwater monitoring wells or zones scheduled for sampling in November 2014, as well as all 24 wells and zones that were rescheduled from October 2014. The 24 wells or zones not sampled in November 2014 were rescheduled for December 2014. As indicated in NASA's November 24, 2014 request for a schedule variance, it is likely that resource limitations will continue to impact groundwater sampling into January 2015. NASA will closely monitor groundwater sampling, evaluate the impact of delayed sampling on the groundwater assessment program, and reschedule the sampling of less critical monitoring wells to ensure all project objectives can be accomplished without negative effects on groundwater monitoring.
- 2.2 Sampling of groundwater remediation system influent, effluent, and operational extraction wells was performed in accordance with applicable permits and approved plans.

3.0 Corrective Actions/Investigations

3.1 Plume Front Treatment System

- PFTS Operation – The PFTS operated on 21 of 30 days in November 2014, at an average flow rate of 740 gallons per minute. The system extracted and treated approximately 63.4 acre-feet of groundwater, most of which was injected to the aquifer following treatment. Approximately 0.28 acre-feet of groundwater were discharged to the on-site Modu-tank system during system startup events. Approximately 1.16 acre-feet were discharged to grade at the PFI wells during injection well backwashing and system startup activities.
- PFTS Shutdowns, Repairs, and Modifications – There was one unplanned shutdown and two planned shutdowns of the PFTS in November 2014. On November 4, 2014 the system was shut down to perform maintenance on PFE-2 and PFE-3 and to perform an evaluation of PFE-4. The system was restarted on November 14, 2014. On November 17, 2014 the system shut down automatically because of a high differential filter pressure. The filters were replaced and the system was restarted within three hours. On November 24, 2014 the system was shut down to continue a series of tests intended to evaluate the effects of various resistances, cable lengths, and baud rates on programmable logic controller signal strength and quality. These tests require the system to be offline for several hours during each setup. Additional short-duration shutdowns are expected as these tests continue into December 2014.

3.2 Mid-plume Interception and Treatment System

- MPITS Operation – The MPITS operated on 11 of 30 days in November 2014 and treated approximately 0.69 acre-feet of groundwater and approximately 0.02 acre-feet of IDW. All treated groundwater was discharged to the infiltration basin.

- MPITS Shutdowns, Repairs, and Modifications – Continued troubleshooting of the MPITS leak detection was the primary cause of system downtime in November 2014. NASA identified and repaired several minor leaks and tested the pipeline to ensure repairs were successful. However, irregular resistance readings and poor connection faults continued to trigger leak detection alarms during the first several weeks of November 2014. The system was restarted on November 20, 2014 and remained operational through the end of the month. Leak detection system troubleshooting and repair will continue into December 2014. No untreated water has been released to the environment.

3.3 100/600 Area Burn Pit and Container Storage Area Investigation

- NASA continued project planning and procurement activities related to the recently approved *Investigation Work Plan for the 100 Area Burn Pit (SWMU 1), the 100 Area Container Storage Area (SWMU 3), and the 600 Area Burn Pit (SWMU 15)*.

3.4 200 Area Investigation

- NASA continued preparation of the 200 Area Phase II Investigation Report, which is scheduled for submittal to NMED in January 2015.
- Analytical data from the comprehensive soil vapor and groundwater sampling at 100, 200, and 600 Area soil vapor and groundwater monitoring wells were received, verified, and validated in November 2014. NASA initiated the review and evaluation of these data for inclusion in the 200 Area Phase II Investigation Report.
- NASA completed the verification and validation of chemical analytical data from soil samples collected during the 200 Area Phase II investigation fieldwork. These data are currently being evaluated for inclusion in the 200 Area Phase II Investigation Report.
- NASA completed the evaluation of chemical analytical data from bedrock core samples collected during the 200 Area Phase II investigation fieldwork and continued development of the report on the matrix diffusion study.

3.5 600 Area Investigation

- NASA continued extracting perched groundwater from monitoring well 600-G-138 in November 2014 in accordance with NMED's March 1, 2013 *Approval Time Extension for Implementation of the Perched Groundwater Extraction Pilot Test at the 600 Area*. Approximately 197 gallons of perched groundwater were removed from 600-G-138 in November 2014.

3.6 Groundwater Dye Tracer Test

- NASA continued a groundwater dye tracer test in accordance with the NMED-approved *Work Plan for Tracer Testing in the 200/600 Areas and Mid-plume Constriction Area*. Four fluorescent dyes were introduced at four locations in June 2014, and post-introduction groundwater monitoring continued throughout November 2014.
- Groundwater tracer samples are regularly collected and submitted to the off-site contracted analytical laboratory as indicated in the work plan. Data are being received and reviewed by NASA project personnel. There has been one confirmed detection of tracer dye in a monitoring well in the Mid-plume area. NASA installed groundwater tracer dye sampling equipment in several additional groundwater monitoring wells to expand the dye monitoring network.

3.7 Soil Background Study

- NASA prepared and submitted a response to NMED's June 26, 2014 *Notice of Disapproval for the Soil Background Study Investigation Report* on August 27, 2014. NMED provided a second NOD on October 15, 2014. NASA is developing the required response for submittal to NMED on or before December 12, 2014.

3.8 Wastewater Lagoon Investigation and Closure

- NASA continues to plan for the investigation and closure of the WSTF wastewater lagoons in accordance with the NMED-approved *Wastewater Lagoon Areas Closure Investigation Work Plan*. NASA submitted a request for additional time to implement the investigation on November 24, 2014. In that request, NASA indicated that the investigation would be initiated by February 28, 2015 or NASA would notify NMED by February 1, 2015 if additional time is required.

3.9 Septic Tank Investigation and Removal

- NASA continues to plan for the removal of several septic tanks and the investigation of the SWMU 22 tank location. Several tanks that are not currently in use were pumped and rinsed by an off-site contractor in November 2014.
- NASA anticipates starting septic tank removal activities at tanks that are not currently in use prior to the end of the 2014 calendar year. Septic tanks that are currently in use will be removed following completion of the WSTF sanitary sewer.

3.10 JER Anomalous NDMA Detections

- NASA continued efforts to purge and sample JER-1 and JER-2 in accordance with the NMED-approved NASA WSTF Investigation Work Plan for Evaluating Anomalous Detections of NDMA in Monitoring Wells JER-1 and JER-2. Field technicians were previously unable to access several of the wells' pumping ports, and repeated attempts in November 2014 also failed. The wells will be camera logged in December 2014 in an effort to identify problems with the pumping ports and determine if they can be resolved in order to continue with the evaluation.

3.11 SWMUs 10, 16, and 29-31

- NASA continued development of the Historical Information Summaries and Investigation Work Plans for SWMU 10 (200 Area Hazardous Waste Transmission Line), SWMU 16 (600 Area BLM Off-Site Pile), SWMU 29 (Small Arms Range at STGT), SWMU 30 (200 Area Small Arms Range), and SWMU 31 (WB-2 Small Arms Firing Range). Investigation Work Plans and Historical Information Summaries for SWMUs 16, 29, 30, and 31 are due to NMED by December 30, 2014. The Investigation Work Plan and Historical Information Summary for SWMU 10 are due to NMED by June 30, 2015, but will be submitted early in order to combine the investigation fieldwork for SWMU 10 with that for SWMU 16.

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 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(1)(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 Miscellaneous

5.1 Sanitary Sewer Upgrade

During November 2014, NASA continued the project to upgrade the sanitary sewer system at WSTF and connect to the City of Las Cruces (CLC) sewer system. The sewer upgrade includes a combination of both gravity and force main in addition to four lift stations. NASA will continue to keep NMED informed about the status of the sewer project, and its potential impacts on other WSTF projects. Construction progress to date includes the following:

- NASA continues to negotiate the Transfer Agreement with the City of Las Cruces. The Service Agreement was signed and approved by the City of Las Cruces on October 29, 2013. The Transfer Agreement addresses NASA's transfer of ownership of Line A and the Holman Lift Station (HLS) to the City.
- Construction of Line A along Holman Road is substantially complete. A final hydrostatic leak test and acceptance procedure with NASA and the City of Las Cruces was completed.
- Construction continues on the HLS. The lift station pumps have been installed. Connection of piping and electrical power is complete. Installation of controls and instrumentation is in progress. Water service inside the HLS is complete. Grouting and sealant coating of the wet well is complete.
- Line B (from Holman Road to the WSTF 100 Area) is substantially complete. Manholes have been installed. Grouting and sealant coating of the inside of the manholes is complete and setting and pouring of the manhole rings is also complete. A final low pressure air leak test and cleaning of the line were completed.
- Line C (the force main from the Second TDRSS Ground Terminal (STGT) to the WSTF 400 Area) is substantially complete. A boring under the STGT access road, and installation of pipe casing under the road, is complete. Validation, testing, and checkout of Lift Station #1 is in progress. A final hydrostatic leak test of the line was completed.
- Line D (the force main from the 400 Area to the 200 Area) is substantially complete. A final hydrostatic leak test was completed.
- Line E (from the 800 Area to the 300 Area) is complete. Installation of connecting manholes, grouting, application of sealant coating, and setting of rings is complete. A final low pressure air leak test and acceptance procedure with NASA is complete.
- Line E (from the 100 Area to the 200 Area) is substantially complete. Grouting, application of sealant coating, and setting of rings is complete. A final low pressure air leak test and acceptance procedure with NASA is complete.
- Line F (400 Area) is substantially complete. A final low pressure air leak test was completed.
- Lines G and H (from several buildings in the 100 Area to Line B) are substantially complete, including the completion of the remaining manholes. Grouting and sealant coating of the inside of the manholes is complete. A final low pressure air leak test of the line was completed.
- Line I (from Lift Station #3 to Line E) is substantially complete. Lift Station #3 has been installed, and backfilling and installation of control panels is complete. A final hydrostatic leak test was completed. Backfilling and compaction around the lift station is complete.
- Line J (from the Hypervelocity facility to Lift Station #3) is substantially complete. A final low pressure air leak test was completed.

- Line K (from Lift Station #3 to the 800 Area) is substantially complete. A final low pressure air leak test was completed.
- Line L (from various 400 Area buildings toward Lift Station #2) is substantially complete. A boring under Road L, and installation of pipe casing under the road, is complete. Installation of the 8-inch gravity line in the pipe casing is complete. Installation of connecting manholes, grouting, application of sealant coating, and setting of rings is complete. Lift Station #2 has been installed, and backfilling and installation of control panels is complete. A final low pressure air leak test of the line was completed. Application of the sealant coating is also complete.

6.0 Documents Submitted

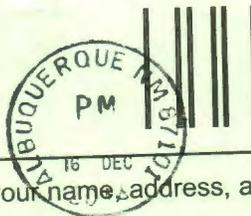
6.1 Documents submitted in November 2014

- NASA submitted the *NASA White Sands Test Facility (WSTF) 2014 Annual Unit Audit Fee Payment* of \$54,400 on November 14, 2014.
- NASA submitted the *Fee Assessment for Periodic Monitoring Report – Second Quarter 2014 (NMED Invoice Number HWB-NASA-14-008) and 2014 Remediation System Monitoring Plan Update (NMED Invoice Number HWB-NASA-14-010)* on November 19, 2014.
- NASA submitted the *Request for Variance from Groundwater Sampling Schedule* on November 24, 2014.
- NASA submitted the *Request for Additional Extension of Time for Implementation of Lagoon Investigation Work Plan* on November 24, 2014.
- NASA submitted the *NASA White Sands Test Facility (WSTF) 2014 Waste Minimization Plan* on November 25, 2014.

6.2 Status of documents submitted in previous months

- NASA submitted the *Soil Background Study Investigation Report* on March 27, 2014. NASA received NMED's April 17, 2014 fee assessment for review of the report and submitted the \$2,000 review fee on May 7, 2014. NASA received NMED's June 26, 2014 Notice of Disapproval and submitted a response to the NOD on August 27, 2014. NASA received NMED's October 15, 2014 second NOD and is developing a response.
- NASA submitted the *NASA WSTF Groundwater Monitoring Plan Update for 2014* on May 15, 2014. NASA received NMED's June 10, 2014 fee assessment for review of the plan and submitted the \$2,500 review fee on July 8, 2014. NMED review is pending.
- NASA submitted the *Remediation System Monitoring Plan 2014 Annual Update* on July 30, 2014. NASA received NMED's August 19, 2014 fee assessment for review of the plan and submitted the \$2,500 review fee on September 10, 2014. Because the review fee check could not be located, NASA resubmitted the 2,500 review fee on November 19, 2014, NMED review is pending.

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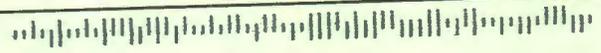


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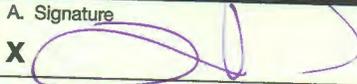
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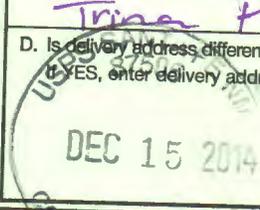
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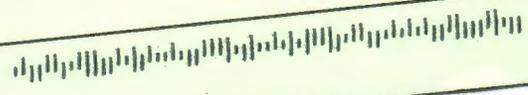
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