

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



January 7, 2015

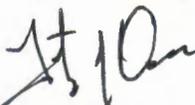
Reply to Attn of: RE-15-002

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 December 2014

Enclosed is the WSTF Monthly Environmental Activity Report for December 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 me at 575-524-5485.


for Mike Zigmond
Acting 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 December 2014:

- NASA completed shipments of universal, PCB, special, medical, solid, and hazardous wastes in December 2014.
- NASA performed sampling at 28 of 29 groundwater monitoring wells and completed all required groundwater remediation system sampling scheduled for December 2014.
- The Plume Front Treatment System operated on 26 of 31 days in December 2014 at an average flow rate of 955 gallons per minute. The PFTS extracted and treated approximately 111.3 acre-feet of groundwater.
- The Mid-plume Interception and Treatment System operated on 28 of 31 days in December 2014 and treated approximately 2.56 acre-feet of groundwater and investigation-derived waste.
- NASA completed the evaluation of chemical analytical data from 200 Area soil and bedrock core samples collected during the Phase II investigation and developed an internal report on the matrix diffusion project. NASA continued preparation of the 200 Area Phase II investigation report.
- 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 of two burn pits and the site of a previous container storage area (SWMUs 1, 3, and 15).
- NASA completed and submitted the Historical Information Summary and Investigation Work Plan for the 600 Area Off-Site BLM Soil Pile (SWMU 16).
- NASA continued development of the Historical Information Summary and Interim Measures Work Plan for 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 203 gallons of perched contaminated groundwater from monitoring well 600-G-138 in December 2014.
- NASA submitted several documents to NMED in December 2014, including a proposal to initiate interim measures at SWMUs 29-31, a response to the second NOD for NASA's soil background study, a summary of the current status of Westbay well conversion work, and the investigation work plan for SWMU 16.
- During December 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 December 2014.



National Aeronautics and
Space Administration

Monthly Environmental Activity Report

December 2014

Submitted January 14, 2015

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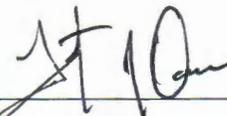
NASA Johnson Space Center White Sands Test Facility

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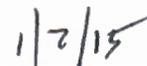
NASA Johnson Space Center White Sands Test Facility Monthly Environmental Activity Report

December 2014

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for Mike Zigmond
Acting Chief, Environmental Office



Date

Executive Summary

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

- NASA completed shipments of universal, PCB, special, medical, solid, and hazardous wastes in December 2014.
- NASA performed sampling at 28 of 29 groundwater monitoring wells and completed all required groundwater remediation system sampling scheduled for December 2014.
- The Plume Front Treatment System operated on 26 of 31 days in December 2014 at an average flow rate of 955 gallons per minute. The PFTS extracted and treated approximately 111.3 acre-feet of groundwater.
- The Mid-plume Interception and Treatment System operated on 28 of 31 days in December 2014 and treated approximately 2.56 acre-feet of groundwater and investigation-derived waste.
- NASA completed the evaluation of chemical analytical data from 200 Area soil and bedrock core samples collected during the Phase II investigation and developed an internal report on the matrix diffusion project. NASA continued preparation of the 200 Area Phase II investigation report.
- 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 of two burn pits and the site of a previous container storage area (SWMUs 1, 3, and 15).
- NASA completed and submitted the Historical Information Summary and Investigation Work Plan for the 600 Area Off-Site BLM Soil Pile (SWMU 16).
- NASA continued development of the Historical Information Summary and Interim Measures Work Plan for 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 203 gallons of perched contaminated groundwater from monitoring well 600-G-138 in December 2014.
- NASA submitted several documents to NMED in December 2014, including a proposal to initiate interim measures at SWMUs 29-31, a response to the second NOD for NASA's soil background study, a summary of the current status of Westbay well conversion work, and the investigation work plan for SWMU 16.
- During December 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 December 2014.

1.0 Waste Management Activities

- 1.1 NASA completed a shipment of universal waste to Veolia in Phoenix, Arizona on December 11, 2014. The shipment consisted of 25 containers (including 20 lamp boxes) with a total weight of 2,074 pounds (940 kg) to be recycled.
- 1.2 NASA completed a shipment of PCB ballasts to Veolia in Phoenix, Arizona on December 11, 2014. The shipment consisted of one container with a total weight of 188 pounds (85 kg) of PCB ballasts to be incinerated.
- 1.3 NASA completed a shipment of special waste (used pipe insulation) to the Camino Real landfill in Sunland Park, New Mexico on December 12, 2014. The shipment consisted of two 18-cubic yard bins of special waste, which were not weighed.
- 1.4 NASA completed a shipment of regulated medical waste to Stericycle in Albuquerque, New Mexico on December 17, 2014. The shipment consisted of one 28-gallon (3.7 cubic feet) container, which was not weighed.
- 1.5 NASA completed a shipment of hazardous waste to Veolia in Henderson, Colorado on December 18, 2014. The shipment consisted of six containers with 205 pounds (93 kg) of hazardous waste for disposal.
- 1.6 NASA completed a shipment of P078 ADGAS waste to Veolia in Henderson, Colorado on December 18, 2014. The shipment consisted of two 330-gallon intermediate bulk containers with 5,051 pounds (2,291 kg) of hazardous waste for disposal.
- 1.7 NASA completed a shipment of solid waste (Star 37 carboxy terminated polybutadiene) to the Otero County landfill in Alamogordo, New Mexico on December 18, 2014. The shipment consisted of seven containers with 3,386 pounds (1,536 kg) of solid waste for disposal.

2.0 Environmental Monitoring

- 2.1 NASA performed sampling at 28 of 29 groundwater monitoring wells or zones scheduled for sampling in December 2014, as well as most of the wells and zones that were previously rescheduled from November 2014. One monitoring well scheduled for December 2014 and two monitoring wells rescheduled from November 2014 were not sampled because of conflicts with the ongoing groundwater tracer test. These wells will continue to be evaluated and will be sampled as soon as possible. One monitoring well rescheduled from November 2014 was not sampled because the water level in the well remains below the accessible portion of the screened interval of the casing. The water level will be monitored and the well will be sampled when possible.
- 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 26 of 31 days in December 2014, at an average flow rate of 955 gallons per minute. The system extracted and treated approximately 111.3 acre-feet of groundwater, most of which was injected to the aquifer following treatment. Approximately 0.02 acre-feet of groundwater were discharged to the on-site Modu-tank system during system startup events. Approximately 1.8 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 planned shutdown of the PFTS in December 2014. On December 1, 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. The system was restarted on December 3, 2014. There were also two unplanned shutdowns of the PFTS in December 2014, one of which was subsequently utilized to perform more of the ongoing evaluations mentioned above and described in previous monthly reports. On December 5, 2014 the PFTS shut down automatically because of an interruption of the electrical power supply. Repairs were completed and the system was restarted on December 8, 2014. On December 9, 2014 another electrical supply interruption caused an automatic shutdown. Repairs were performed as required and the PFTS was restarted on December 12, 2014. The tests to evaluate effects of various resistances, cable lengths, and baud rates on programmable logic controller signal strength and quality were completed in December 2014.

3.2 Mid-plume Interception and Treatment System

- MPITS Operation – The MPITS operated on 28 of 31 days in December 2014 and treated approximately 2.53 acre-feet of groundwater and approximately 0.03 acre-feet of IDW. All treated groundwater was discharged to the infiltration basin.
- MPITS Shutdowns, Repairs, and Modifications – The MPITS operated throughout December with four of five extraction wells. Troubleshooting of the MPITS leak detection system at MPE-9 required that well to remain inoperative during December 2014. The extraction well was separated from the system while repairs are performed. There were three unplanned shutdowns of the MPITS. On December 6, 2014 the system shut down automatically because water with unexpectedly high turbidity caused UV transmissivity readings to drop below preset levels. On December 9, 2014 the system shut down automatically because of an interruption of the electrical power supply. Repairs were performed as required and the MPITS was restarted on December 12, 2014. On December 13, 2014 a blown fuse caused an automatic shutdown of the system.

3.3 100/600 Area Burn Pit and Container Storage Area Investigation (SWMUs 1, 3 and 15)

- 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 early 2015.
- NASA completed development of an internal report on bedrock core sampling performed during the 200 Area Phase II investigation fieldwork. The report is expected to be included in the final 200 Area Phase II Investigation Report submitted to NMED.

3.5 600 Area Investigation

- NASA continued extracting perched groundwater from monitoring well 600-G-138 in December 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 203 gallons of perched groundwater were removed from 600-G-138 in December 2014.

3.6 600 Area Off-Site BLM Soil Pile (SWMU 16)

- NASA completed and submitted to NMED the *NASA WSTF 600 Area BLM Off-Site Soil Pile (SWMU 16) Investigation Work Plan and Historical Information Summary* on December 29, 2014.

3.7 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 December 2014.
- Groundwater tracer samples have been regularly collected since dye introduction 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. The concentration of Rhodamine WT in a monitoring well in the Mid-plume area continues to increase. NASA installed groundwater tracer dye sampling equipment in several additional groundwater monitoring wells downgradient of this well in order to expand the dye monitoring network.

3.8 Soil Background Study

- NASA prepared and submitted a response to NMED's October 15, 2014 *Second Notice of Disapproval Soil Background Study Investigation Report* on December 17, 2014.

3.9 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. On December 8, 2014 NMED approved the request and granted an extension to June 30, 2015.

3.10 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.
- NASA anticipates starting septic tank removal activities at tanks that are not currently in use in January 2015. Septic tanks that are currently in use will be removed following completion of the WSTF sanitary sewer.

3.11 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. In December 2014 the issues were resolved and the wells were allowed to equilibrate until the evaluation resumes in January 2015.

3.12 Closed WSTF Small Arms Firing Ranges (SWMUs 29-31)

- NASA continued development of the Historical Information Summary and Investigation Work Plan for SWMU 29 (Small Arms Range at STGT), SWMU 30 (200 Area Small Arms Range), and SWMU 31 (WB-2 Small Arms Firing Range). NASA determined that it would be more appropriate to implement interim measures at these SWMUs as indicated in Permit Section VII.G.3. NASA proposed this course of action to NMED in a letter dated December 17, 2014 and requested additional time for development and submittal of the interim measures work plan.

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(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 Miscellaneous

5.1 Sanitary Sewer Upgrade

During December 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 of the HLS is complete. 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 December 2014

- NASA submitted the *NASA-Initiated Interim Measures at SWMUs 29-31* on December 17, 2014.
- NASA submitted the *Response to Second NMED Disapproval - NASA White Sands Test Facility Soil Background Study Investigation* on December 17, 2014.
- NASA submitted the *Status of Westbay Well Conversions at NASA WSTF* on December 18, 2014.
- NASA submitted to NMED the *NASA WSTF 600 Area BLM Off-Site Soil Pile (SWMU 16) Investigation Work Plan and Historical Information Summary* on December 29, 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 submitted the *Response to Second NMED Disapproval - NASA White Sands Test Facility Soil Background Study Investigation* on December 17, 2014.
- 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 approved the plan on December 9, 2014.

NASA White Sands Test Facility

- NASA submitted the *Request for Variance from Groundwater Sampling Schedule* on November 24, 2014. NMED approved the request on December 5, 2014.
- NASA submitted the *Request for Additional Extension of Time for Implementation of Lagoon Investigation Work Plan* on November 24, 2014. On December 8, 2014 NMED approved the request and granted an extension to June 30, 2015.
- NASA submitted the *NASA White Sands Test Facility (WSTF) 2014 Waste Minimization Plan* on November 25, 2014.

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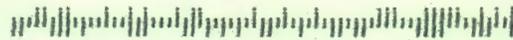


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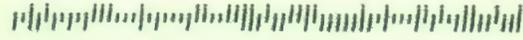
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 2905 Rodeo Park Drive East, Building 1
 Santa Fe, NM 87505

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