

National Aeronautics and
Space Administration

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



March 13, 2013

Reply to Attn of: RE-13-033

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

Subject: WSTF Monthly Environmental Activity Report for February 2013

Enclosed is the WSTF Monthly Environmental Activity Report for February 2013. 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 me at 575-524-5733.


for Radel Bunker-Farrar
Chief, Environmental Office

3 Enclosures

cc:

Mr. Dan Comeau
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 February 2013:

- NASA completed shipments of hazardous and PCB waste to Veolia on February 21, 2013. NASA also shipped electronic scrap to UNICOR on February 27, 2013 and lithium batteries to The Big Green Box Company on February 28, 2013.
- NASA continued a variety of activities related to the closure of the 200 Area Evaporation Tank Unit, including removal of waste from the east tank, inspection of primary and secondary liners in the east tank, management of the liners as hazardous and solid waste, a structural assessment of the steel tank walls, and demolition of the steel tanks and associated concrete support facilities.
- NASA initiated the soil investigation associated with the Hazardous Waste Drain Line (HWDL) and the ETU.
- NASA completed 45 of 54 groundwater sampling events and all required remediation system sampling scheduled for February 2013.
- The Plume Front Treatment System operated on 10 of 28 days in February 2013 at an average flow rate of 890 gallons per minute. During February 2013, the PFTS extracted and treated approximately 36.7 acre-feet of groundwater.
- The Mid-plume Interception and Treatment System operated on 28 of 28 days in February 2013. The system extracted and treated approximately 2.04 acre-feet of contaminated groundwater, which was discharged to the infiltration basin. NASA and Envirogen Technologies continued operation of a pilot scale bioreactor designed to treat contaminated groundwater.
- NASA continued field activities associated with the drilling and installation of several additional groundwater monitoring wells (“data gap wells”) at WSTF.
- NASA submitted a variety of documents in February 2013, including requests for extension of time for three projects and a revised Investigation Work Plan for the WSTF lagoons.
- During February 2013, 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 February 2013.

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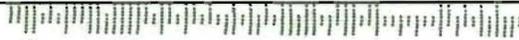


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 Attn: Mr. Dan Comeau
 New Mexico Environmental Department
 2905 Rodeo Park Drive East, Building 1
 Santa Fe, NM 87505

2. Article Number

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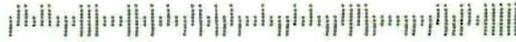


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1. Article Addressed to:

Mr. Baird Swanson
 Ground Water Quality Bureau
 New Mexico Environmental Department
 5500 San Antonio Drive NE
 Albuquerque, NM 87109

2. Article Number

(Transfer from service label)

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National Aeronautics and
Space Administration

Monthly Environmental Activity Report

February 2013

Submitted March 14, 2013

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

February 2013

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.



for

Radel Bunker-Farrah
Chief, Environmental Office

3/13/13

Date

Executive Summary

The following summarizes important information associated with NASA White Sands Test Facility (WSTF) environmental program activities in February 2013:

- NASA completed shipments of hazardous and PCB waste to Veolia on February 21, 2013. NASA also shipped electronic scrap to UNICOR on February 27, 2013 and lithium batteries to The Big Green Box Company on February 28, 2013.
- NASA continued a variety of activities related to the closure of the 200 Area Evaporation Tank Unit, including removal of waste from the east tank, inspection of primary and secondary liners in the east tank, management of the liners as hazardous and solid waste, a structural assessment of the steel tank walls, and demolition of the steel tanks and associated concrete support facilities.
- NASA initiated the soil investigation associated with the Hazardous Waste Drain Line (HWDL) and the ETU.
- NASA completed 45 of 54 groundwater sampling events and all required remediation system sampling scheduled for February 2013.
- The Plume Front Treatment System operated on 10 of 28 days in February 2013 at an average flow rate of 890 gallons per minute. During February 2013, the PFTS extracted and treated approximately 36.7 acre-feet of groundwater.
- The Mid-plume Interception and Treatment System operated on 28 of 28 days in February 2013. The system extracted and treated approximately 2.04 acre-feet of contaminated groundwater, which was discharged to the infiltration basin. NASA and Envirogen Technologies continued operation of a pilot scale bioreactor designed to treat contaminated groundwater.
- NASA continued field activities associated with the drilling and installation of several additional groundwater monitoring wells (“data gap wells”) at WSTF.
- NASA submitted a variety of documents in February 2013, including requests for extension of time for three projects and a revised Investigation Work Plan for the WSTF lagoons.
- During February 2013, 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 February 2013.

1.0 Waste Management

- 1.1 NASA completed a shipment of hazardous waste to Veolia in Henderson, Colorado on February 21, 2013. The shipment consisted of eight containers with 1,010 lbs (458 kg) of hazardous waste. NASA also shipped two containers with 637 lbs (289 kg) of PCB waste (ballasts and capacitors) to the Veolia facility in Phoenix, Arizona.
- 1.2 NASA completed a shipment of electronic scrap to UNICOR in Tucson, Arizona on February 27, 2013. The shipment consisted of 24 pallets and six electronic towers with a total weight of 17,196 lbs (7,800 kg).
- 1.3 NASA completed a shipment of lithium batteries to the Big Green Box Company in Anaheim, California on February 28, 2013. The shipment consisted of two containers with 44 lbs (20 kg) of lithium batteries.
- 1.4 During February 2013 NASA continued closure of the 200 Area Evaporation Tank Unit (ETU), a permitted hazardous waste management unit. NASA completed removal of waste from the east tank in accordance with a Notice of Intent approved by the NMED Ground Water Quality Bureau, which authorizes discharge of the liquid waste from the ETU into the 400 Area salt ponds. The primary and secondary liners of the east tank were inspected by a professional engineer, who determined there were no significant deficiencies or abnormalities in the liners. The primary liner was removed from the tank and is currently being managed as hazardous waste in super sacks in a less-than-90-day area pending submittal of a request for a “no longer contained-in” determination. Based on the evaluations of the primary liners from both tanks, it was determined that the secondary liners had not come into contact with hazardous waste. They were removed from the tanks and managed as solid waste. A certified welding inspector performed an assessment of the structural integrity of the tanks, after which the steel tank walls and bottoms were demolished and removed from the location. The concrete sump and offloading ramp were demolished and the broken concrete was disposed of as solid waste. The location is ready for the upcoming subsurface investigation, scheduled for March 2013.
- 1.5 On February 19, 2013 NASA began the soil investigation associated with the Hazardous Waste Drain Line (HWDL) and the ETU. 48 sampling events were completed at 15 locations along the HWDL. Investigation activities will continue through March 2013.

2.0 Environmental Monitoring

- 2.1 In February 2013 NASA performed sampling at 45 of 54 scheduled groundwater monitoring wells or groundwater remediation system extraction wells, including eight groundwater monitoring wells that were rescheduled from January 2013. Nine groundwater monitoring wells were rescheduled for March 2013 because of limitations on field personnel. Additional field technicians have been recruited to support ongoing and future environmental projects at WSTF.
- 2.2 Sampling of groundwater remediation system influent and effluent was performed in accordance with approved plans.
- 2.3 NASA completed drilling and installation of two groundwater monitoring well clusters at WSTF that are intended to provide additional contaminant plume data in areas identified as data gaps. Three groundwater monitoring wells, identified as BLM-40-515, BLM-40-595, and BLM-40-688, were installed south of the Mid-plume Constriction Area. North of the Mid-plume Constriction Area, NASA installed two groundwater monitoring wells, identified as BLM-41-420 and BLM-41-670. Development and initial sampling of these five groundwater monitoring wells is expected to be completed in March 2013.

3.0 Corrective Actions

3.1 Plume Front Treatment System

- PFTS Operation – The PFTS operated on 10 of 28 days in February 2013 at an average flow rate of 890 gallons per minute. The system extracted and treated approximately 36.7 acre-feet of groundwater, most of which was injected to the aquifer following treatment. Approximately 18,000 gallons of groundwater was discharged to the on-site Modu-tanks during PFTS startup operations. Approximately 0.25 acre-feet were discharged to grade at the PFI wells during backwashing and startup activities.
- PFTS Shutdowns, Repairs, and Modifications – There was only one shutdown of the PFTS in February 2013. On February 3, 2013 the system shut down automatically because of an interruption in the electrical power supply. The shutdown occurred within a day of a planned shutdown for scheduled maintenance, so the system was left offline. NASA performed routine system maintenance and restarted the system on February 22, 2013.

3.2 Mid-plume Interception and Treatment System

- MPITS Operation – The MPITS operated on 28 of 28 days in February 2013. The system extracted and treated approximately 2.04 acre-feet of contaminated groundwater, which was discharged to the infiltration basin following treatment.
- MPITS Shutdowns, Repairs, and Modifications – There were three unplanned shutdowns of the MPITS in February 2013. On February 4 and February 12, 2013 the MPITS shut down automatically as a result of electrical power surges. On February 25, 2013 the system shutdown automatically because of a low surge tank level. In all three cases, the MPITS was restarted within several hours, maintaining a 97% operational time in February 2013.
- Bioreactor Pilot Test – NASA continues to work with Envirogen Technologies to operate a pilot scale bioreactor in the MPITS building to study the feasibility for bioremediation of NDMA-contaminated groundwater at WSTF. The bioreactor completed the first phase of pilot treatment and discontinued the feed of contaminated groundwater in December 2012. The second phase of testing, which will test the bioreactor's capability to treat groundwater with volatile organic contaminants in addition to NDMA, was initiated on January 16, 2013 and continued throughout February 2013. Analytical data continue to indicate a significant reduction in the concentration of NDMA in the treated groundwater, with some effluent concentrations less than 10 ng/L. Envirogen plans to complete the pilot test in March 2013.

3.3 200 Area Investigation

- NASA performed several internal tasks related to the recently completed Phase I investigation while awaiting NMED review of the Phase I Report and Phase II Investigation Work Plan. The required review fee payments for NMED review of these documents were submitted in February 2013.

3.4 600 Area Investigation

- The NM Office of the State Engineer advised NASA in February 2013 that review and approval of NASA's application to utilize groundwater monitoring well 600-G-138 as a pollution recovery well would be delayed. NASA requested an extension of time to postpone the NMED-required extraction of perched groundwater from this well.

3.5 Wastewater Lagoon Investigation and Closure

- NASA revised the Lagoon Investigation Work Plan to incorporate comments received from NMED. The revised work plan was provided to NMED on February 21, 2013.

3.6 Septic Tank Investigation and Closure

- NASA initiated development of an Investigation Work Plan and Historical Information Summary for several septic tanks at WSTF. These documents are due to NMED by June 30, 2013 in accordance with Attachment 16 of the Hazardous Waste Permit.

3.7 Groundwater Tracer Testing

- NASA continues to plan a groundwater tracer test, which will be conducted in the WSTF 200/600 Areas and in the Mid-plume Constriction Area (MPCA). NASA's May 10, 2012 *Work Plan for Tracer Testing in the 200/600 Areas and Mid-plume Constriction Area*, approved by the NMED Hazardous Waste Bureau on July 20, 2012, provides specific information regarding the planned test. Though originally scheduled for as early as August 2012, the tracer test has been postponed until 2013 in order to allow sufficient time for the completion of work at the Mid-plume Interception and Treatment System. When steady-state operating conditions have been achieved in the MPCA, the groundwater tracer test can be performed as indicated in the May 10, 2012 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 February 2013 NASA continued the project to upgrade the sanitary sewer system at WSTF and connect to the City of Las Cruces sewer system. The sewer upgrade includes a combination of both gravity and force main in addition to four lift stations and is scheduled for completion in May 2013. The delays with completing the sewer construction have not affected work on the ETU Closure project. NASA will continue to keep NMED informed about the status of the sewer project, and its potential impacts on the ETU Closure project. Construction progress to date includes the following:

- Construction of Line A along Holman Road is substantially complete.
- Construction continues on the Holman Road lift station. NASA has completed reviewing and approved technical submittals from the contractor for the lift station pumps. The contractor has ordered the pumps.
- Approximately 5,400 feet of Line B (from Holman Road to the WSTF 100 Area) has been completed, leaving approximately 16,900 feet to complete. NASA has provided design drawings to the construction contractor, indicating a change in routing along NASA's Well Road. The sewer line is to be moved from the center of the road, to the westbound lane of the road. This design change also includes raising the elevation of the road surface as well as various drainage improvements. The contractor is expected to resume work on Line B the week of March 11.

- Line C (the force main from the Second TDRSS Ground Terminal to the WSTF 400 Area) is substantially complete. The concrete base for lift station #1 has been installed, but installation of the pump station, backfilling, and installation of power to the lift station are pending.
- Line D (the force main from the 400 Area to the 200 Area) is substantially complete.
- Approximately 3,000 feet of Line E (from the 800 Area to the 300 Area) has been installed. The sewer line is substantially complete, but completion of several manholes is pending.
- During excavation for Line E in the 300 Area, a contractor employee noticed what he thought was a diesel odor coming from the soil. Excavation was halted and NASA Safety and Environmental personnel were notified. Based on the soil sampling and analysis performed to date, which include standard analytical methods, NASA believes that the excavated soil is not a listed hazardous waste per, does not exhibit the characteristic of a hazardous waste, and does not contain weathered petroleum-based compounds. Based on these results, NASA is letting this soil aerate in order to address the odor, then will thin-spread the soil in the area it was excavated from.
- Approximately 3,400 feet of Line E (from the 100 Area to the 200 Area) has been installed. The installation of the sewer line where it crosses Gardner Spring Arroyo is substantially complete.
- Line F (400 Area) is substantially complete.
- Construction of Lines G and H (from several buildings in the 100 Area to Line B) was initiated in January 2013.
- Line I (from Lift Station #3 to Line E) is substantially complete. Lift Station #3 has been installed, but backfilling and installation of power to the lift station are pending.
- Line J (from the Hypervelocity facility to Lift Station #3) is substantially complete.
- Line K (from Lift Station #3 to the 800 Area) is substantially complete.
- Line L (from various 400 Area buildings toward Lift Station #2) is substantially complete, with the exception of the line under Road L. Lift Station #2 has been installed, but backfilling and installation of power to the lift station are pending.

6.0 Documents Submitted

6.1 Documents submitted in February 2013

- NASA submitted the *Request for Extension of Time for Completion and Development of Data Gap Wells BLM-40 and BLM-41* on February 19, 2013.
- NASA submitted the *NMED Approval with Modifications Wastewater Lagoon Areas Historical Information Summary and Closure Investigation Work Plan (HWB-NASA-12-016)*, a response to NMED's approval with modifications of the referenced documents, on February 21, 2013.
- NASA submitted the *Request for Extension of Time for Implementation of Perched Groundwater Extraction Pilot Test at NASA WSTF 600 Area* on February 22, 2013.
- NASA submitted the *Request for Extension of Time for Conversion of Westbay Wells* on February 22, 2013.

6.2 Status of documents submitted in previous months

- NASA submitted the *Notification of Structural Assessment of Evaporation Treatment Unit* on January 7, 2013. NMED review is pending.

NASA White Sands Test Facility

- NASA submitted the *NASA WSTF 600 Area Monitoring Network – NMED Modifications* on January 30, 2013. NMED review is pending.
- NASA submitted the *NASA WSTF 200 Area Investigation - Phase I Status Report* and the *NASA WSTF 200 Area Investigation - Phase II Investigation Work Plan* on January 30, 2013. NASA received NMED's February 6, 2013 fee assessment for review of the documents. NASA submitted the review fee payments to NMED on February 22, 2013.