

National Aeronautics and
Space Administration

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



September 12, 2013

Reply to Attn of: RE-13-108

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 August 2013

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

If you have any questions or comments concerning this submittal, please contact me at 575-524-5733.

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

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 August 2013:

- NASA completed two shipments of hazardous waste to two Veolia facilities in August 2013. NASA also completed a shipment of universal waste to Veolia and a shipment of regulated medical waste to Stericycle.
- NASA completed and submitted a Certification of Closure Report for the Evaporation Tank Unit. NASA also continued developing a Permit modification request related to the removal of permit conditions that are no longer applicable.
- NASA completed and submitted an abbreviated Investigation Work Plan and Historical Information Summary for the 600 Area JP4 and JP5 remote test areas.
- NASA completed 37 of 49 groundwater sampling events and all required groundwater remediation system sampling scheduled for August 2013.
- The Plume Front Treatment System operated on 25 of 31 days in August 2013 at an average flow rate of 1,004 gallons per minute. During August 2013, the PFTS extracted and treated approximately 104 acre-feet of groundwater.
- The Mid-plume Interception and Treatment System operated on 20 of 31 days in August 2013 and treated approximately one acre-foot of groundwater.
- NASA continued planning and preparation for the upcoming septic tank investigation.
- NASA submitted several documents in August 2013, including the certification of closure for the ETU, the revised 200 Area Phase I status report, the IWP and HIS for the JP4 and JP5 remote test areas, review fees for two previous submittals to NMED.
- During August 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 August 2013.



National Aeronautics and
Space Administration

Monthly Environmental Activity Report

August 2013

Submitted September 12, 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

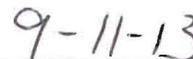
August 2013

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.



Radel Bunker-Farrah

Chief, Environmental Office



Date

Executive Summary

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

- NASA completed two shipments of hazardous waste to two Veolia facilities in August 2013. NASA also completed a shipment of universal waste to Veolia and a shipment of regulated medical waste to Stericycle.
- NASA completed and submitted a Certification of Closure Report for the Evaporation Tank Unit. NASA also continued developing a Permit modification request related to the removal of permit conditions that are no longer applicable.
- NASA completed and submitted an abbreviated Investigation Work Plan and Historical Information Summary for the 600 Area JP4 and JP5 Remote Test Sites.
- NASA completed 37 of 49 groundwater sampling events and all required groundwater remediation system sampling scheduled for August 2013.
- The Plume Front Treatment System operated on 25 of 31 days in August 2013 at an average flow rate of 1,004 gallons per minute. During August 2013, the PFTS extracted and treated approximately 104 acre-feet of groundwater.
- The Mid-plume Interception and Treatment System operated on 20 of 31 days in August 2013 and treated approximately one acre-foot of groundwater.
- NASA continued planning and preparation for the upcoming septic tank investigation.
- NASA submitted several documents in August 2013, including the certification of closure for the ETU, the revised 200 Area Phase I status report, the IWP and HIS for the JP4 and JP5 remote test areas, review fees for two previous submittals to NMED.
- During August 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 August 2013.

1.0 Waste Management Activities

- 1.1 NASA completed a shipment of hazardous waste to Veolia in Henderson, Colorado on August 15, 2013. The shipment consisted of 12 containers with 796 lbs (362 kg) of hazardous waste.
- 1.2 NASA completed a shipment of hazardous waste to Veolia in Burley, Idaho on August 21, 2013. The shipment consisted of one intermediate bulk container with 1,880 lbs (853 kg) of hazardous waste.
- 1.3 NASA completed a shipment of universal waste to Veolia in Phoenix, Arizona on August 21, 2013. The shipment consisted of 19 containers with 1,701 lbs (773 kg) of universal waste.
- 1.4 NASA completed a shipment of 3.7 ft³ (28 gallons) of regulated medical waste to Stericycle in Albuquerque, New Mexico on August 26, 2013.
- 1.5 NASA completed and submitted the Certification of Closure Report for the Evaporation Tank Unit on August 1, 2013.
- 1.6 NASA continued development of a permit modification request to remove all permit conditions and/or requirements that meet the definition of 40 CFR 270.42- Appendix I, Section A(8): "Changes to remove permit conditions that are no longer applicable (i.e., because the standards upon which they are based are no longer applicable to the facility)." Examples of permit conditions include all references to the ETU; references to the 100, 200, 600, and STGT lagoons (SWMU 2, 8, 34, and AOC 51); references to SWMU 13- 400 Area Aspirator discharge pipe; and references to SWMU's 21-27 (septic tanks). NASA expects to submit this permit modification request after receiving NMED approval of the Certification of Closure Report for the Evaporation Tank Unit.

2.0 Environmental Monitoring

- 2.1 In August 2013 NASA performed sampling at 37 of 49 scheduled groundwater monitoring wells. Sampling at six groundwater monitoring wells in the 700 Area was delayed until September 2013 to coincide with scheduled landfill post-closure care detection monitoring. Groundwater monitoring wells BLM-40-517, BLM-40-595, BLM-40-688, BLM-41-420, and BLM-41-670, which were originally scheduled for June 2013, could not be sampled due to continued equipment limitations. Sampling equipment needed to sample the five new BLM wells was received in late August 2013 and will be installed in September 2013 following completion of the Permit-required surveying work at these wells. One additional monitoring well was rescheduled due to equipment limitations. These 12 monitoring wells have been rescheduled for sampling in September 2013.
- 2.2 Sampling of groundwater remediation system influent, effluent, and operational extraction wells was performed in accordance with applicable permits and approved plans.
- 2.3 NASA continued a variety of activities related to the ongoing project to convert two Westbay multipoint groundwater monitoring wells to dual-zone conventional groundwater sampling systems. Field work began on August 12, 2013. The bottom two sampling zones at monitoring well WW-2 were plugged in accordance with the NMED-approved work plan. The top two sampling zones of this well were redeveloped and are ready for installation of the purgeable sampling systems. NASA began plugging the bottom two sampling zones of monitoring well JP-3. NASA expects to complete plugging and redevelopment work at JP-3 in early September 2013 and install dedicated low-flow sampling systems in both wells in late September 2013.

3.0 Corrective Actions

- 3.1 Plume Front Treatment System
 - PFTS Operation – The PFTS operated on 25 of 31 days in August 2013 at an average flow rate of 1,004 gallons per minute. The system extracted and treated approximately 104 acre-feet of

groundwater, most of which was injected to the aquifer following treatment. Approximately 1,500 gallons of groundwater were discharged to the on-site Modu-tanks during routine PFTS startup operations. Approximately 1.65 acre-feet were discharged to grade at the PFI wells during backwashing and startup activities.

- PFTS Shutdowns, Repairs, and Modifications – The system was restarted on August 1, 2013 following a communication loss and automatic shutdown in late July 2013. There were two additional shutdowns of the PFTS during August 2013. On August 8, 2013 the system shut down automatically because of a communication loss. The communication issue was investigated thoroughly and repairs were implemented. The system was restarted on August 15, 2013. On August 21, 2013 the system was purposely shut down to facilitate additional troubleshooting related to residual communication loss issues. The system was restarted within three hours.

3.2 Mid-plume Interception and Treatment System

- MPITS Operation – The MPITS operated on 20 of 31 days in August 2013 and treated approximately one acre-foot of groundwater, all of which was discharged to the infiltration basin. Three MPE wells operated intermittently throughout August 2013 while repairs required from damage resulting from lightning strikes in July 2013 were implemented. Because the treatment process itself was not significantly damaged, IDW was processed throughout August 2013 as required.
- MPITS Shutdowns, Repairs, and Modifications – During August 2013, NASA continued repairing significant damage that resulted from two lightning strikes to the system in July 2013. The system was restarted on August 1, 2013, operating with one to three MPE wells. The system was manually shut down over the weekends of August 2-5, 2013, August 10-13, 2013, and August 16-19, 2013 to prevent automated shutdowns resulting from filter clogging. The system was shut down on August 29, 2013 because of leak detection issues caused by humidity in the extraction piping annulus resulting from the elevated relative humidity experienced during the monsoon season.

3.3 JP4 and JP5 Investigation

- NASA completed and submitted the *NASA White Sands Test Facility (WSTF) 600 Area JP4 and JP5 Investigation Work Plan and Historical Information Summary* on August 26, 2013. The abbreviated work plan is under NMED review. NASA expects to initiate final project planning and field work as quickly as possible following NMED approval of the work plan.

3.4 200 Area Investigation

- NASA submitted a response to NMED's May 8, 2013 *Notice of Disapproval 200 Area Investigation – Phase I Status Report* to NMED on August 7, 2013. This submittal included a revised Phase I Status Report for NMED review.
- In a conference call on August 28, 2013, NASA and NMED discussed the geophysical data presented in the revised *200 Area Investigation – Phase I Status Report*. It was agreed that NMED would complete the review of the report and that NASA would address NMED's concerns with the geophysical data in more depth within the final investigation report to be provided to NMED following completion of the Phase II fieldwork.

3.5 600 Area Investigation

- NASA repaired the pump used to extract perched groundwater from monitoring well 600-G-138 on August 9, 2013 and resumed groundwater extraction 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 142 gallons of perched groundwater was removed from 600-G-138 in August 2013.

3.6 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*. As indicated in NMED's August 7, 2013 *Approval Second Time Extension for Implementation of Closure Activities in Accordance with the Approved Wastewater Lagoon Areas Closure Investigation Work Plan (100, 200, 600 Area and STGT)*, NASA is to start the investigation by December 31, 2013 or notify NMED by December 1, 2013 if additional time is required to complete installation of the WSTF sewer system.

3.7 Septic Tank Investigation and Abandonment

- NASA submitted the *WSTF Septic Tanks (SWMU 21 – 27) Investigation Work Plan and WSTF Septic Tanks Historical Information Summary* to the NMED HWB on June 28, 2013. NASA received NMED's July 16, 2013 fee assessment for review of the reports and submitted the \$15,000 review fee on August 9, 2013. NMED review of the IWP and HIS is pending
- NASA performed a preliminary evaluation of the septic tank at Building 114/119 (SWMU 22) and determined that septage and sludge levels in the tank are sufficient to require thorough sampling. A site-specific Sampling and Analysis Plan is being developed.
- NASA completed and submitted an application to the NMED Liquid Waste Program to replace the septic tank at Building 114/119 prior to removal and investigation of the existing tank. This application was approved on August 30, 2013 and replacement activities are expected to begin on September 10, 2013.

3.8 Groundwater Tracer Testing

- NASA continued planning for 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. NASA anticipates that field work associated with the tracer test will begin following an evaluation of Mid-plume extraction and exploration wells, currently scheduled for completion in late October 2013.

3.9 Soil Background Study

- NASA continued planning for a soil background study, which will be performed in accordance with the NMED-approved *Soil Background Study Investigation Work Plan*. Preliminary field work is expected to begin in September 2013, with sample collection activities scheduled for October 2013.

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 August 2013 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 and is scheduled for completion in August 2013. The delays with completing the sewer construction have not affected work on the ETU Closure project, though closure and investigation of the site wastewater lagoons will be impacted. 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 Service and Transfer agreements with the City of Las Cruces. The Service Agreement addresses the cost of providing sewer service to WSTF. The Transfer Agreement addresses NASA's transfer of ownership of Line A to the City.
- Construction of Line A along Holman Road is substantially complete.
- Construction continues on the Holman Road lift station. The lift station pumps have been installed. Connection of piping and electrical power is in process. Installation of controls and instrumentation are also in progress.
- 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 in progress.
- 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 piping under the road, is in process. Installation of Lift Station #1 is in progress.
- Line D (the force main from the 400 Area to the 200 Area) is substantially complete.
- Line E (from the 800 Area to the 300 Area) is substantially complete. A pavement cut across Apollo Road, and installation of piping under the road, is pending.
- Line E (from the 100 Area to the 200 Area) is substantially complete. Manholes have been installed. A boring under STGT Road, and installation of piping under the road, is complete.
- Line F (400 Area) is substantially complete.
- Lines G and H (from several buildings in the 100 Area to Line B) are substantially complete, including all of the manholes.
- Line I (from Lift Station #3 to Line E) is substantially complete. Lift Station #3 has been installed, backfilling is completed and installation of the control panels is in progress.
- 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. A boring under Road L, and installation of piping under the road, is pending. Lift Station #2 has been installed, and backfilling and installation of control panels is in progress.

6.0 Documents Submitted

6.1 Documents submitted in August 2013

- NASA submitted the *Transmittal of the National Aeronautics and Space Administration (NASA) White Sands Test Facility (WSTF) Certification of Closure Report for the Evaporation Treatment Unit (ETU)* on August 1, 2013.
- NASA submitted the *NASA WSTF 200 Area Investigation – Revised Phase I Status Report* on August 6, 2013.
- NASA submitted the *NASA White Sands Test Facility (WSTF) 600 Area JP4 and JP5 Investigation Work Plan and Historical Information Summary* on August 26, 2013.

6.2 Status of documents submitted in previous months

- NASA submitted the *200/600 Area Semi-annual Soil Vapor & Groundwater Data Summary (Fourth Report-March 2013 Data)* on June 13, 2013. NASA received NMED's June 25, 2013 fee assessment for review of this document and submitted the \$2,000 review fee on July 10, 2013. NMED approved the report on August 9, 2013 with direction to implement the additional soil vapor sampling recommended by NASA in the initial report.
- NASA submitted the *Well Completion Reports for BLM-40 and BLM-41 Cluster Monitoring Wells* on June 25, 2013. NASA received NMED's July 12, 2013 fee assessment for review of the reports and submitted the \$1,000 review fee on August 27, 2013.
- NASA submitted the *NASA WSTF Septic Tanks (SWMU 21-27) Investigation Work Plan & WSTF Septic Tanks Historical Information Summary* on June 27, 2013. Copies of these documents were also submitted to the NMED Groundwater Quality Bureau and NMED Liquid Waste Program. NASA received NMED's July 16, 2013 fee assessment for review of the reports and submitted the \$15,000 review fee on August 9, 2013.
- NASA submitted the *Permit Modification Request for NASA White Sands Test Facility (WSTF) Hazardous Waste Permit No. NM8800019434* on July 8, 2013. This document proposed to update and clarify permit language related to two routine operations at the Fuel Treatment Unit.
- NASA submitted the *Detailed Well Evaluations: 100-D-176, 600-C-173, BLM-3-182, and NASA 2* on July 30, 2013. NMED review is pending.
- NASA submitted the *Request for Additional Extension of Time for Implementation of Lagoon Investigation Work Plan* on July 30, 2013. NMED approved the request on August 7, 2013.
- NASA submitted the *NASA WSTF Remediation System Monitoring Plan Annual Update* on July 31, 2013. NASA received NMED's August 20, 2013 fee assessment for review of the updated plan and is processing payment.

UNITED STATES POSTAL SERVICE



First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •

National Aeronautics and
Space Administration

Mail Code: *RE-17-108*
Lyndon B. Johnson Space Center
White Sands Test Facility
Post Office Box 20
Las Cruces, NM 88004-0020



SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

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

2. Article Number
 (Transfer from service label)

COMPLETE THIS SECTION ON DELIVERY

A. Signature
 Agent
 Addressee

B. Received by (Printed Name)
 C. Date of Delivery

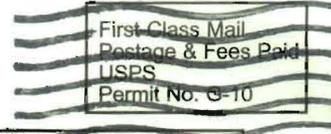
D. Is delivery address different from item 1?
 If YES, enter delivery address below:

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

7009 3410 0001 5868 3975

UNITED STATES POSTAL SERVICE



• Sender: Please print your name, address, and ZIP+4 in this box •

**National Aeronautics and
Space Administration**

Mail Code: *RE-13-108*
**Lyndon B. Johnson Space Center
White Sands Test Facility
Post Office Box 20
Las Cruces, NM 88004-0020**



SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> ■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. ■ Print your name and address on the reverse so that we can return the card to you. ■ Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Print Name) C. Date of Delivery</p> <p style="text-align: center;">87505</p> <p style="text-align: center;">SEP 16 2013</p> <p style="text-align: center;">CORONADO STATION</p>
<p>1. Article Addressed to:</p> <p style="text-align: center;">Hazardous Waste Bureau Attn: Mr. Dan Comeau New Mexico Environmental Department 2905 Rodeo Park Drive East, Building 1 Santa Fe, NM 87505</p>	<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p> <p>3. Service Type</p> <p><input type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail</p> <p><input type="checkbox"/> Registered <input checked="" type="checkbox"/> Return Receipt for Merchandise</p> <p><input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>2. Article Number (Transfer from service label)</p>	<p style="text-align: center;">7009 3410 0001 5868 3999</p>
<p>PS Form 3811, February 2004</p>	<p style="text-align: center;">Domestic Return Receipt</p> <p style="text-align: right;">102595-02-M-1540</p>