

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



July 9, 2015

Reply to Attn of: RE-15-074

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 June 2015

Enclosed is the WSTF Monthly Environmental Activity Report for June 2015. 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 575-524-5024.

A handwritten signature in black ink, appearing to read "Timothy J. Davis".

Timothy J. Davis  
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**

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The following summarizes important information associated with NASA White Sands Test Facility (WSTF) environmental program activities in June 2015:

- NASA completed two shipments of hazardous waste in June 2015.
- NASA performed sampling at 25 of 26 groundwater monitoring wells and completed all required groundwater remediation system sampling scheduled for June 2015.
- The Plume Front Treatment System operated on 30 of 30 days in June 2015 and treated approximately 137.1 acre-feet of contaminated groundwater.
- The Mid-plume Interception and Treatment System operated on 30 of 30 days in June 2015 and treated approximately 2.28 acre-feet of groundwater and investigation-derived waste.
- NASA performed investigation fieldwork at SWMUs 1, 3, and 15.
- NASA completed and submitted the 200 Area Phase II investigation report.
- NASA began preliminary project planning for accelerated corrective measures at three closed small arms firing ranges.
- Post-introduction sampling required for the 200/600 Area and MPCA groundwater dye tracer test was performed and samples were submitted to the off-site laboratory for analysis.
- NASA completed and submitted the IWPs and HISs for SWMUs 10 and 19.
- NASA continued planning for the investigation and removal of additional WSTF septic tanks and the investigation and closure of the WSTF wastewater lagoons.
- NASA extracted 201 gallons of perched contaminated groundwater from monitoring well 600-G-138 in June 2015.
- Several documents were submitted to NMED in June 2015, including two investigation work plans, the 200 Area Phase II investigation report, public notice of a recent permit modification, a status update for work at the JER wells, an extension request for the lagoon investigation, and several review fee payments.
- During June 2015, 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 June 2015.



National Aeronautics and  
Space Administration

# Monthly Environmental Activity Report

June 2015

Submitted July 14, 2015

NM8800019434

NASA Johnson Space Center White Sands Test Facility

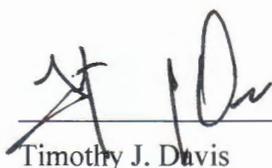
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12600 NASA Road Las Cruces, New Mexico 88012

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

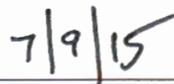
June 2015

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.



Timothy J. Davis

Chief, Environmental Office



Date

### Executive Summary

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- NASA performed investigation fieldwork at SWMUs 1, 3, and 15.
- NASA completed and submitted the 200 Area Phase II investigation report.
- NASA began preliminary project planning for accelerated corrective measures at three closed small arms firing ranges.
- Post-introduction sampling required for the 200/600 Area and MPCA groundwater dye tracer test was performed and samples were submitted to the off-site laboratory for analysis.
- NASA completed and submitted the IWPs and HISs for SWMUs 10 and 19.
- NASA continued planning for the investigation and removal of additional WSTF septic tanks and the investigation and closure of the WSTF wastewater lagoons.
- NASA extracted 201 gallons of perched contaminated groundwater from monitoring well 600-G-138 in June 2015.
- Several documents were submitted to NMED in June 2015, including two investigation work plans, the 200 Area Phase II investigation report, public notice of a recent permit modification, a status update for work at the JER wells, an extension request for the lagoon investigation, and several review fee payments.
- During June 2015, 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 June 2015.

## 1.0 Waste Management Activities

- 1.1 NASA completed a shipment of hazardous waste to Veolia in Henderson, Colorado on June 18, 2015. The shipment consisted of 11 containers with 308 kilograms of hazardous waste for disposal.
- 1.2 NASA completed a shipment of P078 ADGAS treatment residual (water) waste to Veolia in Henderson, Colorado on June 18, 2015. The shipment consisted of one 330-gallon intermediate bulk container and one 5-gallon container with 1,290 kilograms of hazardous waste for disposal.

## 2.0 Environmental Monitoring

- 2.1 NASA performed sampling at 25 of 26 groundwater monitoring wells or zones scheduled for sampling in June 2015. One conventional monitoring well scheduled for June 2015 was not sampled because of conflicts with the ongoing groundwater tracer test. It was rescheduled for July 2015. Several monitoring wells rescheduled from previous months were not able to be sampled in June 2015. One conventional monitoring well scheduled for April 2015 was not sampled because of equipment issues. Additional required equipment is being sought. Three Westbay well sampling zones rescheduled from March 2015 were not sampled because the ports in those wells are no longer accessible due to equipment degradation or damage. An alternate method of sampling these zones is being investigated. Three conventional wells rescheduled from November and December 2014 were not sampled because of conflicts with the ongoing groundwater tracer test (the two tracer dye introduction points) or lingering equipment failure. The two dye tracer wells will continue to be evaluated and will be sampled as soon as practicable. Replacement equipment was received in May 2015 and is expected to be installed in the remaining conventional monitoring well in July 2015.
- 2.2 Sampling of operational groundwater remediation system influent, effluent, and 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 30 of 30 days in June 2015 at an average flow rate of 948 gallons per minute. The system extracted and treated approximately 137.1 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 1.6 acre-feet of groundwater 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 and one unplanned shutdown of the PFTS in June 2015. On June 11, 2015 the system shutdown automatically because of a low pressure condition created during a backwashing operation. The system was restarted within the hour. On June 23, 2015 the system was shut down in order to replace a flow meter that had been returned from calibration. The system was restarted within an hour.

### 3.2 Mid-plume Interception and Treatment System

- MPITS Operation – The MPITS operated on 30 of 30 days in June 2015 and treated approximately 2.28 acre-feet of groundwater and 383 gallons of IDW. All treated groundwater was discharged to the infiltration basin.
- MPITS Shutdowns, Repairs, and Modifications – The MPITS operated throughout June with all five extraction wells. There was a single unplanned shutdown on June 14, 2015 that resulted from scale buildup on a transmissivity sensor. The sensor was cleaned and the system was restarted in less than 24 hours.

3.3 200 Area Investigation

- NASA completed and submitted to NMED the 200 Area Phase II Investigation Report. This report presents the results of an evaluation of subsurface soil, bedrock, groundwater, and soil vapor within the 200 Area vadose zone.

3.4 600 Area Perched Groundwater Extraction Pilot Test

- NASA continued extracting perched groundwater from monitoring well 600-G-138 in June 2015 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 201 gallons of perched groundwater were removed from 600-G-138 in June 2015.

3.5 100/600 Area Burn Pit and Container Storage Area (SWMUs 1, 3 and 15)

- NASA performed investigation fieldwork at SWMUs 1, 3, and 15 and nearby areas of interest identified during historical research performed prior to investigation planning. Planned soil borings were installed and soil samples were collected and shipped to contracted off-site laboratories for analysis. Results and evaluation are pending.

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

- The recently revised and resubmitted *600 Area BLM Off-Site Soil Pile (SWMU 16) Investigation Work Plan* remains under NMED review.

3.7 800 Area BGST (SWMU 19)

- NASA completed development of the Abbreviated Investigation Work Plan and Historical Information Summary (HIS) required for the 800 Area Below Grade Storage Tank (SWMU 19). The Abbreviated IWP and HIS were submitted to NMED on June 25, 2015.

3.8 Small Arms Firing Ranges (SWMUs 29-31)

- NMED approved NASA's Accelerated Corrective Measures Work Plan on May 29, 2015 and NASA began preliminary project planning activities in June 2015.

3.9 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 June 2015 in accordance with the plan.
- Groundwater tracer samples have been regularly collected since dye introduction and submitted to the off-site contracted analytical laboratory as described in the work plan. Data are being received and reviewed by NASA project personnel. Rhodamine WT, which was introduced in monitoring well BLM-14-327, has been detected at three monitoring wells in the Mid-plume area. Eocene, which was introduced in monitoring well BLM-15-305, has been detected at two monitoring wells in the Mid-plume area.

3.10 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*. Preliminary fieldwork is expected to begin when the sanitary sewer system is operational.

3.11 Septic Tank Investigation and Removal

- Based on analytical results from previous samples collected at SMWU 22, NASA is investigating the potential that nitrate or nitrite present in the sewage sludge may have

interfered with cyanide analysis. NASA collected additional cyanide samples from the sludge in the SWMU 22 septic tank on June 16, 2015. These samples were pretreated with sulfamic acid, which significantly reduces nitrate/nitrite interference that could yield erroneously high analytical results for cyanide.

- NASA continues to plan for the removal of several more septic tanks and the investigation of the SWMU 22 tank location. NASA plans to remove all other remaining septic tanks following completion of the WSTF sanitary sewer.

### 3.12 JER Anomalous NDMA Detections

- NASA continued evaluating analytical data obtained from samples collected at Westbay monitoring wells 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*.

### 3.13 Westbay Monitoring Well Conversion

- NASA continued to plan for the installation of purgeable groundwater sampling systems in the boreholes at BLM-28 and BLM-32, from which Westbay wells were recently removed. Delays with procurement of the replacement sampling systems continue to slow acquisition and installation of new equipment.

## 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 June 2015, NASA completed construction of the sanitary sewer system at WSTF, connected it to the City of Las Cruces (CLC) sewer system, and successfully tested all lines and associated lift stations. The CLC has formally issued a Discharge Permit to allow wastewater flow, and NASA completed an internal System Readiness Review (SRR). Based on the results of the SRR, and subsequent minor delays closing out SRR action items, NASA expects to start wastewater flow to the CLC sewer system during the month of July 2015.

## 6.0 Documents Submitted

### 6.1 Documents submitted in June 2015

- NASA distributed public notice of the *Transmittal of Class 1 Permit Modification Request for the NASA WSTF Hazardous Waste Permit No. NM8800019434 Attachment 16* on June 3, 2015 to all entities on the NMED mailing list.
- NASA submitted the *Status Update and Request for Extension of Time – Investigation of Anomalous Detections of NDMA in Monitoring Wells JER-1 and JER-2*.
- NASA submitted the *Fee Assessment for 600 Area Perched Groundwater Extraction Pilot Test Interim Status Report – Project Year 2*, the *Fee Assessment for Small Arms Firing Ranges*

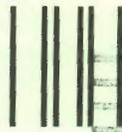
(SWMUs 29-31) *Accelerated Corrective Measures Work Plan*, the *Fee Assessment for Periodic Monitoring Report – First Quarter 2015*, and the *Fee Assessment for WSTF Groundwater Monitoring Plan Update for 2015* on June 24, 2015.

- NASA submitted the *Request for Additional Extension of Time for Implementation of Lagoon Investigation Work Plan* on June 25, 2015.
- NASA submitted the *800 Area HWTL (SWMU 19) Abbreviated Investigation Work Plan and Historical Information Summary* on June 25, 2015. This submittal provided the IWP and HIS for SWMU 19, the 800 Area Below Grade Storage Tank (BGST) rather than the HWTL as indicated in the letter subject line.
- NASA submitted the *200 Area Phase II Investigation Report* on June 29, 2015.
- NASA submitted the *200 Area HWTL (SWMU 10) Investigation Work Plan and Historical Information Summary* on June 29, 2015.

## 6.2 Status of documents submitted in previous months

- NASA submitted the *Transmittal of Class 1 Permit Modification Request for the NASA WSTF Hazardous Waste Permit No. NM8800019434 Attachment 16* on May 11, 2015. NMED approved the request on May 29, 2015 and instructed NASA to notify all entities on the NMED mailing list of the permit modification. NASA distributed the public notice on June 3, 2015.
- NASA submitted the *Groundwater Monitoring Plan Update for 2015* on April 29, 2015. NASA received NMED's May 22, 2015 fee assessment for review of the plan and submitted the \$2,500 review fee on June 24, 2015.
- NASA submitted the *600 Area Perched Groundwater Extraction Pilot Test Interim Status Report – Project Year 2* on April 16, 2015. NASA received NMED's May 22, 2015 fee assessment for review of the report and submitted the \$2,000 review fee on June 24, 2015.
- NASA submitted the *NASA WSTF 600 Area BLM Off-Site Soil Pile (SWMU 16) Investigation Work Plan and Historical Information Summary* on December 29, 2014. NASA received NMED's March 2, 2015 fee assessment for review of the documents and submitted the \$10,000 review fee on March 17, 2015. NMED disapproved the Investigation Work Plan on March 10, 2015 and directed NASA to submit a revised IWP by May 31, 2015. NASA submitted a revised IWP along with the response to the disapproval to NMED on May 28, 2015.
- NASA submitted the *NASA WSTF Small Arms Firing Ranges (SWMUs 29-31) Accelerated Corrective Measures Work Plan and Historical Information Summary* on February 26, 2015. NASA received NMED's May 20, 2015 fee assessment for review of the ACMWP and submitted the \$7,000 review fee on June 24, 2015. NMED approved the ACMWP with modifications on May 29, 2015.

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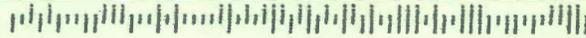


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Ms. Vicky Baca  
 Hazardous Waste Bureau  
 New Mexico Environmental Department  
 2905 Rodeo Park Drive East, Building 1  
 Santa Fe, NM 87505

 2. Article Number  
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