National Aeronautics and
Space Administration

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

June 9, 2016

Reply to Attn of: RE-16-080

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 May 2016

Enclosed is the WSTF Monthly Environmental Activity Report for May 2016. 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 575–524–5024.

Timothy J. Davis
Chief, Environmental Office

3 Enclosures

cc:
Mr. Gabriel Acevedo
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

Executive Summary

The following summarizes important information associated with NASA White Sands Test Facility (WSTF) environmental program activities in May 2016:

- NASA completed shipments of hazardous waste, used oil, and used oil filters in May 2016.
- NASA performed sampling at 30 of 38 groundwater monitoring wells scheduled for May 2016.
- The Plume Front Treatment System operated on 31 of 31 days in May 2016 and treated 115.3 acre-feet of contaminated groundwater.
- The Mid-plume Interception and Treatment System operated on 16 of 31 days in May 2016 and treated 0.56 acre-feet of contaminated groundwater and IDW.
- NASA continued fieldwork associated with the investigation and closure of the WSTF wastewater lagoons (SWMUs 2, 8, and 34 and AOC 51).
- NASA continued work on a project to investigate and remove WSTF septic tanks (SWMUs 21-27).
- NASA initiated investigation fieldwork at the hazardous waste transmission line (SWMU 10).
- NASA continued planning for the investigation of the 400 Area Closure in accordance with the NMED-approved work plan.
- NASA continued development of the investigation work plan and historical information summary for the TDRSS diesel release (SWMU 50).
- 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 extracted 249 gallons of perched contaminated groundwater from monitoring well 600-G-138 in May 2016 and continued development of a work plan to further investigate perched groundwater in the 600 Area.
- NASA continued project planning for the installation of a new groundwater monitoring well and for the reconfiguration of several Westbay monitoring wells.
- NASA submitted a variety of documents to NMED in May 2016, including the 2016 GMP update, updated contingency plan, and two replacement fee assessment payments.
- There were no reportable non-compliance issues in May 2016.

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RE-16-080

RE-16-080

MR. GABRIEL ACEVEDO
HAZARDOUS WASTE BUREAU
NEW MEXICO ENVIRONMENTAL DEPARTMENT
2905 RODEO PARK DRIVE EAST, BUILDING 1
SANTA FE, NM 87505

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National Aeronautics and
Space Administration

Monthly Environmental Activity Report

May 2016

Submitted June 14, 2016

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

May 2016

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

6/9/16
Date

Executive Summary

The following summarizes important information associated with NASA White Sands Test Facility (WSTF) environmental program activities in May 2016:

- NASA completed shipments of hazardous waste, used oil, and used oil filters in May 2016.
- NASA performed sampling at 30 of 38 groundwater monitoring wells scheduled for May 2016.
- The Plume Front Treatment System operated on 31 of 31 days in May 2016 and treated 115.3 acre-feet of contaminated groundwater.
- The Mid-plume Interception and Treatment System operated on 16 of 31 days in May 2016 and treated 0.56 acre-feet of contaminated groundwater and IDW.
- NASA continued fieldwork associated with the investigation and closure of the WSTF wastewater lagoons (SWMUs 2, 8, and 34 and AOC 51).
- NASA continued work on a project to investigate and remove WSTF septic tanks (SWMUs 21-27).
- NASA initiated investigation fieldwork at the hazardous waste transmission line (SWMU 10).
- NASA continued planning for the investigation of the 400 Area Closure in accordance with the NMED-approved work plan.
- NASA continued development of the investigation work plan and historical information summary for the TDRSS diesel release (SWMU 50).
- 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 extracted 249 gallons of perched contaminated groundwater from monitoring well 600-G-138 in May 2016 and continued development of a work plan to further investigate perched groundwater in the 600 Area.
- NASA continued project planning for the installation of a new groundwater monitoring well and for the reconfiguration of several Westbay monitoring wells.
- NASA submitted a variety of documents to NMED in May 2016, including the 2016 GMP update, updated contingency plan, and two replacement fee assessment payments.
- There were no reportable non-compliance issues in May 2016.

1.0 Waste Management Activities

1.1 NASA completed a shipment of used oil to Mesa Oil in Belen, New Mexico on May 12, 2016. The shipment consisted of 20 drums with 3,298 kilograms of used oil to be recycled.

1.2 NASA completed a shipment of used oil filters to Mesa Oil in Belen, New Mexico on May 12, 2016. The shipment consisted of three drums with 113 kilograms of used oil filters for disposal.

1.3 NASA completed a shipment of hazardous waste to Veolia in Henderson, Colorado on May 19, 2016. The shipment consisted of 18 containers with 829 kilograms of hazardous waste for disposal.

1.4 NASA completed a shipment of P078 ADGAS treatment residual (water) waste to Veolia in Henderson, Colorado on May 19, 2016. The shipment consisted of three containers with 572 kilograms of hazardous waste for disposal.

2.0 Environmental Monitoring

2.1 NASA performed sampling at 30 of 38 groundwater monitoring wells or zones scheduled for sampling in May 2016. Eight wells or zones were rescheduled to June 2016 because of resource limitations imposed by several other ongoing field projects.

2.2 Other regulatory groundwater sampling requirements (such as those included in the Remediation System Monitoring Plan and discharge plans) were performed as scheduled.

3.0 Corrective Actions/Investigations

3.1 Plume Front Treatment System

- PFTS Operation – The PFTS operated on 31 of 31 days in May 2016 at an average flow rate of 799 gallons per minute. The system extracted and treated approximately 115.3 acre-feet of groundwater, most of which was injected into the aquifer following treatment. Approximately 0.17 acre-feet of groundwater were discharged to the on-site Modu-tank system during system startup events. Approximately 0.63 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 unplanned shutdown of the PFTS in May 2016. On May 24, 2016, the system shut down automatically because of a disruption in the electrical power supply. The power supply was restored and the system was restarted within 6 hours.

3.2 Mid-plume Interception and Treatment System

- MPITS Operation – The MPITS operated on 16 of 31 days in May 2016 and treated approximately 0.56 acre-feet of groundwater and 254 gallons of IDW. All treated water was discharged to the infiltration basin.
- MPITS Shutdowns, Repairs, and Modifications – There was one planned shutdown of the MPITS in May 2016. On May 16, 2016, the system was taken offline to initiate a project to evaluate the MPE wells. The pumps, motors, and drop pipe were removed from each MPE well and the well casing was redeveloped using swabbing, brushing, and bailing. The pumps and motors were reinstalled in wells MPE-1, MPE-9, and MPE-10. The previously failed motor in well MPE-11 was also replaced during the well evaluation. Well MPE-8 remains open for further evaluation of the well casing and installation and testing of a new pump, motor, and flexible piping. During the shutdown, additional anti-siphoning piping was installed between the extraction wells and the MPITS surge tank.

3.3 200 Area Investigation

- NMED approved the *200 and 600 Area Vapor Intrusion Assessment Work Plan* February 25, 2016) on May 27, 2016.

3.4 400 Area

- NASA continued project planning activities for investigation fieldwork, which will be performed in accordance with the NMED-approved *400 Area Closure Investigation Work Plan* (June 27, 2011).

3.5 600 Area Perched Groundwater Extraction Pilot Test

- NASA continued extracting perched groundwater from monitoring well 600-G-138 in April 2016 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 249 gallons of perched groundwater were removed from 600-G-138 in May 2016.
- NASA continued development of a work plan to further evaluate perched groundwater in the 600 Area as directed in NMED's February 11, 2016 *Additional Work Plan Requirements to Evaluate Potential Source of 600 Area Contamination.*

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

- NMED approved the *NASA WSTF SWMUs 1, 3, and 15 (100 Area Burn Pit, 100 Area Container Storage Area, and 600 Area Burn Pit) Investigation Report* (November 23, 2015) on May 24, 2016 with modifications that NASA must address by August 31, 2016.

3.7 SWMUs 2, 8, and 34 and AOC 51 (Wastewater Lagoons)

- NASA finalized plans to collect sludge samples from the 100 Area lagoons after transferring approximately 900,000 gallons of wastewater to the 600 Area lagoons.
- NASA began transferring wastewater from the 600 Area lagoons to the City of Las Cruces sanitary sewer on May 12, 2016 to accelerate the drying of those lagoon cells. Approximately 15,000 gallons are being transferred each working day.

3.8 SWMU 10 (200 Area Hazardous Waste Transmission Line)

- NASA initiated investigation fieldwork in accordance with the *200 Area HWTL (SWMU 10) Investigation Work Plan and Historical Information Summary* (July 29, 2015) on May 10, 2016.
- NASA excavated and removed the 440-foot section of stainless steel HWTL to the northwest of the 200 Area buildings. The stainless steel pipe is being managed as hazardous waste pending decontamination and recycling.
- NASA excavated and removed the 660-foot section of PVC pipe adjacent to the former Evaporation Tank Unit location (adjacent to and southeast of Apollo Blvd.). NASA also excavated and removed approximately 1,100 feet of PVC to the northwest of Apollo Blvd. (from its northeastern-most point on that side of the road southwestward toward the 600 Area wastewater lagoons).
- NASA collected the IWP-required soil samples from the designated locations adjacent to and beneath the excavated and removed portions of the HWTL. Samples were shipped to off-site analytical laboratories for analysis.

- Residual fluid was discovered in several short sections of the pipeline during its removal. Approximately 30 gallons of fluid and approximately 30 gallons of soil impacted by minor releases of the fluid have been containerized and are being managed as hazardous waste.

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

- The *SWMU 16 (600 Area BLM Off-Site Soil Pile) Investigation Report* (February 25, 2016) remains under NMED review.

3.10 SWMU 19 (800 Area Below Grade Storage Tank)

- The *SWMU 19 (800 Area Below Grade Storage Tank) Investigation Report* (February 17, 2016) remains under NMED review.

3.11 SWMUs 21-27 (Septic Tanks)

- NASA continued planning the collection of additional cyanide samples from the soil at the bottom of the SWMU 22 septic tank in order to fully characterize the soil for waste management purposes.
- NASA continues to plan for the removal of several more septic tanks and the investigation of the SWMU 22 tank location, which will be performed after non-SWMU tanks are removed.

3.12 SWMUs 29-31 (Small Arms Firing Ranges)

- NMED approved NASA's Request for Extension of Time for Small Arms Firing Ranges (SWMUs 29-31) Accelerated Corrective Measures (April 16, 2016) on April 29, 2016. The approved due date for the final investigation report is September 30, 2016.
- NMED also approved the *Status Update for NASA WSTF Small Arms Firing Ranges (SWMUs 29-31) Accelerated Corrective Measures* (March 8, 2016) with modifications on May 11, 2016. After reviewing NMED's approval, NASA has concluded that required modifications will significantly expand the scope of the planned corrective action, requiring additional time to complete. NASA anticipates submitting another request for additional time in June 2016.

3.13 SWMU 50 (TDRSS Diesel Release)

- NASA continued development of the investigation work plan and historical information summary for SWMU 50. These documents are due to NMED by June 30, 2016.

3.14 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* (May 10, 2012). Four fluorescent dyes were introduced at four locations (two in the 200 Area and two in the Mid-plume area) in June 2014, and post-introduction groundwater monitoring continued through March 2016 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. Eosine, which was introduced in monitoring well BLM-15-305, has been detected at several monitoring wells to the southwest of the Mid-plume area and in one location to the northwest of the Mid-plume area. To date, there have been no confirmed detections of the tracer dyes released in the 200 Area.

3.15 Westbay Monitoring Well Reconfiguration

- NASA developed an abbreviated work plan for the reconfiguration of Westbay monitoring wells JER-1, JER-2, and ST-7. The work plan was submitted to NMED on March 8, 2016 and approved by NMED on May 11, 2016.
- NASA began project planning and procurement activities for the reconfiguration of Westbay monitoring wells BLM-37, JER-1, JER-2, ST-6, and ST-7. Fieldwork is planned for late summer 2016.
- NASA continues efforts to reconfigure previous Westbay monitoring well BLM-28. After a significant delay, the off-site vendor responsible for the construction of the dedicated low-flow bladder pump system (with packer) delivered the sampling system in late January 2016. The system was inspected and prepared for installation. However, attempts to install the system were unsuccessful. The partially installed sampling system was removed from borehole in March 2016 and it was determined that the inflatable packer supplied with the system is too large in diameter for installation in the open borehole. Alternate downhole equipment is required to complete the reconfiguration of this well.

3.16 Installation of New Monitoring Well PL-11

- NASA continued project planning for the drilling and installation of new groundwater monitoring well PL-11 in accordance with the NMED-approved *Drilling Work Plan for Supplement Groundwater Monitoring Well (PL-11)* (February 10, 2016).
- NASA expects to initiate fieldwork in late June or early July 2016.

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 Documents Submitted

5.1 Documents submitted to the Hazardous Waste Bureau in May 2016.

- NASA submitted the *NASA WSTF Groundwater Monitoring Plan Update for 2016* on May 9, 2016.
- NASA submitted the *Fee Assessment for NASA WSTF 200 Area Phase II Investigation Report (NMED Invoice Number HWB-NASA-15-008) and NASA White Sands Test Facility (WSTF) 2015 Annual Fee Payment (NMED Invoice Number HWB-NASA-2015-AF)* on May 18, 2016.
- NASA submitted the *NASA White Sands Test Facility (WSTF) Contingency Plan (Permit Attachment 13) Annual Update Submission Hazardous Waste Permit No. NM8800019434* on May 26, 2016.

5.2 Status of documents submitted in previous months

- NASA submitted the *SWMUs 1, 3, and 15 (100 Area Burn Pit, 100 Area Container Storage Area, and 600 Are Burn Pit) Investigation Report* on November 23, 2015. NASA received NMED's January 6, 2016 Fee Assessment for review of the report and submitted the $9,500

review fee payment on February 8, 2016. NMED approved the report with modifications on May 24, 2016 and directed NASA to respond to several comments by August 31, 2016.

- NASA submitted the *SWMU 19 (800 Area Below Grade Storage Tank) Investigation Report* on February 17, 2016. NASA received NMED's March 8, 2016 fee assessment for review of the work plan and submitted the $7,500 review fee to NMED on April 4, 2016. The investigation report remains under NMED review.
- NASA submitted the *SWMU 16 (600 Area BLM Off-Site Soil Pile) Investigation Report* on February 25, 2016. NASA received NMED's March 8, 2016 fee assessment for review of the work plan and submitted the $7,500 review fee to NMED on April 3, 2016. The investigation report remains under NMED review.
- NASA submitted the *200 and 600 Area Vapor Intrusion Assessment Work Plan* on February 25, 2016. NASA received NMED's March 8, 2016 fee assessment for review of the work plan and is submitted the $6,000 review fee to NMED on April 7, 2016. NMED approved the work plan on May 27, 2016.
- NASA submitted the *Status Update for NASA WSTF Small Arms Firing Ranges (SWMUs 29-31) Accelerated Corrective Measures* on March 8, 2016. NASA received NMED's April 18, 2016 fee assessment for the report and is processing the request for payment. NMED approved the status update with modifications on May 11, 2016.
- NASA submitted the *600 area Perched Groundwater Extraction Pilot Test Interim Status Report – Project Year 3* on April 14, 2016. NASA received NMED's May 24, 2016 fee assessment for the report and is processing the request for payment.
- NASA submitted the *Request for Extension of Time for NASA WSTF Small Arms Firing Ranges (SWMUs 29-31) Accelerated Corrective Measures* on April 18, 2016. NMED approved the request on April 29, 2016.
- NASA submitted the *Westbay Well Reconfiguration Work Plan for Wells JER-1, JER-2, and ST-7* on March 8, 2016. NASA received NMED's April 18, 2016 fee assessment for the work plan and is processing the request for payment. NMED approved the work plan on May 11, 2016.
- NASA submitted the *Well Reconfiguration Reports for Wells BLM-32, WW-4, and WW-5* on March 30, 2016. NASA received NMED's April 18, 2016 fee assessment for the report and is processing the request for payment.