National Aeronautics and
Space Administration

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

January 10, 2014

Reply to Attn of: RE-14-006

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 December 2013

Enclosed is the WSTF Monthly Environmental Activity Report for December 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-Farrah
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 December 2013:

- The NMED Hazardous Waste Bureau conducted a compliance inspection of NASA WSTF on December 9 and 10, 2013. The final inspection report is pending.
- NASA completed a shipment of hazardous waste and a shipment of universal waste to two Veolia facilities in December 2013.
- NASA completed 37 of 42 groundwater sampling events and all required groundwater remediation system sampling scheduled for December 2013.
- The Plume Front Treatment System operated on 31 of 31 days in December 2013 at an average flow rate of 1,019 gallons per minute. During December 2013, the PFTS extracted and treated approximately 138 acre-feet of groundwater.
- The Mid-plume Interception and Treatment System operated on 30 of 31 days in December 2013 and treated approximately 2.69 acre-feet of groundwater and approximately 0.30 acre-feet of investigation-derived waste.
- NASA received NMED LWP approval of the *WSTF Septic Tanks Removal Plan* and sampled the sludge in the decommissioned Building 114/119 septic tank.
- NASA continued preliminary planning for the wastewater lagoon investigation and a groundwater tracer test.
- NASA submitted several documents to NMED in December 2013, including well completion reports for recently converted Westbay wells, a fee assessment for a work plan to evaluate anomalous NDMA detections in the JER area, and a fee assessment for the third quarter 2013 PMR.
- During December 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 December 2013.

National Aeronautics and
Space Administration

Monthly Environmental Activity Report

December 2013

Submitted January 14, 2014

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

December 2013

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for Radel Bunker-Farrah
Chief, Environmental Office

1/10/14
Date

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- The Plume Front Treatment System operated on 31 of 31 days in December 2013 at an average flow rate of 1,019 gallons per minute. During December 2013, the PFTS extracted and treated approximately 138 acre-feet of groundwater.
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- There were no reportable non-compliance issues in December 2013.

1.0 Waste Management Activities

1.1 The NMED Hazardous Waste Bureau conducted a compliance inspection of NASA WSTF on December 9 and 10, 2013. The final inspection report is pending.

1.2 NASA completed a shipment of universal waste to Veolia in Phoenix, Arizona on December 16, 2013. The shipment consisted of 11 containers with 242 pounds (110 kg) of universal waste.

1.3 NASA completed a shipment of hazardous waste to Veolia in Henderson, Colorado on December 18, 2013. The shipment consisted of 20 containers with 1,826 pounds (830 kg) of hazardous waste.

1.4 NASA was notified that a permit modification request to remove all references to the ETU would not be required. Instead, upon receipt of the Certification of Closure of the ETU, NASA will submit a revised Permit Attachment 22 that will indicate the ETU has been "clean closed." SWMU 13 – 400 Area Aspirator Discharge Pipe will also be removed from the revised Attachment 22.

2.0 Environmental Monitoring

2.1 In December 2013, NASA performed sampling at fourteen groundwater monitoring wells that were rescheduled from November 2013 due to the ongoing schedule impacts of the Federal Government shutdown and resulting WSTF site closure in October 2013. NASA also performed sampling at 37 of the 42 groundwater monitoring wells scheduled for December 2013. The remaining five groundwater monitoring wells were rescheduled to January 2014.

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

3.1 Plume Front Treatment System

- PFTS Operation – The PFTS operated on 31 of 31 days in December 2013 at an average flow rate of 1,019 gallons per minute. The system extracted and treated approximately 138 acre-feet of groundwater, most of which was injected to the aquifer following treatment. Approximately 650 gallons of groundwater were discharged to the on-site Modu-tanks during routine PFTS startup operations. Approximately 1.82 acre-feet were discharged to grade at the PFI wells during backwashing and startup activities.
- PFTS Shutdowns, Repairs, and Modifications – There was one unplanned shutdown of the PFTS in December 2013. On December 10, 2013 the system shut down automatically when the air conditioner unit and backup cooling fan in the motor control center failed. Both components were replaced and the system was restarted in less than 12 hours.

3.2 Mid-plume Interception and Treatment System

- MPITS Operation – The MPITS operated on 30 of 31 days in December 2013 and treated approximately 2.69 acre-feet of groundwater and approximately 0.30 acre-feet of IDW. All 2.99 acre-feet of treated water was discharged to the infiltration basin.
- MPITS Shutdowns, Repairs, and Modifications – There was one unplanned shutdown of the MPITS on December 29, 2013 when the UV reactor automatically shut down for an undetermined reason. The system was restarted and no further issues were encountered. There were two planned shutdowns of the MPITS in December 2013, once to perform required repairs and once to allow for the measurement of static water levels at five extraction wells.

3.3 JP4 and JP5 Investigation

- NASA received NMED's December 19, 2013 approval of the abbreviated work plan for investigating the JP4 and JP5 remote test areas. NASA continued preliminary planning of the project and anticipates performing the investigation in early 2014.

3.4 200 Area Investigation

- NASA continued preparation and planning for the upcoming investigation fieldwork while NMED reviews the investigation work plan.

3.5 600 Area Investigation

- NASA continued extracting perched groundwater from monitoring well 600-G-138 in December 2013 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 76 gallons of perched groundwater was removed from 600-G-138 in December 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*. A letter requesting an Extension for Implementation of Closure Activities in Accordance with the Approved Wastewater Lagoon Areas Closure Investigation Work Plan (100, 200, 600 Area and STGT) to February 28, 2014 was sent to NMED on November 26, 2013 and approved by NMED on December 19, 2013. The extension is required to complete the Sanitary Sewer Pipeline Project which will connect WSTF to the City of Las Cruces sewage treatment facilities and complete property transfer between NASA and the City of Las Cruces. Surveying of the lagoons to establish sample collection locations has been initiated to prepare for lagoon water and sludge sampling after discharge to the lagoons is terminated. NASA is to start the investigation by February 28, 2014 or notify NMED by February 1, 2014 if additional time is required to complete installation of the WSTF sewer system.

3.7 Septic Tank Investigation and Removal

- NASA received NMED Liquid Waste Program approval of the *WSTF Septic Tanks Removal Plan* on December 9, 2013.
- NASA sampled the sewage sludge remaining in the decommissioned septic tank at Buildings 114/119 (SWMU 22) on December 11, 2013. Analytical results are pending.

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 in order to allow sufficient time for the completion of work at the Mid-plume Interception and Treatment System. When consistent operational 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 early 2014. A preliminary activity of note is a fluorescent dye and low level NDMA analysis interference test. This test includes performing low level NDMA analysis of WSTF groundwater samples with and without fluorescent dye to determine if the presence of

the dye impacts the low level NDMA analysis used to monitor groundwater quality at WSTF. Preliminary data are being evaluated.

3.9 Soil Background Study

- Analytical data from soil sampling performed in November 2013 are being received and reviewed by NASA. NASA continues development of the investigation report to be submitted to NMED.

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 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. 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 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 will be performed prior to activating the system.
- Construction continues on the HLS. The lift station pumps have been installed. Connection of piping and electrical power is in progress. Installation of controls and instrumentation is in progress. Drainage control and water service inside the HLS are in progress. 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 in progress, and setting and pouring of the manhole rings is complete. A final hydrostatic leak test and acceptance procedure with NASA will be performed prior to activating the system.
- 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. Installation of Lift Station #1 is in progress. A final hydrostatic leak test and acceptance procedure with NASA will be performed prior to activating the system.

- Line D (the force main from the 400 Area to the 200 Area) is substantially complete. A final hydrostatic leak test and acceptance procedure with NASA will be performed prior to activating the system.
- 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 in progress. A final hydrostatic leak test and acceptance procedure with NASA will be performed prior to activating the system.
- Line E (from the 100 Area to the 200 Area) is substantially complete. Grouting, application of sealant coating, and setting of rings is in progress. A final hydrostatic leak test and acceptance procedure with NASA will be performed prior to activating the system.
- Line F (400 Area) is substantially complete. A final hydrostatic leak test and acceptance procedure with NASA will be performed prior to activating the system.
- Lines G and H (from several buildings in the 100 Area to Line B) are substantially complete, but completion of several manholes is pending. Grouting and sealant coating of the inside of the manholes is complete. A final hydrostatic leak test and acceptance procedure with NASA will be performed prior to activating the system.
- 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 and acceptance procedure with NASA will be performed prior to activating the system.
- Line J (from the Hypervelocity facility to Lift Station #3) is substantially complete. A final hydrostatic leak test and acceptance procedure with NASA will be performed prior to activating the system.
- Line K (from Lift Station #3 to the 800 Area) is substantially complete. A final hydrostatic leak test and acceptance procedure with NASA will be performed prior to activating the system.
- 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 in progress. Lift Station #2 has been installed, and backfilling and installation of control panels is complete. A final hydrostatic leak test and acceptance procedure with NASA will be performed prior to activating the system.

6.0 Documents Submitted

6.1 Documents submitted in December 2013

- NASA submitted the *Well Completion Reports for the Conversion of Westbay Wells WW-2 and JP-3* on December 16, 2013.
- NASA submitted the *Fee Assessment for IWP for Evaluating Anomalous Detections of NDMA in MWs JER-1 and JER-2 (NMED Invoice Number HWB-NASA-13-015)* on December 19, 2013.
- NASA submitted the *Fee Assessment for Periodic Monitoring Report – Third Quarter 2013 (NMED Invoice Number HWB-NASA-13-016)* on December 19, 2013.

6.2 Status of documents submitted in previous months

- 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. The NMED LWP indicated on December 5, 2013 that NASA's plan for removal of the non-SWMU tanks meets or exceeds regulatory requirements. The LWP directed NASA to provide proof of the abandonment/removal of each tank following completion of the work.

- 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. NMED review is pending.
- 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. NASA received NMED's September 4, 2013 fee assessment for review of the plan and submitted the $10,000 review fee on September 16, 2013. NMED approved the work plan on December 19, 2013.
- NASA submitted the *200 Area Investigation – Phase II Investigation Work Plan* on October 30, 2013. NASA received NMED's November 21, 2013 fee assessment for the work plan and is corresponding with NMED regarding this assessment.
- NASA submitted the *IWP for Evaluating Anomalous Detections of NDMA in Monitoring Wells JER-1 and JER-2* on November 7, 2013. NASA received NMED's November 21, 2013 fee assessment for review of the plan and submitted the $10,000 review fee on December 19, 2013.
- NASA submitted the *Periodic Monitoring Report (PMR) – Third Quarter 2013* on November 7, 2013. NASA received NMED's November 21, 2013 fee assessment for review of the report and submitted the $2,000 review fee on December 19, 2013.
- NASA submitted the *Request for Additional Extension of Time for Implementation of Lagoon Investigation Work Plan* on November 26, 2013. NMED approved the request on December 19, 2013.

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