DEPARTMENT OF ENERGY
Environmental Management Los Alamos Field Office (EM-LA)
Los Alamos, New Mexico 87544

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Mr. John Kieling
Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6313

Dear Mr. Kieling:

Subject: Submittal of the 2015 Annual Inspection Report for Los Alamos County Airport Landfill, Solid Waste Management Units 73-001(a) and 73-001(d), Technical Area 73

Enclosed please find two hard copies with electronic files of the 2015 Annual Inspection Report for Los Alamos County Airport Landfill, Solid Waste Management Units 73-100(a) and 73-100(d), Technical Area 73.

If you have any questions, please contact Ramoncita N. Massey at (505) 665-7771.

David S. Rhodes
Supervisory Federal Project Director
Environmental Management
Los Alamos Field Office

Enclosures

37374

cc w/enclosures: **
Kathryn Roberts
Chief
DOE Oversight Bureau
New Mexico Environment Department
PO Box 5400, MS-1396
Albuquerque, NM 87185-5400

Laurie King
US EPA Region 6
1445 Ross Avenue, 6PD
Suite 1200
Dallas, TX 75202-2733

Neelam Dhawan
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6313

Siona Briley
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6313

Jerzy Kulis
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6313

Michael Dale
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6313

R. Massey, EM-LA
T. Haagenstad, ADEP-PDO, LANS, MS-M992
Records Center, EM-LA
Official Contract File, EM-LA

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February 14, 2016

2015 Annual Inspection Report for Los Alamos County Airport Landfill Solid Waste Management Units 73-001(a) and 73-001(d) Technical Area 73

Prepared for the
U.S. Department of Energy (DOE)
Environmental Management,
Los Alamos Field Office (EM-LA)

Prepared by:

The Lakeworth Group, LLC

146B East Gate Drive, PO Box 1232, Los Alamos, NM 87544 / Telephone (505) 662-7275

2015 Annual Inspection Report for Los Alamos County Airport Landfill Solid Waste Management Units 73-001(a) and 73-001(d) Technical Area 73

February 14, 2016

Date: 2/11/16

Ramoncita N. Massey
Federal Project Director Environmental Management Los Alamos Field Office

Date: 2-11-2016

David S. Rhodes
Supervisory Federal Project Director
Environmental Management Los Alamos Field Office

EXECUTIVE SUMMARY

This report summarizes activities and data collected from the landfill inspections conducted for the Los Alamos County Airport Technical Area 73 landfill for calendar year 2015, as part of the requirements in the "Post-Closure Care and Monitoring Plan for the Los Alamos Site Office TA-73 Airport Landfill, Revision 2" (North Wind Inc. 2006, 111707).

During a 1,000 year storm event, in September 2013, the airport received over seven inches of rain. This storm event caused substantial erosion damage to the lower region of the landfill. Construction activities began in December 2014 through January 2015, to stabilize the erosion damage and to provide complete storm water management system improvements. Permanent storm water measures installed included a riprap-lined bench repair; riprap bench extension system; gabion baskets; rill restoration; installation of rock check dams; restoration of eroded edges; restoration of a porous detention area and sedimentation basin; south slope and north and south eroded rill improvement; and northern slope drainage improvement.

Construction began at the site in October 2015 to remove the failing cover. As of the end of December 2015 the north and east sides of the MatCon cover and concrete hangar pads had been removed and the north part of the landfill was stabilized. All waste was removed from western portion of the landfill where the new hangar will be installed. For final subgrade preparation, an additional 20% of fill material is necessary and then installation of the concrete hangar pad will be completed.

The 2015 results of the methane monitoring at perimeter spinner locations were as follows:

- PS-01, All readings for methane were at 0%.
- PS-02, Methane was recorded at elevated values 22 out of 24 times. All 22 readings were above the 25% LEL, 16 of the readings were recorded at 100%.
- PS-03, All readings for methane were at 0%.
- PS-04, Methane was recorded at elevated values twice out of 24 times. Both readings were at 100% LEL, which is above the 25% LEL.
- PS-05, Methane was recorded at elevated values 20 out of 24 times. Two values were below the 25% LEL, 18 of the elevated values were above the 25% LEL, 13 times it was recorded at 100% LEL.
- PS-06, All readings for methane were at 0%.

Two significant rainfall events occurred in 2015. On July 10, 2015 an inspection documented that one-half inch of rain had fallen within fifteen minutes at 4:55 the morning of July 7, 2015, with a total of 1.12 inches that day. During construction activities, on October 21, 2015, 1.14 inches of rain fell over the course of the day.

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1.0 INTRODUCTION

This 2015 Annual Inspection Report for Los Alamos County Airport Landfill, Solid Waste Management Units 73-001(a) and 73-001(d), Technical Area 73, prepared by the U.S. Department of Energy (DOE) Environmental Management Los Alamos Field Office (EM-LA), summarizes the results of inspection activities conducted at the Los Alamos County (LAC) Airport at Technical Area 73 (TA-73), Solid Waste Management Unit (SWMU) 73-001(a), a landfill, and SWMU 73-001(d), a debris disposal area (DDA), for calendar year 2015.

Post closure inspection and reporting requirements are described in the "Post-Closure Care and Monitoring Plan for the Los Alamos Site Office TA-73 Airport Landfill, Revision 2" (North Wind Inc. 2006, 111707). The final implementation strategy was developed to update the 2006 post closure plan to include minor changes reflected in the 2007 final remedy and specific activities necessary for a comprehensive approach to maintaining and monitoring the landfill for 30 years following closure.

2.0 BACKGROUND

2.1 Pre-2015 Activities

Two inactive solid waste disposal sites [the Airport Landfill, SWMU 73-001(a), and the DDA, SWMU 73-001(d)] are located at the Los Alamos County Airport (Figure 2.0-1). The Airport Landfill operated from 1943 to 1973 for the disposal of solid waste consisting of household trash from the Los Alamos townsite and office trash from Los Alamos Scientific Laboratory. Prior to 1965, some of the waste was burned and subsequently buried in the Airport Landfill. Approximately 489,500 yd3 of waste was disposed of in the landfill.

From 1984 to 1986, approximately 126,000 yd3 of burned debris were excavated from the western end of the Airport Landfill and reburied in two parallel trenches at the DDA.

In late 2006 and early 2007, the DOE installed the final remedy landfill cover system at the Airport Landfill through a contract with North Wind, Inc. The final remedy design and completion activities for the landfill and the DDA are provided in the "Remedy Completion Report, DOE-LASO TA-73 Airport Landfill, SWMUs 73-001(a) and 73-001(d)" (North Wind Inc. 2007, 096333).

Approximately 50,000 yd3 of waste was relocated within the SWMU 73-001(a) boundary during the 2006 final remedy completion activities. With the exception of a single container of Freon-113, uncovered and subsequently managed off-site, no other hazardous or radioactive materials were discovered.

After waste relocation, compaction, and re-grading were conducted, the following features were installed for the Airport Landfill cover (Figure 2.0-2):

- Approximately six acres of MatCon (Modified Asphalt Technology for Containment) asphalt pavement,
- Five concrete hangar pads within the MatCon pavement area,
- Turf reinforcement matting (TRM),
- A landfill-gas collection system,
- Two rock gabion basket retaining walls,

- A concrete retaining wall,
- Re-vegetation with native grasses of approximately 4 acres, and
- A storm water collection system consisting of 5 trench drains, 13 drain inlets, approximately 1950 feet of associated buried concrete storm-sewer lines, an 18 inch diameter high-density polyethylene outfall pipe approximately 110 feet in length, and 3 riprap drainage channels.

In 2009 and 2010, erosion features (rills and small gullies) and subsidence associated with storm water runoff from the paved areas above the vegetated slopes were repaired. In addition, the curb along the runway was repaired and extended to redirect storm water away from the main vegetated slope. Cracks in the concrete at hangar pads 2 and 3 were repaired using polyurethane sealants. These repairs and enhancements are detailed in the "Final Construction Report for Los Alamos Airport Landfill TA-73, SWMU 73-001(a) Cover Improvements, Los Alamos, New Mexico" (LANL 2011, 111750, Appendix A).

In 2011, cracks in the MatCon pavement and areas of separation between the concrete hangar pads and MatCon pavement were cleaned and filled with a hot seal mixture.

In 2012, stub outs at gas-vent riser locations PS-2, PS-3, and PS-5 were opened, and risers with turbines (spinners) were installed. New cracks in the MatCon pavement and any new areas of separation between the concrete hangar pads and MatCon pavement were cleaned and filled with a hot seal mixture.

On September 30, 2013, the Los Alamos Site Office, Environmental Projects Office (LASO, EPO) awarded a contract for continued maintenance and design activities at the Los Alamos Airport landfill. This contract provided the LASO, EPO with a mechanism to generate a design for a new landfill cover and for construction of erosion control measures. The week of February 28, 2014, fencing along the east edge of the site was repaired. The fence had been damaged in September 2013 by heavy rains. The week of May 19, 2014, cracks in the MatCon asphalt and concrete hangar pads were sealed. The new landfill cover design was completed, and its construction began, in 2015.

In November 2013, the LASO, EPO informally notified New Mexico Environment Department (NMED) of methane levels at 100% of the Lower Explosive Limit (LEL) at vent risers along the north edge of the Los Alamos Airport Landfill cap. NMED directed LASO, EPO on November 22, 2013, to immediately implement a weekly air monitoring program in open air at the landfill. Weekly air monitoring was to continue until the methane levels dropped below the 100% LEL.

On December 12, 2013, the LASO, EPO formally notified NMED of methane levels at 100% of the LEL at vent risers along the north edge of the Los Alamos Airport Landfill cap and requested a waiver of the implementation of an active gas collection system using blowers, as required in the 2006 "Post-Closure Care and Monitoring Plan for the Los Alamos Site Office TA-73 Airport Landfill, Revision 2" (North Wind Inc. 2006, 111707). The LASO, EPO received a denial to the waiver request from NMED dated July 25, 2014. The LASO, EPO provided a response to the waiver denial which included a Pre-Design Work Plan for the Los Alamos County Airport Landfill on September 26, 2014. Weekly monitoring continued through 2014.

In October 2014, geoenvironmental drilling in the paved area of the landfill site was

conducted. The main objectives of this subsurface drilling activity were to determine the waste depth on the western end of the landfill and the volume of soil available under the MatCon for possible Evapo-Transpiration (ET) cover construction use. Seventy geoprobe borings were drilled, per the Los Alamos Airport Landfill Geoenvironmental Sub Surface Drilling Work Plan, dated August 15, 2014. An additional four soil borings were drilled to determine more precise field conditions, resulting in a total of seventy-four geoprobe borings being drilled. In addition to the soil index properties and characteristics, the following samples were collected and analyzed per NMED's request.

- At six soil boring locations soil samples were collected and analyzed for Volatile Organic Compounds (VOCs) by Gas Chromatograph Mass Spectrometry (GCMS),
- In addition, at the same six locations air samples were collected and analyzed for VOCs, Carbon Dioxide Thermal Conductivity (TCD), Nitrogen, Methane (TCD), and Hydrogen Sulfide.

The analytical report for these analyses was provided with the 2014 Annual Inspection Report for Los Alamos County Airport Landfill, Solid Waste Management Units 73-001(a) and 73-001(d), Technical Area 73.

In December 2014 through January 2015, construction activities were conducted to further stabilize the eastern perimeter ground of the Airport Landfill. The objective of these activities was to complete storm water management system improvements, see figures 3.2-1 through 3.2-5, 3.5-1, 3.6-1, and 3.6-2. Permanent storm water measures installed included:

- Riprap lined bench repair,
- Riprap bench extension system,
- Gabion baskets,
- North and South rill restoration,
- Installation of rock check dams,
- Eroded edge restoration,
- Porous detention and sedimentation basin restoration,
- South slope and North and South eroded rill improvement, and
- Northern slope drainage improvement, grading, and disturbed area topsoil.

2.2 2015 Activities

May 7, 2015, the Work Plan for Los Alamos County Airport Landfill Cover Replacement was submitted for NMED review. On July 17, 2015 a Notice of Disapproval was received from NMED. NMED's comments were addressed and revised documents were submitted August 6, 2015. On August 15, 2015, an Approval with Modifications was received from NMED. August 31, 2015 final clarifications were submitted to NMED. On October 7, 2015, mobilization for construction activities began at the Airport Landfill. Once construction of the new landfill cover is complete, monitoring will be resumed according to the Post-Closure Care and Monitoring Plan, Los Alamos County Airport Landfill Cover Replacement dated July 2015.

3.0 INSPECTION ACTIVITIES

During calendar year 2015, inspection activities were conducted in accordance with the-

"Post-Closure Care and Monitoring Plan for the Los Alamos Site Office TA-73 Airport Landfill, Revision 2" (North Wind, Inc. 2006, 111707). In addition, weekly and quarterly landfill-gas monitoring was implemented in response to the elevated air monitoring results measured at the end of 2013.

Inspection activities at SWMU 73-001(a) focused on evaluating the condition and overall integrity of each individual feature of the Airport Landfill. The SWMU 73-001(d) DDA, located at the eastern end of the airport runway (Figure 2.0-1), was inspected for evidence of erosion or reduced vegetation.

The following field inspections and landfill gas monitoring activities were completed during 2015.

The 2015 annual inspection of the gas-collection system, TRM, the vegetated areas, concrete retaining wall, rock check dams, storm water collection system, outfall pipe, and DDA was not conducted due to construction at the site. In October 2015, construction began at the site to remove the failing cover. As of the end of December 2015 the north and east sides of the MatCon and concrete hangar pads had been removed and the north part of the landfill was stabilized. All waste was removed from the hangar area. For final subgrade preparation, an additional 20% of fill material is necessary and then installation of the concrete hangar pad will be completed. Appendix A provides highlights of the construction activities at the site that were completed prior to the end of 2015.

Monthly Inspections of MatCon pavement, concrete hangar pads, and survey benchmarks were conducted on the following dates. See Appendix B for the completed monthly checklists and photos of landfill features.

- January 28, 2015
- February 26, 2015
- March 26, 2015
- April 30, 2015
- May 28, 2015
- June 25, 2015
- July 30, 2015
- August 27, 2015
- September 28, 2015
- October 13, 2015

Quarterly landfill-gas measurements were conducted on the following dates. See Appendix C for the quarterly landfill-gas measurements.

- March 26, 2015
- June 29, 2015
- September 23, 2015

Weekly landfill-gas measurements were conducted through April 2015. In May 2015, at the direction of the EM-LA, weekly landfill-gas monitoring changed to monthly landfill-gas monitoring which continued through October 2015 when construction started at the site. See Appendix D for the weekly/monthly landfill-gas measurements.

One After Significant Rainfall event inspection of the MatCon pavement, hangar pads, vegetated areas, rock check dams, rock retaining wall, gabion baskets, and the storm

water collection system was completed on July 10, 2015. An after significant rainfall is either a thunderstorm that produces more than half an inch of rain in less than one hour, or a precipitation event in which more than one inch of rain falls. The inspection documented one-half inch of rain had fallen within 15 minutes at 4:55 the morning of July 7, 2015, with a total of 1.12 inches that day with additional light rain on July 8th and July 9th. When construction began in October 2015 the EM-LA requested they be notified of significant precipitation events, but that inspections not be conducted due to the site being a construction zone. The EM-LA was notified of a significant precipitation event on October 21, 2015, 1.14 inches of rain fell over the course of the day. See Appendix E for the completed after significant rainfall checklist and notification.

3.1 MatCon Pavement and Concrete Hangar Pads

Monthly inspection surveys of the MatCon asphalt pavement were conducted by walking along transects along the western, eastern, and southern areas of the pavement and between each hangar pad (Figures 2.0-1 and 2.0-2). The inspection survey looked for evidence of cracking, subsidence, or separation of the pavement.

Cracking of the hot seal repairs completed in 2011 and 2012 was noted at approximately 90% of the previously repaired locations. In addition, extension cracks were noted at many of the previously identified locations. New cracks were observed between all hangar pads.

Cracks and gaps between the MatCon pavement and the concrete hangar pads were sealed May 19, 2014. Continued expansion between joints and previously sealed cracks were noted in monthly reports, this was more visible as temperatures dropped below freezing.

Monthly inspection surveys, completed in 2015, of the five concrete hangar pads were conducted by walking along the perimeter of each hangar pad and along a transect down the center of each pad. The inspection survey looked for evidence of cracking, subsidence, and/or separation between expansion joints and separation/subsidence between the concrete pads and the MatCon pavement. Visual observations indicated the following:

- Subsidence of the MatCon primarily associated with the north west corners of Hangar pads 2 and 3.
- MatCon settling is evident at the north west corner of Hangar Pad 2, see figure 3.1-1.
- Subsidence and settlement is evident at concrete Hangar Pads 2, 3, 4 & 5.
- The north end of Hangar Pad 1 has raised and slightly twisted.
- The north ends of Hangar pads 2, 3, 4, & 5, particularly the north west corners, have noticeable subsidence.
- Cracking associated with the subsidence of the Hangar pads was also observed throughout the middle portion of each Hangar Pad.
- Separation of the expansion joints was observed at all Hangar pads.
- Cracking and differential settling of joints between the Hangar pads and the MatCon pavement was noted at all Hangar pads, see figure 3.1-2.

3.2 Vegetated (Seeded) Areas

The annual inspection of the vegetated areas was not conducted due to construction at the site. An After Significant Rainfall event inspection, conducted July 10, 2015, which focused on evidence of erosion, subsidence, sparse vegetation, and animal burrows.

Most of the vegetated areas are well populated with various grasses, some shrubs, and seasonal weeds. A few areas have sparse vegetation but are covered with TRM. No animal burrows were noted.

In September 2013, during a 1,000 year storm event, the airport received over seven inches of rain. Rill erosion was noted within the vegetated slope area, a channel cut formed from runoff associated with the mid-slope riprap runoff channel, and a 14' by 14' by 10' hole was created. This area was stabilized during construction activities that were conducted from December 2014 through January 2015 to further stabilize the eastern perimeter ground. Rock armoring and gabion baskets were used to address the hole that was created, see figures 3.2-1 and 3.2-2. In addition, the fencing along the eastern edge of the site, below the vegetated areas was destroyed by the erosion, new fencing was installed; see figures 3.2-3 and 3.2-4. Some of the vegetated area was disturbed during construction activities. The disturbed area was covered with jute matting, see figure 3.2-5.

3.3 Storm Water Collection System

The annual inspection of the storm water collection system was not conducted due to construction at the site. An After Significant Rainfall event inspection was conducted July 10, 2015. The components consist of 6 grated trench drains (5 of which run next to each of the 5 Hangar pads), 13 drain inlets, a manhole, and the outfall pipe. The length of each trench drain was inspected for standing water, cracking, excessive sedimentation, and displacement of grates. The integrity of the drain inlet grates and concrete structures was inspected for cracking or displacement. The outfall pipe was inspected for damage and/or displacement.

- Cracking and displacement of the concrete channels associated with hangar pad subsidence were noted in the trench drains at all Hangar pads.
- Standing water was observed in the northern half of all trench drains, to varying degrees. The most standing water was noted in the trench drain associated with Hangar Pad 3, see figure 3.3-1.
- Standing water was noted in all concrete drain inlets associated with the Hangar pads.
- The drainage culvert inlets located south of the Hangar pads, the manhole, and the outfall all appear to be in good working condition.

3.4 Riprap Drainage Channels

The annual inspection of riprap drainage channel was not conducted due to construction at the site. An After Significant Rainfall event inspection was conducted July 10, 2015. Two riprap gravel drainage channels are located along the eastern and southeastern edges of the MatCon cover; a third riprap gravel channel is located mid-slope on the sloped portion of the landfill cover.

The length of each drainage channel was inspected for evidence of subsidence, erosion, vegetation, or excessive sedimentation. Areas below each end of the mid-slope drainage

channel that receive flow from the channels were also inspected for signs of subsidence, erosion, and sedimentation.

Based upon visual inspections, the drainage channels adjacent to the MatCon cover appear to be in good working condition, with no evidence of subsidence, erosion, sedimentation, or excessive vegetation. However, after the significant precipitation event in July, standing water was noted in the North-South gravel channel, see figure 3.4-1.

3.5 Retaining Walls

The annual inspection of the retaining walls and porous retention areas was not conducted due to construction at the site. An After Significant Rainfall event inspection was conducted July 10, 2015. The concrete retaining wall and the two rock retaining (rock basket/gabion) walls are located at the toe of the sloped portion of the landfill cover (Figure 2.0-2). The top and face of each wall were inspected for areas of cracking, separation, rotation, erosion/sedimentation, or slumping.

Based upon visual observations, all retaining walls are in good working condition, with no evidence of cracking, separation, rotation, erosion/sedimentation, or slumping.

The retention area below the retaining walls was addressed during construction activities that began in December 2014 and was completed in January 2015. The area below the retaining wall was graveled to slow water during storm events and gabion baskets were installed. See figures 3.5-1 and 3.2-2.

3.6 Temporary Erosion-Control Features

During the December 2014 through January 2015 construction activities permanent erosion control features were installed to further stabilize the eastern perimeter ground of the Airport Landfill. See figures 3.6-1 and 3.6-2 of the newly constructed rock check dams that replaced temporary waddles.

3.7 Landfill-Gas Monitoring

Landfill-gas monitoring was conducted quarterly at hangar pad, trench drain, drainage culvert, perimeter ground, and perimeter spinner locations. Landfill-gas monitoring was conducted weekly at perimeter spinner locations. Monitoring entailed measuring combustible gases, oxygen, and carbon monoxide at 47 locations along the hangar pads, trench drains, and drain inlets and within the northern and eastern vegetated areas. In addition, monitoring was completed at the six landfill-gas collection system riser vent (spinner) locations. Landfill-gas monitoring locations are shown in Figure 2.0-2.

Concentrations of combustible gases, oxygen, and carbon monoxide were measured in percent values using a calibrated GX-2012 multigas detector calibrated by Essential Safety Products of Albuquerque, New Mexico. This instrument is designed to detect the minimum concentration of a combustible gas in air that can ignite, or the lower explosive limit (LEL), as well as oxygen and carbon monoxide levels. The combustible alarm was calibrated at 2.5% by volume for methane. Toxic alarm #1 was calibrated at 50 parts per million (ppm) for carbon monoxide and toxic alarm #2 was calibrated at 25 ppm for hydrogen sulfide. The oxygen alarm was calibrated at 12% by volume. Overall combustibility was calibrated using methane at 50% by volume.

Gas monitoring was conducted two inches above the expansion joints for the hangar pad

(HP) locations, four inches below the trench grate for trench drain (TD) locations, four inches below the grate for drainage culvert (DC) locations, two inches above ground surface for perimeter ground (PG) locations, and at the spinner for perimeter spinner (PS) vent pipe locations.

Quarterly gas-monitoring results are presented in Table 3.7-1. Results of the quarterly landfill-gas monitoring for hangar pad, trench drain, drainage culvert, and perimeter ground locations indicated background values or as noted in the table, or not measured due to the culvert being full at TD-05 in the 2nd and 3rd quarters and due to standing water at two trench locations, TD-07 and TD-09 in the 3rd quarter of 2015. Perimeter spinner locations are discussed in the next section.

3.8 Weekly/Monthly Landfill-Gas Monitoring

Landfill-gas monitoring was conducted in the same manner as the quarterly landfill-gas monitoring. It was conducted weekly through April 2015 and monthly through October 2015, a total of 24 times. These landfill-gas monitoring results are presented in Table 3.8-1. Readings are measured and compared to standard background levels of 0% for methane, 20.9% for oxygen, and 0% for carbon monoxide.

Results of the landfill-gas monitoring for perimeter spinner location PS-01 were as follows:

- All readings for methane were at 0%.
- All readings for oxygen were at 20.9% except for one reading which was at 20.7%.
- All readings for carbon monoxide were at 0%.

Results of the landfill-gas monitoring for perimeter spinner location PS-02 are plotted on a line chart in Figure 3.8-1.

- Methane was recorded at elevated values 22 out of 24 times.
    - Elevated values ranged from 27% to 100% LEL, which is above the 25% LEL.
    - Sixteen of the elevated readings for methane were recorded at 100%.
- Twenty-two readings for oxygen were below 20.9%.
    - These oxygen readings ranged from 3.8% to 20.3%.
- All readings for carbon monoxide were 0%.

Results of the landfill-gas monitoring for perimeter spinner location PS-03 are plotted on a line chart in Figure 3.8-2.

- All readings for methane were at 0%.
- Two readings for oxygen were below 20.9% at 15.9% and 20.4%.
- One reading for carbon monoxide was recorded at 1%.

Results of the weekly landfill-gas monitoring for perimeter spinner location PS-04 are plotted on a line chart in Figure 3.8-3.

- Methane was recorded at elevated values twice out of 24 times.
    - Two readings for methane were at 100% LEL, which is above the 25% LEL.
- Four readings for oxygen were below 20.9%.

    - These readings ranged from 15.7% to 20.8%
- One reading for carbon monoxide was recorded at 1%.

Results of the weekly landfill-gas monitoring for perimeter spinner location PS-05 are plotted on a line chart in Figure 3.8-4.

- Methane was recorded at elevated values 20 out of 24 times.
    - Elevated values ranged from 2% to 100% LEL.
        - Two values were below the 25% LEL at 2% and 5%.
        - Eighteen of the elevated values were above the 25% LEL.
        - Methane was recorded at 100% 13 times.
- Twenty-one oxygen readings were below 20.9%.
    - These oxygen readings ranged from 3% to 20.7%
- All readings for carbon monoxide were at 0%.

Results of the weekly landfill-gas monitoring for perimeter spinner location PS-06 are plotted on a line chart in Figure 3.8-5.

- All readings for methane were at 0%.
- One reading for oxygen was below 20.9% at 20.8%.
- One reading for carbon monoxide was recorded at 1%.

3.9 Debris Disposal Area

Inspections of the DDA were conducted after significant rainfall events. The DDA has a well-established vegetative cover with no evidence of erosion.

4.0 REFERENCES

The following list includes all documents cited in this report. Parenthetical information following each reference provides the author(s), publication date, and ER ID. This information is also included in text citations. ER IDs are assigned by the Environmental Programs Directorate's Records Processing Facility (RPF) and are used to locate the document at the RPF and, where applicable, in the master reference set.

Copies of the master reference set are maintained at the NMED Hazardous Waste Bureau and the Directorate. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority.

Documents previously submitted to the administrative authority are not included.

LANL (Los Alamos National Laboratory), February 2011. "Inspection Report for Technical Area 73, Los Alamos County Airport Landfill, Solid Waste Management Units 73-001(a) and 73-001(d)," Los Alamos National Laboratory document LA-UR-11-0772, Los Alamos, New Mexico. (LANL 2011, 111750)

NMED (New Mexico Environment Department), August 8, 2007. "Notice of Approval, Remedy Completion Report SWMUs 73-001(a) and 73-001(d)," New Mexico Environment Department letter to D. Gregory (DOE-LASO) and D. McInroy (LANL) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2007, 098285)

North Wind Inc., April 2006. "Post-Closure Care and Monitoring Plan for the Los Alamos Site Office TA-73 Airport Landfill, Revision 2," report prepared for the U.S. Department of Energy, Los Alamos Site Office, North Wind report no. NW-ID-2004-027, Los Alamos, New Mexico. (North Wind, Inc., 2006, 111707)

North Wind Inc., April 2007. "Remedy Completion Report, DOE-LASO TA-73 Airport Landfill, SWMUs 73-001(a) and 73-001(d)," report prepared for U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Site Office, North Wind report no. NWI-4212-001,Los Alamos, New Mexico. (North Wind, Inc., 2007, 096333)

Dwyer Engineering LLC, August 2015. "Work Plan Los Alamos County Airport Landfill Cover Replacement," prepared for U.S. Department of Energy, Environmental Management Los Alamos Field Office (EM-LA). DE-EM 002882.

Dwyer Engineering LLC, July 2015, Revision 01. "POST-CLOSURE CARE AND MONITORING PLAN, LOS ALAMOS COUNTY AIRPORT LANDFILL COVER REPLACEMENT," prepared for U.S. Department of Energy, Environmental Management Los Alamos Site Office, Environmental Projects Office (LASO, EPO).

5.0 FIGURES

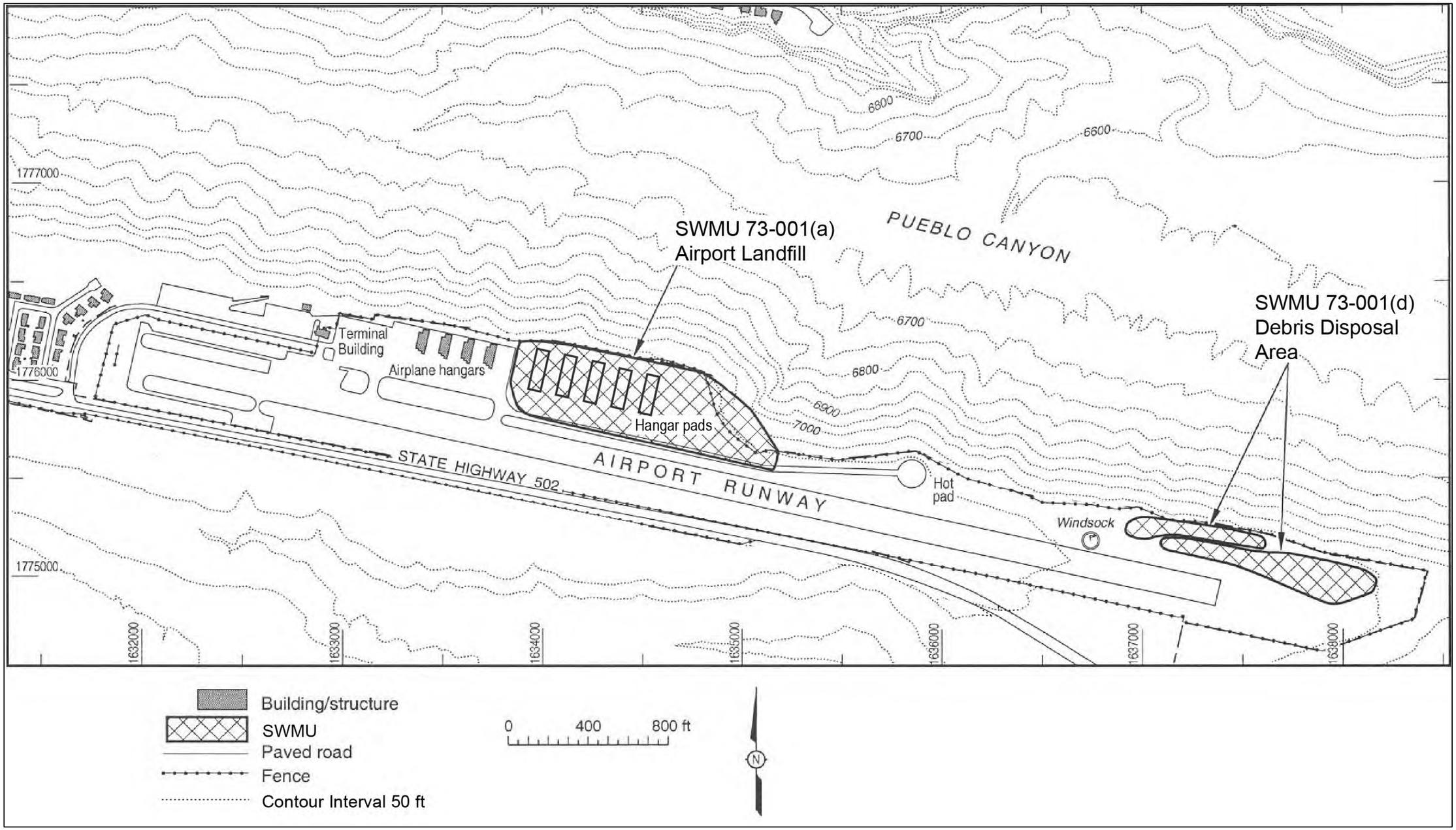


Figure 2.0-1 Locations of the Airport Landfill and DDA

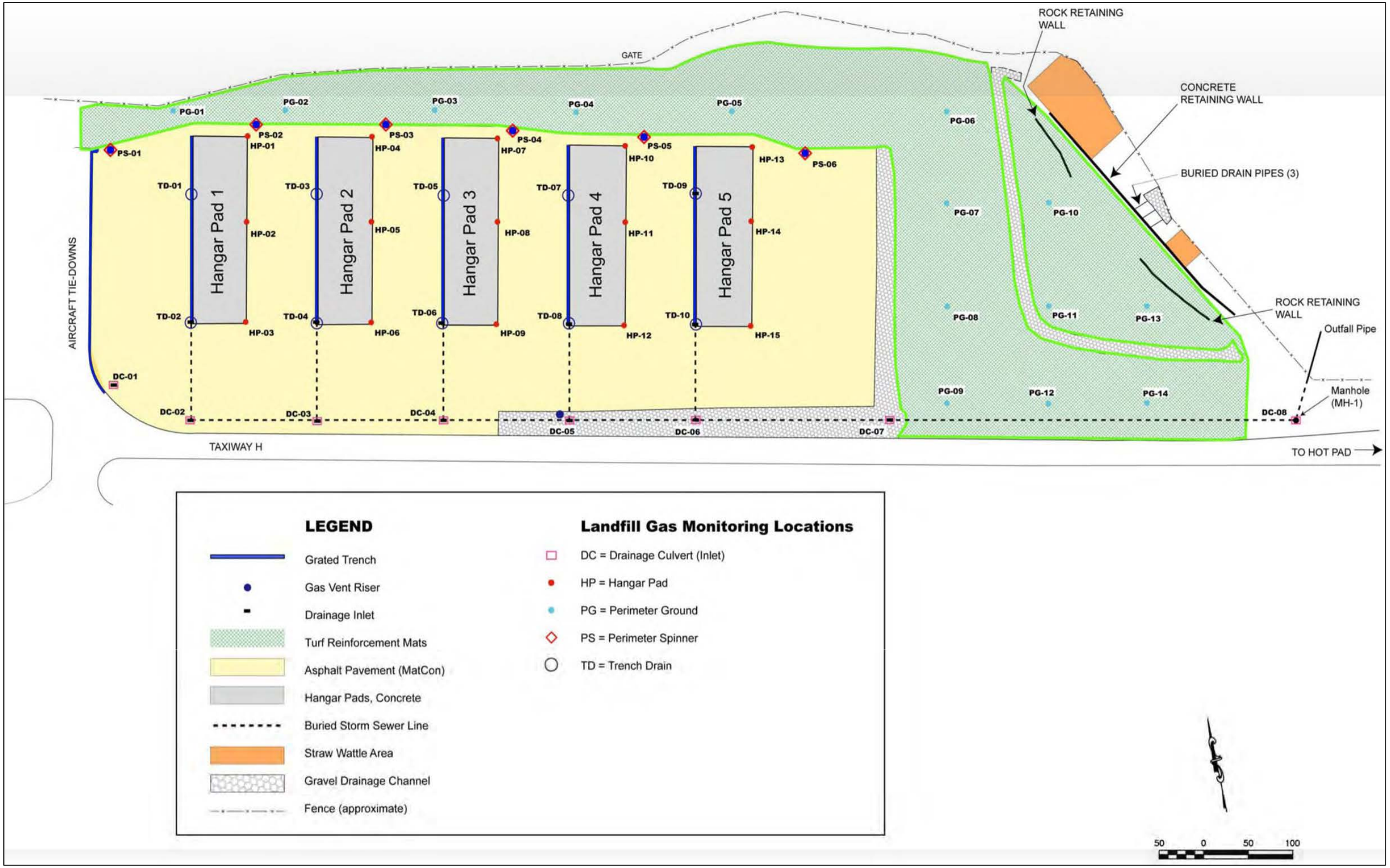


Figure 2.0-2 Airport landfill features

Figure 3.1-1 MatCon settling, North West corner of Hangar Pad 2

Figure 3.1-2 Seam between MatCon & Hangar Pad 1, cracking/differential settling

Figure 3.2-1 Erosion caused by 1,000 year rainstorm in 2013

Figure 3.2-2 Rock armoring and gabion basket wall to address erosion

Figure 3.2-3 Fence destruction caused by 1,000 year rainstorm in 2013

Figure 3.2-4 Riprap, rock check dams, and fence installation

Figure 3.2-5 Jute matting on vegetated (seeded) area from above, facing East

Figure 3.3-1 Trench drain water pooling at North West corner of Hangar Pad 3

Figure 3.4-1 Standing water in North-South gravel channel

Figure 3.5-1 Completed rocked area below retaining wall

Figure 3.6-1 Rock check dams, former waddle slope (from above)

Figure 3.6-2 Rock check dams, former waddle slope (from below)

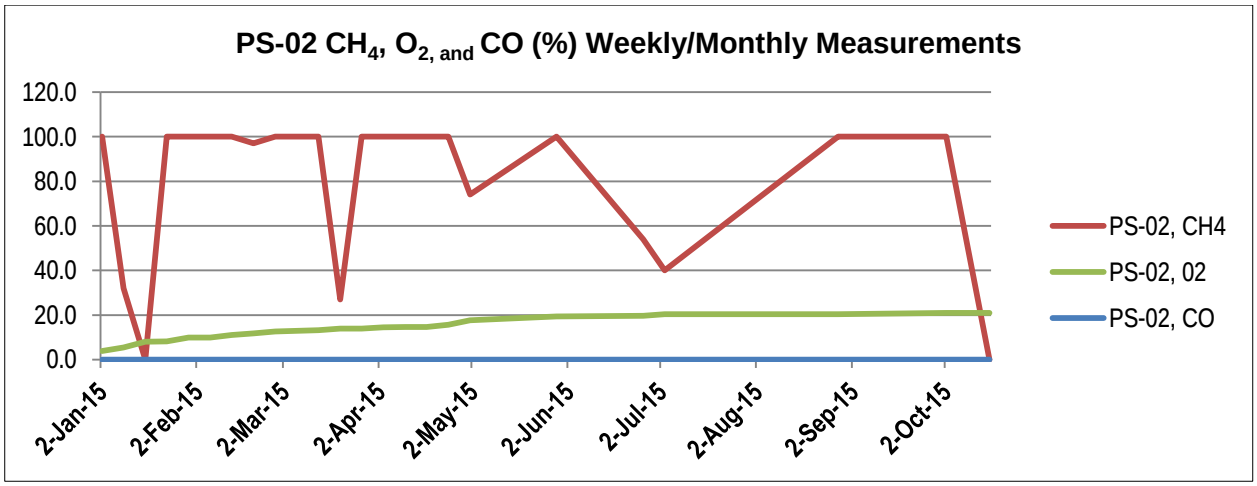


Figure 3.8-1 2015 PS-02: Methane, Oxygen, and Carbon Monoxide Measurements

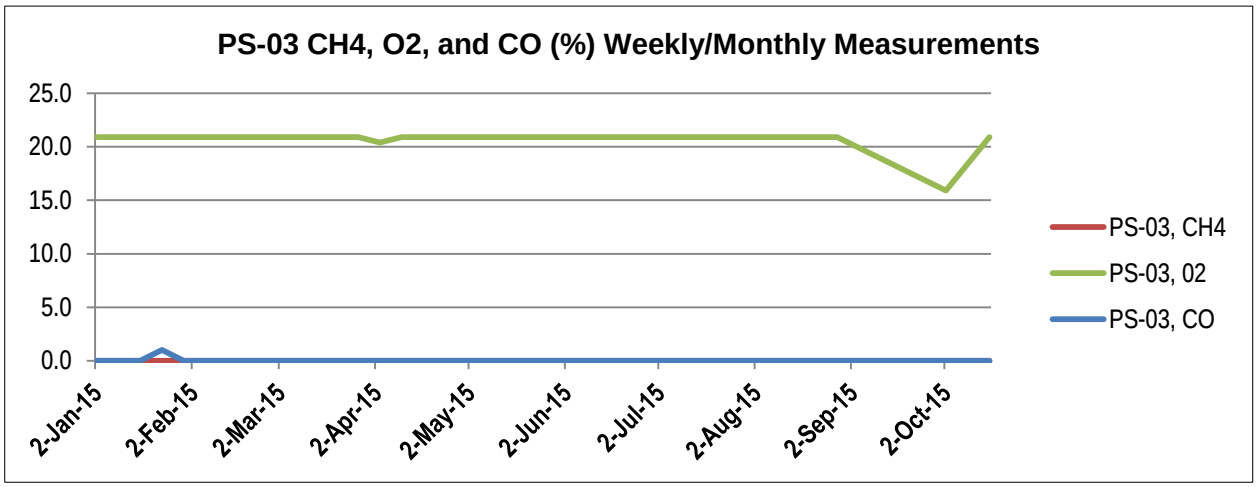


Figure 3.8-2 2015 PS-03: Methane, Oxygen, and Carbon Monoxide Measurements

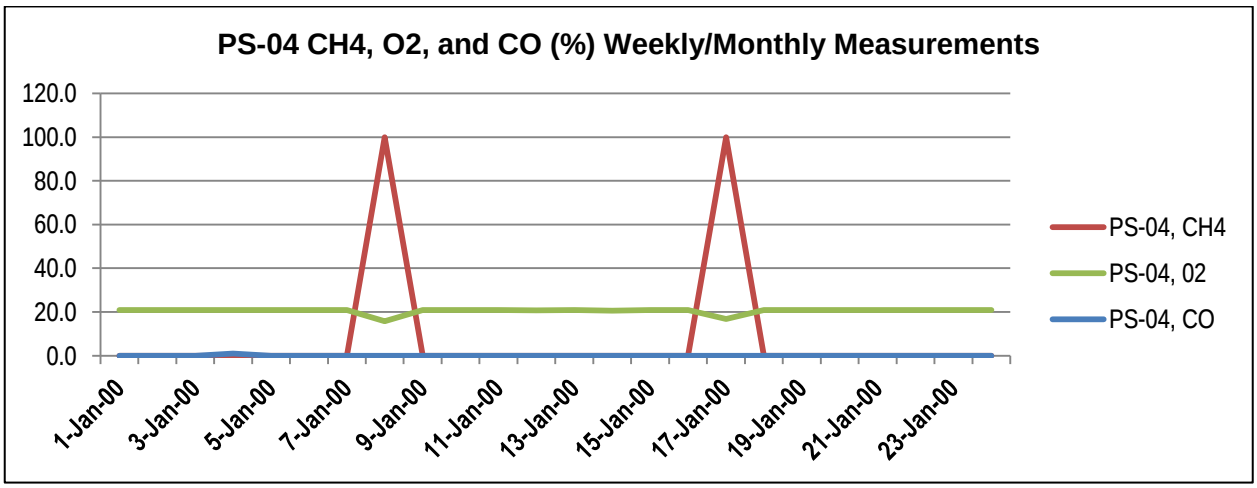


Figure 3.8-3 2015 PS-04: Methane, Oxygen, and Carbon Monoxide Measurements

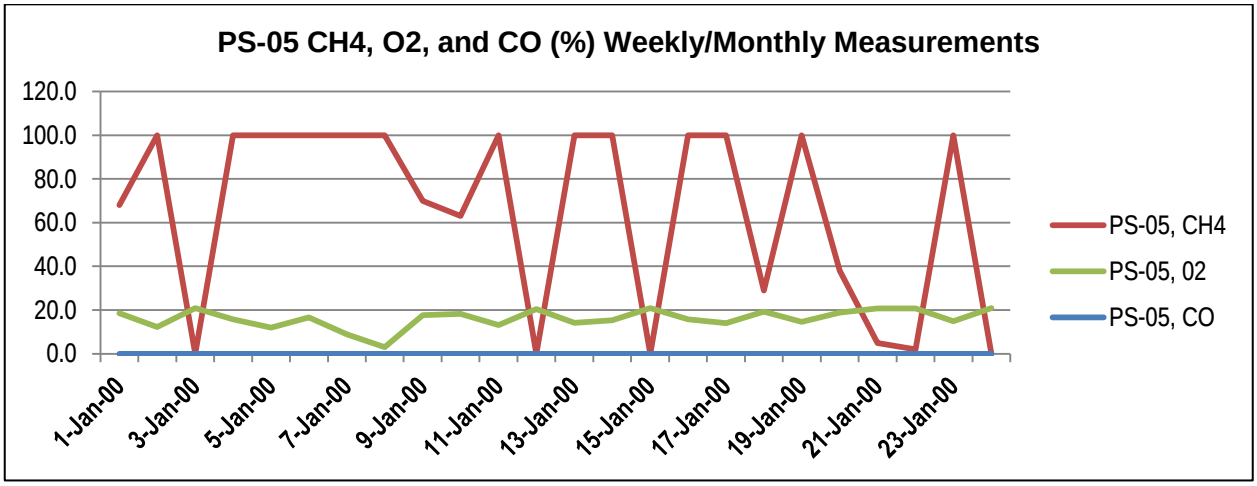


Figure 3.8-4 2015 PS-05: Methane, Oxygen, and Carbon Monoxide Measurements

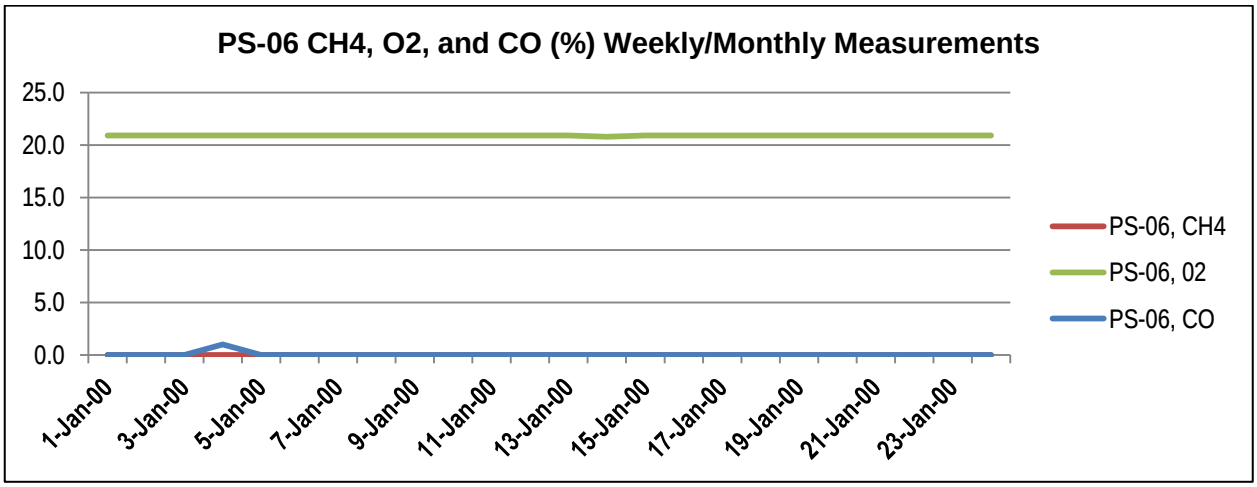


Figure 3.8-5 2015 PS-06: Methane, Oxygen, and Carbon Monoxide Measurements

6.0 TABLES

Table 3.7-1 Quarterly Landfill-Gas Monitoring Results (%), 2015

DATE	PS-01, CH_4	PS-01, O_2	PS-01, CO	PS-02, CH_4	PS-02, O_2	PS-02, CO	PS-03, CH_4	PS-03, O_2	PS-03, CO	PS-04, CH_4	PS-04, O_2	PS-04, CO	PS-05, CH_4	PS-05, O_2	PS-05, CO	PS-06, CH_4	PS-06, O_2	PS-06, CO
26-Mar-15	0	20.9	0	100	12.9	0	0	20.9	0	0	20.9	0	100	14.2	0	0	20.9	0
29-Jun-15	0	20.9	0	100	7.5	0	0	20.9	0	0	20.9	0	85	18.7	0	0	20.9	0
3-Sep-15	0	20.9	0	100	10.9	0	0	20.9	0	0	20.9	0	85	18.7	0	0	20.9	0
	HP-01, CH_4	HP-01, O_2	HP-01, CO	HP-02, CH_4	HP-02, O_2	HP-02, CO	HP-03, CH_4	HP-03, O_2	HP-03, CO	HP-04, CH_4	HP-04, O_2	HP-04, CO	HP-05, CH_4	HP-05, O_2	HP-05, CO	HP-06, CH_4	HP-06, O_2	HP-06, CO
26-Mar-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
29-Jun-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
3-Sep-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
	HP-07, CH_4	HP-07, O_2	HP-07, CO	HP-08, CH_4	HP-08, O_2	HP-08, CO	HP-09, CH_4	HP-09, O_2	HP-09, CO	HP-10, CH_4	HP-10, O_2	HP-10, CO	HP-11, CH_4	HP-11, O_2	HP-11, CO	HP-12, CH_4	HP-12, O_2	HP-12, CO
26-Mar-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
29-Jun-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
3-Sep-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
	HP-13, CH_4	HP-13, O_2	HP-13, CO	HP-14, CH_4	HP-14, O_2	HP-14, CO	HP-15, CH_4	HP-15, O_2	HP-15, CO	TD-01, CH_4	TD-01, O_2	TD-01, CO	TD-02, CH_4	TD-02, O_2	TD-02, CO	TD-03-15, CH_4	TD-03, O_2	TD-03, CO
26-Mar-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
29-Jun-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
3-Sep-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
	TD-04, CH_4	TD-04, O_2	TD-04, CO	TD-05, CH_4	TD-05, O_2	TD-05, CO	TD-06, CH_4	TD-06, O_2	TD-06, CO	TD-07, CH_4	TD-07, O_2	TD-07, CO	TD-08, CH_4	TD-08, O_2	TD-08, CO	TD-09-15, CH_4	TD-09, O_2	TD-09, CO
26-Mar-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
29-Jun-15	0	20.9	0	culvert full of water			0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
3-Sep-15	0	20.9	0	culvert full of water			0	20.9	0	standing water			0	20.9	0	standing water		
	TD-10, CH_4	TD-10, O_2	TD-10, CO	DC-01, CH_4	DC-01, O_2	DC-01, CO	DC-02, CH_4	DC-02, O_2	DC-02, CO	DC-03, CH_4	DC-03, O_2	DC-03, CO	DC-04, CH_4	DC-04, O_2	DC-04, CO	DC-05-15, CH_4	DC-05, O_2	DC-05, CO
26-Mar-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
29-Jun-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
3-Sep-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
	DC-06, CH_4	DC-06, O_2	DC-06, CO	DC-07, CH_4	DC-07, O_2	DC-07, CO	DC-08, CH_4	DC-08, O_2	DC-08, CO	PG-01, CH_4	PG-01, O_2	PG-01, CO	PG-02, CH_4	PG-02, O_2	PG-02, CO	PG-03, CH_4	PG-03, O_2	PG-03, CO
26-Mar-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
29-Jun-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
3-Sep-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
	PG-04, CH_4	PG-04, O_2	PG-04, CO	PG-05, CH_4	PG-05, O_2	PG-05, CO	PG-06, CH_4	PG-06, O_2	PG-06, CO	PG-07, CH_4	PG-07, O_2	PG-07, CO	PG-08, CH_4	PG-08, O_2	PG-08, CO	PG-09, CH_4	PG-09, O_2	PG-09, CO
26-Mar-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
29-Jun-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
3-Sep-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
	PG-10, CH_4	PG-10, O_2	PG-10, CO	PG-11, CH_4	PG-11, O_2	PG-11, CO	PG-12, CH_4	PG-12, O_2	PG-12, CO	PG-13, CH_4	PG-13, O_2	PG-13, CO	PG-14, CH_4	PG-14, O_2	PG-14, CO			
26-Mar-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0			
29-Jun-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0			
3-Sep-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0			

Notes: Final quarterly report was not conducted due to construction activities that began mid-October.

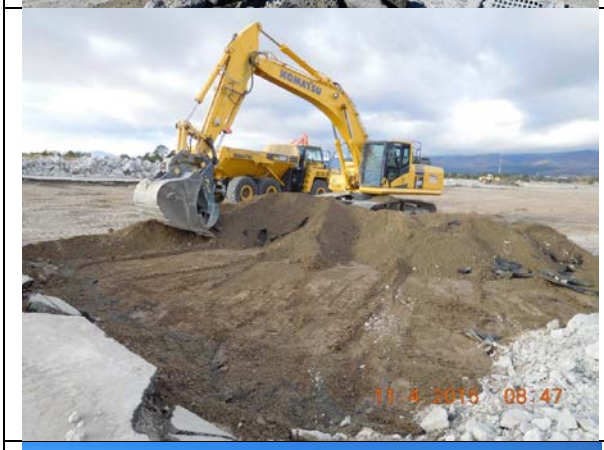
Table 3.8-1 Weekly Landfill-Gas Monitoring Results (%), 2015

WEEK ENDING	PS-01, CH_4	PS-01, O_2	PS-01, CO	PS-02, CH_4	PS-02, O_2	PS-02, CO	PS-03, CH_4	PS-03, O_2	PS-03, CO	PS-04, CH_4	PS-04, O_2	PS-04, CO	PS-05, CH_4	PS-05, O_2	PS-05, CO	PS-06, CH_4	PS-06, O_2	PS-06, CO
2-Jan-15	0	20.9	0	100	11.8	0	0	20.9	0	0	20.9	0	68	18.6	0	0	20.9	0
9-Jan-15	0	20.9	0	32	15.6	0	0	20.9	0	0	20.9	0	100	12.2	0	0	20.9	0
16-Jan-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
23-Jan-15	0	20.9	0	100	17.7	0	0	20.9	1	0	20.9	1	100	15.8	0	0	20.9	1
30-Jan-15	0	20.9	0	100	3.8	0	0	20.9	0	0	20.9	0	100	11.9	0	0	20.9	0
6-Feb-15	0	20.9	0	100	14.5	0	0	20.9	0	0	20.9	0	100	16.6	0	0	20.9	0
13-Feb-15	0	20.9	0	100	8.1	0	0	20.9	0	0	20.9	0	100	8.9	0	0	20.9	0
20-Feb-15	0	20.9	0	97	5.5	0	0	20.9	0	100	15.7	0	100	3	0	0	20.9	0
27-Feb-15	0	20.9	0	100	14.6	0	0	20.9	0	0	20.9	0	70	17.7	0	0	20.9	0
6-Mar-15	0	20.9	0	100	12.6	0	0	20.9	0	0	20.9	0	63	18.2	0	0	20.9	0
13-Mar-15	0	20.9	0	100	9.9	0	0	20.9	0	0	20.9	0	100	13.2	0	0	20.9	0
20-Mar-15	0	20.9	0	27	19.7	0	0	20.9	0	0	20.8	0	0	20.5	0	0	20.9	0
27-Mar-15	0	20.9	0	100	12.9	0	0	20.9	0	0	20.9	0	100	14.2	0	0	20.9	0
3-Apr-15	0	20.7	0	100	14.6	0	0	20.4	0	0	20.6	0	100	15.3	0	0	20.8	0
10-Apr-15	0	20.9	0	100	13.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0
17-Apr-15	0	20.9	0	100	13.9	0	0	20.9	0	0	20.9	0	100	15.7	0	0	20.9	0
24-Apr-15	0	20.9	0	100	8	0	0	20.9	0	100	16.8	0	100	14	0	0	20.9	0
1-May-15	0	20.9	0	74	20.3	0	0	20.9	0	0	20.9	0	29	19.3	0	0	20.9	0
29-May-15	0	20.9	0	100	13.2	0	0	20.9	0	0	20.9	0	100	14.6	0	0	20.9	0
26-Jun-15	0	20.9	0	54	19.3	0	0	20.9	0	0	20.9	0	38	18.9	0	0	20.9	0
3-Jul-15	0	20.9	0	40	20.3	0	0	20.9	0	0	20.9	0	5	20.7	0	0	20.9	0
28-Aug-15	0	20.9	0	100	11	0	0	20.9	0	0	20.9	0	2	20.7	0	0	20.9	0
2-Oct-15	0	20.9	0	100	9.9	0	0	15.9	0	0	20.9	0	100	14.9	0	0	20.9	0
16-Oct-15	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0	0	20.9	0

Notes: Weekly monitoring was discontinued in May when monthly monitoring began; November and December monthly monitoring inspections were not conducted due to construction activities that began mid-October.

Appendix A, Highlights of Construction Activities

	10/13/15, demolition of Hangar Pad 5
	10/15/15, saw cutting asphalt for its removal.
	10/22/15, excavation and stockpiling of material
	10/22/15, sizing larger stockpiled material

	11/2/15, removal of asphalt in waste removal area
	11/4/15, stripping of exposed aggregate base material
	11/6/15, stripping sand tuff material beneath aggregate base material
	11/6/15, uncovered asphalt 1'-2' below top of asphalt in southern 25' of new hangar pad footprint. Removed the asphalt, at request of Dwyer Engineering, to allow for uniform engineered fill subgrade for the new hangar pad.

	11/9/15, removing reinforced concrete of hangar pad 1.
	11/14/15, excavating waste from the new hangar pad area. Waste was relocated to the east side of the landfill center area and covered with a 6” lift of subgrade material.
	11/17/15, condition of waste relocation area in the center of the landfill.
	11/19/15, spreading 6” lift of relocated waste in the southeastern section of the waste relocation area.

	11/21/15, area east of Hangar Pad 5, after asphalt removal
	11/24/15, waste relocation area along center of landfill after placement of additional soil cover
	12/2/15, excavating waste from northwest corner of removal area
	12/2/15, asphalt removal at east end of landfill

	12/2/15, spreading 6” lift of relocated waste, across the northern section of the waste relocation area, a minimum 6” lift of excavated subgrade was spread and compacted over the waste as a daily cover
	12/11/15, temporary storm sewer run installed
	12/11/15, cutting existing subgrade along north edge of landfill. Subgrade was noted to contain waste, subgrade was spread in a layer across the north side of the waste removal area
	12/15/15, in-place density test with a nuclear density gauge on salvaged aggregate base material placed as backfill in the waste relocation area. Tests indicated that all compacted backfill met or exceeded the required compaction of 95% of the standard proctor

	12/17/15, continuing to place maximum 1’ lifts of salvaged aggregate base material as backfill, west of the proposed methane liner curtain in the waste relocation excavation.
	12/18/15, removed temporary storm water piping and excavated 4” deep trench to place concrete pipe ballast
	12/18/15, loading stockpiled, sized, asphalt for recycling
	12/21/15, placed concrete as a 4” thick mud ballast for new storm sewer pipe crossing

	12/21/15, covered concrete with several layers of plastic tarp

Appendix B, Monthly Inspection Checklists

The Lakeworth Group, LLC

146B East Gate Drive; PO Box 1232 / Los Alamos, NM 87544 / Telephone (505) 662-7275

Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: 1-28-15

Inspector Printed Name: Joseph T. Sena Inspector Signature: Joseph T Sena

Barometric Pressure: 30.30 Temperature: 44 F Wind Direction: NE Wind Speed: 6

Weather conditions: Fair

Date and amount of last precipitation (within last 48 hours): NONE

Weather Data Source: Los Alamos Airport - National Weather Service

Figure(s): Photos attached

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	See attachment			
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	See attachment			
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	Benchmarks were accessible and attached to concrete pads	No		
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
OTHER					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

LIST PHOTOS:

Photo 1: Newly constructed rock dams		
Photo 2: Newly constructed rock dams		
Photo 3: Newly constructed gravel channel		

The Lakeworth Group, LLC

146B East Gate Drive; PO Box 1232 / Los Alamos, NM 87544 / Telephone (505) 662-7275

Inspection Attachment for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d)

Date: 1-28-15

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Meteon Asphalt Pavement	m	Differential settlement and subsidence continues as previously report in the prior monthly reports.			
Concrete Hanger Pads and expansion joints	m	Subsidence and settling continues on all pads. Spider web cracks and seperation of expansion joints continue.			

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

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Photo 1. Newly constructed rock dams	Photo 2. Newly constructed rock dams
Photo 3. Newly construct gravel channel	

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Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: 2-26-15

Inspector Printed Name: JOSEPH T. SENA Inspector Signature: Joseph T. Sena

Barometric Pressure: 30.07 Temperature: 24 Wind Direction: S Wind Speed: 12

Weather conditions: OVERCAST

Date and amount of last precipitation (within last 48 hours): 2-24-15 .02 in

Weather Data Source: Los Alamos Airport - National Weather Service

Figure(s): Photos attached

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	See ATTACHMENT			
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	SEE ATTACHMENT			
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	BENCHMARKS WERE ATTACHED AND ACCESSIBLE ON EACH HANGER PAD.	NO		
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
OTHER					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

LIST PHOTOS:

1. COMPLETED ROCK CHECK DAMS FROM ABOVE	4. COMPLETED GRAVEL CHANNEL	8. CRACKS IN PAD 1
2. COMPLETED ROCK CHECK DAMS FROM BELOW.	5. COMPLETED GRAVEL CHANNEL AND RIP RAP ON FAR EAST SIDE OF SITE.	9. MARKER ON PAD 1
3. COMPLETED ROCKED AREA BELOW RETAINING WALL	6. JUTE MATTING ON DISTURBED VEGETATION AREA FROM ABOVE.	10. SEAM BETWEEN MATCON AND PAD 1, CRACK AND DIFFERENTIAL SETTLING.
	7. JUTE MATTING FROM BELOW	11. NORTH WEST CORNER OF PAD 2, MAT CON SETTLING.

12. DRAINAGE CHANNEL INEFFECTIVE, WATER POOLING NORTH-WEST CORNER OF PAD 3

13. PREVIOSLY SEALED SEAM ON PAD 4, CRACKING CONTINUES TO EXPAND

14. PREVIOSLY SEALED SEAM IN MAT CON BETWEEN PADS 4 & 5.

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Inspection Attachment for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: 2-26-15

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
MATCON ASPHALT PAVEMENT	M	DIFFERENTIAL SETTLEMENT AND SUBSIDENCE CONTINUES AS PREVIOUSLY REPORTED IN PRIOR MONTHS.			
CONCRETE HANGER PADS AND EXPANSION JOINTS	M	SUBSIDENCE AND SETTLEMENT CONTINUES ON ALL PADS. SEPERATION OF EXPANSION JOINTS CONTINUES AS WELL AS AN INCREASE IN THE DENSITY OF SPIDER WEB CRACKS			

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

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Photo 1. Completed rock check dams from above (former waddle slope)

Photo 2. Completed rock check dams from below (former waddle slope)

Photo 3. Completed rocked area below retaining wall

Photo 4. Completed gravel channel

Photo 5. Completed gravel channel and rip rap on far east end of site

Photo 6. Jute matting on disturbed vegetated area from above

Photo 7. Jute matting on disturbed vegetated area from below

Photo 8. Cracks in Pad 1

Photo 9. Marker on Pad 1

Photo10. Seam between MatCon and Pad 1, crack and differential settling

Photo 11. North West corner of Pad 2, MatCon settling

Photo12. Drainage channel ineffective, water pooling North West corner of Pad 3

Photo 13. Previously sealed seam on Pad 4, cracking continuing to expand

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Photo 14. Previously sealed seam in MatCon between Pads 4 and 5

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Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: 3-26-15

Inspector Printed Name: JOSEPH T. SENA Inspector Signature: Joseph T Sena

Barometric Pressure: 30.36 Temperature: 41 Wind Direction: NE Wind Speed: 5

Weather conditions: FAIR

Date and amount of last precipitation (within last 48 hours): NONE

Weather Data Source: Los Alamos Airport - National Weather Service

Figure(s): Photos attached

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	SEE ATTACHMENT			
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	SEE ATTACHMENT			
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	SURVEY BENCHMARKS ON EACH HANGER ARE ATTACHED AND FULLY ACCESSIBLE	NO		
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B	LANDFILL GAS MEASUREMENTS COLLECTED AND RECORDED ON THE MONITORING FORM.	NO		
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
OTHER					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

LIST PHOTOS:

1. SUBSIDENCE OF MATCON ALONG EASTERN EDGE OF PAD 2.	5. SUBSIDENCE ON THE EASTERN OF PAD 3.	8. NEW GROWTH OF VEGETATION ON THE NORTHERN SLOPED SEEDED AREA.
2. SUBSIDENCE OF MATCON ALONG EASTERN EDGE OF PAD 2.	6. SUBSIDENCE ON THE EASTERN EDGE OF PAD3.	9. NEW GROWTH OF VEGETATION ON THE NORTHERN SLOPED SEEDED AREA.
3. NW CORNER OF PAD 2	7. CRACKS ON EXPANSION JOINT ON PAD 4.	10. ~~E AREA SLOPE~~ DISTURBED AREA WITH NEW GROWTH ON EASTERN SLOPE.
4. NW CORNER OF PAD 2		

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Inspection Attachment for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: 3-26-15

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
MATCON ASHPALT PAVEMENT	M	MATCON CONTINUES TO SETTLED WITH ADDITIONAL GAPS AND CRACKS VISABLE AS DOCUMENTED IN THE ATTACHED PHOTOS.	YES		
CONCRETE HANGER PADS AND EXPANSION JOINTS	M	ALL CONCRETE PADS CONTINUE TO CRACK AND SEPARATE FROM ASHPALT PAVEMENT. PADS AND EXPANSION JOINTS CONTINUE TO CRACK AND SUBSIDE AS PREVIOUS REPORTED IN PREVIOUS MONTHLY REPORTS.			

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

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Photo 1. Subsidence of matcon along eastern edge of pad 2.

Photo 2. Subsidence of matcon along eastern edge of pad 2.

Photo 3. NW Corner of Pad 2

Photo 4. NW Corner of Pad 2

Photo 5.Subsidence on the eastern edge of Pad 3.

Photo 6. Subsidence on the eastern edge of Pad 3.

Photo 7. Cracks on expansion joint on Pad 4.

Photo 8. New growth of vegetation on the northern sloped seeded area.

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Photo 9. New growth of vegetation on the northern sloped seeded area.	Photo 10. Eastern Slope disturbed area with new growth

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Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: 4-30-15

Inspector Printed Name: JOSEPH T. SENA Inspector Signature: Joseph T Sena

Barometric Pressure: 30.17 Temperature: 58 Wind Direction: NE Wind Speed: 3

Weather conditions: FAIR

Date and amount of last precipitation (within last 48 hours): NONE

Weather Data Source: Los Alamos Airport - National Weather Service

Figure(s): Photos attached

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	SEE ATTACHMENT	NO		
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	SEE ATTACHMENT	NO		
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	ALL SURVEY BENCHMARKS ARE ATTACHED AND ACCESIBLE.	NO		
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
OTHER					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

LIST PHOTOS:

1. Spider web cracks on		
hanger pad 2.		
2. Dispacement at Pad 4.		
3. Survey Benchmark at		
NE corner of Pad 4		

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Inspection Attachment for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: 4-30-15

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
CONCRETE HANGER PAD AND EXPANSION JOINTS	M	DISPLACEMENT, CRACKING, SUBSIDENCE OF CONCRETE PADS AND EXPASION JOINT CONTINUE AS PREVIOUSLY REPORTED. EXAMPLES OF NEW SPIDER WEB CRACKS AND CONTINUD DISPLACEMENT CAN BE FOUND IN THE ATTACHED PHOTOS.			
MATCON ASPHALT PAVEMENT	M	CRACKING OF THE MATCON ASPHALT PAVEMENT CONTINUES AS PREVIOUSLY REPORTED.			

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

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	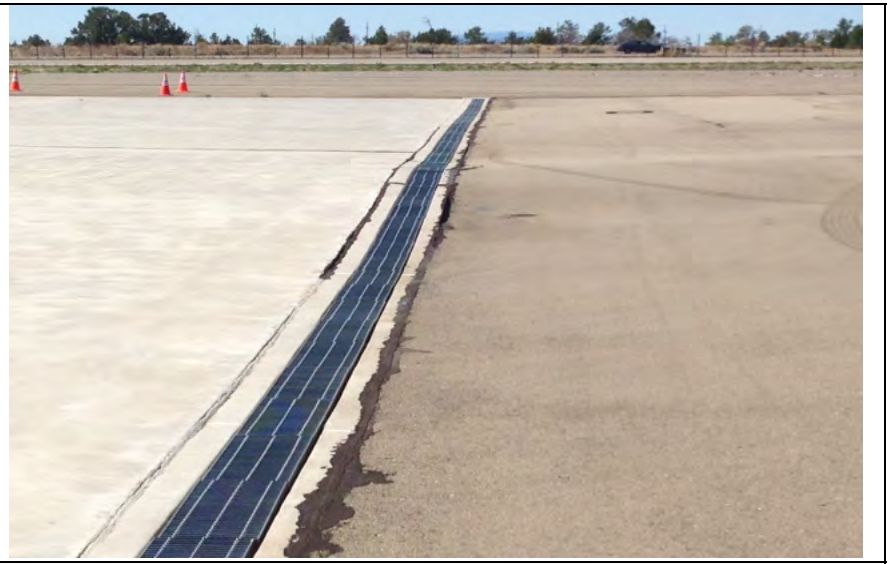
Photo 1. Spider web cracks on hanger pad 4.	Photo 2. Displacement at pad 4.
Photo 3. Survey Benchmark at NE corner of Pad 4.	

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Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: 5-28-15

Inspector Printed Name: JOSEPH T. SENA Inspector Signature: Joseph T Sena

Barometric Pressure: 30.21 Temperature: 62 Wind Direction: E Wind Speed: 3

Weather conditions: FAIR

Date and amount of last precipitation (within last 48 hours): 5-26-15 .03 in

Weather Data Source: Los Alamos Airport - National Weather Service

Figure(s): Photos attached

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	SEE ATTACHED	NO		
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	SEE ATTACHED	NO		
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	ALL SURVEY BENCHMARKS WERE ACCESSIBLE AND ATTACHED TO CONCRETE PADS	NO		
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
OTHER					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

LIST PHOTOS:

1. LIFTING OF E. EDGE OF PAD 1	5. CHANGE IN ELEVATION BETWEEN	9. TRENCH DUE TO RUNOFF N. OF PAD 3
2. LIFTING OF E. EDGE OF PAD 2	PADS 2 AND 3.	10. DRAINAGE AT EAST END OF SITE
3. POOLING at NW CORNER OF PAD 2	6. POOLING AT NW CORNER OF PAD 3.	11. CHECK DAMS
4. POOLING IN DRAINAGE CHANNEL	7. SEAM IN ASPHALT BETWEEN PAD 3	12. NEW MONITORING STATION
AT PAD 2.	AND PAD 4.	
	8. SEAM ON PAD 4	

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Inspection Attachment for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: 5-28-15

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
MATCON ASPHALT PAVEMENT	M	CRACKING, SUBSIDENCE AND GAPS OF THE MATCON CONTINUES AS REPORTED IN PREVIOUS MONTHLY REPORTS.			
CONCRETE HANGER PADS		THE CONCRETE HANGER PADS CONTINUE TO CRACK AND SHOW NOTICABLE SPALLING AND SUBSIDENCE.			

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

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Photo 1. Lifting of E edge of Pad 1

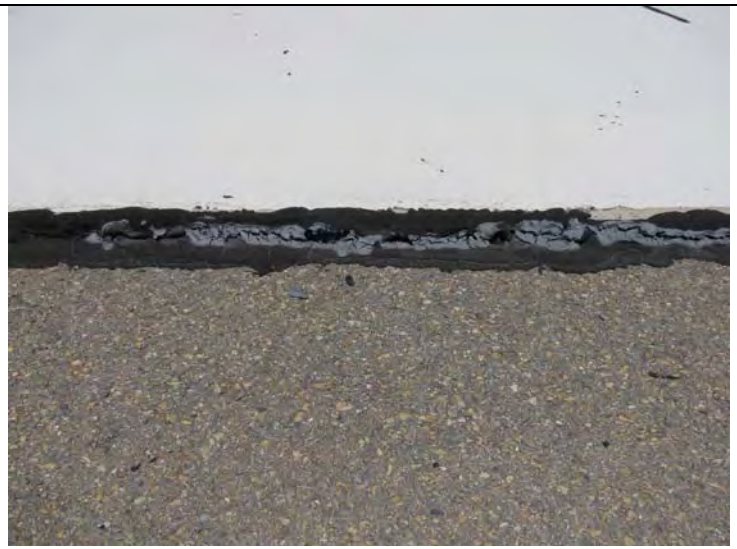

Photo 2. Lifting of E edge of Pad 2

Photo 3. NW corner of Pad 2

Photo 4. Ponding in drainage Pad 2

Photo 5. Change in elevation btw Pad 2 and Pad 3

Photo 6. NW corner Pad 3

Photo 7. Seam in asphalt btw Pad 3 and Pad 4

Photo 8. Seam on Pad 4

Photo 9. Trench cut due to drainage N of Pad 3

Photo 10. Drainage at East end of site

Photo 11. Check dams

Photo 12. New monitoring station

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Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: 6-25-15

Inspector Printed Name: JOSEPH T. SENA Inspector Signature: Joseph T. Sena

Barometric Pressure: 30.38 Temperature: 66 Wind Direction: NA Wind Speed: CALM

Weather conditions: CLEAR

Date and amount of last precipitation (within last 48 hours): NONE

Weather Data Source: Los Alamos Airport - National Weather Service

Figure(s): Photos attached

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	SEE ATTACHED			
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	SEE ATTACHED			
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	ALL SURVEY BENCHMARK ARE ACCESSIBLE AND ATTACHED			
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
OTHER					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

LIST PHOTOS:

1. SPIDERWEB CRACKS ON	4. POOLING IN NW CORNER	
PAD 1.	OF PAD 3	
2. SUBSIDENCE OF MATCON AND	5. SUBSIDENCE ON EASTERN	
POOLING AIONG EASTERN	EDGE OF PAD 3.	
EDGE OF PAD 2.	6. CRACKING OF MATCON	
3. SPIDER WED CRACKS IN PAD 2.	WHERE PREVIOUSLY REPAIRED	

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Inspection Attachment for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: 6-25-15

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
MATCON ASPHALT	M	DISPLACEMENT, CRACKING CONTINUES ON THE MATCON AS PREVIOUSLY REPORTED			
CONCRETE HANGER PADS	M	CRACKING, SUBSIDENCE AND DISPLACEMENT OF HANGER PADS AND EXPANSION JOINTS CONTINUES. SPIDER WEB CRACK DENSITY INCREASED DURING WINTER MONTHS.			

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

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Photo 1. Spider web cracks in pad 1.

Photo 2. Subsidence of matcon and pooling along eastern edge of pad 2.

Photo 3. Spider web cracks in Pad 2

Photo 4. Pooling in NW Corner of Pad 3

Photo 5.Subsidence on the eastern edge of Pad 3.	Photo 6. Cracking of Matcon where previously repaired.

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Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: 6-30-15

Inspector Printed Name: JOSEPH T. SENA Inspector Signature: Joseph T. Sena

Barometric Pressure: 30.52 Temperature: 62 Wind Direction: SE Wind Speed: 3

Weather conditions: CALM

Date and amount of last precipitation (within last 48 hours): 6/29/15 - 6/30/15 .64 in

Weather Data Source: Los Alamos Airport - National Weather Service

Figure(s): Photos attached

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	CRACKS, GAPS, SPALLING AND SUBSIDENCE CONTINUES AS PREVIOUSLY REPORTED			
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	HANGER PADS CONTINUE TO SUBSIDE WITH AN INCREASE OF SPIDER CRACKS AS PREVIOSLY REPORTED			
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	BENCHMARK ARE ATTACHED AND ACCESSIBLE			
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
OTHER					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

LIST PHOTOS:

1. PONDING ON NW CORNER OF	5. CRACKING IN MATCON	
PAD 3	BETWEEN PADS 4 AND 5.	
2. SUBSIDENCE OF MATCON		
3. SURVEY BENCHMARK		
4. CRACKING IN MATCON		
BETWEEN PADS 4 AND 5.		

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Photo 1. Ponding on NW Corner of Pad 3.

Photo 2. Subsidence of the Matcon.

Photo 3. Survey benchmark

Photo 4. Cracking in the Matcon between pads 4 and 5

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Photo 5. Cracking in the Matcon between pads 4 and 5

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Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: 8-27-15

Inspector Printed Name: JOSEPH T. SENA Inspector Signature: Joseph T Sena

Barometric Pressure: 30.45 Temperature: 62 Wind Direction: CALM Wind Speed: NA

Weather conditions: CALM

Date and amount of last precipitation (within last 48 hours): 8-26-15 .02 in

Weather Data Source: Los Alamos Airport - National Weather Service

Figure(s): Photos attached

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	SEE ATTACHED			
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	SEE ATTACHED			
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	ALL SURVEY WERE ACCESSIBLE AND ATTACHED TO CONCRETE PADS.			
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
OTHER					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

LIST PHOTOS:

1. SPIDER WEB CRACKS IN	3. VEGETATION GROWTH	
PAD 1.	BETWEEN MATCON AND PAD 2.	
2. SUBSIDENCE OF MATCON	4. CRACKING OF MATCON	
AND PODLING ALONG EASTERN	WHERE PREVIOUSLY REPAIRED	
EDGE OF PAD 2.	5. SUBSIDENCE ON THE	
	EASTERN EDGE OF PA 3.	

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Inspection Attachment for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: 8-27-15

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
MATCON ASPHALT PAVEMENT	M	CRACKING, SUBSIDENCE AND GAPS OF THE MATCON CONTINUES AS REPORTED IN PREVIOUS MONTHLY REPORTS.			
CONCRETE HANGER PADS	M	THE PADS CONTINUE TO SHOW THE CRACKING, SPALLING AND SUBSIDENCE.			

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

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Photo 1. Spider web cracks in pad 1.

Photo 2. Subsidence of matcon and pooling along eastern edge of pad 2.

Photo 3. Vegetation Growth between Matcon and Pad 2

Photo 4. Cracking of Matcon where previously repaired.

Photo 5.Subsidence on the eastern edge of Pad 3.	

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Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: 9-28-15

Inspector Printed Name: JOSEPH T. SENA Inspector Signature: [signature]

Barometric Pressure: 30.25 Temperature: 69 Wind Direction: E Wind Speed: 8

Weather conditions: FAIR

Date and amount of last precipitation (within last 48 hours): NONE

Weather Data Source: Los Alamos Airport - National Weather Service

Figure(s): Photos attached

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	See ATTACHMENT			
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	"			
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	ALL BENCHMARKS ARE ATTACHED AND ACCESSIBLE			
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
OTHER					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

LIST PHOTOS:

1. NEW CRACKS IN MATCON	4. CRACKING OF MATCON	
BETWEEN PITS 4 AND 5.	WHERE PREVIOUSLY REPAIRED.	
2. NEW CRACKS IN MATCON		
ON EASTERN EDGE OF PAD 4.		
3. SUBSIDENCE ON THE NW		
CORNER EDGE OF PAD 3.		

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Inspection Attachment for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: _____

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
MATCON ASPHALT PAVEMENT	M	THE MATCON PAVEMENT CONTINUES TO CRACK. CRACKS AND GAPS THAT WERE PREVIOUSLY OBSERVERED CONTINUE TO EXPAND AND NEW CRACKS CONTINUE TO APPEAR.	Y		
CONCRETE HANGER PADS	M	CONCRETE HANGER PADS CONTINUE TO SHOW GAPS, CRACKS, SPALLING AND SUBSIDENCE.	Y		

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

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Photo 1. New cracks in Matcon between Pads 4 and 5.

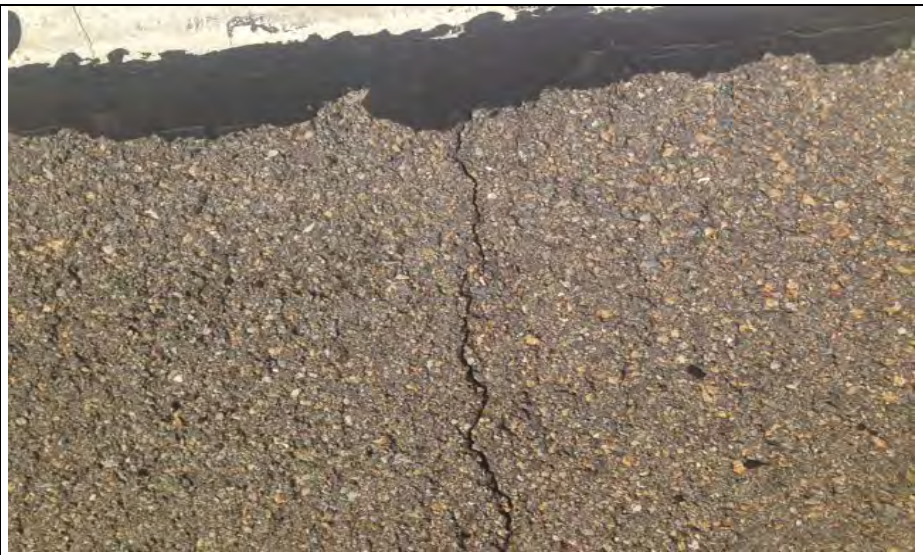

Photo 2. New cracks in Matcon on eastern edge of pit 4.

Photo 3. Subsidence on the NW corner edge of Pad 3.

Photo 4. Cracking of Matcon where previously repaired.

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Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: 10-13-15

Inspector Printed Name: Joseph T. Seng Inspector Signature: Joseph T. Seng

Barometric Pressure: 30.15 Temperature: 50 Wind Direction: W Wind Speed: 3

Weather conditions: FAIR

Date and amount of last precipitation (within last 48 hours): NONE

Weather Data Source: Los Alamos Airport - National Weather Service

Figure(s): Photos attached

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	SEE Attached			
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	See Attached			
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All survey benchmarks were attached and accessible			
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR				
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR				
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR				
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR				
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR				
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR				
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR				

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR				
OTHER					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

LIST PHOTOS:

1. Subsidence on the edge of pad 3	4. Subsidence on NW corner of pad 2.	
2. Pooling on NW corner of pad 3		
3. Pooling on north edge of pad 2.		

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Inspection Attachment for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: 10-13-15

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Matcon Asphalt Pavement	M	Cracking, subsidence and gaps on the matcon continues as reported in previous monthly reports	Y		
Concrete hanger pads	M	The concrete pads continue to show cracking, subsidence and spalling as previously reported	Y		
		Note: Construction to correct landfill was starting on the day of inspection.			

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

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Photo 1. Subsidence on the edge of Pad 3

Photo 2. Pooling on the NW corner Pad 3.

Photo 3. Pooling on North side of Pad 2.

Photo 4. Subsidence on NW corner Pad 2.

Appendix C, Quarterly Landfill-Gas Measurements

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QUARTERLY/BI-ANNUAL, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING ATTACHMENT

Date: 9/3/2015

Inspector Printed Name: Felicia Aguilar

Inspector Signature: Felicia M. Aguilar

Barometric Pressure: 30.27 in Temperature: 65°F Wind Direction: SE

Wind Speed: 3 mph Weather Conditions: fair

Date and amount of last precipitation (within last 48 hours): none

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 5/26/15 ESP

Comments: Qtrly rpt executed at begining of month in anticipation of construction.

Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Mon~~Di~~oxide (CO_2) %
PS-01	at spinner (4 ft above pavement)	9:42	0	20.9	0
PS-02	at spinner (4 ft above pavement)	10:11	100	10.9	0
PS-03	at spinner (4 ft above pavement)	10:30	0	20.9	0
PS-04	at spinner (4 ft above pavement)	11:00	0	20.9	0
PS-05	at spinner (4 ft above pavement)	11:27	0	20.9	0 odor present
PS-06	at spinner (4 ft above pavement)	11:37	0	20.9	0
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
HP-01	2 inches above expansion joint*	10:08	0	20.9	0
HP-02	2 inches above expansion joint*	10:04	0	20.9	0
HP-03	2 inches above expansion joint*	10:01	0	20.9	0

HP-04	2 inches above expansion joint*	10:27	0	20.9	0
HP-05	2 inches above expansion joint*	10:24	0	20.9	0
HP-06	2 inches above expansion joint*	10:21	0	20.9	0
HP-07	2 inches above expansion joint*	10:57	0	20.9	0
HP-08	2 inches above expansion joint*	10:54	0	20.9	0
HP-09	2 inches above expansion joint*	10:51	0	20.9	0
HP-10	2 inches above expansion joint*	11:24	0	20.9	0
HP-11	2 inches above expansion joint*	11:21	0	20.9	0
HP-12	2 inches above expansion joint*	11:18	0	20.9	0
HP-13	2 inches above expansion joint*	11:34	0	20.9	0
HP-14	2 inches above expansion joint*	11:44	0	20.9	0
HP-15	2 inches above expansion joint*	11:47	0	20.9	0
Trench drains (west side of each hangar pad)					
TD-01	4 inches below trench grate	9:48	0	20.9	0
TD-02	4 inches below trench grate	9:52	0	20.9	0
TD-03	4 inches below trench grate	10:14	0	20.9	0
TD-04	4 inches below trench grate	10:16	0	20.9	0
TD-05	4 inches below trench grate	10:40	full of water		
TD-06	4 inches below trench grate	10:44	0	20.9	0
TD-07	4 inches below trench grate	11:08	0 standing water	20.9	0
TD-08	4 inches below trench grate	11:11	0	20.9	0
TD-09	4 inches below trench grate	11:41	0 standing water	20.9	0
TD-10	4 inches below trench grate	11:50	0	20.9	0
Drainage culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 inches below grate	9:55	0	20.9	0
DC-02	4 inches below grate	9:58	0	20.9	0
DC-03	4 inches below grate	10:18	0	20.9	0
DC-04	4 inches below grate	10:48	0	20.9	0

DC-05	4 inches below grate	11:15	0	20.9	0
DC-06	4 inches below grate	11:54	0	20.9	0
DC-07	4 inches below grate	11:58	0	20.9	0
DC-08	4 inches below manhole lid	12:45	0	20.9	0
Northern perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 inches above ground surface	9:45	0	20.9	0
PG-02	2 inches above ground surface	10:34	0	20.9	0
PG-03	2 inches above ground surface	10:37	0	20.9	0
PG-04	2 inches above ground surface	11:04	0	20.9	0
PG-05	2 inches above ground surface	11:31	0	20.9	0
PG-06	2 inches above ground surface	12:16	0	20.9	0
PG-07	2 inches above ground surface	12:13	0	20.9	0
PG-08	2 inches above ground surface	12:09	0	20.9	0
PG-09	2 inches above ground surface	12:04	0	20.9	0
PG-10	2 inches above ground surface	12:20	0	20.9	0
PG-11	2 inches above ground surface	12:24	0	20.9	0
PG-12	2 inches above ground surface	12:29	0	20.9	0
PG-13	2 inches above ground surface	12:34	0	20.9	0
PG-14	2 inches above ground surface	12:40	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
Form modified from http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc.

The Lakeworth Group, LLC

146B East Gate Drive; PO Box 1232 / Los Alamos, NM 87544 / Telephone (505) 662-7275

QUARTERLY/BI-ANNUAL, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING ATTACHMENT

Date: 6-29-15

Inspector Printed Name: JOSEPH T. SENA

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.39 Temperature: 76 Wind Direction: E

Wind Speed: 6 Weather Conditions: FAIR

Date and amount of last precipitation (within last 48 hours): NA

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: ESP

Comments:

Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Monoxide (CO) %
PS-01	at spinner (4 ft above pavement)	11:16	0	20.9	0
PS-02	at spinner (4 ft above pavement)	11:27	100	7.5	0
PS-03	at spinner (4 ft above pavement)	11:35	0	20.9	0
PS-04	at spinner (4 ft above pavement)	11:44	0	20.9	0
PS-05	at spinner (4 ft above pavement)	11:54	85	18.7	0
PS-06	at spinner (4 ft above pavement)	12:03	0	20.9	0
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
HP-01	2 inches above expansion joint*	11:24	0	20.9	0
HP-02	2 inches above expansion joint*	11:24	0	20.9	0
HP-03	2 inches above expansion joint*	11:23	0	20.9	0

HP-04	2 inches above expansion joint*	11:34	0	20.9	0
HP-05	2 inches above expansion joint*	11:33	0	20.9	0
HP-06	2 inches above expansion joint*	11:32	0	20.9	0
HP-07	2 inches above expansion joint*	11:43	0	209	0
HP-08	2 inches above expansion joint*	11:42	0	20.9	0
HP-09	2 inches above expansion joint*	11:41	0	20.9	0
HP-10	2 inches above expansion joint*	11:53	0	20.9	0
HP-11	2 inches above expansion joint*	11:52	0	20.9	0
HP-12	2 inches above expansion joint*	11:51	0	20.9	0
HP-13	2 inches above expansion joint*	12:00	0	20.9	0
HP-14	2 inches above expansion joint*	11:59	0	20.9	0
HP-15	2 inches above expansion joint*	11:58	0	20.9	0
Trench drains (west side of each hangar pad)					
TD-01	4 inches below trench grate	11:18	0	20.9	0
TD-02	4 inches below trench grate	11:20	0	20.9	0
TD-03	4 inches below trench grate	11:29	0	20.9	0
TD-04	4 inches below trench grate	11:30	0	20.9	0
TD-05	4 inches below trench grate	culvert full of water			
TD-06	4 inches below trench grate	11:37	0	20.9	0
TD-07	4 inches below trench grate	11:46	0	20.9	0
TD-08	4 inches below trench grate	11:48	0	20.9	0
TD-09	4 inches below trench grate	11:55	0	20.9	0
TD-10	4 inches below trench grate	11:56	0	20.9	0
Drainage culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 inches below grate	11:21	0	20.9	0
DC-02	4 inches below grate	11:22	0	20.9	0
DC-03	4 inches below grate	11:31	0	20.9	0
DC-04	4 inches below grate	11:40	0	20.9	0

DC-05	4 inches below grate	11:49	0	20.9	0
DC-06	4 inches below grate	11:57	0	20.9	0
DC-07	4 inches below grate	12:56	0	20.9	0
DC-08	4 inches below manhole lid	1253	0	20.9	0
Northern perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 inches above ground surface	11:25	0	20.9	0
PG-02	2 inches above ground surface	11:28	0	20.9	0
PG-03	2 inches above ground surface	11:36	0	20.9	0
PG-04	2 inches above ground surface	11:45	0	20.9	0
PG-05	2 inches above ground surface	12:02	0	20.9	0
PG-06	2 inches above ground surface	12:07	0	20.9	0
PG-07	2 inches above ground surface	12:11	0	20.9	0
PG-08	2 inches above ground surface	12:17	0	20.9	0
PG-09	2 inches above ground surface	12:23	0	20.9	0
PG-10	2 inches above ground surface	12:28	0	20.9	0
PG-11	2 inches above ground surface	12:34	0	20.9	0
PG-12	2 inches above ground surface	12:40	0	20.9	0
PG-13	2 inches above ground surface	12:45	0	20.9	0
PG-14	2 inches above ground surface	12:51	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
Form modified from http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc.

The Lakeworth Group, LLC

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QUARTERLY/BI-ANNUAL, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING ATTACHMENT

Date: 3-26-15

Inspector Printed Name: JOSEPH T. SENA

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.36 Temperature: 41 Wind Direction: NE

Wind Speed: 5 Weather Conditions: FAIR

Date and amount of last precipitation (within last 48 hours): NONE

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 1-14-15 ESP

Comments:

Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Monoxide (CO) %
PS-01	at spinner (4 ft above pavement)	11:49	0	20.9	0
PS-02	at spinner (4 ft above pavement)	11:51	100	12.9	0
PS-03	at spinner (4 ft above pavement)	12:05	0	20.9	0
PS-04	at spinner (4 ft above pavement)	12:10	0	20.9	0
PS-05	at spinner (4 ft above pavement)	12:21	100	14.2	0
PS-06	at spinner (4 ft above pavement)	12:50	0	20.9	0
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
HP-01	2 inches above expansion joint*	11:52	0	20.9	0
HP-02	2 inches above expansion joint*	11:54	0	20.9	0
HP-03	2 inches above expansion joint*	11:55	0	20.9	0

HP-04	2 inches above expansion joint*	12:04	0	20.9	0
HP-05	2 inches above expansion joint*	12:08	0	20.9	0
HP-06	2 inches above expansion joint*	12:02	0	20.9	0
HP-07	2 inches above expansion joint*	12:09	0	20.9	0
HP-08	2 inches above expansion joint*	12:11	0	20.9	0
HP-09	2 inches above expansion joint*	12:12	0	20.9	0
HP-10	2 inches above expansion joint*	12:~~19~~ 28	0	20.9	0
HP-11	2 inches above expansion joint*	12:18	0	20.9	0
HP-12	2 inches above expansion joint*	12:17	0	20.9	0
HP-13	2 inches above expansion joint*	12:24	0	20.9	0
HP-14	2 inches above expansion joint*	12:25	0	20.9	0
HP-15	2 inches above expansion joint*	12:26	0	20.9	0
Trench drains (west side of each hangar pad)					
TD-01	4 inches below trench grate	11:53	0	20.9	0
TD-02	4 inches below trench grate	11:56	0	20.9	0
TD-03	4 inches below trench grate	12:03	0	20.9	0
TD-04	4 inches below trench grate	12:01	0	20.9	0
TD-05	4 inches below trench grate	12:07	0	20.9	0
TD-06	4 inches below trench grate	12:13	0	20.9	0
TD-07	4 inches below trench grate	12:19	0	20.9	0
TD-08	4 inches below trench grate	12:16	0	20.9	0
TD-09	4 inches below trench grate	12:23	0	20.9	0
TD-10	4 inches below trench grate	12:27	0	20.9	0
Drainage culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 inches below grate	11:58	0	20.9	0
DC-02	4 inches below grate	11:59	0	20.9	0
DC-03	4 inches below grate	12:00	0	20.9	0
DC-04	4 inches below grate	12:14	0	20.9	0

DC-05	4 inches below grate	12:15	0	20.9	0
DC-06	4 inches below grate	12:28	0	20.9	0
DC-07	4 inches below grate	12:30	0	20.9	0
DC-08	4 inches below manhole lid	12:32	0	20.9	0
Northern perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 inches above ground surface	12:59	0	20.9	0
PG-02	2 inches above ground surface	12:57	0	20.9	0
PG-03	2 inches above ground surface	12:55	0	20.9	0
PG-04	2 inches above ground surface	12:53	0	20.9	0
PG-05	2 inches above ground surface	12:51	0	20.9	0
PG-06	2 inches above ground surface	12 48	0	20.9	0
PG-07	2 inches above ground surface	12 42	0	20.9	0
PG-08	2 inches above ground surface	12:37	0	20.9	0
PG-09	2 inches above ground surface	12:35	0	20.9	0
PG-10	2 inches above ground surface	12:41	0	20.9	0
PG-11	2 inches above ground surface	12:38	0	20.9	0
PG-12	2 inches above ground surface	12:34	0	20.9	0
PG-13	2 inches above ground surface	12:40	0	20.9	0
PG-14	2 inches above ground surface	12:33	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
Form modified from http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc.

Appendix D, Weekly/Monthly Landfill-Gas Measurements

The Lakeworth Group, LLC

146B East Gate Drive; PO Box 1232 / Los Alamos, NM 87544 / Telephone (505) 662-7275

MONTHLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 10-13-15

Inspector Printed Name: Joseph T. Sena

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.15 Temperature: 50 Wind Direction: W

Wind Speed: 3 Weather Conditions: FAIR

Date and amount of last precipitation (within last 48 hours): NONE

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: ESP 9-16-15

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Monoxide (CO) %
PS-01	at spinner (4 ft above pavement)	0800	0	20.9	0
PS-02	at spinner (4 ft above pavement)	0802	0	20.9	0
PS-03	at spinner (4 ft above pavement)	0804	0	20.9	0
PS-04	at spinner (4 ft above pavement)	0805	0	20.9	0
PS-05	at spinner (4 ft above pavement)	0807	0	20.9	0
PS-06	at spinner (4 ft above pavement)	0810	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
Form modified from http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc.

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MONTHLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 9-28-15

Inspector Printed Name: Joseph T. Sena

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.25 Temperature: 69 Wind Direction: E

Wind Speed: 8 Weather Conditions: FAIR

Date and amount of last precipitation (within last 48 hours): NONE

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: ESP 9-16-15

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Monoxide (CO) %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
PS-01	at spinner (4 ft above pavement)	1137	0	20.9	0
PS-02	at spinner (4 ft above pavement)	1139	100	9.9	0
PS-03	at spinner (4 ft above pavement)	1142	100	15.9	0
PS-04	at spinner (4 ft above pavement)	1144	0	20.9	0
PS-05	at spinner (4 ft above pavement)	1147	100	14.9	0
PS-06	at spinner (4 ft above pavement)	1149	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
Form modified from http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc.

The Lakeworth Group, LLC
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MONTHLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 8-27-15

Inspector Printed Name: JOSEPH T. SENA

Inspector Signature: Joseph T. Sena

Barometric Pressure: 30.45 Temperature: 62 Wind Direction: CALM

Wind Speed: NA Weather Conditions: PARTLY CLOUDY

Date and amount of last precipitation (within last 48 hours): 8-26-15 .02 in

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 5-26-15 ESP

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Monoxide (CO) %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
PS-01	at spinner (4 ft above pavement)	1100	0	20.9	0
PS-02	at spinner (4 ft above pavement)	1103	100	11.0	0
PS-03	at spinner (4 ft above pavement)	1105	0	20.9	0
PS-04	at spinner (4 ft above pavement)	1108	0	20.9	0
PS-05	at spinner (4 ft above pavement)	1110	2	20.7	0
PS-06	at spinner (4 ft above pavement)	1113	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
Form modified from http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc.

The Lakeworth Group, LLC

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MONTHLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 6-30-15

Inspector Printed Name: JOSEPH T. SENA

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.52 Temperature: 62 Wind Direction: SE

Wind Speed: 3 Weather Conditions: CALM

Date and amount of last precipitation (within last 48 hours): 6/29/15 - 6/30/15 .64 in

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX - 2012 Calibration method and date: ESP 5-13-2015

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Monoxide (CO) %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
PS-01	at spinner (4 ft above pavement)	1141	0	20.9	0
PS-02	at spinner (4 ft above pavement)	1143	40	20.3	0
PS-03	at spinner (4 ft above pavement)	1145	0	20.9	0
PS-04	at spinner (4 ft above pavement)	1148	0	20.9	0
PS-05	at spinner (4 ft above pavement)	1151	5	20.7	0
PS-06	at spinner (4 ft above pavement)	1154	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
Form modified from http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc.

The Lakeworth Group, LLC
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MONTHLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 06-24-15

Inspector Printed Name: JOSEPH T. SENA

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.41 Temperature: 64 Wind Direction: S

Wind Speed: 6 Weather Conditions: FAIR

Date and amount of last precipitation (within last 48 hours): NONE

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: ESP 05/15

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Monoxide (CO) %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
PS-01	at spinner (4 ft above pavement)	0806	0	20.9	0
PS-02	at spinner (4 ft above pavement)	0808	54	19.3	0
PS-03	at spinner (4 ft above pavement)	0810	0	20.9	0
PS-04	at spinner (4 ft above pavement)	0812	0	20.9	0
PS-05	at spinner (4 ft above pavement)	0814	38	18.9	0
PS-06	at spinner (4 ft above pavement)	0816	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
Form modified from http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc.

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MONTHLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 5-28-15

Inspector Printed Name: JOSEPH T. SENA

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.21 Temperature: 62 Wind Direction: E

Wind Speed: 3 Weather Conditions: FAIR

Date and amount of last precipitation (within last 48 hours): 5-26-15 .03 in

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: ESP 5-13-15

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Monoxide (CO) %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
PS-01	at spinner (4 ft above pavement)	10:52	0	20.9	0
PS-02	at spinner (4 ft above pavement)	10:54	100	13.2	0
PS-03	at spinner (4 ft above pavement)	10:56	0	20.9	0
PS-04	at spinner (4 ft above pavement)	10:58	0	20.9	0
PS-05	at spinner (4 ft above pavement)	11:00	100	14.6	0
PS-06	at spinner (4 ft above pavement)	11:01	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
Form modified from http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc.

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146B East Gate Drive; PO Box 1232 / Los Alamos, NM 87544 / Telephone (505) 662-7275

WEEKLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 4-30-15

Inspector Printed Name: JOSEPH T. SENA

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.17 Temperature: 58 Wind Direction: NE

Wind Speed: 3 Weather Conditions: FAIR

Date and amount of last precipitation (within last 48 hours): NONE

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 1-14-15 ESP

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Monoxide (CO) %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
PS-01	at spinner (4 ft above pavement)	1000	0	20.9	0
PS-02	at spinner (4 ft above pavement)	1002	74	20.3	0
PS-03	at spinner (4 ft above pavement)	1005	0	20.9	0
PS-04	at spinner (4 ft above pavement)	1007	0	20.9	0
PS-05	at spinner (4 ft above pavement)	1009	29	19.3	0
PS-06	at spinner (4 ft above pavement)	1012	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
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WEEKLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 4-23-14

Inspector Printed Name: JOSEPH T. SENA

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.03 Temperature: 60 Wind Direction: SE

Wind Speed: 6 Weather Conditions: FAIR

Date and amount of last precipitation (within last 48 hours): 4-23-15 .03in

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 1-14-15 ESD

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Monoxide (CO) %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
PS-01	at spinner (4 ft above pavement)	1134	0	20.9	0
PS-02	at spinner (4 ft above pavement)	1136	100	8.0	0
PS-03	at spinner (4 ft above pavement)	1138	0	20.9	0
PS-04	at spinner (4 ft above pavement)	1141	100	16.8	0
PS-05	at spinner (4 ft above pavement)	1143	100	14.0	0
PS-06	at spinner (4 ft above pavement)	1145	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
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WEEKLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 4-16-15

Inspector Printed Name: JOSEPH T. SENA

Inspector Signature: Joseph T Sena

Barometric Pressure: 29.93 Temperature: 47 Wind Direction: S

Wind Speed: 15 Weather Conditions: FAIR

Date and amount of last precipitation (within last 48 hours): NONE

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 1-14-15 ESP

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Monoxide (CO) %
PS-01	at spinner (4 ft above pavement)	1245	0	20.9	0
PS-02	at spinner (4 ft above pavement)	1247	100	13.9	0
PS-03	at spinner (4 ft above pavement)	1250	0	20.9	0
PS-04	at spinner (4 ft above pavement)	1252	0	20.9	0
PS-05	at spinner (4 ft above pavement)	1255	100	15.7	0
PS-06	at spinner (4 ft above pavement)	1258	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
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WEEKLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 4-9-15

Inspector Printed Name: JOSEPH SENA

Inspector Signature: Joseph Sena

Barometric Pressure: 30.11 Temperature: 51 Wind Direction: EAST

Wind Speed: 8 Weather Conditions:

Date and amount of last precipitation (within last 48 hours): NONE

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 1-14-15 ESP

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Monoxide (CO) %
PS-01	at spinner (4 ft above pavement)	1150	0	20.9	0
PS-02	at spinner (4 ft above pavement)	1152	100	13.9	0
PS-03	at spinner (4 ft above pavement)	1154	0	20.9	0
PS-04	at spinner (4 ft above pavement)	1156	0	20.9	0
PS-05	at spinner (4 ft above pavement)	1157	0	20.9	0
PS-06	at spinner (4 ft above pavement)	1159	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
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WEEKLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 4-2-15

Inspector Printed Name: JOSEPH T. SENA

Inspector Signature: Joseph T. Sena

Barometric Pressure: 30.02 in Temperature: 49°F Wind Direction: SW

Wind Speed: 15 G 20 mph Weather Conditions: Fair

Date and amount of last precipitation (within last 48 hours): none

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 1-14-15 ESP

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Monoxide (CO) %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
PS-01	at spinner (4 ft above pavement)	10:00	0	20.7	0
PS-02	at spinner (4 ft above pavement)	10:03	100	14.6	0
PS-03	at spinner (4 ft above pavement)	10:05	0	20.4	0
PS-04	at spinner (4 ft above pavement)	10:07	0	20.6	0
PS-05	at spinner (4 ft above pavement)	10:10	100	15.3	0
PS-06	at spinner (4 ft above pavement)	10:12	0	20.8	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
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WEEKLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 3-26-15

Inspector Printed Name: JOSEPH T. SENA

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.36 Temperature: 41 Wind Direction: NE

Wind Speed: 5 Weather Conditions: Fair

Date and amount of last precipitation (within last 48 hours): NONE

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 1-14-15 ESP

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Monoxide (CO) %
PS-01	at spinner (4 ft above pavement)	11:49	0	20.9	0
PS-02	at spinner (4 ft above pavement)	11:51	100	12.9	0
PS-03	at spinner (4 ft above pavement)	12:05	0	20.9	0
PS-04	at spinner (4 ft above pavement)	12:10	0	20.9	0
PS-05	at spinner (4 ft above pavement)	12:21	100	14.2	0
PS-06	at spinner (4 ft above pavement)	12:50	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
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WEEKLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 3-19-15

Inspector Printed Name: JOSEPH T. SENA

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.07 in Temperature: 42° Wind Direction: South

Wind Speed: 3 mph Weather Conditions: overcast

Date and amount of last precipitation (within last 48 hours): 3/18/15: 0.04", 3/19/15: 0.05"

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX- 2012 Calibration method and date: 1-14-15 ESP

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Mon ~~Dioxide~~ (CO) %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
PS-01	at spinner (4 ft above pavement)	10:09	0	20.9	0
PS-02	at spinner (4 ft above pavement)	10:11	27	19.7	0
PS-03	at spinner (4 ft above pavement)	10:13	0	20.9	0
PS-04	at spinner (4 ft above pavement)	10:15	0	20.8	0
PS-05	at spinner (4 ft above pavement)	10:17	0	20.5	0
PS-06	at spinner (4 ft above pavement)	10:19	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
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WEEKLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d)
GAS MONITORING

Date: 3/12/15

Inspector Printed Name: Felicia Aguilar

Inspector Signature: Felicia M. Aguilar

Barometric Pressure: 30.28in Temperature: 45°F Wind Direction: —

Wind Speed: calm Weather Conditions: fair

Date and amount of last precipitation (within last 48 hours): none

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: ESP 1-14-15

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Monoxide (CO) %
PS-01	at spinner (4 ft above pavement)	11:16	0	20.9	0
PS-02	at spinner (4 ft above pavement)	11:17	100	9.9	0
PS-03	at spinner (4 ft above pavement)	11:19	0	20.9	0
PS-04	at spinner (4 ft above pavement)	11:20	0	20.9	0
PS-05	at spinner (4 ft above pavement)	11:22	100	13.2	0
PS-06	at spinner (4 ft above pavement)	11:24	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
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WEEKLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 3-5-15

Inspector Printed Name: JOSEPH T. SENA

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.36 Temperature: 32 Wind Direction: NE

Wind Speed: 5 Weather Conditions: FAIR

Date and amount of last precipitation (within last 48 hours): NONE

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 1-14-15 ESP

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Mon ~~Dio~~xide (CO_2) %
PS-01	at spinner (4 ft above pavement)	1127	0	20.9	0
PS-02	at spinner (4 ft above pavement)	1129	100	12.6	0
PS-03	at spinner (4 ft above pavement)	1130	0	20.9	0
PS-04	at spinner (4 ft above pavement)	1132	0	20.9	0
PS-05	at spinner (4 ft above pavement)	1135	63	18.2	0
PS-06	at spinner (4 ft above pavement)	1136	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
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WEEKLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 2-26-15

Inspector Printed Name: JOSEPH T. SENA

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.07 Temperature: 24 Wind Direction: S

Wind Speed: 12 Weather Conditions: OVERCAST

Date and amount of last precipitation (within last 48 hours): 2-24-15 .02 in

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 1-14-15 ESP

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Mon~~Dioxide~~ oxide (CO) %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
PS-01	at spinner (4 ft above pavement)	1125	0	20.9	0
PS-02	at spinner (4 ft above pavement)	1128	100	14.6	0
PS-03	at spinner (4 ft above pavement)	1131	0	20.9	0
PS-04	at spinner (4 ft above pavement)	1134	0	20.9	0
PS-05	at spinner (4 ft above pavement)	1136	70	17.7	0
PS-06	at spinner (4 ft above pavement)	1140	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
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WEEKLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 2-19-15

Inspector Printed Name: Joseph T. Sena

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.21 Temperature: 42 Wind Direction: N

Wind Speed: 3 Weather Conditions: Fair

Date and amount of last precipitation (within last 48 hours): NONE

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 1-14-15 ESP

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Mon ~~Dioxide~~ (CO) %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
PS-01	at spinner (4 ft above pavement)	11:17	0	20.9	0
PS-02	at spinner (4 ft above pavement)	11:19	97	5.5	0
PS-03	at spinner (4 ft above pavement)	11:21	0	20.9	0
PS-04	at spinner (4 ft above pavement)	11:22	100	15.7	0
PS-05	at spinner (4 ft above pavement)	11:24	100	3.0	0
PS-06	at spinner (4 ft above pavement)	11:27	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
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WEEKLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 2-12-15

Inspector Printed Name: Joseph T. Sena

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.43 Temperature: 38 Wind Direction: E

Wind Speed: 3 mph Weather Conditions: Fair

Date and amount of last precipitation (within last 48 hours): .04 2-11-15

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 1-14-15 ESP

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon ~~Dioxide~~ Mon (CO) %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
PS-01	at spinner (4 ft above pavement)	11:32	0	20.9	0
PS-02	at spinner (4 ft above pavement)	11:34	100	8.1	0
PS-03	at spinner (4 ft above pavement)	11:36	0	20.9	0
PS-04	at spinner (4 ft above pavement)	11:39	0	20.9	0
PS-05	at spinner (4 ft above pavement)	11:44	100	8.9	0
PS-06	at spinner (4 ft above pavement)	11:46	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
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WEEKLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 2-5-15

Inspector Printed Name: Joseph T. Sena

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.39 Temperature: 45 F Wind Direction: E

Wind Speed: 6 Weather Conditions: Fair

Date and amount of last precipitation (within last 48 hours): NONE

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 1-14-15 ESP

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Mon ~~Dioxide~~ (CO) %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
PS-01	at spinner (4 ft above pavement)	11:53	0	20.9	0
PS-02	at spinner (4 ft above pavement)	11:55	100	14.5	0
PS-03	at spinner (4 ft above pavement)	11:57	0	20.9	0
PS-04	at spinner (4 ft above pavement)	11:59	0	20.9	0
PS-05	at spinner (4 ft above pavement)	12:01	100	16.6	0
PS-06	at spinner (4 ft above pavement)	12:04	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
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WEEKLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 1-28-15

Inspector Printed Name: Joseph T. Sena

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.30 Temperature: 44 F Wind Direction: NE

Wind Speed: 6 Weather Conditions: Fair

Date and amount of last precipitation (within last 48 hours): NONE

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 1-14-15 ESP

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon ~~Dioxide~~ Mon (CO_2) %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
PS-01	at spinner (4 ft above pavement)	11:36	0	20.9	0
PS-02	at spinner (4 ft above pavement)	11:39	100	3.8	0
PS-03	at spinner (4 ft above pavement)	11:41	0	20.9	0
PS-04	at spinner (4 ft above pavement)	11:43	0	20.9	0
PS-05	at spinner (4 ft above pavement)	11:46	100	11.9	0
PS-06	at spinner (4 ft above pavement)	11:48	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
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WEEKLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 1/20/15

Inspector Printed Name: Felicia Aguilar

Inspector Signature: Felicia M Aguila

Barometric Pressure: 30.10in. Temperature: 46°F Wind Direction: S

Wind Speed: 7mph Weather Conditions: Fair

Date and amount of last precipitation (within last 48 hours): none

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 1/14/15 ESP

Comments: Calibration was re-checked @ ESP 1/16/15; it is working fine.

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Mon Dioxide (CO_2) %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
PS-01	at spinner (4 ft above pavement)	15:43	0	20.9	0
PS-02	at spinner (4 ft above pavement)	15:45	100	17.7	0
PS-03	at spinner (4 ft above pavement)	15:57	0	20.9	1
PS-04	at spinner (4 ft above pavement)	15:59	0	20.9	1
PS-05	at spinner (4 ft above pavement)	16:00	100	15.8	0
PS-06	at spinner (4 ft above pavement)	16:02	0	20.9	1

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
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WEEKLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 1-15-15

Inspector Printed Name: Joseph T. Sena

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.39 Temperature: 25 Wind Direction: NE

Wind Speed: 6 Weather Conditions: Fair

Date and amount of last precipitation (within last 48 hours): none

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 1-14-15 ESP

Comments: Calibration is being re-checked.

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Mon Dioxide (CO_2) %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
PS-01	at spinner (4 ft above pavement)	10:17	0	20.9	0
PS-02	at spinner (4 ft above pavement)	10:19	0	20.9	0
PS-03	at spinner (4 ft above pavement)	10:20	0	20.9	0
PS-04	at spinner (4 ft above pavement)	10:22	0	20.9	0
PS-05	at spinner (4 ft above pavement)	10:24	0	20.9	0
PS-06	at spinner (4 ft above pavement)	10:26	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
Form modified from http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc.

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WEEKLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 1/8/15

Inspector Printed Name: Joseph T. Sena

Inspector Signature: Joseph T Sena

Barometric Pressure: 30.28 Temperature: 24 Wind Direction: Calm

Wind Speed: Calm Weather Conditions: Fog/Mist

Date and amount of last precipitation (within last 48 hours): None

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 9-18-14 RK14-Gas

Comments:

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Mon Dioxide (CO_2) %
Hangar Pads: Samples will be collected on the east side of the pad along the expansion joint.* After a hangar is built, samples will be collected along the interior walls at 4 inches to 4 ft above pad.					
PS-01	at spinner (4 ft above pavement)	12:24	0	20.9	0
PS-02	at spinner (4 ft above pavement)	12:26	32	15.6	0
PS-03	at spinner (4 ft above pavement)	12:28	0	20.9	0
PS-04	at spinner (4 ft above pavement)	12:30	0	20.9	0
PS-05	at spinner (4 ft above pavement)	12:33	100	12.2	0
PS-06	at spinner (4 ft above pavement)	12:34	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
Form modified from http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc.

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WEEKLY, AIRPORT LANDFILL SWMU 73-001(a) and DEBRIS DISPOSAL AREA, SWMU 73-001(d GAS MONITORING

Date: 12/29/14

Inspector Printed Name: Felicia Aguilar

Inspector Signature: Felicia M Aguilar

Barometric Pressure: 29.95 in Temperature: 29°F Wind Direction: SE

Wind Speed: 8 mph Weather Conditions: overcast

Date and amount of last precipitation (within last 48 hours): none

Weather Data Source: Los Alamos Airport - National Weather Service

Instrument: GX-2012 Calibration method and date: 9/18/14 - RKI 4 gas

Comments: none

Weekly Monitoring

Sample Location	Height (ft)	Time	Methane (CH_4) % LEL	Oxygen (O_2) %	Carbon Mon ~~Dio~~xide (CO_2) %
PS-01	at spinner (4 ft above pavement)	1255	0	20.9	0
PS-02	at spinner (4 ft above pavement)	1257	100	11.8	0
PS-03	at spinner (4 ft above pavement)	1258	0	20.9	0
PS-04	at spinner (4 ft above pavement)	1259	0	20.9	0
PS-05	at spinner (4 ft above pavement)	1301	68	18.6	0
PS-06	at spinner (4 ft above pavement)	1303	0	20.9	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
LEL = lower explosive limit
PS = Perimeter Spinner (wind turbine)
Form modified from http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc.

Appendix E, After Significant Rainfall Inspection Checklists

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After Significant Rainfall

Inspection Checklist for the Airport Landfill, SWMU 73-001(a) and Debris Disposal Area, SWMU 73-001(d) Date: 7/10/15

Inspector Printed Name: Felicia Aguilar Inspector Signature: Felicia M. Aguilar

Barometric Pressure: 30.31in Temperature: 61°F Wind Direction: E Wind Speed: 5mph

Weather conditions: Fair

Date and amount of last precipitation (~~within last 48 hours~~): 7/7 1.12in (1/2 in measured in 15 minutes @ 455am) ~~7/8 and 7/9 light rain at times~~

Weather Data Source: Los Alamos Airport - National Weather Service

Figure(s): Photos attached

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	See next pages for After Significant Rainfall inspection results			
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M				
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M				
Gas Collection System: Turbines (6) along northern edge of asphalt pavement and 1 stub-out on southern edge of asphalt pavement: debris, functional, accessible	A				

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				
Seeded Areas & Turf Reinforcement Mats: barren areas >1,000 square feet, tears, animals burrows >4 inches deep, subsidence >1 ft, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR	no issues observed, area disturbed during const. at east end of ~~sig~~site now begining to fill in w/ vegetation	NO		
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR	standing water visible in N-S gravel channel, N of DC07	NO		
Concrete Retaining Wall & 2 Rock Retaining Walls: cracks, bulges, separation, rotation, nearby erosion, spalling, pop-outs, drain pipes (3) open at gravel drainage channel	A, ASR	no visible issues	NO		
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR	standing water visible in all grated trenches to varying degrees. Worst at Pad 3	Yes	problems due to landfill failure, being re-designed	
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR	standing water visible in all inlets except DC01			
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR	None visible	NO		
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR	None visible			
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR	no visible issues, manhole in place			

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Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completion Date
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR	new rock check dams and fence in good condition	NO		
Debris Disposal Area					
Seeded (hydromulched) Areas: animals burrows >4 inches deep, barren areas >1,000 square feet, subsidence >1 ft deep, rills/cracks >4 inches deep, large vegetation (trees, shrubs, bushes, deep-rooting weeds)	A, ASR	no visible issues.			
OTHER					

Component locations are shown on Figure 2 of the *Final Implementation Strategy for Post Closure and Maintenance of the DOE/NNSA LASO Airport Landfill SWMU 73-001(a) and Debris Disposal Area SWMU 73-001(d), Los Alamos County Airport, New Mexico, July 2009.*

*Inspection Frequency: A = annual, ASR = After Significant Rainfall, B = biannual (twice a year), M = Monthly, Q = quarterly.

Note: If an additional component(s) is installed for the Airport Landfill, the component(s) can be added in the blank row.

LIST PHOTOS:

1. Area disturbed during last summers construction at east end of site		
2. Standing water in gravel trench		
3. Retaining wall and rock wall		
4. Standing water Pad 3		
5. Fence and drainage area East end of site		
6. Rock check dams		

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Photo 1. Area disturbed during last summer's construction on East end of site. Vegetation is beginning to fill in.	Photo 2. Standing water in N-S gravel channel
Photo 3. Retaining wall and rock wall	Photo 4. NW corner of Pad 3, standing water in trench and puddling beyond pad

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Photo 5. Fence and drainage area intact at East end of site,	Photo 6. Rock check dams and fence

faguilar@thelakeworthgroup.com

From: faguilar@thelakeworthgroup.com
Sent: Wednesday, October 21, 2015 6:21 PM
To: Massey, Ramoncita N.
Cc: jsena@thelakeworthgroup.com
Subject: After Significant Rainfall Inspection due

Hi Ramoncita.
We've had 1.14 inches of rain measured at the airport between 6:00 this morning and 6:00 this evening.
I've included the language from the post closure report that defines "after significant rainfall".
We've not had 0.5 in within an hour but we have had more than one inch over the course of the day.
Please let me know if you have any questions.
Thanks.
Felicia

Final Implementation Strategy for Post Closure Inspection and Maintenance of Airport Landfill and Debris Disposal Area, DOE/NNSA Los Alamos County Airport *July 2009*

8.0 Inspection Tasks and Weather Considerations

The Inspection Checklist for the Airport Landfill and the DDA is presented in Appendix A. The inspection frequency for the various landfill components are either annual (A), quarterly (Q), biannual (B), monthly (M), or after significant rainfall (ASR). The PCMP (North Wind Inc., 2006a) and RCR (North Wind Inc. and Weston Solutions Inc., 2007) were used for compiling the components listed in the checklist. The Inspection Checklist (Appendix A) is SWMU specific and is more detailed that the Best Management Practices (BMP) Inspection and Maintenance Form presented in the lab-wide SWPPP (LANL, 2005).

While inspection of most landfill components can be conducted regardless of most weather conditions, the weather can affect three types of tasks and the corresponding field efforts need to be conducted accordingly.

[a] According to the frequencies listed in the Inspection Checklist, some field inspections shall be conducted following significant rainfall. A significant rainfall is defined as either a thunderstorm that produces more than half an inch of rain in less than one hour, or a precipitation event in which more than one inch of rain falls. Because thunderstorms in the rainy season tend to occur in clusters of a few days each, timely inspections can be beneficial if repairs are needed. Of course, field inspections should not be conducted while lightning is occurring in the vicinity. After the effects of several significant rainfalls are observed, professional judgment might be used to reduce the amount of ASR inspections.

Felicia Aguilar, President
The Lakeworth Group, LLC
PO Box 1232

146B East Gate Drive
Los Alamos, NM 87544
Office: 505-662-7275
Cell: 505-690-0575
http://www.thelakeworthgroup.com