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2012 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 Environmental Programs Directorate

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EP2013-0002

2012 Annual Inspection Report for Los Alamos County Airport Landfill, Solid Waste Management Units 73-001(a) and 73-001(d), Technical Area 73

February 2013

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EXECUTIVE SUMMARY

This report summarizes activities and findings of the landfill inspection conducted for the Los Alamos County Airport Technical Area 73 landfill for calendar year 2012 as part of the postclosure monitoring requirements.

Routine inspections and monitoring were conducted throughout the year and following significant precipitation events. In November 2012, cracks in the MatCon pavement and joints between the pavement and the concrete hangar pads were hot-sealed. Additional wattles were installed and angular riprap was placed to aid in the dispersion of storm water along the access area to the retaining walls. Stub-outs at gas-vent riser locations PS-2, PS-3, and PS-5 were opened, and risers with turbines (spinners) were installed.

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1.0 INTRODUCTION

This landfill cover inspection report, prepared by Los Alamos National Laboratory (LANL or the Laboratory), summarizes the findings 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 2012.

Postclosure inspection and reporting requirements are described in the "Final Implementation Strategy for Post Closure Inspection 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" (CE2 Corporation 2009, 111600) and 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 postclosure plan to include minor changes reflected in the 2007 final remedy and to include specific activities necessary for a comprehensive approach to maintaining and monitoring the landfill for 30 yr following closure.

2.0 BACKGROUND

Two inactive solid waste disposal sites [the airport landfill, SWMU 73-001(a), and the DDA, SWMU 73-001(d)] are located at the LAC 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. Before 1965, some of the waste was burned and subsequently buried in the airport landfill. Approximately 489,500 yd^3 of waste was disposed of in the landfill.

From 1984 to 1986, approximately 126,000 yd^3 of burned debris was 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 U.S. Department of Energy (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 yd^3 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 regrading were conducted, the following features were installed for the airport landfill cover (Figure 2.0-2):

- Approximately 6 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 retaining walls
- A concrete retaining wall

- Revegetation with native grasses of approximately 4 acres
- A storm water collection system consisting of 5 trench drains, 13 drain inlets, approximately 1950 ft of associated buried concrete storm-sewer lines, an 18-in.-diameter high-density polyethylene outfall pipe approximately 110 ft 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. 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.

The New Mexico Environment Department's (NMED's) approval with modifications for the remedy completion report requires monitoring of storm water runoff from the site (NMED 2007, 098285). This monitoring is being performed under the Laboratory's National Pollutant Discharge Elimination System Individual Permit for storm water discharges from SWMUs and areas of concern.

3.0 INSPECTION ACTIVITIES

During calendar year 2012, inspection activities were conducted in accordance with the "Final Implementation Strategy for Post Closure Inspection 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" (CE2 Corporation 2009, 111600) and the "Post-Closure Care and Monitoring Plan for the Los Alamos Site Office TA-73 Airport Landfill, Revision 2" (North Wind, Inc. 2006, 111707).

Inspection activities at SWMU 73-001(a) focused on evaluating the condition and overall integrity of each individual feature of the landfill. In addition, gas monitoring was conducted throughout the landfill cover to evaluate the presence of potentially combustible gases. 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 completed inspection checklists are included in Appendix A.

In accordance with section 7 of the implementation strategy (CE2 Corporation 2009, 111600), the following field inspections and gas monitoring were completed during 2012.

January 27, 2012

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks.

February 28, 2012

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks.

March 30, 2012

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks.

April 25, 2012

- First quarter landfill-gas monitoring.

April 30, 2012

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks.

May 4, 2012

- Annual inspection of the gas-collection system, TRM, the vegetated areas, wattle area, concrete and rock retaining walls, storm water–collection system, outfall pipe, and DDA.
- Inspection checklist form modified to list inspection findings.

May 29, 2012

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks. The grated trenches were also inspected.

June 22, 2012

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks. The grated trenches were also inspected.

June 25, 2012

- Second quarter landfill-gas monitoring.

July 23, 2012

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks. The grated trenches were also inspected.

August 31, 2012

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks. The grated trenches were also inspected.

September 28, 2012

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks. The grated trenches were also inspected.
- Third quarter landfill-gas monitoring.

October 15, 2012

- Significant rainfall inspection of the MatCon pavement, hangar pads, vegetated areas, wattle area, retaining walls, and the storm water–collection system.

October 24, 2012

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks. The grated trenches were also inspected.

November 29, 2012

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks. The grated trenches were also inspected.
- Fourth quarter landfill-gas monitoring.
- Cracks in the MatCon pavement and joints between the pavement and the concrete hangar pads were hot sealed under warranty by MatCon representatives.
- Additional wattles were installed and angular riprap was placed to assist with dispersion of storm water along the access area to the retaining walls.
- Stub-outs at gas-vent riser locations PS-2, PS-3, and PS-5 were opened and risers with turbines (spinners) were installed in November under DOE contract.

December 18, 2012

- Monthly inspection of MatCon pavement, concrete hangar pads, and survey benchmarks. The grated trenches were also inspected.

Inspection activities and findings are described below.

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.

Following the repairs completed in 2011, minor cracking and/or separation was observed in various locations of the MatCon pavement.

In November 2012, cracks in the MatCon pavement and joints between the pavement and the concrete hangar pads were hot sealed, as shown in Figures 3.1-1 and 3.1-2. Repairs were completed by MatCon representatives.

Monthly inspection surveys 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.

Visible subsidence was observed on the northern half of hangar pads 2 and 3. Subsidence was also noted on the northwest quarter of hangar pads 1 and 4, but to a lesser degree than on pads 2 and 3, as shown in Figure 3.1-3. Cracking associated with the subsidence of the pads was also observed throughout the central portion of each pad. Cracks in pads 2 and 3 had been treated in 2009 using polyurethane sealants; some of the treated cracks have expanded and grown in length and width, as shown in Figure 3.1-4. Separation of the expansion joints was observed at all the pads, with the exception

of pad 5. Separation or subsidence of joints between the pads and the MatCon pavement was noted at various locations.

3.2 Vegetated (Seeded) Areas

Inspections of the vegetated areas were conducted annually and after significant rainfall events and focused on evidence of erosion, subsidence, sparse vegetation, and animal burrows. Two parallel transects were surveyed along the northern vegetated area between the MatCon pavement and the chainlink perimeter fence, three parallel transects were surveyed along the upper reaches of the eastern sloped area, and three parallel transects were surveyed along the lower reaches of the eastern-sloped area.

The vegetated areas are well populated with various grasses, some shrubs, and seasonal weeds, as shown in Figure 3.2-1. A few areas have sparse vegetation but are covered with TRM. No animal burrows were noted.

In November 2012, wattles were replaced and additional wattles were installed along the access area to the retaining walls. Additional angular riprap was placed to assist with dispersion of storm water, as shown in Figure 3.2-2.

3.3 Storm Water-Collection System

Inspection of the visible components of the storm water–collection system were completed annually and after significant rainfall. 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 (Figure 2.0-2). 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 next to hangar pads 1, 2, 3, 4, and 5. Standing water has been observed in the northern half of trench drains associated with pads 2, 3, 4, and 5. Ponding of water has been observed at the northern end of hangar pads 2 and 3. Previously, cracks in the trench drains next to pads 2 and 3 had been repaired with grout. Drain inlets associated with pads 1, 2, and 3 are cracking or flaking and contain standing water. The remaining 10 drain inlets, manhole, and outfall appear to be in good working order.

3.4 Riprap Drainage Channels

The riprap drainage channels were inspected annually and after significant rainfall events. 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 (Figures 2.0-1 and 2.0-2).

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.

All drainage channels are in good working order, with no evidence of subsidence, erosion, sedimentation, or excessive vegetation.

3.5 Retaining Walls

The retaining walls and porous detention areas were inspected annually and after significant rainfall. 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.

Three porous detention areas are located on the lower slope to the east of the concrete retaining wall to enhance sediment removal from storm water before being discharged from the site and to reduce the velocity of the storm water discharge.

All retaining walls are in good working order, with no evidence of cracking, separation, rotation, erosion/sedimentation, or slumping. The detention areas are also in good working order.

3.6 Temporary Erosion-Control Features

Temporary erosion-control features installed during the remedy implementation included straw wattles, hay bales, and erosion fencing. These features served their intended purpose of protecting unvegetated runoff areas until vegetation could be established. During the 2010 inspections, it was observed that vegetation has been established, and the existing temporary erosion-control measures were no longer needed and were removed.

3.7 Landfill-Gas Monitoring

Landfill-gas monitoring was conducted quarterly and entailed measuring combustible gases, oxygen, and carbon dioxide at 53 locations, including the landfill-gas collection system riser vents (locations PS-02, PS-03, and PS-05 and were completed with blind flange cap fittings), along the hangar pads, trench drains, and drain inlets, and within the northern and eastern vegetated areas. Gas-monitoring locations are shown in Figure 2.0-2, and the completed gas-measurement forms are provided in Appendix B. In accordance with the implementation plan (CE2 Corporation 2009, 111600), no landfill-gas monitoring was conducted at the DDA.

Concentrations of combustible gases, oxygen, and carbon dioxide were measured in percent values using a calibrated MSA Altair 5 multigas detector. 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 dioxide levels. The upper alarm level of the multigas detector was set at 20% of the LEL. Because of the potential for variable combustible gases and vapors that could rise from the landfill, the gas detector was calibrated using pentane rather than methane. Calibration to pentane results in more conservative detector readings (i.e., biased high) with respect to methane and minimizes the loss of sensitivity because of “poisoning” of the detector with elevated levels of methane.

Gas monitoring was conducted 2 in. above the expansion joints for the hangar pad (HP) locations, 4 in. below the trench grate for trench drain (TD) locations, 4 in. below the grate for drainage culvert (DC) locations, 2 in. above ground surface for perimeter ground (PG) locations, and at the spinner for perimeter spinner (PS) vent pipe locations.

In November 2012, risers with turbines (spinners) were installed at gas-vent riser locations PS-02, PS-03, and PS-05 (Figure 3.1-1) and were monitored during the fourth quarter. Figure 3.7-1 shows gas-monitoring activities at location PS-02.

During first quarter monitoring, combustible gases were detected at drainage culvert location DC-01 at a concentration of 2% of the LEL. The oxygen concentration was 20.8%. First quarter gas-monitoring results are presented in Table 3.7-1.

During second quarter monitoring, combustible gases were detected at drainage culvert locations DC-04 and DC-06 at concentrations of 4% and 8% of the LEL, respectively. The oxygen concentration was 20.8% at both locations. The second quarter gas-monitoring results are presented in Table 3.7-2.

During third quarter monitoring, combustible gases were detected at perimeter spinner location PS-06 at a concentration of 6% of the LEL. The oxygen concentration was 20.8%. Third quarter gas-monitoring results are presented in Table 3.7-3.

During fourth quarter monitoring, combustible gases were detected at the drainage culverts at the following locations: DC-3 at 8%, DC-04 at 4%, DC-05 at 10%, and DC-06 at 20% of the LEL and an oxygen concentration of 20.8%. Combustible gases were detected at the following perimeter spinner locations: PS-02 at 90%, PS-03 at 67%, PS-05 at 23%, and PS-06 at 21% of the LEL. All locations had an oxygen concentration of 20.8%. Fourth quarter gas-monitoring results are presented in Table 3.7-4. Follow-up monitoring of all perimeter spinners was completed five days after the initial monitoring had been completed. Combustible gases were detected at the following perimeter spinner locations: PS-02 at 95% of the LEL with an oxygen concentration of 19.1% and PS-3 at 3% of the LEL with an oxygen concentration of 20.1%.

Landfill-gas monitoring results are below action levels, as specified in the postclosure care and monitoring plan (North Wind Inc. 2006, 111707), for the four quarters in 2012; however, gas concentrations increased for the fourth quarter of calendar year 2012.

3.8 Debris Disposal Area

Inspections of the DDA were conducted annually and after significant rainfall.

No evidence of erosion with well-established vegetative cover was observed, as shown in Figure 3.8-1. No issues were observed at the DDA.

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.

CE2 Corporation, July 2009. "Final Implementation Strategy for Post Closure Inspection 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," report prepared for U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Site Office, Los Alamos, New Mexico. (CE2 Corporation 2009, 111600)

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)

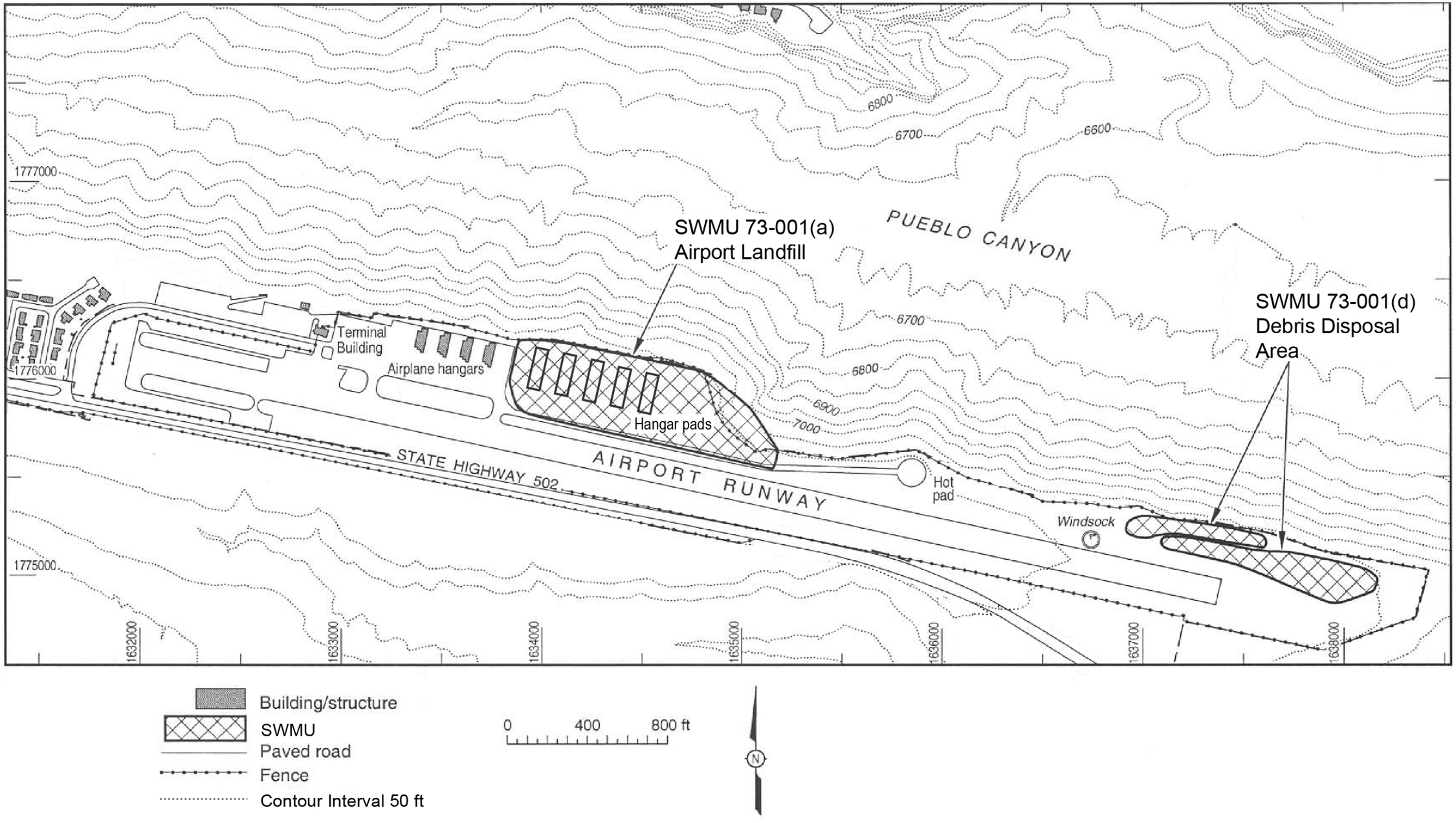


Figure 2.0-1 Locations of the airport landfill and DDA

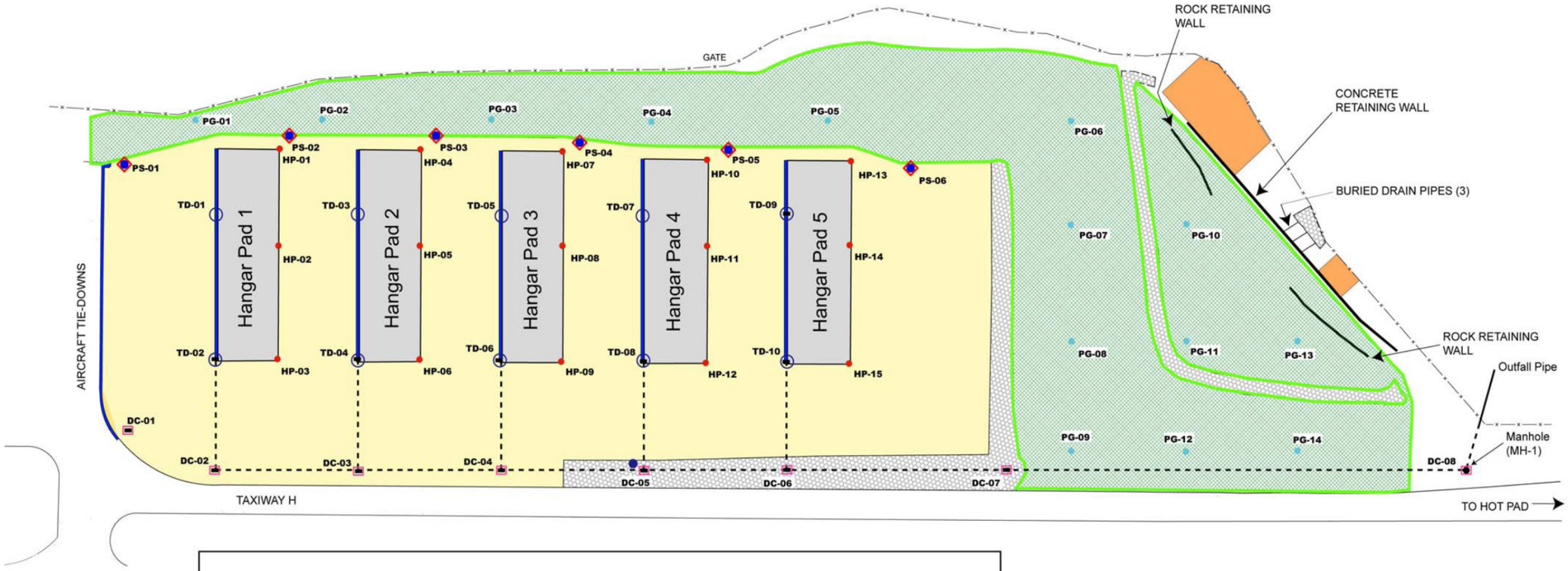


Figure 2.0-2 Airport landfill features



Figure 3.1-1 Hot seal between MatCon pavement and hangar pad. Risers installed at locations PS-2, PS-3, PS-5



Figure 3.1-2 MatCon pavement hot seal; view to the west



Figure 3.1-3 View to the east; note uneven appearance of pads and MatCon pavement

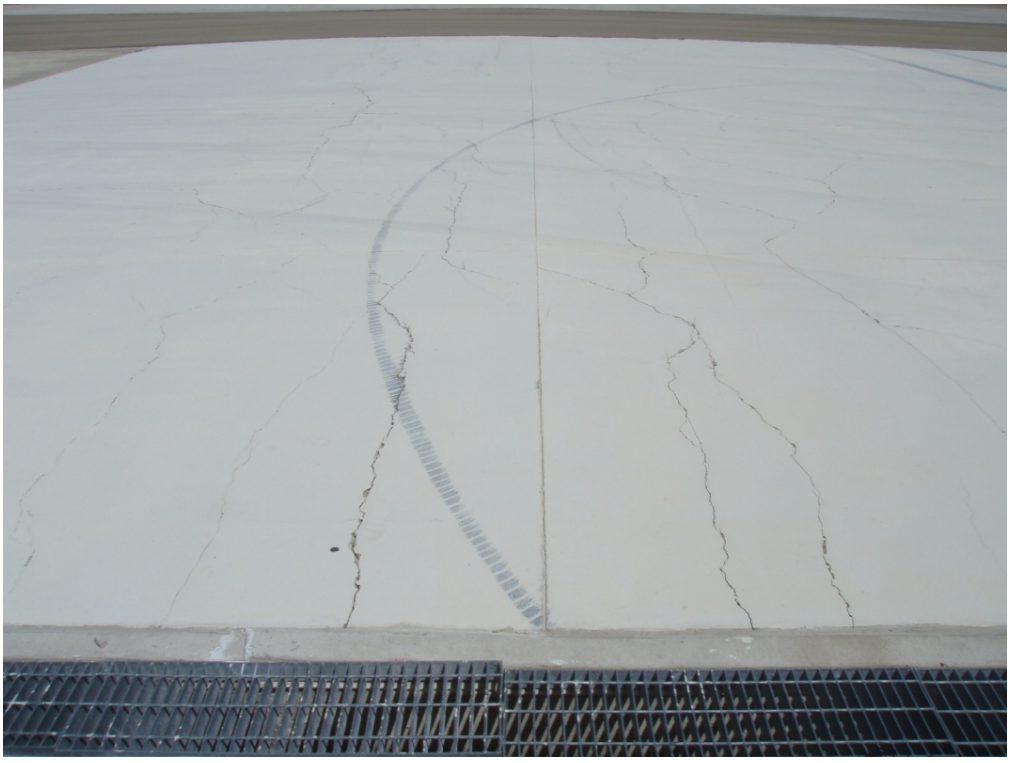


Figure 3.1-4 Cracks in concrete hangar pad 3



Figure 3.2-1 Northwest view of vegetated slope, riprap drainage channels, retaining walls, wattle slope, and small detention area



Figure 3.2-2 Wattles and riprap on access slope



Figure 3.7-1 Monitoring gas at vent riser PS-02



Figure 3.8-1 Northwest view of vegetated DDA

Table 3.7-1
First Quarter Landfill-Gas Monitoring Results

Monitoring Location	Height	Time	CH_4[a] (% LEL)	O_2 (%)	CO_2 (%)
Hangar Pads (samples collected on the east side of the pad along the expansion joint)					
HP-01	2 in. above expansion joint	1002	0	20.8	0
HP-02	2 in. above expansion joint	1003	0	20.8	0
HP-03	2 in. above expansion joint	1004	0	20.8	0
HP-04	2 in. above expansion joint	0954	0	20.8	0
HP-05	2 in. above expansion joint	0955	0	20.8	0
HP-06	2 in. above expansion joint	0956	0	20.8	0
HP-07	2 in. above expansion joint	0947	0	20.8	0
HP-08	2 in. above expansion joint	0948	0	20.8	0
HP-09	2 in. above expansion joint	0949	0	20.8	0
HP-10	2 in. above expansion joint	0941	0	20.8	0
HP-11	2 in. above expansion joint	0942	0	20.8	0
HP-12	2 in. above expansion joint	0943	0	20.8	0
HP-13	2 in. above expansion joint	0934	0	20.8	0
HP-14	2 in. above expansion joint	0935	0	20.8	0
HP-15	2 in. above expansion joint	0936	0	20.8	0
Trench Drains (west side of each hangar pad)					
TD-01	4 in. below trench grate	1006	0	20.8	0
TD-02	4 in. below trench grate	1005	0	20.8	0
TD-03	4 in. below trench grate	0959	0	20.8	0
TD-04	4 in. below trench grate	0958	0	20.8	0
TD-05	4 in. below trench grate	0952	0	20.8	0
TD-06	4 in. below trench grate	0951	0	20.8	0
TD-07	4 in. below trench grate	0946	0	20.8	0
TD-08	4 in. below trench grate	0944	3	20.8	0
TD-09	4 in. below trench grate	0938	0	20.8	0
TD-10	4 in. below trench grate	0939	0	20.8	0
Drainage Culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 in. below grate	1004	2	20.8	0
DC-02	4 in. below grate	1004	0	20.8	0
DC-03	4 in. below grate	0957	0	20.8	0
DC-04	4 in. below grate	0947	0	20.8	0
DC-05	4 in. below grate	0943	3	20.8	0
DC-06	4 in. below grate	0937	0	20.8	0
DC-07	4 in. below grate	0936	0	20.8	0
DC-08	4 in. below manhole lid	1016	0	20.8	0

Table 3.7-1 (continued)

Monitoring Location	Height	Time	CH_4[a] (% LEL)	O_2 (%)	CO_2 (%)
Northern Perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 in. above ground surface	1008	0	20.8	0
PG-02	2 in. above ground surface	1001	0	20.8	0
PG-03	2 in. above ground surface	0954	0	20.8	0
PG-04	2 in. above ground surface	0948	0	20.8	0
PG-05	2 in. above ground surface	0939	0	20.8	0
PG-06	2 in. above ground surface	1011	0	20.8	0
PG-07	2 in. above ground surface	1012	0	20.8	0
PG-08	2 in. above ground surface	1013	0	20.8	0
PG-09	2 in. above ground surface	1014	0	20.8	0
PG-10	2 in. above ground surface	1023	0	20.8	0
PG-11	2 in. above ground surface	1022	0	20.8	0
PG-12	2 in. above ground surface	1015	0	20.8	0
PG-13	2 in. above ground surface	1020	0	20.8	0
PG-14	2 in. above ground surface	1016	0	20.8	0
PS-01	At spinner (4 ft above pavement)	0924	0	20.8	0
PS-02	At spinner (4 ft above pavement)	Capped	n/a[b]	n/a	n/a
PS-03	At spinner (4 ft above pavement)	Capped	n/a	n/a	n/a
PS-04	At spinner (4 ft above pavement)	0930	0	20.8	0
PS-05	At spinner (4 ft above pavement)	Capped	n/a	n/a	n/a
PS-06	At spinner (4 ft above pavement)	0932	0	20.8	0

Notes: Methane concentrations measured in percent of the LEL. Other gases measured in percent.

[a] CH_4 = Methane.

[b] n/a = Not applicable.

Table 3.7-2
Second Quarter Landfill-Gas Monitoring Results

Monitoring Location	Height	Time	CH_4[a] (% LEL)	O_2 (%)	CO_2 (%)
Hangar Pads (samples collected on the east side of the pad along the expansion joint)					
HP-01	2 in. above expansion joint	0843	0	20.8	0
HP-02	2 in. above expansion joint	0842	0	20.8	0
HP-03	2 in. above expansion joint	0841	0	20.8	0
HP-04	2 in. above expansion joint	0845	0	20.8	0
HP-05	2 in. above expansion joint	0844	0	20.8	0
HP-06	2 in. above expansion joint	0843	0	20.8	0
HP-07	2 in. above expansion joint	0854	0	20.8	0
HP-08	2 in. above expansion joint	0853	0	20.8	0
HP-09	2 in. above expansion joint	0852	0	20.8	0
HP-10	2 in. above expansion joint	0900	0	20.8	0
HP-11	2 in. above expansion joint	0859	0	20.8	0
HP-12	2 in. above expansion joint	0856	0	20.8	0
HP-13	2 in. above expansion joint	0905	0	20.8	0
HP-14	2 in. above expansion joint	0903	0	20.8	0
HP-15	2 in. above expansion joint	0902	0	20.8	0
Trench Drains (west side of each hangar pad)					
TD-01	4 in. below trench grate	0839	0	20.8	0
TD-02	4 in. below trench grate	0840	0	20.8	0
TD-03	4 in. below trench grate	0838	0	20.8	0
TD-04	4 in. below trench grate	0837	0	20.8	0
TD-05	4 in. below trench grate	0835	0	20.8	0
TD-06	4 in. below trench grate	0834	0	20.8	0
TD-07	4 in. below trench grate	0832	0	20.8	0
TD-08	4 in. below trench grate	0831	0	20.8	0
TD-09	4 in. below trench grate	0829	0	20.8	0
TD-10	4 in. below trench grate	0828	0	20.8	0
Drainage Culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 in. below grate	0805	0	20.8	0
DC-02	4 in. below grate	0807	0	20.8	0
DC-03	4 in. below grate	0808	0	20.8	0
DC-04	4 in. below grate	0810	4	20.8	0
DC-05	4 in. below grate	-811	0	20.8	0
DC-06	4 in. below grate	0813	8	20.8	0
DC-07	4 in. below grate	0815	0	20.8	0
DC-08	4 in. below manhole lid	0819	0	20.8	0

Table 3.7-2 (continued)

Monitoring Location	Height	Time	CH_4[a] (% LEL)	O_2 (%)	CO_2 (%)
Northern Perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 in. above ground surface	0910	0	20.8	0
PG-02	2 in. above ground surface	0912	0	20.8	0
PG-03	2 in. above ground surface	0913	0	20.8	0
PG-04	2 in. above ground surface	0915	0	20.8	0
PG-05	2 in. above ground surface	0916	0	20.8	0
PG-06	2 in. above ground surface	0918	0	20.8	0
PG-07	2 in. above ground surface	0920	0	20.8	0
PG-08	2 in. above ground surface	0922	0	20.8	0
PG-09	2 in. above ground surface	0924	0	20.8	0
PG-10	2 in. above ground surface	0935	0	20.8	0
PG-11	2 in. above ground surface	0932	0	20.8	0
PG-12	2 in. above ground surface	0925	0	20.8	0
PG-13	2 in. above ground surface	0930	0	20.8	0
PG-14	2 in. above ground surface	0927	0	20.8	0
PS-01	At spinner (4 ft above pavement)	0828	0	20.8	0
PS-02	At spinner (4 ft above pavement)	Capped	n/a[b]	n/a	n/a
PS-03	At spinner (4 ft above pavement)	Capped	n/a	n/a	n/a
PS-04	At spinner (4 ft above pavement)	0826	0	20.8	0
PS-05	At spinner (4 ft above pavement)	Capped	n/a	n/a	n/a
PS-06	At spinner (4 ft above pavement)	0823	0	20.8	0

Notes: Methane concentrations measured in percent of the LEL. Other gases measured in percent.

[a] CH_4 = Methane.

[b] n/a = Not applicable.

Table 3.7-3
Third Quarter Landfill-Gas Monitoring Results

Monitoring Location	Height	Time	CH_4[a] (% LEL)	O_2 (%)	CO_2 (%)
Hangar Pads (samples collected on the east side of the pad along the expansion joint)					
HP-01	2 in. above expansion joint	0958	0	20.8	0
HP-02	2 in. above expansion joint	1000	0	20.8	0
HP-03	2 in. above expansion joint	1001	0	20.8	0
HP-04	2 in. above expansion joint	1003	0	20.8	0
HP-05	2 in. above expansion joint	1004	0	21.2	0
HP-06	2 in. above expansion joint	1005	0	21.2	0
HP-07	2 in. above expansion joint	1007	0	20.8	0
HP-08	2 in. above expansion joint	1008	0	20.8	0
HP-09	2 in. above expansion joint	1009	0	21.2	0
HP-10	2 in. above expansion joint	1010	0	21.2	0
HP-11	2 in. above expansion joint	1011	0	21.2	0
HP-12	2 in. above expansion joint	1012	0	20.8	0
HP-13	2 in. above expansion joint	1013	0	20.8	0
HP-14	2 in. above expansion joint	1014	0	20.8	0
HP-15	2 in. above expansion joint	1015	0	20.8	0
Trench Drains (west side of each hangar pad)					
TD-01	4 in. below trench grate	1026	0	21.2	0
TD-02	4 in. below trench grate	1025	0	21.2	0
TD-03	4 in. below trench grate	1024	0	21.2	0
TD-04	4 in. below trench grate	1023	0	21.2	0
TD-05	4 in. below trench grate	1021	0	20.8	0
TD-06	4 in. below trench grate	1019	0	20.8	0
TD-07	4 in. below trench grate	1018	0	20.8	0
TD-08	4 in. below trench grate	1017	0	21.2	0
TD-09	4 in. below trench grate	1016	0	20.8	0
TD-10	4 in. below trench grate	1015	0	21.2	0
Drainage Culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 in. below grate	1057	0	20.8	0
DC-02	4 in. below grate	1058	0	20.8	0
DC-03	4 in. below grate	1059	0	20.8	0
DC-04	4 in. below grate	1100	0	20.8	0
DC-05	4 in. below grate	1101	0	20.8	0
DC-06	4 in. below grate	1102	0	20.8	0
DC-07	4 in. below grate	1103	0	20.2	0
DC-08	4 in. below manhole lid	1105	0	20.2	0

Table 3.7-3 (continued)

Monitoring Location	Height	Time	CH_4[a] (% LEL)	O_2 (%)	CO_2 (%)
Northern Perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 in. above ground surface	1054	0	20.2	0
PG-02	2 in. above ground surface	1053	0	20.2	0
PG-03	2 in. above ground surface	1052	0	20.2	0
PG-04	2 in. above ground surface	1050	0	20.2	0
PG-05	2 in. above ground surface	1049	0	20.2	0
PG-06	2 in. above ground surface	1048	0	20.8	0
PG-07	2 in. above ground surface	1047	0	20.8	0
PG-08	2 in. above ground surface	1043	0	20.8	0
PG-09	2 in. above ground surface	1042	0	20.2	0
PG-10	2 in. above ground surface	1040	0	20.8	0
PG-11	2 in. above ground surface	1039	0	20.8	0
PG-12	2 in. above ground surface	1038	0	20.8	0
PG-13	2 in. above ground surface	1037	0	20.8	0
PG-14	2 in. above ground surface	1036	0	20.8	0
PS-01	At spinner (4 ft above pavement)	1028	0	20.8	0
PS-02	At spinner (4 ft above pavement)	Capped	n/a[b]	n/a	n/a
PS-03	At spinner (4 ft above pavement)	Capped	n/a	n/a	n/a
PS-04	At spinner (4 ft above pavement)	1030	0	20.8	0
PS-05	At spinner (4 ft above pavement)	Capped	n/a	n/a	n/a
PS-06	At spinner (4 ft above pavement)	1032	6	20.8	0

Notes: Methane concentrations measured in percent of the LEL. Other gases measured in percent.

[a] CH_4 = Methane.

[b] n/a = Not applicable.

Table 3.7-4
Fourth Quarter Landfill-Gas Monitoring Results

Monitoring Location	Height	Time	CH_4* (% LEL)	O_2 (%)	CO_2 (%)
Hangar Pads (samples collected on the east side of the pad along the expansion joint)					
HP-01	2 in. above expansion joint	1335	0	20.8	0
HP-02	2 in. above expansion joint	1336	0	20.8	0
HP-03	2 in. above expansion joint	1337	0	20.8	0
HP-04	2 in. above expansion joint	1327	0	20.8	0
HP-05	2 in. above expansion joint	1329	0	20.8	0
HP-06	2 in. above expansion joint	1330	0	20.8	0
HP-07	2 in. above expansion joint	1321	0	20.8	0
HP-08	2 in. above expansion joint	1322	0	20.8	0
HP-09	2 in. above expansion joint	1323	0	20.8	0
HP-10	2 in. above expansion joint	1314	0	20.8	0
HP-11	2 in. above expansion joint	1315	0	20.8	0
HP-12	2 in. above expansion joint	1317	0	20.8	0
HP-13	2 in. above expansion joint	1313	0	20.8	0
HP-14	2 in. above expansion joint	1312	0	20.8	0
HP-15	2 in. above expansion joint	1311	0	20.8	0
Trench Drains (west side of each hangar pad)					
TD-01	4 in. below trench grate	1339	0	20.8	0
TD-02	4 in. below trench grate	1340	0	20.8	0
TD-03	4 in. below trench grate	1333	0	20.8	0
TD-04	4 in. below trench grate	1332	0	20.8	0
TD-05	4 in. below trench grate	1325	0	20.8	0
TD-06	4 in. below trench grate	1324	0	20.8	0
TD-07	4 in. below trench grate	1319	0	20.8	0
TD-08	4 in. below trench grate	1318	0	20.8	0
TD-09	4 in. below trench grate	1314	0	20.8	0
TD-10	4 in. below trench grate	1310	0	20.8	0
Drainage Culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 in. below grate	1342	0	20.8	0
DC-02	4 in. below grate	1343	0	20.8	0
DC-03	4 in. below grate	1345	8	20.8	0
DC-04	4 in. below grate	1346	4	20.8	0
DC-05	4 in. below grate	1347	10	20.8	0
DC-06	4 in. below grate	1348	20	20.8	0
DC-07	4 in. below grate	1350	0	20.8	0
DC-08	4 in. below manhole lid	1026	0	20.8	0

Table 3.7-4 (continued)

Monitoring Location	Height	Time	CH_4* (% LEL)	O_2 (%)	CO_2 (%)
Northern Perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 in. above ground surface	1006	0	20.8	0
PG-02	2 in. above ground surface	1007	0	20.8	0
PG-03	2 in. above ground surface	1013	0	20.8	0
PG-04	2 in. above ground surface	1016	0	20.8	0
PG-05	2 in. above ground surface	1018	0	20.8	0
PG-06	2 in. above ground surface	1020	0	20.8	0
PG-07	2 in. above ground surface	1021	0	20.8	0
PG-08	2 in. above ground surface	1022	0	20..2	0
PG-09	2 in. above ground surface	1023	0	20.8	0
PG-10	2 in. above ground surface	1030	0	20.8	0
PG-11	2 in. above ground surface	1029	0	20.8	0
PG-12	2 in. above ground surface	1024	0	20.8	0
PG-13	2 in. above ground surface	1028	0	20.8	0
PG-14	2 in. above ground surface	1025	0	20.8	0
PS-01	At spinner (4 ft above pavement)	1004	0	20.8	0
PS-02	At spinner (4 ft above pavement)	1001	90	20.8	0
PS-03	At spinner (4 ft above pavement)	0959	67	20.8	0
PS-04	At spinner (4 ft above pavement)	0957	0	20.8	0
PS-05	At spinner (4 ft above pavement)	0954	23	20.8	0
PS-06	At spinner (4 ft above pavement)	0952	21	20.8	0

Notes: Methane concentrations measured in percent of the LEL. Other gases measured in percent.

*CH_4 = Methane.

Appendix A

Completed Inspection Checklists

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

Date: January 27, 2012 Time: 1030 Printed Name: Jeff Walterscheid Signature: _____

Figure(s): Inspection photos attached.

Weather: temperature: 34 degrees wind: 1 mph, last significant rain/snow: January 19, 2012. Weather Data Source: Los Alamos Airport

January 2012 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	Subsidence and lifting are visible throughout the hangar pad area. Ponding and puddling of water are noted throughout cap area. Water is ponding at north west corners of pad #2 and #3. Due to subsidence water is draining to the north between pads #3 and #4 and is causing rills and small erosion channel to form on the vegetative north slope. A soil fissure is visible in an east-west trend for approximately 125 ft at the northern margin of pad #2. New spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5. Areas to the north of the hinge line are subsiding and have improper drainage for the matcon, pads and trench drains. See photo 1, 2, 3, & 4	Yes	Remedies for the permanent corrective action are beyond the scope of the inspection.	

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	See October report for general status. Subsidence and lifting is noticeable at pads 1, 2, & 3. From visual observation the north end of pad 1 is raising and twisting. The north ends of pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pad 4 has some subsidence and drainage problems at the north end of the pad with pad 5 beginning to show signs of subsidence and trench drainage issues. Pads 1,2, 3,& 4 have cracking in an east-west orientation with major cracking occurring at pads 2 and 3. Pad 4 is has spider web type cracking and is showing new cracks in an east-west orientation. Pad 5 has spider web type cracking appearing. Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted and twisted.	Yes	Remedies for the permanent corrective action of the cracking and subsidence are beyond the scope of the inspection.	
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and accessible.	No		

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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 Completed Yes/No? & 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				

Comments:

1. Inspection form modified per DOE verbal instruction May 3, 2011.

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*. Copies of this figure can be marked up to show concerns, findings, and corrective actions. These copies should be listed above in the comments section and stapled to this checklist.

*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.



Photo 1: Ponding of water at the NE corner of Pad #2



Photo 2: Ponding of water at NE corner of Pad #3.



Photo 3: Improper drainage between Pads #3 and 4, causing rilling down slope.



Photo 4: Puddle at NW corner of pad #3, note drop inlet at edge of pad.

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

Date: February 28, 2012 Time: 1030 Printed Name: Jeff Walterscheid Signature: _____

Figure(s): Inspection photos attached.

Weather: temperature: 34 degrees wind: 1 mph, last significant rain/snow: January 19, 2012. Weather Data Source: Los Alamos Airport

February 2012 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	Subsidence and lifting are visible throughout the hangar pad area. Ponding and puddling of water has been noted throughout cap area in previous inspections.. Water is ponding at north west corner of pad #2 and #3. Due to subsidence water is draining to the north between pads #3 and #4 and is causing rills and small erosion channel to form on the vegetative north slope. A soil fissure is visible in an east-west trend for approximately 125 ft at the northern margin of pad #2. New spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5. Areas to the north of the hinge line are subsiding and have improper drainage for the matcon, pads and trench drains.	Yes	Remedies for the permanent corrective action are beyond the scope of the inspection.	

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	Subsidence and lifting is noticeable at pads 1, 2, & 3. From visual observation the north end of pad 1 is raising and twisting. The north ends of pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pad 4 has some subsidence and drainage problems at the north end of the pad with pad 5 beginning to show signs of subsidence and trench drainage issues. Pads 1,2, 3,& 4 have cracking in an east-west orientation with major cracking occurring at pads 2 and 3. Pad 4 is has spider web type cracking and is showing new cracks in an east-west orientation. Pad 5 has spider web type cracking appearing. Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted and twisted.	Yes	Remedies for the permanent corrective action of the cracking and subsidence are beyond the scope of the inspection.	
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and accessible.	No		

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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 Completed Yes/No? & 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				
Comments: 1. Inspection form modified per DOE verbal instruction May 3, 2011.					

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*. Copies of this figure can be marked up to show concerns, findings, and corrective actions. These copies should be listed above in the comments section and stapled to this checklist.

*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.



Photo 1: Looking east at Matcon and hanger pads

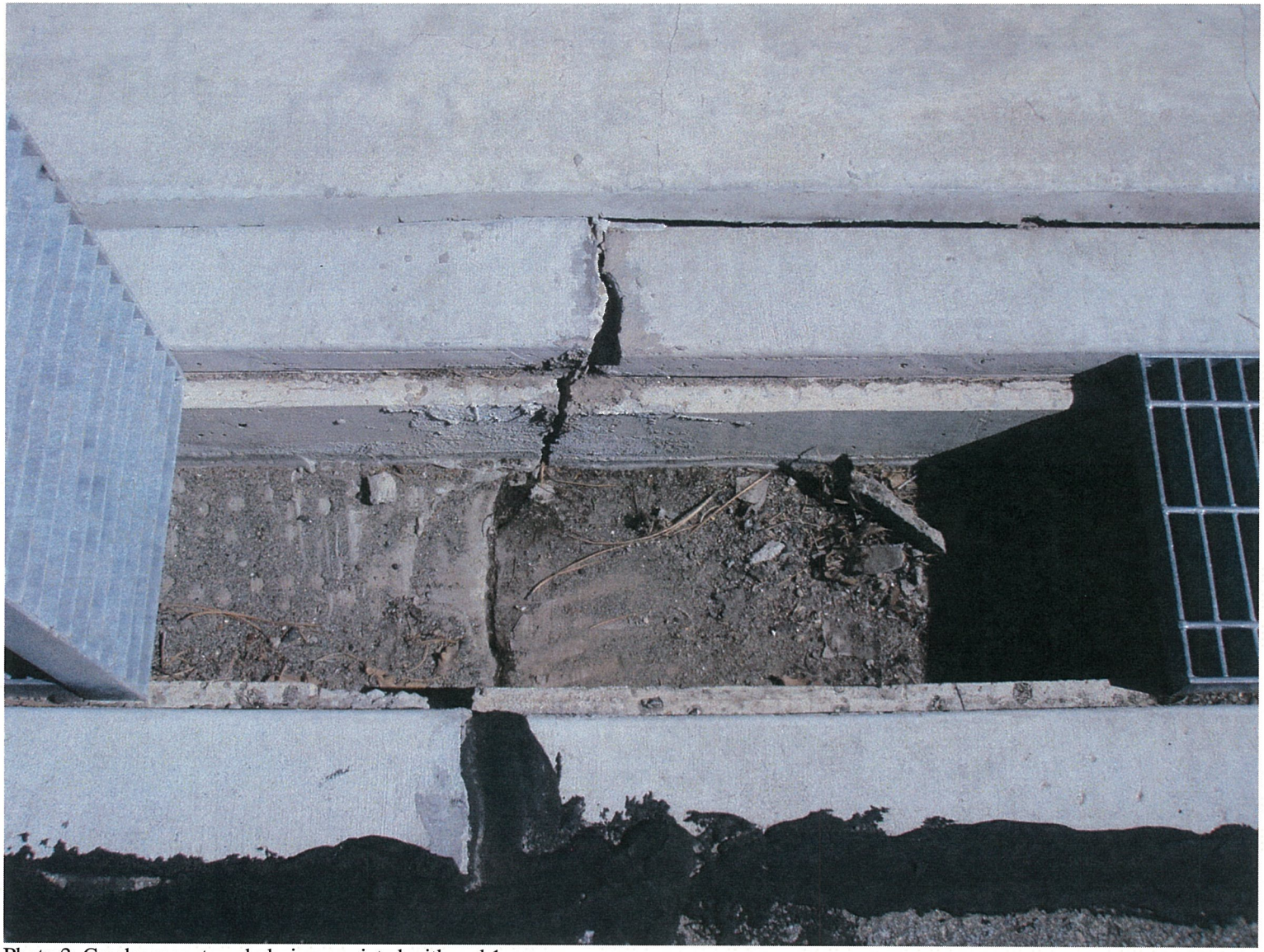


Photo 2: Crack across trench drain associated with pad 1.



Photo 3: Crack across trench drain associated with Pad 1.



Photo 4: Spalling of concrete on Pad 1.



Photo 5: Note subsidence of pads 2 & 3 on north end of pads.



Photo 6: Subsidence of Matcon from concrete at pad 2.



Photo 7: Note subsidence of Matcon at NW corner of pad 2 and uneven nature of trench drain.



Photo 8: Matcon subsidence at NW corner of pad 2.



Photo 9: Cracking in pad 2 along an east west hinge line.

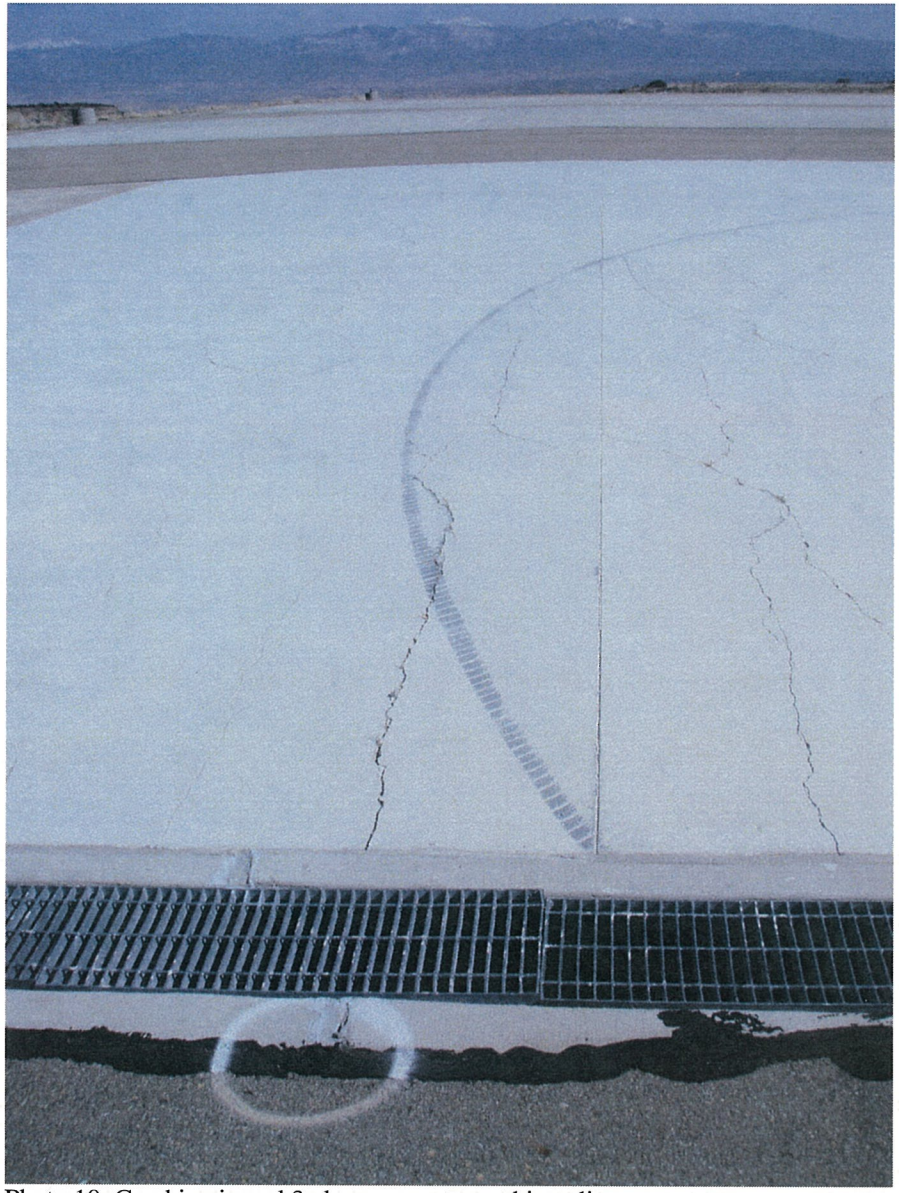


Photo 10: Cracking in pad 3 along an east west hinge line.



Photo 11: looking west along hinge line



Photo 12: Cracking in Matcon along hinge line in an east-west orientation

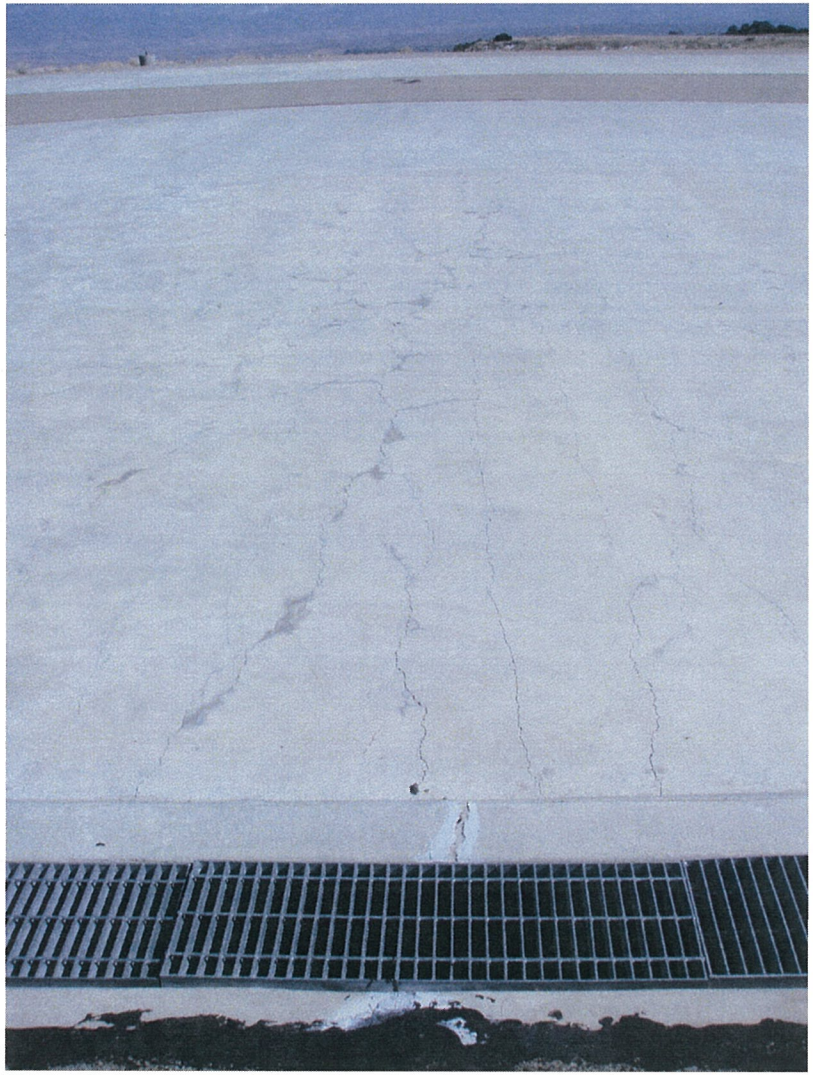


Photo 13: Cracking in pad 4 along hinge line in east-west orientation



Photo 14: Spider web type cracking in pad 4.



Photo 15: New cracks in Matcon appearing between pads 4 & 5 along cracks repaired in October 2011



Photo 16: Cracks in Matcon repaired in October 2011.



Photo 17: Capped vent riser between pad 1 & 2.

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

Date: March 30, 2012 Time: 0830 Printed Name: Jeff Walterscheid Signature: _____

Figure(s): None.

Weather: temperature: 37 degrees wind: 4 mph, last significant rain/snow: February 24, 2012. Weather Data Source: Los Alamos Airport

March 2012 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	Subsidence and lifting are visible throughout the hangar pad area. Ponding and puddling of water has been noted throughout cap area in previous inspections. Water is ponding at north west corner of pad #2 and #3. Due to subsidence water is draining to the north between pads #3 and #4 and is causing rills and small erosion channel to form on the vegetative north slope. A soil fissure is visible in an east-west trend for approximately 125 ft at the northern margin of pad #2. New spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5. Areas to the north of the hinge line are subsiding and have improper drainage for the matcon, pads and trench drains.	Yes	Remedies for the permanent corrective action are beyond the scope of the inspection.	

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	Subsidence and lifting is noticeable at pads 1, 2, & 3. From visual observation the north end of pad 1 is raising and twisting. The north ends of pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pad 4 has some subsidence and drainage problems at the north end of the pad with pad 5 beginning to show signs of subsidence and trench drainage issues. Pads 1,2, 3,& 4 have cracking in an east-west orientation with major cracking occurring at pads 2 and 3. Pad 4 is has spider web type cracking and is showing new cracks in an east-west orientation. Pad 5 has spider web type cracking appearing. Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted and twisted.	Yes	Remedies for the permanent corrective action of the cracking and subsidence are beyond the scope of the inspection.	
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and accessible.	No		

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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 Completed Yes/No? & 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				

Comments:

1. Inspection form modified per DOE verbal instruction May 3, 2011.
2. No photos taken, refer to previous inspections.

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*. Copies of this figure can be marked up to show concerns, findings, and corrective actions. These copies should be listed above in the comments section and stapled to this checklist.

*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.

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

Date: April 30, 2012 Time: 1130 Printed Name: Jeff Walterscheid Signature: _____

Figure(s): Photos attached.

Weather: temperature: 65 degrees wind: 4 mph, last significant rain/snow: April 17, 2012. Weather Data Source: Los Alamos Airport

April 2012 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	Subsidence and lifting are visible throughout the hangar pad area. Ponding and puddling of water has been noted throughout cap area in previous inspections. Following a snow/rain event water is ponding at north west corner of pad #2 and #3. Due to subsidence water is draining to the north between pads #3 and #4 and is causing rills and small erosion channel to form on the vegetative north slope. A soil fissure is visible in an east-west trend for approximately 125 ft at the northern margin of pad #2. New spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5. Areas to the north of the hinge line are subsiding and have improper drainage for the matcon, pads and trench drains. New cracks along the paving lane are visible on the south side of pad #3. Previously repaired cracks between pads 4 and 5 are extending along the hinge point.	Yes	Remedies for the permanent corrective action are beyond the scope of the inspection.	

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	Subsidence and lifting is noticeable at pads 1, 2, & 3. From visual observation the north end of pad 1 is raising and twisting. The north ends of pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pad 4 has some subsidence and drainage problems at the north end of the pad with pad 5 beginning to show signs of subsidence and trench drainage issues. Pads 1, 2, 3,& 4 have cracking in an east-west orientation with major cracking occurring at pads 2 and 3. Pad 4 is has spider web type cracking and is showing new cracks in an east-west orientation. Pad 5 has spider web type cracking appearing. Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted and twisted.	Yes	Remedies for the permanent corrective action of the cracking and subsidence are beyond the scope of the inspection.	
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and accessible.	No		

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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 Completed Yes/No? & 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				

Comments:

1. Inspection form modified per DOE verbal instruction May 3, 2011.

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*. Copies of this figure can be marked up to show concerns, findings, and corrective actions. These copies should be listed above in the comments section and stapled to this checklist.

*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.



Photo 1: Looking west. Note spider web cracking of Matcon, previously repaired cracks are continuing to grow in an east-west orientation between pads 4 and 5.

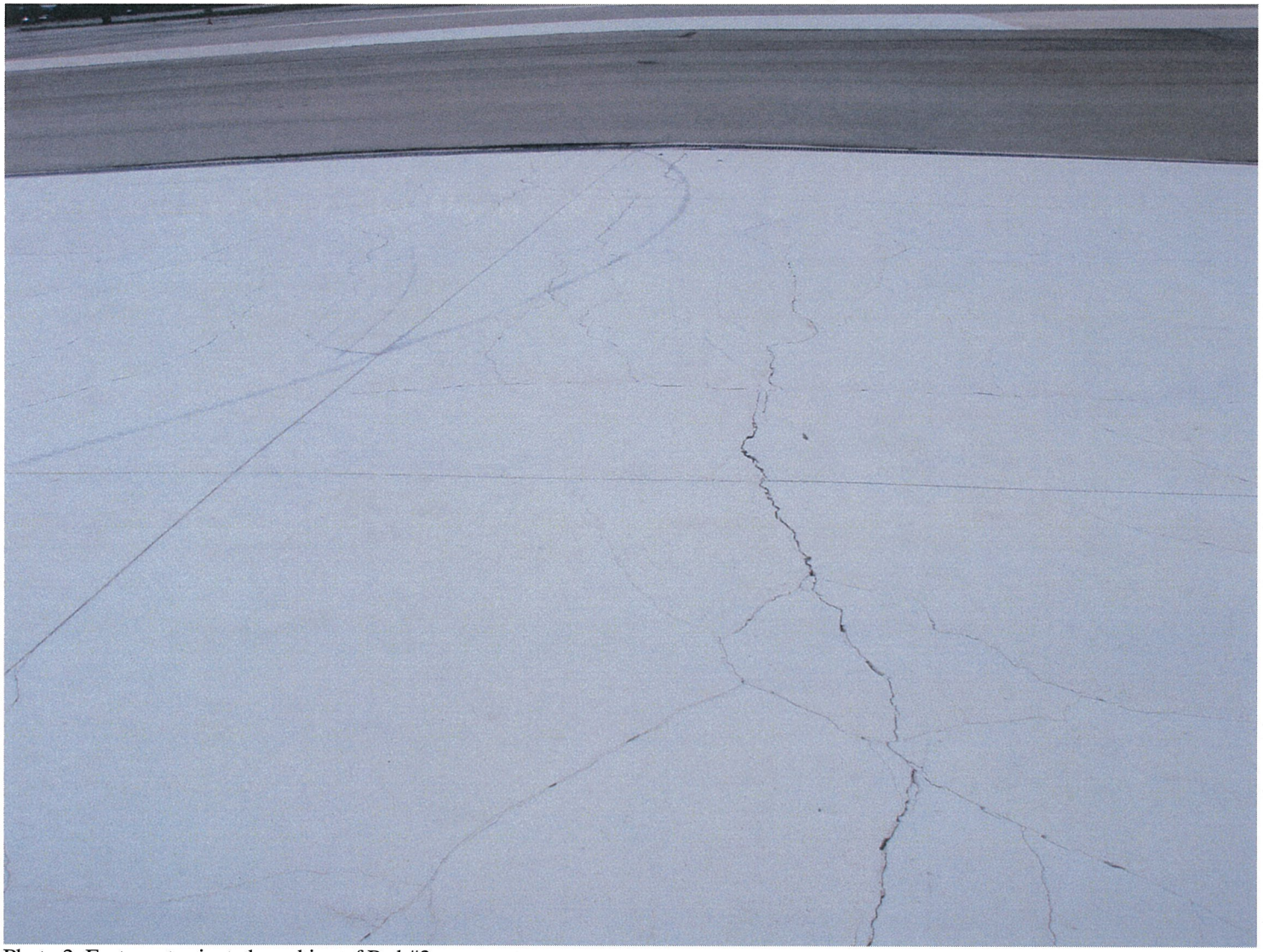


Photo 2: East-west oriented cracking of Pad #2.



Photo 3: Looking east at all pads. Note subsidence of pads to the north.



Photo 4: Looking SE. Note missing vent risers and pad/matcon subsidence.



Photo 5: Looking NE across pads.



Photo 6: Cracking and vegetation around drop inlet.



Photo 7: Looking NE at pad #3, note subsidence and improper drainage.



Photo 8: Vegetation is growing at various locations along the pad margins.



Photo 9: New cracking of Matcon on south side of pad #3.

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

Date: May 29, 2012 Time: 1130 Printed Name: Jeff Walterscheid Signature: _____

Figure(s): Photos attached.

Weather: temperature: 65 degrees wind: 4 mph, last significant rain/snow: 0.21 inches May 13, 2012. Weather Data Source: LANL Weather Machine (TA-53) and Los Alamos Airport

May 2012 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	Subsidence and lifting are visible throughout the hangar pad area. Ponding and puddling of water has been noted throughout cap area in previous inspections. Following precipitation events water is ponding at north west corner of pad #2 and #3. Due to subsidence water is draining to the north between pads #3 and #4 and is causing rills and small erosion channel to form on the vegetative north slope. A soil fissure is visible in an east-west trend for approximately 125 ft at the northern margin of pad #2. New spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5. Areas to the north of the hinge line are subsiding and have improper drainage for the matcon, pads and trench drains. New cracks along the paving lane are visible on the south side of pad #3. Previously repaired cracks between pads 4 and 5 are extending along the hinge point.	Yes	Remedies for the permanent corrective action are beyond the scope of the inspection. Recommend new cracks be sealed, at a minimum, yearly.	

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	Subsidence and lifting is noticeable at pads 1, 2, & 3. From visual observation the north end of pad 1 is raising and twisting. The north ends of pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pad 4 has some subsidence and drainage problems at the north end of the pad with pad 5 beginning to show signs of subsidence and trench drainage issues. Pads 1, 2, 3,& 4 have cracking in an east-west orientation with major cracking occurring at pads 2 and 3. Pad 4 is has spider web type cracking and is showing new cracks in an east-west orientation. Pad 5 has spider web type cracking appearing. Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted and twisted. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. See Grated Trenchs section for additional information.	Yes	Remedies for the permanent corrective action of the cracking and subsidence are beyond the scope of the inspection. Recommend cracks in pads be sealed.	

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and 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				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR	Trench drains associated with pads 1-5 are not draining correctly due to associated subsidence of pads. Standing water was observed in trench drains associated with pads 2, 3 & 4. Cracks are visible in all drains and may allow infiltration of storm water. Sediment build up at the northern 1/3rd of each drain (due to drainage issues).	Yes	Recommend cracks in trench drains be sealed to minimize infiltration.	
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 Completed Yes/No? & 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				
Comments: 1. Inspection form modified per DOE verbal instruction May 3, 2011.					

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*. Copies of this figure can be marked up to show concerns, findings, and corrective actions. These copies should be listed above in the comments section and stapled to this checklist.

*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.



Photo 1: Looking west from Pad 5.

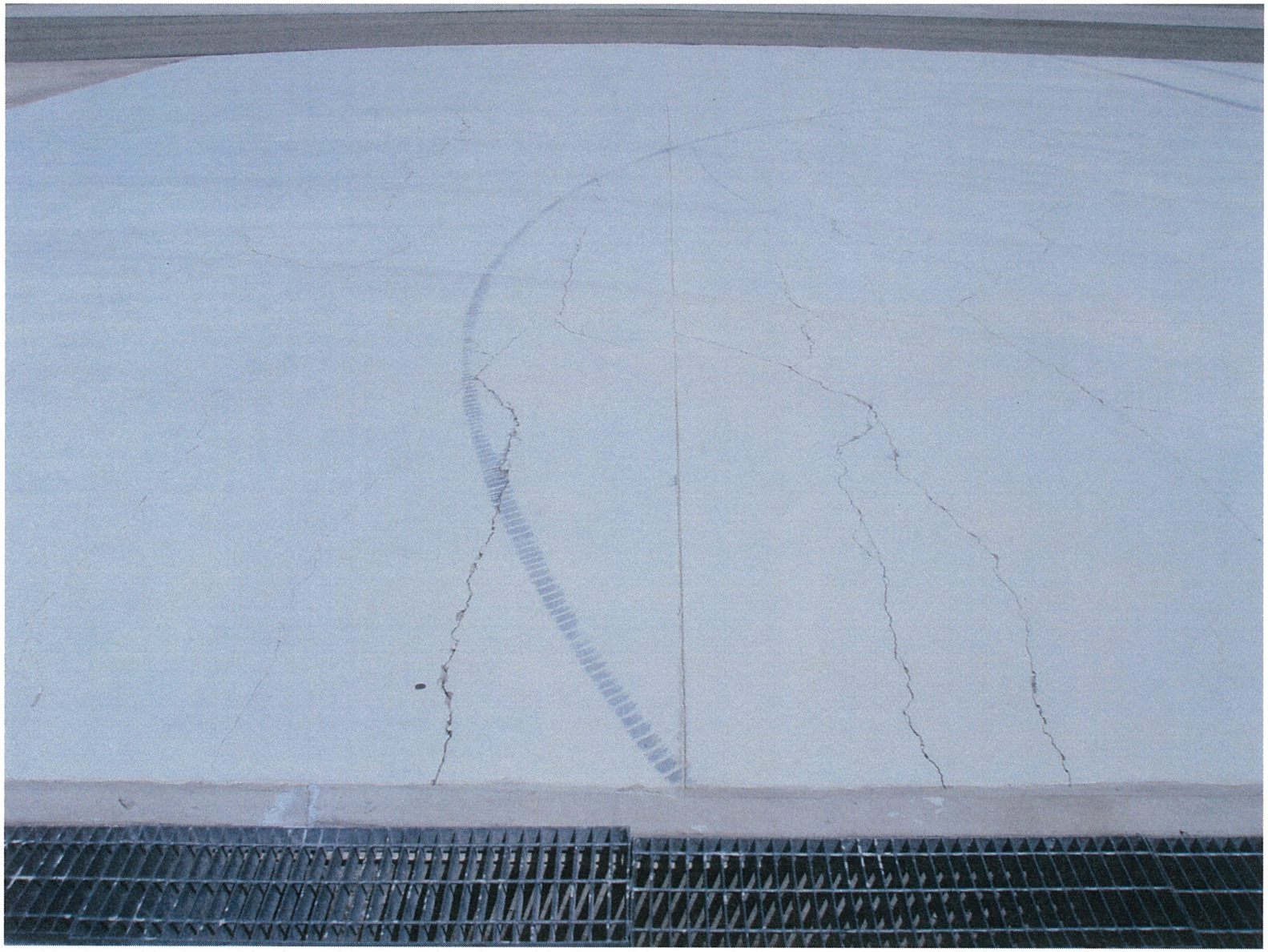


Photo 2: Cracks in Pad #3.



Photo 3: NW corner of Pad #2. Matcon subsidence, trench drain does not function properly, stormwater accumulates and does not drain (infiltrates along matcon margin).



Photo 4: Trench drain at pad #3.



Photo 5: Crack in trench drain associated with Pad #1.

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

Date: June 22, 2012 Time: 1200 Printed Name: Jeff Walterscheid Signature:

Figure(s): Photos attached.

Weather: temperature: 78 degrees wind: 11 mph, last significant rain/snow: 0.21 inches (24 hrs) May 13, 2012.

Weather Data Source: LANL Weather Machine (TA-53) and Los Alamos Airport

June 2012 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	Subsidence and lifting are visible throughout the hangar pad area. Ponding and puddling of water has been noted throughout cap area in previous inspections. Following precipitation events water is ponding at north west corner of pad #2 and #3. Due to subsidence water is draining to the north between pads #3 and #4 and is causing rills and small erosion channel to form on the vegetative north slope. A soil fissure is visible in an east-west trend for approximately 125 ft at the northern margin of pad #2. New spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5. Areas to the north of the hinge line are subsiding and have improper drainage for the matcon, pads and trench drains. New cracks along the paving lane are visible on the south side of pad #3. Previously repaired cracks between pads 4 and 5 are extending along the hinge point.	Yes	Remedies for the permanent corrective action are beyond the scope of the inspection. Recommend new cracks be sealed, at a minimum, yearly.	

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	Subsidence and lifting is noticeable at pads 1, 2, & 3. From visual observation the north end of pad 1 is raising and twisting. The north ends of pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pad 4 has some subsidence and drainage problems at the north end of the pad with pad 5 beginning to show signs of subsidence and trench drainage issues. Pads 1, 2, 3,& 4 have cracking in an east-west orientation with major cracking occurring at pads 2 and 3. Pad 4 is has spider web type cracking and is showing new cracks in an east-west orientation. Pad 5 has spider web type cracking appearing. Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted and twisted. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. See Grated Trenchs section for additional information.	Yes	Remedies for the permanent corrective action of the cracking and subsidence are beyond the scope of the inspection. Recommend cracks in pads be sealed.	

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and 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				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR	Trench drains associated with pads 1-5 are not draining correctly due to associated subsidence of pads. Cracks are in drains may allow infiltration of storm water. Sediment build up at the northern 1/3rd of each drain (due to drainage issues).	Yes	Recommend cracks in trench drains be sealed to minimize infiltration.	
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 Completed Yes/No? & 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				

Comments:

1. Inspection form modified per DOE verbal instruction May 3, 2011.
2. Methane smell near vent risers PS-4 and PS-6.

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*. Copies of this figure can be marked up to show concerns, findings, and corrective actions. These copies should be listed above in the comments section and stapled to this checklist.

*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.



Photo 1: Looking north at pad 5



Photo 2: Looking north at pad 4



Photo 3: Looking north at pad 3



Photo 4: Looking north at pad 2



Photo 5: Looking north at pad 1



Photo 6: Looking east, note pad settlement to the north.



Photo 7: Looking NE at pad 3, note improper drainage of trench drain.

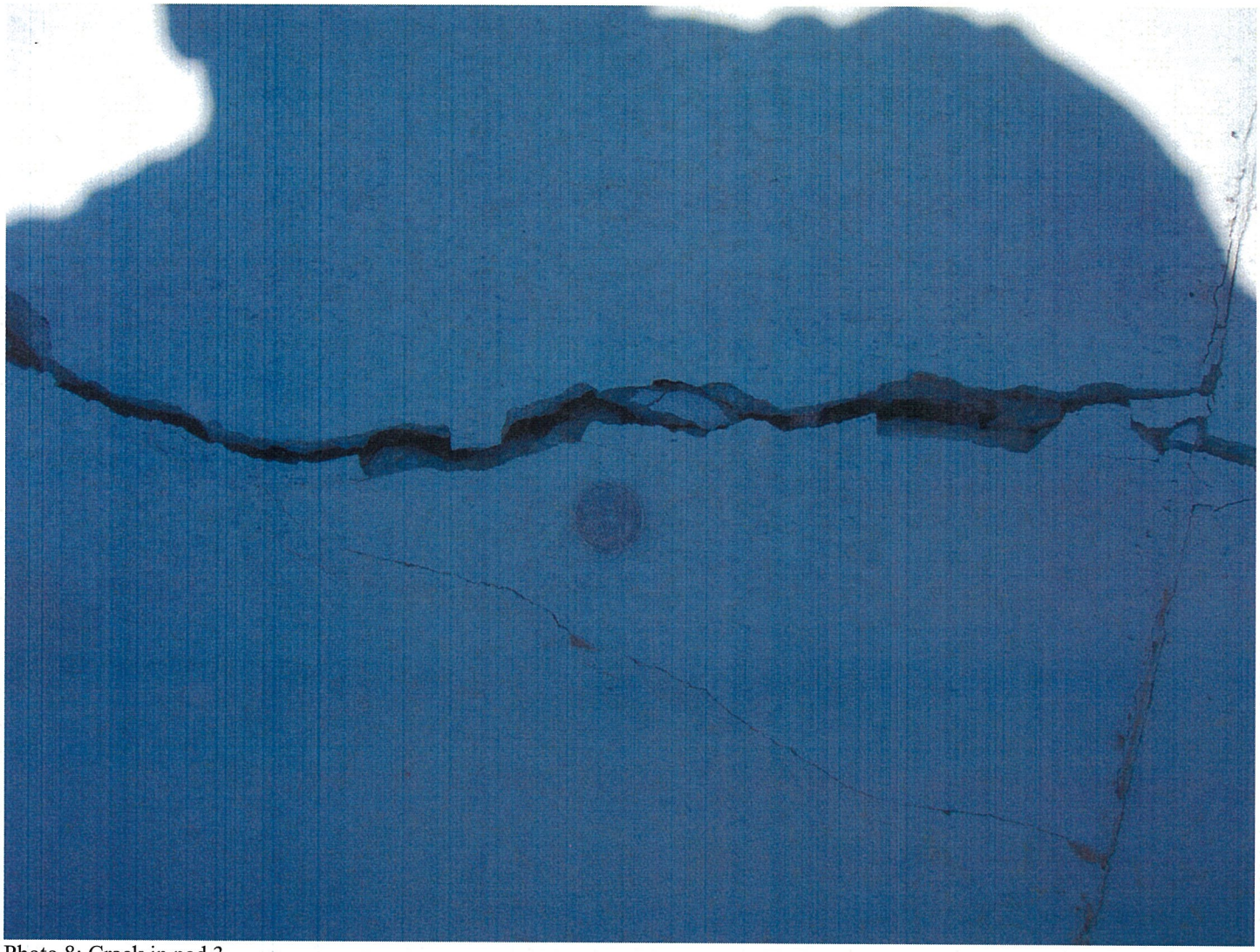


Photo 8: Crack in pad 3.



Photo 9: Looking west from pad 4. Note cracking of pad and hinge line with settling to north.

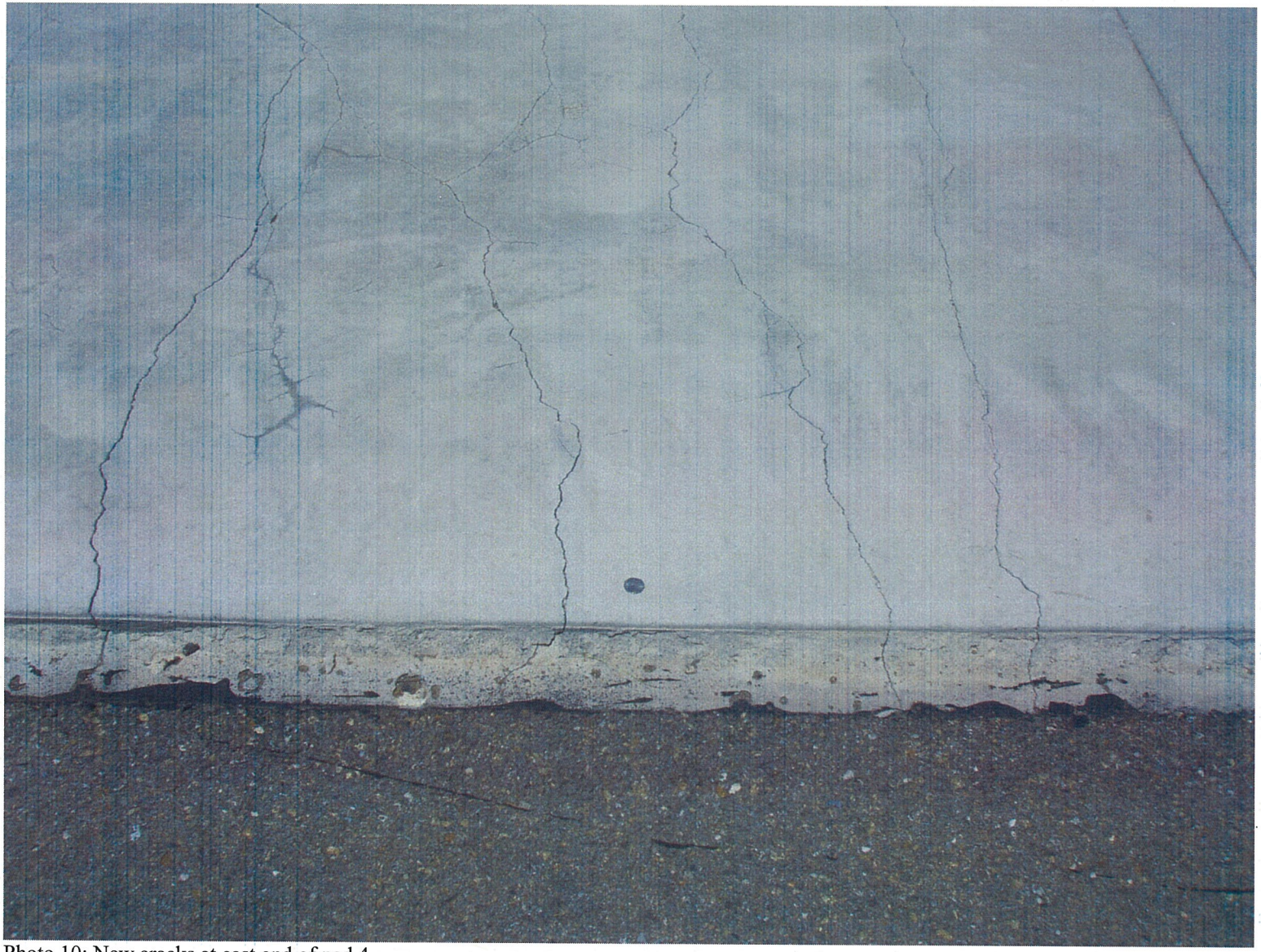


Photo 10: New cracks at east end of pad 4.



Photo 11: Looking west from east end of tarmac/pads.

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

Date: July 23, 2012 Time: 1300 Printed Name: Jeff Walterscheid Signature: _____

Figure(s): Photos attached.

Weather: temperature: 78 degrees wind: 3 mph, last significant rain/snow: 0.18 inches (24 hrs) July 21, 2012.

Weather Data Source: Los Alamos Airport

July 2012 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	Subsidence of MatCon pavement is visible throughout the hangar pad area. Puddling of water following storm events was noted throughout cap area (MatCon and hangar pads) during this inspection. Following precipitation events water is ponding at northwest corner of pad #2 and #3. Due to subsidence water is draining to the north between pads #3 and #4 and is causing rills and small erosion channel to form on the vegetative north slope. Spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5. Areas to the north of the hinge line are subsiding and have improper drainage for the matcon, pads and trench drains. Cracks along the paving lane are visible on the south side of pad #3. Previously repaired cracks between pads 4 and 5 are extending along the hinge point.	Yes	Remedies for permanent corrective action are beyond the scope of the inspection. Recommend new cracks be sealed, at a minimum, yearly.	

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	Subsidence is noticeable at pads 1, 2, & 3. From visual observation the north end of pad 1 is raising and twisting. The north ends of pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pad 4 has some subsidence and drainage problems at the north end of the pad with pad 5 beginning to show signs of subsidence and trench drainage issues. Pads 1, 2, 3, & 4 have cracking in an east-west orientation with major cracking occurring at pads 2 and 3. Pad 4 is has spider web type cracking and is showing new cracks in an east-west orientation. Pad 5 has spider web type cracking appearing. Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted and twisted. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. See Grated Trenches section for additional information.	Yes	Remedies for the permanent corrective action of the cracking and subsidence are beyond the scope of the inspection. Recommend cracks in concrete pads and associated trench drains be sealed.	
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and accessible.	No		

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR	Trench drains associated with pads 1-5 are not draining correctly due to associated subsidence of pads. Cracks in drains may allow infiltration of storm water. Sediment build accumulation at the northern 1/3rd of each drain (due to drainage issues). Trench drains associated with hangar pads have standing water at northern ends.	Yes	Recommend cracks in trench drains be sealed to minimize infiltration.	
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 Completed Yes/No? & 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				

Comments:

1. Inspection form modified per DOE verbal instruction May 3, 2011.

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*. Copies of this figure can be marked up to show concerns, findings, and corrective actions. These copies should be listed above in the comments section and stapled to this checklist.

*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.



Photo 1: View NE of MatCon and hanger pads



Photo 2: Looking West across MatCon and concrete hangar pad cap.



Photo 3: Looking east at MatCon and Concrete hangar pad cap.



Photo 4: NE corner of pad #2. Note subsidence of MatCon, standing water, and subsidence of pad/drain/MatCon at upper right in photo.



Photo 5: NE corner of pad #2. Subsidence of drain and Matcon is causing storm water infiltration into earthen cap.

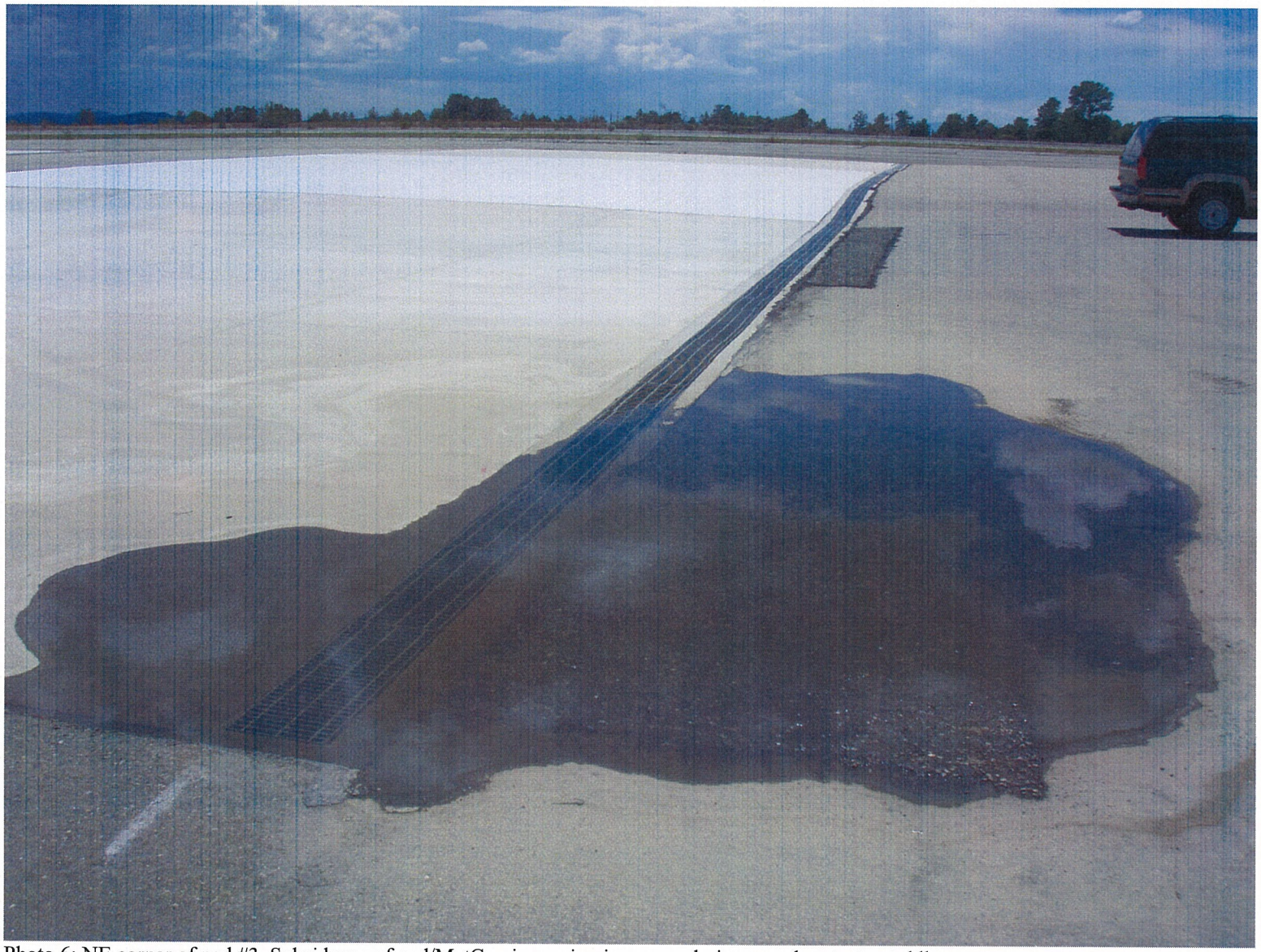


Photo 6: NE corner of pad #3. Subsidence of pad/MatCon is causing improper drainage and water to puddle.

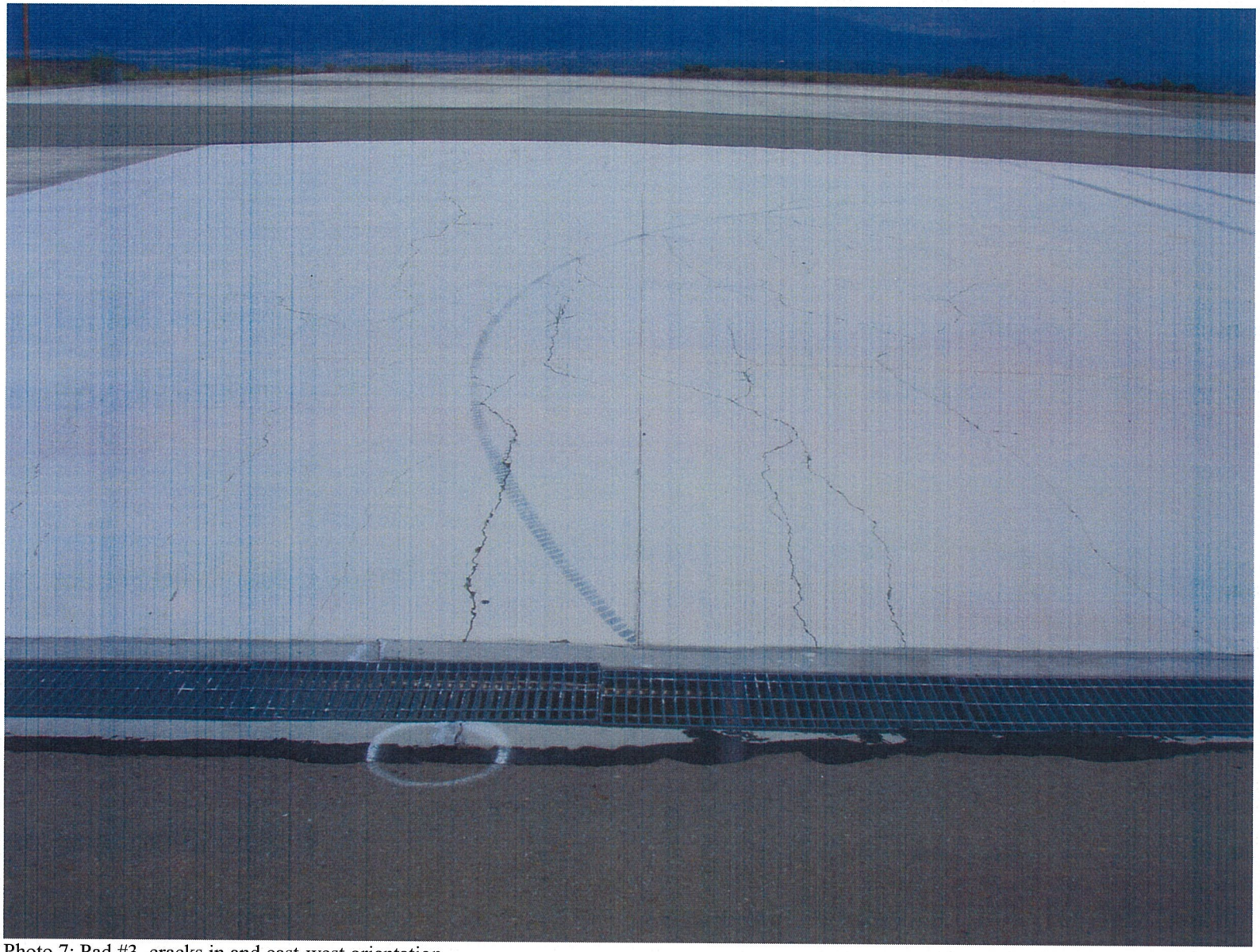


Photo 7: Pad #3, cracks in and east-west orientation.



Photo 8: Pad #2, cracks in east- west orientation.

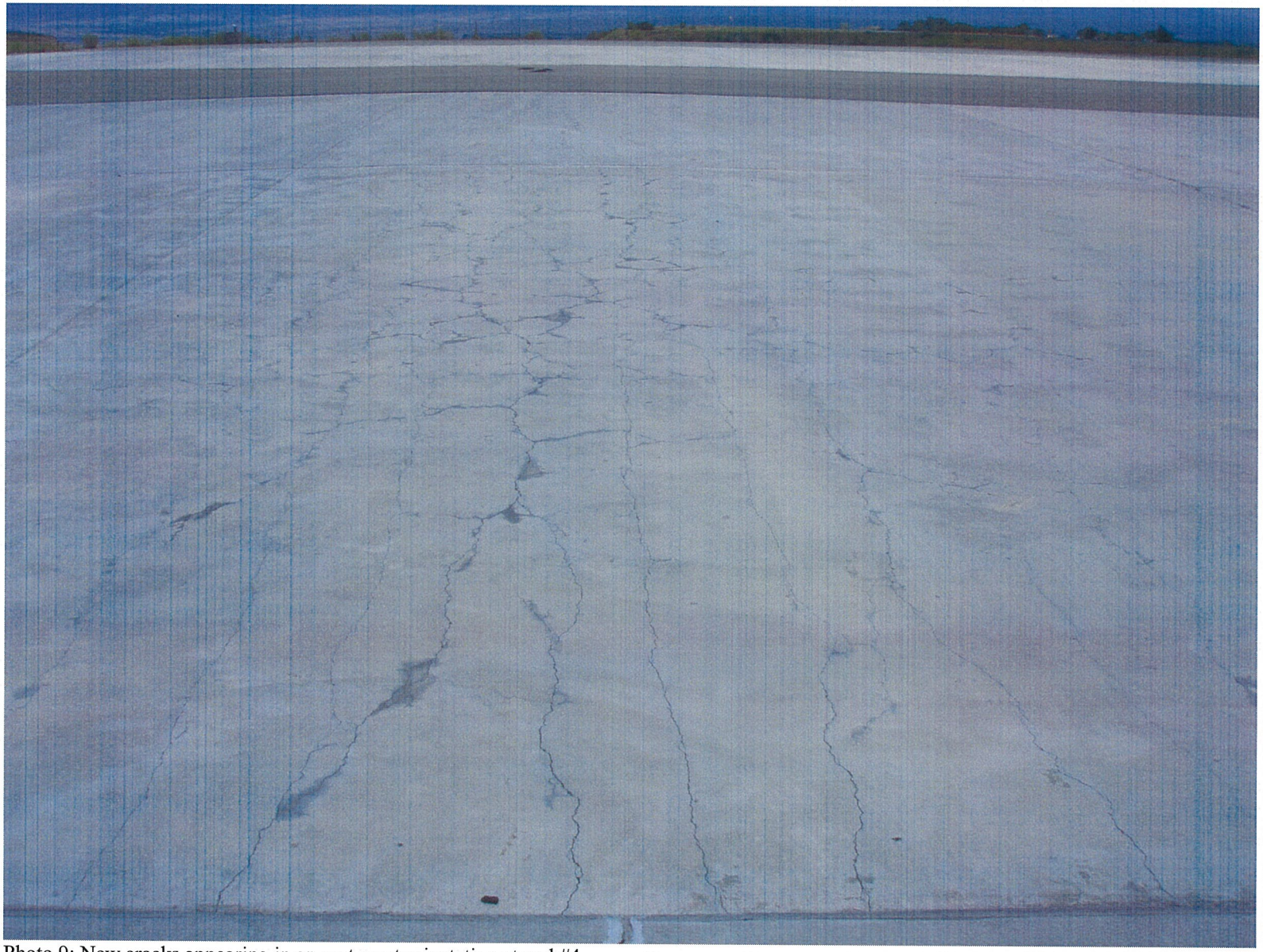


Photo 9: New cracks appearing in an east-west orientation at pad #4.

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

Date: August 31, 2012 Time: 1300 Printed Name: Jeff Walterscheid Signature: _____

Figure(s): Photos attached.

Weather: temperature: 84 degrees wind: 3 mph, last significant rain/snow: 0.2 inches (24 hrs) August 18, 2012.

Weather Data Source: Los Alamos Airport

August 2012 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	Subsidence of MatCon pavement is visible throughout the hangar pad area. Puddling of water evident at NW corners of Pad 2 & 3 on the Matcon. Due to subsidence stormwater drains to the north between pads #3 and #4 and is causing rills and small erosion channel to form on the vegetative north slope. Spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5. Areas to the north of the hinge line from Pad 1 to Pad 5 are subsiding and have improper drainage for the matcon, pads and trench drains. Cracks along the paving lane are visible on the south side of pad #3. Previously repaired cracks between pads 4 and 5 are extending along the hinge point.	Yes	Remedies for permanent corrective action are beyond the scope of the inspection. Recommend new cracks be sealed, at a minimum, yearly. Recommend NW corner of Pad 2 drainage be corrected to eliminate ponding and infiltration along soil berm.	

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	Subsidence is noticeable at pads 1, 2, & 3. From visual observation the north end of pad 1 is raising and twisting. The north ends of pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pad 4 has some subsidence and drainage problems at the north end of the pad with pad 5 beginning to show signs of subsidence and trench drainage issues. Pads 1, 2, 3, & 4 have cracking in an east-west orientation with major cracking occurring at pads 2 and 3. Pad 4 is has spider web type cracking and is showing new cracks in an east-west orientation. Pad 5 has spider web type cracking appearing. Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted and twisted. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. See Grated Trenches section for additional information.	Yes	Remedies for the permanent corrective action of the cracking and subsidence are beyond the scope of the inspection. Recommend cracks in concrete pads and associated trench drains be sealed.	
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and accessible.	No		

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR	Trench drains associated with pads 1-5 are not draining correctly due to associated subsidence of pads. Cracks in drains may allow infiltration of storm water. Sediment accumulation at the northern 1/3rd of each drain (due to drainage issues). Trench drains associated with hangar Pads 2 and 3have standing water at northern ends.	Yes	Recommend cracks in trench drains be sealed to minimize infiltration.	
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 Completed Yes/No? & 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				

Comments:

1. Inspection form modified per DOE verbal instruction May 3, 2011.

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*. Copies of this figure can be marked up to show concerns, findings, and corrective actions. These copies should be listed above in the comments section and stapled to this checklist.

*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.

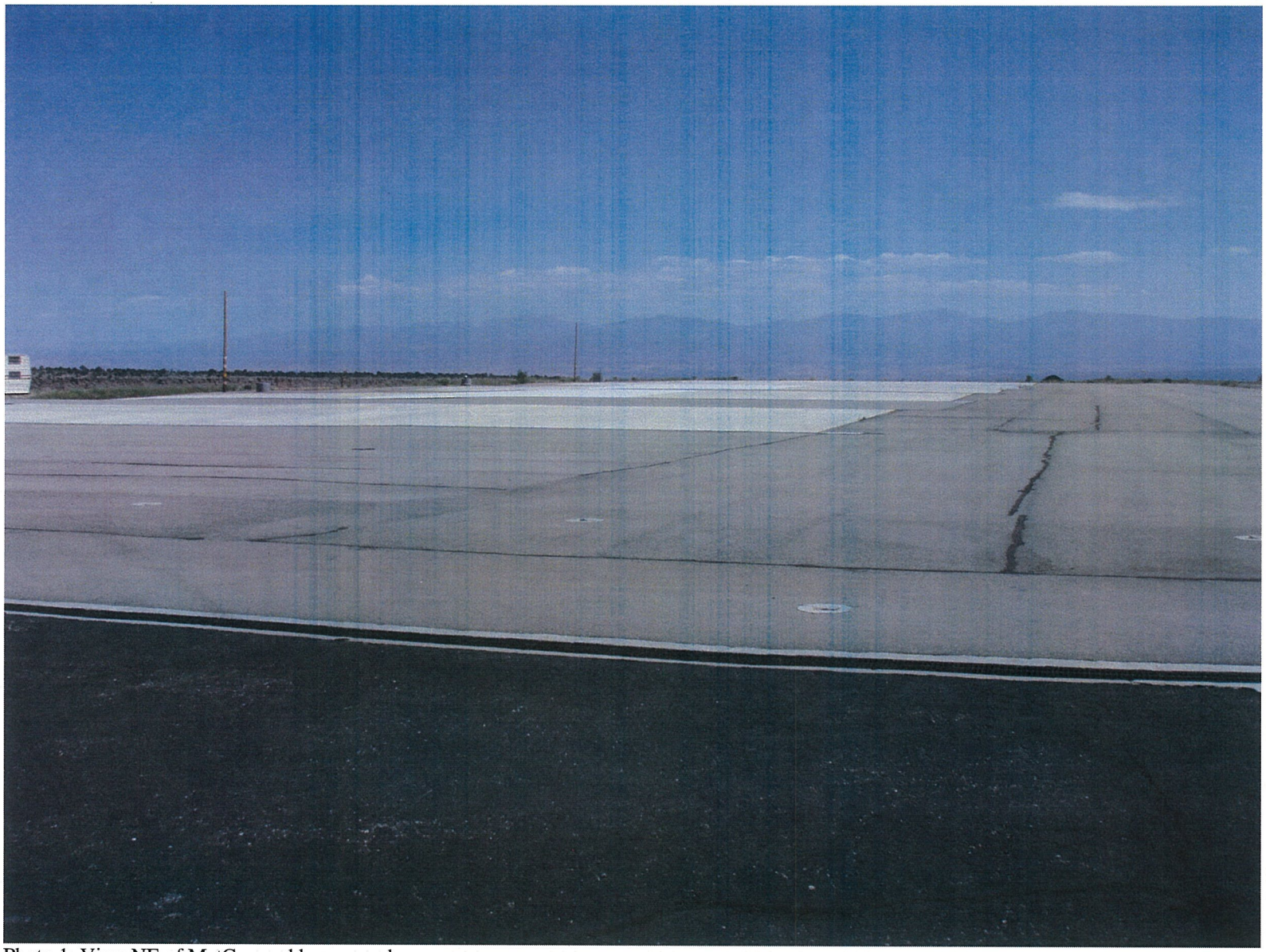


Photo 1: View NE of MatCon and hanger pads



Photo 2: NE corner of pad #2. Note subsidence of MatCon, standing water, and subsidence of pad/drain/MatCon.

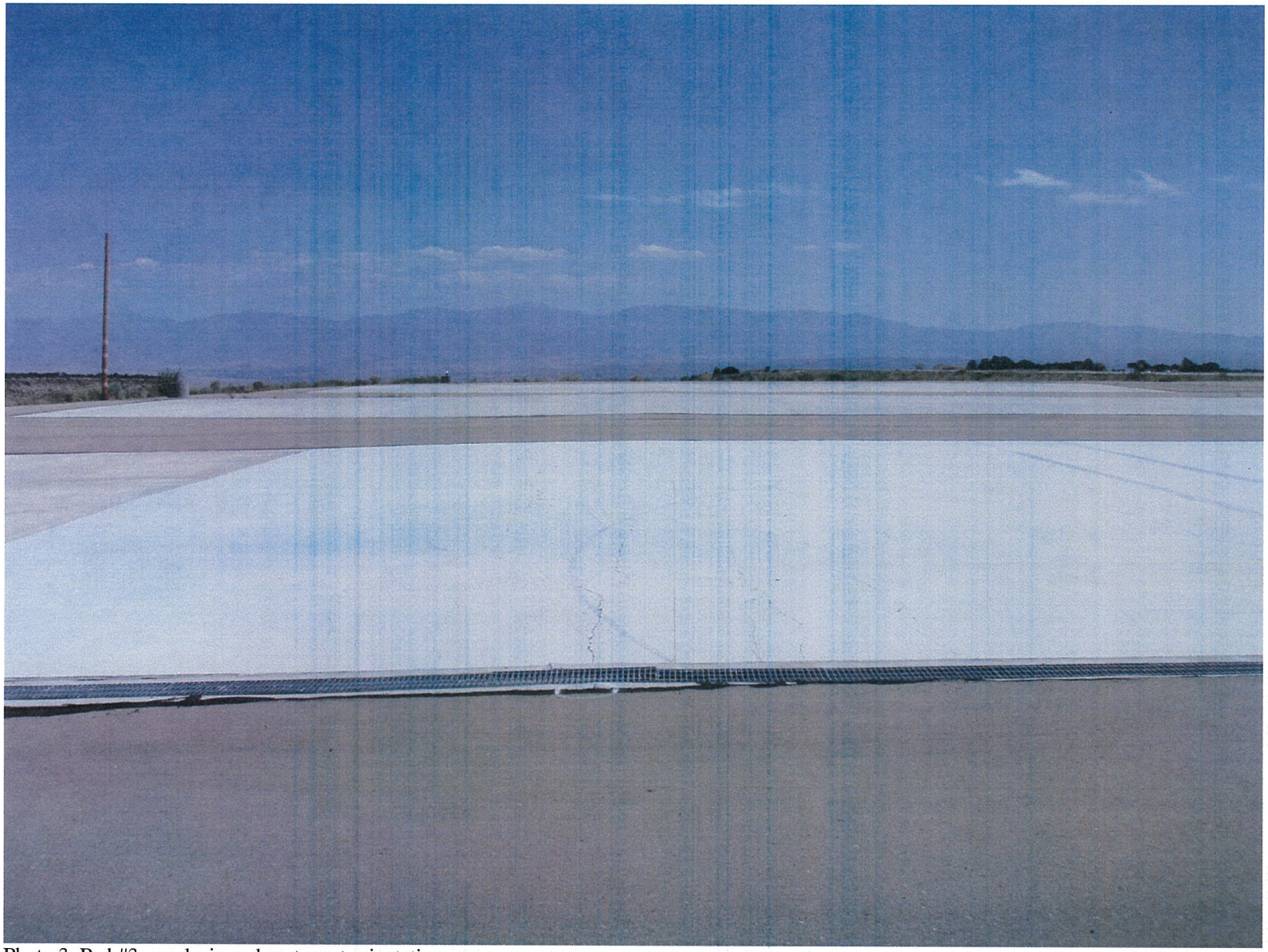


Photo 3: Pad #3, cracks in and east-west orientation.



Photo 4: Looking west at Pad 5.

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

Date: September 28, 2012 Time: 1130 Printed Name: Jeff Walterscheid Signature: _____

Figure(s): Photos attached.

Weather: temperature: 60 degrees wind: 3 mph, last significant rain/snow: 0.23 inches (24 hrs) September 27, 2012.

Weather Data Source: Los Alamos Airport

September 2012 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	Subsidence of MatCon pavement is visible throughout the hangar pad area. Puddling of water evident at NW corners of Pad 2 & 3 on the Matcon. Due to subsidence stormwater drains to the north between pads #3 and #4 and is causing rills and small erosion channel to form on the vegetative north slope. Spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5. Areas to the north of the hinge line from Pad 1 to Pad 5 are subsiding and have improper drainage for the matcon, pads and trench drains. Cracks along the paving lane are visible on the south side of pad #3. Previously repaired cracks between pads 4 and 5 are extending along the hinge point.	Yes	Remedies for permanent corrective action are beyond the scope of the inspection. Recommend new cracks be sealed, at a minimum, yearly. Recommend NW corner of Pad 2 drainage be corrected to eliminate ponding and infiltration along soil berm.	

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR	Trench drains associated with pads 1-5 are not draining correctly due to associated subsidence of pads. Cracks in drains may allow infiltration of storm water. Sediment accumulation at the northern 1/3rd of each drain (due to drainage issues). Trench drains associated with hangar Pads 2 and 3 have standing water at northern ends.	Yes	Recommend cracks in trench drains be sealed to minimize infiltration.	
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 Completed Yes/No? & 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				

Comments:

1. Inspection form modified per DOE verbal instruction May 3, 2011.

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*. Copies of this figure can be marked up to show concerns, findings, and corrective actions. These copies should be listed above in the comments section and stapled to this checklist.

*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.



Photo 1: View NE of MatCon and hanger pads



Photo 2: Looking west from pad #5



Photo 3: NE corner of pad #2. Note subsidence of MatCon, standing water, and subsidence of pad/drain/MatCon.

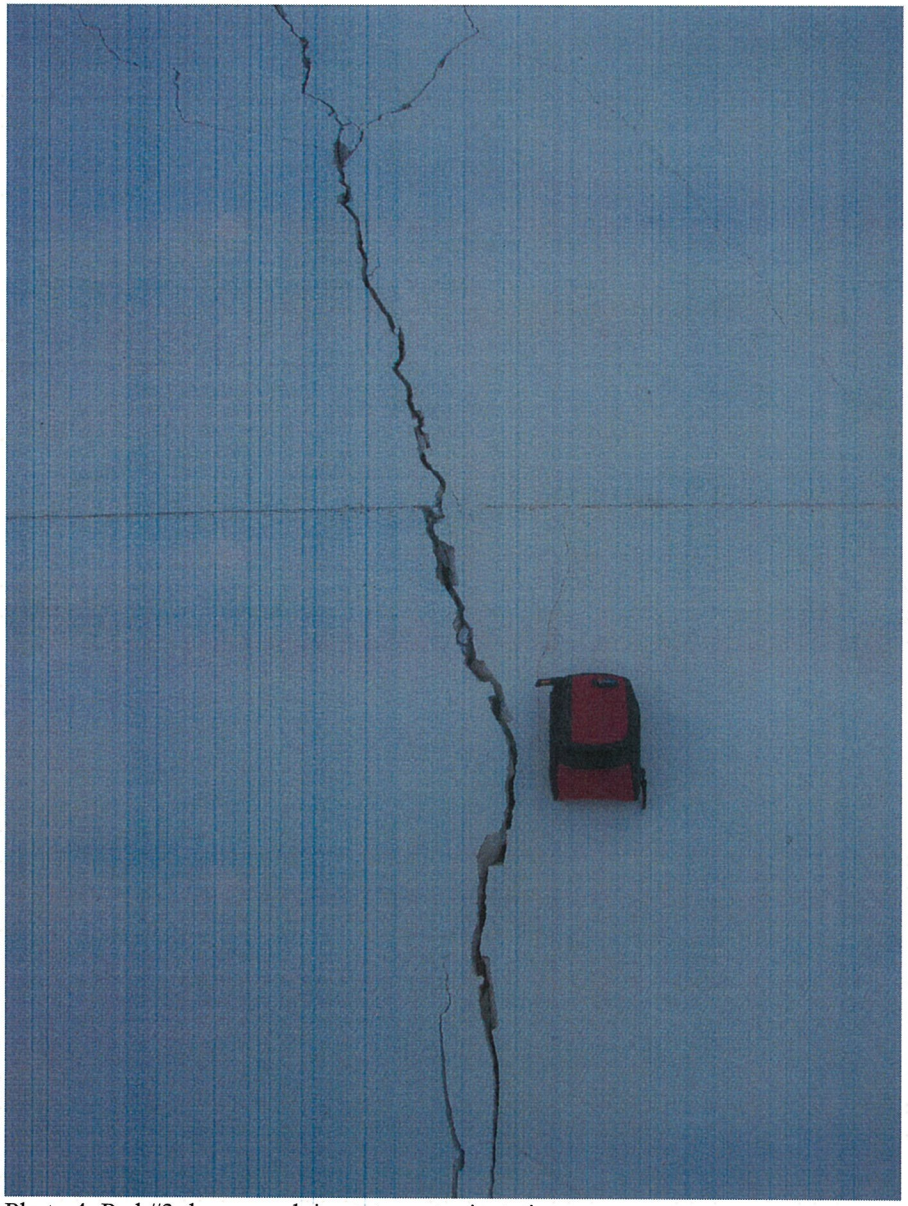


Photo 4: Pad #3, large crack in east-west orientation.

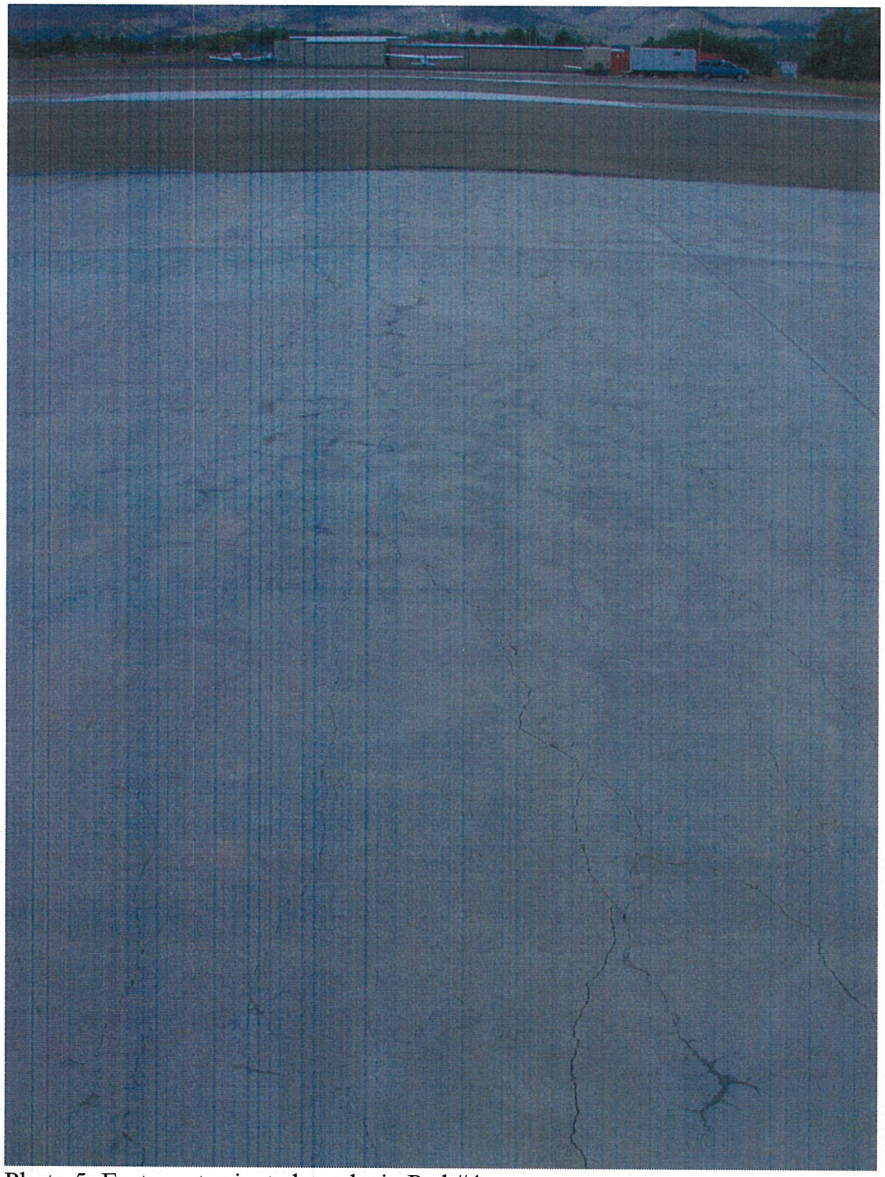


Photo 5: East-west oriented cracks in Pad #4.

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

Date: October 24, 2012 Time: 1330 Printed Name: Jeff Walterscheid Signature: _____

Figure(s): Photos attached.

Weather: temperature: 68 degrees wind: 3 mph, last significant rain/snow: 1.14 inches (24 hrs) October 12, 2012.

Weather Data Source: Los Alamos Airport

October 2012 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	Subsidence of MatCon pavement is visible throughout the hangar pad area. Puddling of water evident at NW corners of Pad 2 & 3 on the Matcon. Due to subsidence stormwater drains to the north between pads #3 and #4 and is causing rills and small erosion channel to form on the vegetative north slope. Spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5. Areas to the north of the hinge line from Pad 1 to Pad 5 are subsiding and have improper drainage for the matcon, pads and trench drains. Cracks along the paving lane are visible on the south side of pad #3. Previously repaired cracks between pads 4 and 5 are extending along the hinge point.	Yes	Remedies for permanent corrective action are beyond the scope of the inspection. Recommend new cracks be sealed, at a minimum, yearly. Recommend NW corner of Pad 2 drainage be corrected to eliminate ponding and infiltration along soil berm. NOTE: Seams between MatCon and Pads will be resealed where separation or an inadequate seal has been identified. Work to be completed under warranty in early November.	

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	Subsidence is noticeable at pads 2, 3 & 4. From visual observation the north end of pad 1 is raising and twisting. The north ends of pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pad 4 has some subsidence and drainage problems at the north end of the pad with pad 5 beginning to show signs of subsidence and trench drainage issues. Pads 1, 2, 3, & 4 have cracking in an east-west orientation with major cracking occurring at pads 2 and 3. Pad 4 is has spider web type cracking and is showing new cracks in an east-west orientation. Pad 5 has spider web type cracking appearing. Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted and twisted. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. See Grated Trenches section for additional information.	Yes	Remedies for the permanent corrective action of the cracking and subsidence are beyond the scope of the inspection. Recommend cracks in concrete pads and associated trench drains be sealed. NOTE: Seams between MatCon and Pads will be resealed where separation or an inadequate seal has been identified. Work to be completed under warranty in early November.	
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and accessible.	No		

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR	Trench drains associated with pads 1-5 are not draining correctly due to associated subsidence of pads. Cracks in drains may allow infiltration of storm water. Sediment accumulation at the northern 1/3rd of each drain (due to drainage issues). Separation and subsidence of trench drains from the associated pad at Pad 2 & 3.	Yes	Recommend cracks in trench drains be sealed to minimize infiltration.	
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 Completed Yes/No? & 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				

Comments:

1. Inspection form modified per DOE verbal instruction May 3, 2011.

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*. Copies of this figure can be marked up to show concerns, findings, and corrective actions. These copies should be listed above in the comments section and stapled to this checklist.

*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.



Photo 1: Looking East at MatCon and hanger pads



Photo 2: Looking West at MatCon and hanger pads



Photo 3: Looking West at Pad #4, note cracking of pad and hinge point

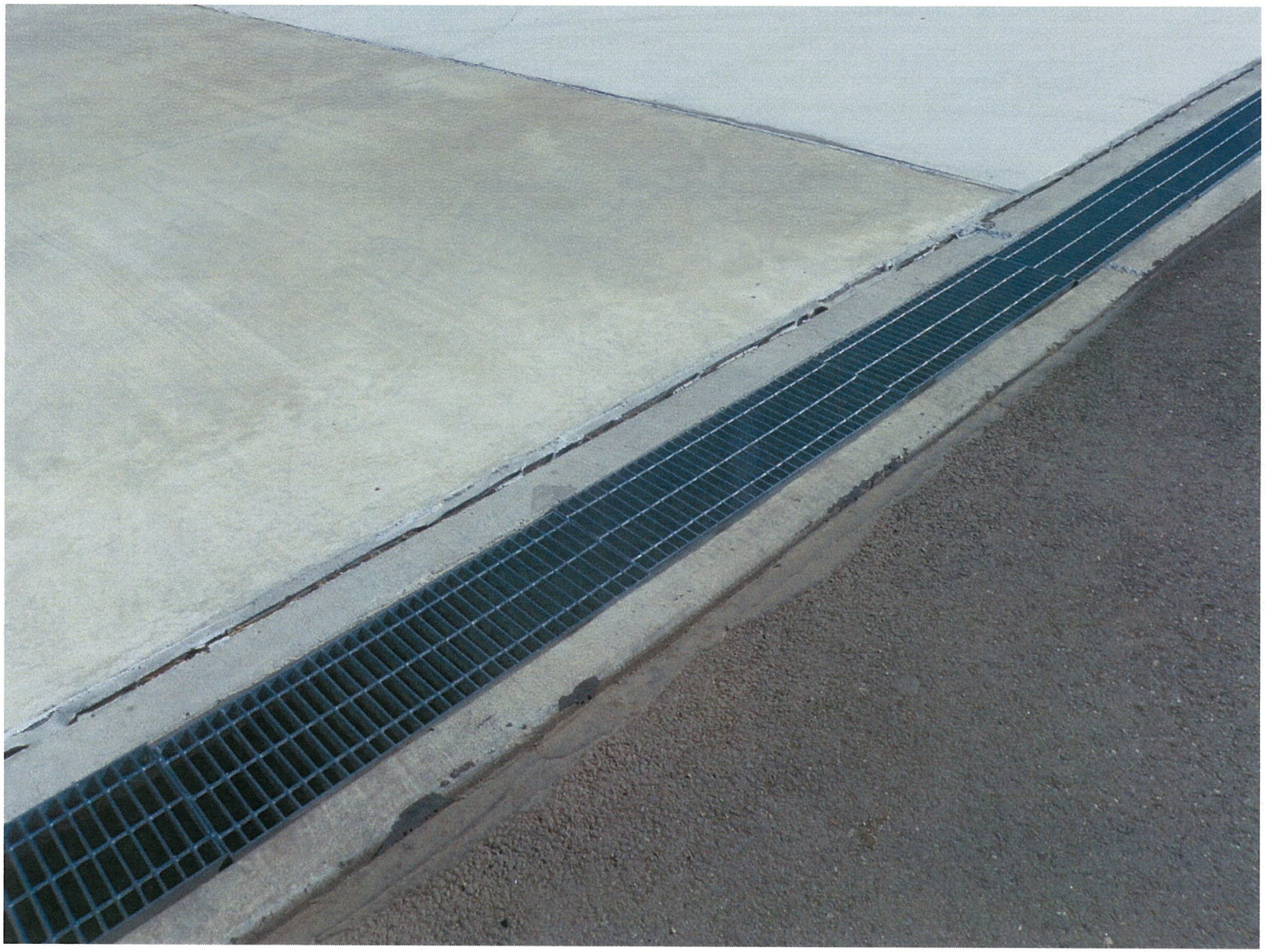


Photo 4: Pad #3 separation of trench drain from pad



Photo 4: Close-up of trench drain contact separation at Pad #3.

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

Date: November 29, 2012 Time: 1000 Printed Name: Jeff Walterscheid Signature:

Figure(s): Photos attached.

Weather: temperature: 51 degrees wind: 1 mph, last significant rain/snow: 1.14 inches (24 hrs) October 12, 2012.

Weather Data Source: Los Alamos Airport

November 2012 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	Subsidence of MatCon pavement is visible throughout the hangar pad area. Puddling of water evident at NW corners of Pad 2 & 3 on the Matcon. Due to subsidence stormwater drains to the north between pads #3 and #4 and is causing rills and small erosion channel to form on the vegetative north slope. Spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5. Areas to the north of the hinge line from Pad 1 to Pad 5 are subsiding and have improper drainage for the matcon, pads and trench drains. Cracks along the paving lane are visible on the south side of pad #3. Previously repaired cracks between pads 4 and 5 are extending along the hinge point. Photo: 1, 3, 6, 9	Yes	Remedies for permanent corrective action are beyond the scope of the inspection. Recommend new cracks be sealed, at a minimum, yearly. Recommend NW corner of Pad 2 drainage be corrected to eliminate ponding and infiltration along soil berm. Seams between MatCon and Pads were resealed where separation or an inadequate seal had been identified. In addition, new cracks or cracks that had opened or extended were also sealed. Work was completed November 3.	Yes 11/3/12

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	Subsidence is noticeable at pads 2, 3 & 4. From visual observation the north end of pad 1 is raising and twisting. The north ends of pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pad 4 has some subsidence and drainage problems at the north end of the pad with pad 5 beginning to show signs of subsidence and trench drainage issues. Pads 1, 2, 3, & 4 have cracking in an east-west orientation with major cracking occurring at pads 2 and 3. Pad 4 is has spider web type cracking and is showing new cracks in an east-west orientation. Pad 5 has spider web type cracking appearing. Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted and twisted. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. See Grated Trenches section for additional information. Photo: 1, 4, 5, 6, 7, 8, 9	Yes	Remedies for the permanent corrective action of the cracking and subsidence are beyond the scope of the inspection. Recommend cracks in concrete pads and associated trench drains be sealed. Seams between MatCon and Pads were resealed where separation or an inadequate seal had been identified. Work was completed November 3.	Yes 11/3/12
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and accessible.	No		

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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			Note: stub-out at PS-2, PS-3, and PS-5 were opened and risers with turbines (spinners) installed in early November. Photo: 9	Yes November 2013
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				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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	Trench drains associated with pads 1-5 are not draining correctly due to associated subsidence of pads. Cracks in drains may allow infiltration of storm water. Sediment accumulation at the northern 1/3rd of each drain (due to drainage issues). Separation and subsidence of trench drains from the associated pad at Pad 2 & 3. Photo: 5, 8, 9	Yes	Recommend cracks in trench drains be sealed to minimize infiltration.	No

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR			Additional straw wattles were added to slope and rill was back filled with angular rock. Photo: 2	Yes 11/12/13
Debris Disposal Area					

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				
Comments:					

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*. Copies of this figure can be marked up to show concerns, findings, and corrective actions. These copies should be listed above in the comments section and stapled to this checklist.

*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.



Photo 1: Looking North East



Photo 2: Additional wattles placed on wattle slope. Rill was backfilled with angular rock.



Photo 3: Repaired crack in between pads 4 & 5.



Photo 4: Cracks in Pad #3.



Photo 5: Seperation between pad and trench drain at Pad #3.



Photo 6: Resealed joint between Pad #4 and Matcon.

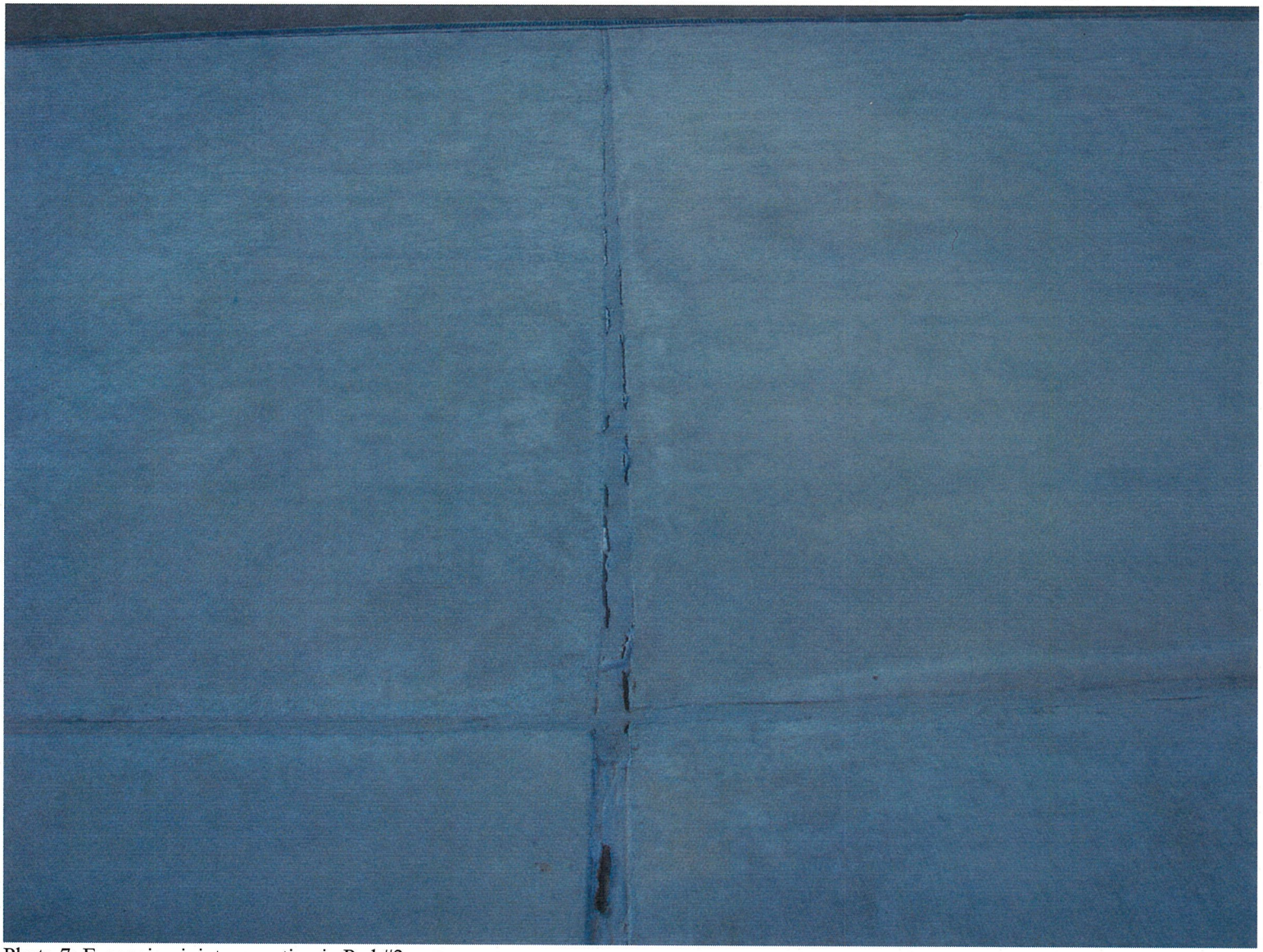


Photo 7: Expansion joint separation in Pad #2.



Photo 8: Crack in trench drain.



Photo 9: Gas vents were opened and risers with spinners attached at PS-2, PS-3 and PS-4. Note puddle and resealed contact between Matcon and Pad # 1.

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

Date: December 18, 2012 Time: 1600 Printed Name: Jeff Walterscheid Signature: _____

Figure(s): Photos attached.

Weather: temperature: 31 degrees wind: 1 mph, last significant rain/snow: 2 inches of snow December 14, 2012.

Weather Data Source: Los Alamos Airport

December 2012 Monthly Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M	Subsidence of MatCon pavement is visible throughout the hangar pad area. Puddling of water evident at NW corners of Pad 2 & 3 on the Matcon. Due to subsidence stormwater drains to the north between pads #3 and #4 and is causing rills and small erosion channel to form on the vegetative north slope. Spider web type cracking is visible along a hinge point trend between pads #3 and 4, and between pads #4 and #5. Areas to the north of the hinge line from Pad 1 to Pad 5 are subsiding and have improper drainage for the matcon, pads and trench drains. Depression and cracks along the paving lane are visible on the south side of pad #3. Previously repaired cracks between pads 4 and 5 are extending along the hinge point. Photo: 1, 2, 3, 4, 5	Yes	Remedies for permanent corrective action are beyond the scope of the inspection. Recommend new cracks be sealed, at a minimum, yearly. Recommend NW corner of Pad 2 and 3 drainage be corrected to eliminate ponding and infiltration along soil berm.	No

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Concrete Hangar Pads (5) and expansion joints: cracks, gaps, spalling, pop-outs, separation of pad from asphalt, subsidence	M	Subsidence is noticeable at pads 2, 3 & 4. From visual observation the north end of pad 1 is raising and twisting. The north ends of pads 2 & 3 have noticeable subsidence and the trench drains drain in reverse causing water to puddle. Pad 4 has some subsidence and drainage problems at the north end of the pad with pad 5 beginning to show signs of subsidence and trench drainage issues. Pads 1, 2, 3, & 4 have cracking in an east-west orientation with major cracking occurring at pads 2 and 3. Pad 4 is has spider web type cracking and is showing new cracks in an east-west orientation. Pad 5 has spider web type cracking appearing. Cracking and subsidence are trending along a hinge line that is roughly in east-west orientation. The north side of the hinge line is subsiding with the exception of pad 1 which has lifted and twisted. Cracks in pads 2 & 3 are numerous and large enough to allow infiltration of water during storm events. See Grated Trenches section for additional information. Photo: 1, 2, 3, 4, 5	Yes	Remedies for the permanent corrective action of the cracking and subsidence are beyond the scope of the inspection. Recommend cracks in concrete pads and associated trench drains be sealed.	No
Survey Benchmark on each hangar pad: accessible, attached to concrete pad	M	All ACOE points are in place and accessible.	No		

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				
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				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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	Trench drains associated with pads 2-5 are not draining correctly due to associated subsidence of pads. Cracks in drains may allow infiltration of storm water. Sediment accumulation at the northern 1/3rd of each drain (due to drainage issues). Separation and subsidence of trench drains from the associated pad at Pad 2 & 3. Photo: 1, 2, 3	Yes	Recommend cracks in trench drains be sealed to minimize infiltration.	No

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR				
Debris Disposal Area					

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				
Comments:					

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*. Copies of this figure can be marked up to show concerns, findings, and corrective actions. These copies should be listed above in the comments section and stapled to this checklist.

*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.



Photo 1: Depression at SW corner of Pad #3. Crack in MatCon paving lane (approximately 6 ft in length) has developed over the last 2 months.



Photo 2: Improper drainage from Pads #3 & 4, draining onto vegetative cover and not into trench drains. Rill has formed on slope.



Photo 3: Puddle at NW corner of Pad #2. Soil fissure is to left of pad.



Photo 4: Looking NE at pads and MatCon pavement.



Photo 5: Looking West at pads and MatCon pavement.

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

Date: October 15, 2012 Time: 1330 Printed Name: Jeff Walterscheid Signature: Jeff Walterscheid

Figure(s): Photos attached.

Weather: temperature: 60 degrees wind: 3 mph, last significant rain/snow: 1.14 inches (24 hrs) October 12, 2012.

Weather Data Source: Los Alamos Airport

October 12, 2012 Significant Rain Event Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M				
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				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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				
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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	October 12, 2012 storm produced up to 3inches of ¼ - ½ inch hail. Vegetation had some stripping of leaf and grass. Evidence of sheet flow (accumulated vegetative debris and vegetation lying over) on north slope of hangar pads. Settling of the pads and MatCon is contributing to sheet flow as the trench drains no longer drain correctly at Pads 2,3,4.	Yes	Corrective action to correct drainage is out of the scope of this inspection.	No
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR	No evidence of subsidence, erosion, trash, soil, or other blockages.	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 evidence of cracks, bulges, separation, rotation, erosion, spalling, or pop-outs. Drain pipes are open at gravel drainage channel.	No		

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR	Trench drains associated with pads 1-5 are not draining correctly due to associated subsidence of pads. Cracks in drains may allow infiltration of storm water. Sediment accumulation at the northern 1/3rd of each drain (due to drainage issues). Trench drains associated with hangar Pads 2 and 3 have standing water at northern ends.	Yes	Recommend cracks in trench drains be sealed to minimize infiltration. Corrective action to correct drainage is out of the scope of this inspection.	No
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR	Drainage inlets are functional and grates are not blocked by trash, soil, or other material.			
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR	No evidence that pollutants (spills) have entered the storm-water system.	No		
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR	No evidence of sediment washing off the site.	No		
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR	Outfall Pipe is secure. No evidence of blockage or soil staining and the manhole is in place. Significant erosion taking place on hillside below outfall.	No Yes	Corrective action to correct drainage is out of the scope of this inspection.	

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR	Straw wattle area has evidence of sheet flow, minor rilling and sediment accumulation behind wattles. Previous efforts to hydromulch the area have failed due to hard compacted soil.	Yes	Additional wattles are needed to replace wattles with sediement behind them. Recommend slope be covered with gravel mulch to reduce / eliminate sheet flow and rilling.	
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 evidence of erosion, vegetation had some stripping of leaf and grass.	No		

Comments:

1. Inspection form modified per DOE verbal instruction May 3, 2011.
2. Friday October 12, 2012 storm produced up to 3inches of ¼ - ½ inch hail with over an inch of rain in 1hour (2:55pm -3:55 pm)

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*. Copies of this figure can be marked up to show concerns, findings, and corrective actions. These copies should be listed above in the comments section and stapled to this checklist.

*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.



Photo 1: North slope vegetation laid over from October 13 rain/hail storm.



Photo 2: View of main vegetated slope, rock channel and concrete retaining wall.



Photo 3: Looking up wattle slope, note sparse vegetative cover.



Photo4: Looking down wattle slope. Note sheet flow effects, rilling, sediment accumulation behind wattles and sparse vegetation.

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

Date: May 4, 2012 Time: 1200 Printed Name: Jeff Walterscheid Signature: _____

Figure(s): Photos attached.

Weather: temperature: 72 degrees wind: 4 mph, last significant rain/snow: April 16, 2012. Weather Data Source: Los Alamos Airport

2012 Annual Inspection

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Airport Landfill					
MatCon Asphalt Pavement: cracks, gaps, spalling, subsidence	M				
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				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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	Risers and wind screen are present at locations PS-01, PS-04, and PS-06 (not completed as shown in as built drawing) and are functional. Risers have not been completed at locations PS-02, PS-03, PS-05 and at southern stub out. All locations are free of debris and accessible. Photo #: 2, 4, 5, 14	Yes	Remedies for the installation of risers and wind screens (per the as built drawing) are beyond the scope of the inspection and will require a health and safety review.	
Measure landfill-gas concentrations using Landfill Gas Monitoring Form: any values greater than 25% of the methane LEL (lower explosive limit)?	Q or B				

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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	All areas have successful vegetation. In areas where the vegetation is not as well established the turf matting is protecting the soil during vegetation fill in. No animal burrows were located. Slopes have established sage and may need to be removed or cut back (deep rooting). A 125ft long soil crack running east-west near pad 2 has been identified in monthly inspections. A 1ft deep by 1ft wide rill has formed between pads 2 and 3 that is draining a portion of the subsided area of pads and matcon. Photo #: 1, 10, 11, 15	Yes	Drainage north from the matcon and pads needs to be addressed.	
Gravel drainage channels (3): subsidence, erosion, clear of trash, soil, other blockages	A, ASR	All gravel drainage channels are functioning properly. Photo #: 1, 8, 9, 10, 11	No		

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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	All retaining walls are functioning properly. Photo #: 11, 16, 17, 18, 19	No		
Grated Trenches (6): cracks; clear of trash, soil, other blockages, draining properly, standing water, subsidence	A, ASR	The north ends of pads 2 & 3 have noticeable subsidence and the trench drains in reverse causing water to puddle. Pad 4 has some subsidence and drainage problems at the north end of the pad with pad 5 beginning to show signs of subsidence and trench drainage issues. Standing water at north end of trench drains associated with pads 2 & 3. Sediment (sand & dirt) is accumulating in all trench drains. Photo#: 3	Yes	Remedies for the permanent corrective action are beyond the scope of the inspection.	
Drainage inlets (8): functional, grates not blocked by trash, soil, other material	A, ASR	All drainage inlets are functional. Grate needs to be replaced at one location and repair of concrete at one location. Photo #: 6, 7, 9, 14	Yes		

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
Evidence that pollutants (spills) have entered the storm-water system?	A, ASR	No evidence that spills have occurred.	No		
Sediment washing off the site? If so, map the location[s] in logbook	A, ASR	No evidence of soil washing off of site.	No		
Outfall Pipe: secure, blockage, significant erosion, soil staining, manhole in place	A, ASR	Outfall and manhole are functioning properly Photo #: 1	No		
Straw-wattle areas between retaining walls and fence: wattles in place, erosion, rills	A, ASR	Straw wattles were replaced and are functioning properly. No evidence or rills or erosion. Photo #: 11, 16, 18	No		
Debris Disposal Area					

Component: Concern(s)	Inspection Frequency*	Inspection Findings	Corrective Action Needed Yes/No?	Description of Corrective Action	Corrective Action Completed Yes/No? & Date
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	Vegetation is established with no evidence of burrows, erosion, rills or large vegetation. Photo #: 12, 13	No		
Comments: 1. Inspection form modified per DOE verbal instruction May 3, 2011.					

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*. Copies of this figure can be marked up to show concerns, findings, and corrective actions. These copies should be listed above in the comments section and stapled to this checklist.

*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.



Photo 1: Looking SE across vegetated slope and gravel drainage channel. The outfall pipe is visible in upper left center of photo. Note black turf matting in area of sparse vegetation at bottom left of photo.



Photo 2: Completed vent riser and spinner.



Photo 3: Trench drain concerns.



Photo 4: Incomplete vent riser.



Photo 5: capped vent riser.



Photo 6: Drop inlet



Photo 7: Drop inlet



Photo 8: Gravel drainage channel



Photo 9: Gravel drainage channel and drop inlet



Photo 10: Vegetated slope with gravel drainage channel.



Photo 11: Vegetated slope, gravel drainage channels, retaining walls, and wattle slope.



Photo 12: Vegetated cover at the debris disposal area.



Photo 13: Vegetated cover at the debris disposal area.



Photo 14: Southern gas vent stub out and drop inlet.



Photo 15: Large rill is forming on north slope between pads 2 and 3.



Photo 16: Concrete and rock retaining walls, wattle slopes.



Photo 17: Eastern rock retaining wall.



Photo 18: Wattle slopes and retaining walls.



Photo 19: Western rock retaining wall

Appendix B

Completed Landfill-Gas Measurement Forms

LANDFILL GAS MONITORING FORM

Landfill Name: Airport Landfill, SWMU 73-001(a) at the Los Alamos County Airport

Inspector Printed Name: Jeff Walterscheid Inspector Signature: Jeff Walterscheid

Date: 4/25/12 Barometric Pressure: 30.43 Temperature: 62 degrees F

Weather conditions: Fair Wind Direction: NE Wind Speed: 1-2 mph

Date and amount of last precipitation (within last 48 hours): 4/23/12 0.1 inches

Instrument: MSA Altair 5X #1550 Calibration method and date: 3/30/12, Pentane gas

Sample Location	Height (ft)	Time	CH_4 % LEL	O_2 %	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.					
HP-01	2 inches above expansion joint*	1002	0	20.8	0
HP-02	2 inches above expansion joint*	1003	0	20.8	0
HP-03	2 inches above expansion joint*	1004	0	2.08	0
HP-04	2 inches above expansion joint*	0954	0	20.8	0
HP-05	2 inches above expansion joint*	0955	0	20.8	0
HP-06	2 inches above expansion joint*	0956	0	20.8	0
HP-07	2 inches above expansion joint*	0947	0	20.8	0
HP-08	2 inches above expansion joint*	0948	0	20.8	0
HP-09	2 inches above expansion joint*	0949	0	20.8	0
HP-10	2 inches above expansion joint*	0941	0	20.8	0
HP-11	2 inches above expansion joint*	0942	0	20.8	0
HP-12	2 inches above expansion joint*	0943	0	20.8	0
HP-13	2 inches above expansion joint*	0934	0	20.8	0
HP-14	2 inches above expansion joint*	0935	0	20.8	0
HP-15	2 inches above expansion joint*	0936	0	20.8	0

Trench drains (west side of each hangar pad)					
TD-01	4 inches below trench grate	1006	0	20.8	0
TD-02	4 inches below trench grate	1005	0	20.8	0
TD-03	4 inches below trench grate	0959	0	20.8	0
TD-04	4 inches below trench grate	0958	0	20.8	0
TD-05	4 inches below trench grate	0952	0	20.8	0
TD-06	4 inches below trench grate	0951	0	20.8	0
TD-07	4 inches below trench grate	0946	0	20.8	0
TD-08	4 inches below trench grate	0944	0	20.8	0
TD-09	4 inches below trench grate	0938	0	20.8	0
TD-10	4 inches below trench grate	0939	0	20.8	0
Drainage culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 inches below grate	1004	0	20.8	0
DC-02	4 inches below grate	1004	0	20.8	0
DC-03	4 inches below grate	0957	0	20.8	0
DC-04	4 inches below grate	0947	0	20.8	0
DC-05	4 inches below grate	0943	0	20.8	0
DC-06	4 inches below grate	0937	0	20.8	0
DC-07	4 inches below grate	0936	0	20.8	0
DC-08	4 inches below manhole lid	1016	0	20.8	0
Northern perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 inches above ground surface	1008	0	20.8	0
PG-02	2 inches above ground surface	1001	0	20.8	0
PG-03	2 inches above ground surface	0954	0	20.8	0
PG-04	2 inches above ground surface	0948	0	20.8	0
PG-05	2 inches above ground surface	0939	0	20.8	0
PG-06	2 inches above ground surface	1011	0	20.8	0
PG-07	2 inches above ground surface	1012	0	20.8	0
PG-08	2 inches above ground surface	1013	0	20.8	0

PG-09	2 inches above ground surface	1014	0	20.8	0
PG-10	2 inches above ground surface	1023	0	20.8	0
PG-11	2 inches above ground surface	1022	0	20.8	0
PG-12	2 inches above ground surface	1015	0	20.8	0
PG-13	2 inches above ground surface	1020	0	20.8	0
PG-14	2 inches above ground surface	1016	0	20.8	0
PS-01	at spinner (4 ft above pavement)	0924	0	20.8	0
PS-02	at spinner (4 ft above pavement)	See comment	NA	NA	NA
PS-03	at spinner (4 ft above pavement)	See comment	NA	NA	NA
PS-04	at spinner (4 ft above pavement)	0930	0	20.8	0
PS-05	at spinner (4 ft above pavement)	See comment	NA	NA	NA
PS-06	at spinner (4 ft above pavement)	0932	0	20.8	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
DC = Drainage Culvert (inlet)
HP = Hangar Pad
LEL = lower explosive limit
PG = Perimeter Ground
PS = Perimeter Spinner (wind turbine)
TD = Trench Drain
Methane = CH_4
Oxygen = O_2
Carbon dioxide = CO_2

Comments: PS-02, PS-03 & PS-05 are capped.

Form modified from http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc.

LANDFILL GAS MONITORING FORM

Landfill Name: Airport Landfill, SWMU 73-001(a) at the Los Alamos County Airport

Inspector Printed Name: Jeff Walterscheid Inspector Signature: 

Date: 6/25/12 Barometric Pressure: 30.35 Temperature: 70 degrees F

Weather conditions: Fair Wind Direction: SW Wind Speed: 1-2 mph

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

Instrument: MSA Altair 5X #1587 Calibration method and date: 6/7/12, Pentane gas

Sample Location	Height (ft)	Time	CH_4 % LEL	O_2 %	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.					
HP-01	2 inches above expansion joint*	0843	0	20.8	0
HP-02	2 inches above expansion joint*	0842	0	20.8	0
HP-03	2 inches above expansion joint*	0841	0	2.08	0
HP-04	2 inches above expansion joint*	0845	0	20.8	0
HP-05	2 inches above expansion joint*	0844	0	20.8	0
HP-06	2 inches above expansion joint*	0843	0	20.8	0
HP-07	2 inches above expansion joint*	0854	0	20.8	0
HP-08	2 inches above expansion joint*	0853	0	20.8	0
HP-09	2 inches above expansion joint*	0852	0	20.8	0
HP-10	2 inches above expansion joint*	0900	0	20.8	0
HP-11	2 inches above expansion joint*	0859	0	20.8	0
HP-12	2 inches above expansion joint*	0856	0	20.8	0
HP-13	2 inches above expansion joint*	0905	0	20.8	0
HP-14	2 inches above expansion joint*	0903	0	20.8	0
HP-15	2 inches above expansion joint*	0902	0	20.8	0

Trench drains (west side of each hangar pad)					
TD-01	4 inches below trench grate	0839	0	20.8	0
TD-02	4 inches below trench grate	0840	0	20.8	0
TD-03	4 inches below trench grate	0838	0	20.8	0
TD-04	4 inches below trench grate	0837	0	20.8	0
TD-05	4 inches below trench grate	0835	0	20.8	0
TD-06	4 inches below trench grate	0834	0	20.8	0
TD-07	4 inches below trench grate	0832	0	20.8	0
TD-08	4 inches below trench grate	0831	0	20.8	0
TD-09	4 inches below trench grate	0829	0	20.8	0
TD-10	4 inches below trench grate	0828	0	20.8	0
Drainage culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 inches below grate	0805	0	20.8	0
DC-02	4 inches below grate	0807	0	20.8	0
DC-03	4 inches below grate	0808	0	20.8	0
DC-04	4 inches below grate	0810	0	20.8	0
DC-05	4 inches below grate	0811	0	20.8	0
DC-06	4 inches below grate	0813	0	20.8	0
DC-07	4 inches below grate	0815	0	20.8	0
DC-08	4 inches below manhole lid	0819	0	20.8	0
Northern perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 inches above ground surface	0910	0	20.8	0
PG-02	2 inches above ground surface	0912	0	20.8	0
PG-03	2 inches above ground surface	0913	0	20.8	0
PG-04	2 inches above ground surface	0915	0	20.8	0
PG-05	2 inches above ground surface	0916	0	20.8	0
PG-06	2 inches above ground surface	0918	0	20.8	0
PG-07	2 inches above ground surface	0920	0	20.8	0
PG-08	2 inches above ground surface	0922	0	20.8	0

PG-09	2 inches above ground surface	0924	0	20.8	0
PG-10	2 inches above ground surface	0935	0	20.8	0
PG-11	2 inches above ground surface	0932	0	20.8	0
PG-12	2 inches above ground surface	0925	0	20.8	0
PG-13	2 inches above ground surface	0930	0	20.8	0
PG-14	2 inches above ground surface	0927	0	20.8	0
PS-01	at spinner (4 ft above pavement)	0828	0	20.8	0
PS-02	at spinner (4 ft above pavement)	See comment	NA	NA	NA
PS-03	at spinner (4 ft above pavement)	See comment	NA	NA	NA
PS-04	at spinner (4 ft above pavement)	0826	0*	20.8	0*
PS-05	at spinner (4 ft above pavement)	See comment	NA	NA	NA
PS-06	at spinner (4 ft above pavement)	0823	0*	20.8	0*

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
DC = Drainage Culvert (inlet)
HP = Hangar Pad
LEL = lower explosive limit
PG = Perimeter Ground
PS = Perimeter Spinner (wind turbine)
TD = Trench Drain
Methane = CH_4
Oxygen = O_2
Carbon dioxide = CO_2

Comments: PS-02, PS-03 & PS-05 are capped. *PS-04 & PS-06 alarmed the gas monitor at 4ft depth with 15% O2.

Form modified from http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc.

LANDFILL GAS MONITORING FORM

Landfill Name: Airport Landfill, SWMU 73-001(a) at the Los Alamos County Airport

Inspector Printed Name: Jeff Walterscheid Inspector Signature: Jeff Walterscheid

Date: 9/28/12 Barometric Pressure: 30.32 Temperature: 60 degrees F

Weather conditions: Fair Wind Direction: SE Wind Speed: 1-2 mph

Date and amount of last precipitation (within last 48 hours): 9/27/12 0.23 inches of rain

Instrument: MSA Altair 5X #1523 Calibration method and date: Pentane gas 9/24/12

Sample Location	Height (ft)	Time	CH_4 % LEL	O_2 %	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.					
HP-01	2 inches above expansion joint*	0958	0	20.8	0
HP-02	2 inches above expansion joint*	1000	0	20.8	0
HP-03	2 inches above expansion joint*	1001	0	2.08	0
HP-04	2 inches above expansion joint*	1003	0	20.8	0
HP-05	2 inches above expansion joint*	1004	0	21.2	0
HP-06	2 inches above expansion joint*	1005	0	21.2	0
HP-07	2 inches above expansion joint*	1007	0	20.8	0
HP-08	2 inches above expansion joint*	1008	0	20.8	0
HP-09	2 inches above expansion joint*	1009	0	21.2	0
HP-10	2 inches above expansion joint*	1010	0	21.2	0
HP-11	2 inches above expansion joint*	1011	0	21.2	0
HP-12	2 inches above expansion joint*	1012	0	20.8	0
HP-13	2 inches above expansion joint*	1013	0	20.8	0
HP-14	2 inches above expansion joint*	1014	0	20.8	0
HP-15	2 inches above expansion joint*	1015	0	20.8	0

Trench drains (west side of each hangar pad)					
TD-01	4 inches below trench grate	1026	0	21.2	0
TD-02	4 inches below trench grate	1025	0	21.2	0
TD-03	4 inches below trench grate	1024	0	21.2	0
TD-04	4 inches below trench grate	1023	0	21.2	0
TD-05	4 inches below trench grate	1021	0	20.8	0
TD-06	4 inches below trench grate	1019	0	20.8	0
TD-07	4 inches below trench grate	1018	0	20.8	0
TD-08	4 inches below trench grate	1017	0	21.2	0
TD-09	4 inches below trench grate	1016	0	20.8	0
TD-10	4 inches below trench grate	1015	0	21.2	0
Drainage culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 inches below grate	1057	0	20.8	0
DC-02	4 inches below grate	1058	0	20.8	0
DC-03	4 inches below grate	1059	0	20.8	0
DC-04	4 inches below grate	1100	0	20.8	0
DC-05	4 inches below grate	1101	0	20.8	0
DC-06	4 inches below grate	1102	0	20.8	0
DC-07	4 inches below grate	1103	0	20.2	0
DC-08	4 inches below manhole lid	1105	0	20.2	0
Northern perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 inches above ground surface	1054	0	20.2	0
PG-02	2 inches above ground surface	1053	0	20.2	0
PG-03	2 inches above ground surface	1052	0	20.2	0
PG-04	2 inches above ground surface	1050	0	20.2	0
PG-05	2 inches above ground surface	1049	0	20.2	0
PG-06	2 inches above ground surface	1048	0	20.8	0
PG-07	2 inches above ground surface	1047	0	20.8	0
PG-08	2 inches above ground surface	1043	0	20.2	0

PG-09	2 inches above ground surface	1042	0	20.8	0
PG-10	2 inches above ground surface	1040	0	20.8	0
PG-11	2 inches above ground surface	1039	0	20.8	0
PG-12	2 inches above ground surface	1038	0	20.8	0
PG-13	2 inches above ground surface	1037	0	20.8	0
PG-14	2 inches above ground surface	1036	0	20.8	0
PS-01	at spinner (4 ft above pavement)	1028	0	20.8	0
PS-02	at spinner (4 ft above pavement)	See comment	NA	NA	NA
PS-03	at spinner (4 ft above pavement)	See comment	NA	NA	NA
PS-04	at spinner (4 ft above pavement)	1030	0	20.8	0
PS-05	at spinner (4 ft above pavement)	See comment	NA	NA	NA
PS-06	at spinner (4 ft above pavement)	1032	6%	20.8	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
DC = Drainage Culvert (inlet)
HP = Hangar Pad
LEL = lower explosive limit
PG = Perimeter Ground
PS = Perimeter Spinner (wind turbine)
TD = Trench Drain
Methane = CH_4
Oxygen = O_2
Carbon dioxide = CO_2

Comments: PS-02, PS-03 & PS-05 are capped. Standing water in trench drains and drop inlets.

Form modified from http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc.

LANDFILL GAS MONITORING FORM

Landfill Name: Airport Landfill, SWMU 73-001(a) at the Los Alamos County Airport

Inspector Printed Name: Jeff Walterscheid Inspector Signature: Jeff Walterscheid

Date: 10/29/12 Barometric Pressure: 30.27 Temperature: 51 degrees F

Weather conditions: Clear Wind Direction: SE Wind Speed: 1-2 mph

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

Instrument: MSA Altair 5X #1523 Calibration method and date: Pentane gas 10/26/12

Sample Location	Height (ft)	Time	CH_4 % LEL	O_2 %	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.					
HP-01	2 inches above expansion joint*	1335	0	20.8	0
HP-02	2 inches above expansion joint*	1336	0	20.8	0
HP-03	2 inches above expansion joint*	1337	0	2.08	0
HP-04	2 inches above expansion joint*	1327	0	20.8	0
HP-05	2 inches above expansion joint*	1329	0	20.8	0
HP-06	2 inches above expansion joint*	1330	0	20.8	0
HP-07	2 inches above expansion joint*	1321	0	20.8	0
HP-08	2 inches above expansion joint*	1322	0	20.8	0
HP-09	2 inches above expansion joint*	1323	0	20.8	0
HP-10	2 inches above expansion joint*	1314	0	20.8	0
HP-11	2 inches above expansion joint*	1315	0	20.8	0
HP-12	2 inches above expansion joint*	1317	0	20.8	0
HP-13	2 inches above expansion joint*	1313	0	20.8	0
HP-14	2 inches above expansion joint*	1312	0	20.8	0
HP-15	2 inches above expansion joint*	1311	0	20.8	0

Trench drains (west side of each hangar pad)					
TD-01	4 inches below trench grate	1339	0	20.8	0
TD-02	4 inches below trench grate	1340	0	20.8	0
TD-03	4 inches below trench grate	1333	0	20.8	0
TD-04	4 inches below trench grate	1332	0	20.8	0
TD-05	4 inches below trench grate	1325	0	20.8	0
TD-06	4 inches below trench grate	1324	0	20.8	0
TD-07	4 inches below trench grate	1319	0	20.8	0
TD-08	4 inches below trench grate	1318	0	20.8	0
TD-09	4 inches below trench grate	1314	0	20.8	0
TD-10	4 inches below trench grate	1310	0	20.8	0
Drainage culverts (drainage inlets on the buried storm sewer lines)					
DC-01	4 inches below grate	1342	0	20.8	0
DC-02	4 inches below grate	1343	0	20.8	0
DC-03	4 inches below grate	1345	8%	20.8	0
DC-04	4 inches below grate	1346	4%	20.8	0
DC-05	4 inches below grate	1347	10%	20.8	0
DC-06	4 inches below grate	1348	20%	20.8	0
DC-07	4 inches below grate	1350	0	20.8	0
DC-08	4 inches below manhole lid	1026	0	20.8	0
Northern perimeter (ground and spinner [wind turbine] locations)					
PG-01	2 inches above ground surface	1006	0	20.8	0
PG-02	2 inches above ground surface	1007	0	20.8	0
PG-03	2 inches above ground surface	1013	0	20.8	0
PG-04	2 inches above ground surface	1016	0	20.8	0
PG-05	2 inches above ground surface	1018	0	20.8	0
PG-06	2 inches above ground surface	1020	0	20.8	0
PG-07	2 inches above ground surface	1021	0	20.8	0
PG-08	2 inches above ground surface	1022	0	20.2	0

PG-09	2 inches above ground surface	1023	0	20.8	0
PG-10	2 inches above ground surface	1030	0	20.8	0
PG-11	2 inches above ground surface	1029	0	20.8	0
PG-12	2 inches above ground surface	1024	0	20.8	0
PG-13	2 inches above ground surface	1028	0	20.8	0
PG-14	2 inches above ground surface	1025	0	20.8	0
PS-01	at spinner (4 ft above pavement)	1004	0	20.8	0
PS-02	at spinner (4 ft above pavement)	1001	90%	20.8	0
PS-03	at spinner (4 ft above pavement)	0959	67%	20.8	0
PS-04	at spinner (4 ft above pavement)	0957	0	20.8	0
PS-05	at spinner (4 ft above pavement)	0954	23%	20.8	0
PS-06	at spinner (4 ft above pavement)	0952	21%	20.8	0

Note:
Methane concentrations shall be measured in percent of the LEL. Other gases measured in %.
DC = Drainage Culvert (inlet)
HP = Hangar Pad
LEL = lower explosive limit
PG = Perimeter Ground
PS = Perimeter Spinner (wind turbine)
TD = Trench Drain
Methane = CH_4
Oxygen = O_2
Carbon dioxide = CO_2

Comments: PS-02, PS-03 & PS-05 caps were removed and vent risers installed October 2012. As expected, landfill gas was detected at all three locations. Gas monitoring was also completed along the approximate 125 ft long, 1-4 inch wide fissure running E-W in soil just north of pad 1 and 2. One monitoring location near the NW corner of Pad 2 was 100% of the LEL with oxygen at 17.6 %, approximately 1-2 inches deep in fissure. A second shorter fissure was noted near the NW corner of Pad 3 (in the same orientation as the long fissure). Monitoring showed 24% of the LEL and 19.9% oxygen. Standing water has been previously noted at the NW corners of Pad 2 & 3, the puddle at Pad 2 infiltrates into the soil cap.

Form modified from http://www.nmenv.state.nm.us/swb/documents/ExampleMethaneFORM10-10-08.doc.