Nevada
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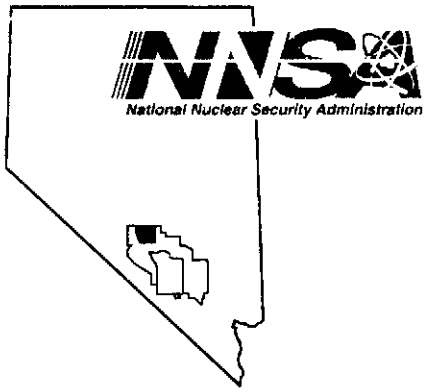

Tonopah Test Range Post-Closure Inspection Annual Report, Tonopah Test Range, Nevada Calendar Year 2002

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Controlled Copy No.:_____

Revision: 1

August 2003

Environmental Restoration
Division

U.S. Department of Energy
National Nuclear Security Administration
Nevada Site Office

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DOE/NV--898-REV 1

TONOPAH TEST RANGE POST-CLOSURE INSPECTION ANNUAL REPORT TONOPAH TEST RANGE, NEVADA CALENDAR YEAR 2002

Prepared for
U. S. Department of Energy
National Nuclear Security Administration
Nevada Site Office
Work Performed Under Contract No.
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Revision: 1

August 2003

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TONOPAH TEST RANGE POST-CLOSURE INSPECTION ANNUAL REPORT TONOPAH TEST RANGE, NEVADA CALENDAR YEAR 2002

Approved by: _____ Date: 7/21/03
Janet L. Appenzeller-Wing, Project Manager
Industrial Sites Project

Approved by: _____ Date: 7-21-03
Runore C. Wycoff, Division Director
Environmental Restoration Project

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LIST OF ACRONYMS AND ABBREVIATIONS

BN	Bechtel Nevada
CAU	Corrective Action Unit
CAS	Corrective Action Site
CR	Closure Report
DOE/NV	U.S. Department of Energy, Nevada Operations Office
ft	foot (feet)
FY	Fiscal Year
m	meter(s)
NDEP	Nevada Division of Environmental Protection

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EXECUTIVE SUMMARY

This Post-Closure Inspection Annual Report provides documentation of the semiannual inspections conducted at the following Corrective Action Units (CAU)s: CAU 400: Bomblet Pit and Five Points Landfill; CAU 404: Roller Coaster Lagoons and Trench; CAU 407: Roller Coaster RadSafe Area; CAU 424: Area 3 Landfill Complexes; CAU 426: Cactus Spring Waste Trenches; CAU 427: Septic Waste Systems 2, 6; and CAU 453: Area 9 UXO Landfill, all located at the Tonopah Test Range, Nevada. Post-closure inspections are not required at CAU 400 but are conducted to monitor vegetation and fencing at the site.

Site inspections were conducted in May and November 2002. All site inspections were made after Nevada Division of Environmental Protection (NDEP) approval of the appropriate Closure Report (CR), excluding CAU 400 which did not require a CR, and were conducted in accordance with the Post-Closure Inspection Plans in the NDEP-approved CRs.

Post-closure inspections conducted during 2002 identified several areas requiring maintenance/repairs. Maintenance work and proposed additional monitoring are included in the appropriate section for each CAU.

This report includes copies of the Post-Closure Inspection Plans, Post-Closure Inspection Checklists, copies of the field notes, photographs, and the Post-Closure Vegetative Monitoring Report. The Post-Closure Inspection Plan for each CAU is located in Attachment A. Post-Closure Inspection Checklists are in Attachment B. Copies of the field notes from each inspection are included in Attachment C. Attachment D consists of the photographic logs and photographs of the sites. The post-closure vegetative monitoring report for calendar year 2002 is included in Attachment E.

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1.0 INTRODUCTION

This post-closure inspection report includes the inspection results, maintenance and repair activities, and conclusions and recommendations for calendar year 2002 for seven corrective action units (CAUs) located on the Tonopah Test Range, Nevada. The CAUs included in the report include the following (Figure 1):

- CAU 400: Bomblet Pit and Five Points Landfill
- CAU 404: Roller Coaster Lagoons and Trench
- CAU 407: Roller Coaster RadSafe Area
- CAU 424 Area 3 Landfill Complexes
- CAU 426 Cactus Spring Waste Trenches
- CAU 427 Area 3 Septic Waste Systems 2, 6
- CAU 453 Area 9 UXO Landfill

Post-closure monitoring consists of the following activities:

- Site inspections conducted twice a year to evaluate and document the condition of the unit.
- Verification that the site is secure.
- Notice of any subsidence or deficiencies that may compromise the integrity of the unit.
- Remedy of any deficiencies within 90 days of discovery.
- Preparation and submittal of an annual report.

All site inspections were conducted in accordance with the Post-Closure Monitoring Plans in the appropriate Nevada Division of Environmental Protection (NDEP) approved Closure Report (CR) for each CAU, with the exception of CAU 400, which did not require a CR. Attachment A includes the post-closure inspection plan for each CAU. Post-Closure Inspection Checklists are located in Attachment B. Copies of the field notes from each inspection are included in Attachment C. Attachment D consists of the photographic logs and photographs of the sites. The post-closure vegetative monitoring report for calendar year 2002 is in Attachment E.

1.1 CLOSURE REPORT CONTENTS

This Post Closure Inspection Report is divided into the following sections:

- Section 1.0 - Introduction: Identification of CAU and CAS names and numbers, description of the general scope of inspections and maintenance work, and report contents.

- Section 2.0 - Post Closure Inspections: Inspection scope, first and second annual inspection results, maintenance and repairs, and conclusions and recommendations.

- Section 3.0 - Summary: Summary of the post-closure inspection and maintenance work completed during the calender year.

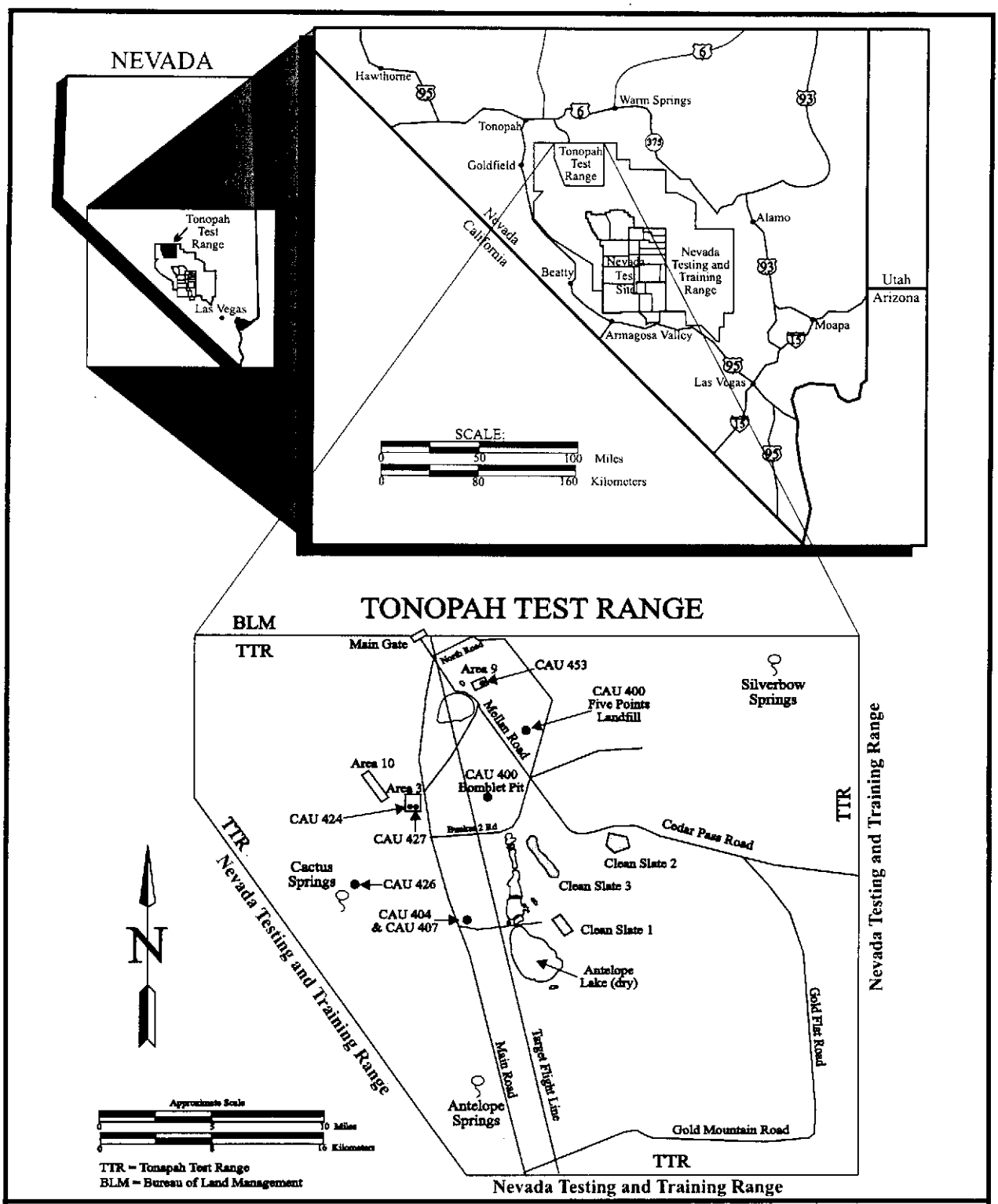

FIGURE 1
TONOPAH TEST RANGE
POST-CLOSURE MONITORING SITES LOCATION MAP

- Section 4.0 - References
- Attachment A - Post-Closure Inspection Plans
- Attachment B - Inspection Checklists
- Attachment C - Field Notes
- Attachment D - Photographs
- Attachment E - Post-Closure Vegetate Monitoring Report
- Attachment F - Nevada Environmental Restoration Project Document Review Sheet
- Distribution List

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2.0 POST-CLOSURE INSPECTIONS

2.1 CAU 400 Bomblet Pit and 5 Points Landfill

2.1.1 CAU 400 Introduction

There are no post-closure monitoring requirements for CAU 400: Bomblet Pit and 5 Points Landfill, as described in the Tonopah Test Range Closure Sites Revegetation Plan (U.S. Department of Energy, Nevada Operations Office [DOE/NV], 1997). While completing post-closure monitoring at other sites on the Tonopah Test Range, inspections were completed at CAU 400, though not required by any closure plan. Inspections are completed to monitor vegetation growth and integrity of the fence surrounding the site. The NDEP-approved Revegetation Plan states that the site fence may be removed once vegetation at the site is well established.

Site inspections were conducted on May 8, 2002 and November 5, 2002. The Post-Closure Inspection Checklists are located in Attachment B. Copies of the field notes from each inspection are included in Attachment C. Attachment D consists of the photographic logs and photographs.

In addition to the semiannual inspections, vegetative monitoring of the site (a plant census) was conducted in June of 2002. The results are included in Appendix E.

2.1.2 Inspection Results

2.1.2.1 CAU 400 First Semiannual Inspection

The first semiannual inspection of 2002 at the Bomblet Pit (Figure 2) was completed on May 7, 2002. Numerous bomblets and bomb fragments were noted during the site inspection, both inside and outside the fenced area. Several small mammal burrows and horse droppings were identified along the fence line. No erosion, subsidence, or cracking of the surface was observed. The vegetation inside the fenced area appeared healthy, but sparse. The majority of the species located in the fenced area appeared native; no thistle was present. Overall, the fencing and the area inside the fence appeared to be in excellent condition.

The first semiannual inspection of 2002 at the Five Points Landfill (Figure 3) was completed on May 7, 2002. Several small mammal burrows were observed along the fence line along with some loose debris. There was very little debris located inside the fenced area, and the burrows did not affect the integrity of the unit. No erosion, subsidence, or cracking of the cover surface was observed. The vegetation inside the fence appeared healthy and plentiful, with some Russian Thistle present. Overall the fencing and the area inside the fence were observed to be in excellent condition.

2.1.2.2 CAU 400 Second Semiannual Inspection

The second semiannual inspection of 2002, for the Bomblet Pit, was completed on November 5, 2002. A small number of animal burrows and horse droppings along the fence perimeter were

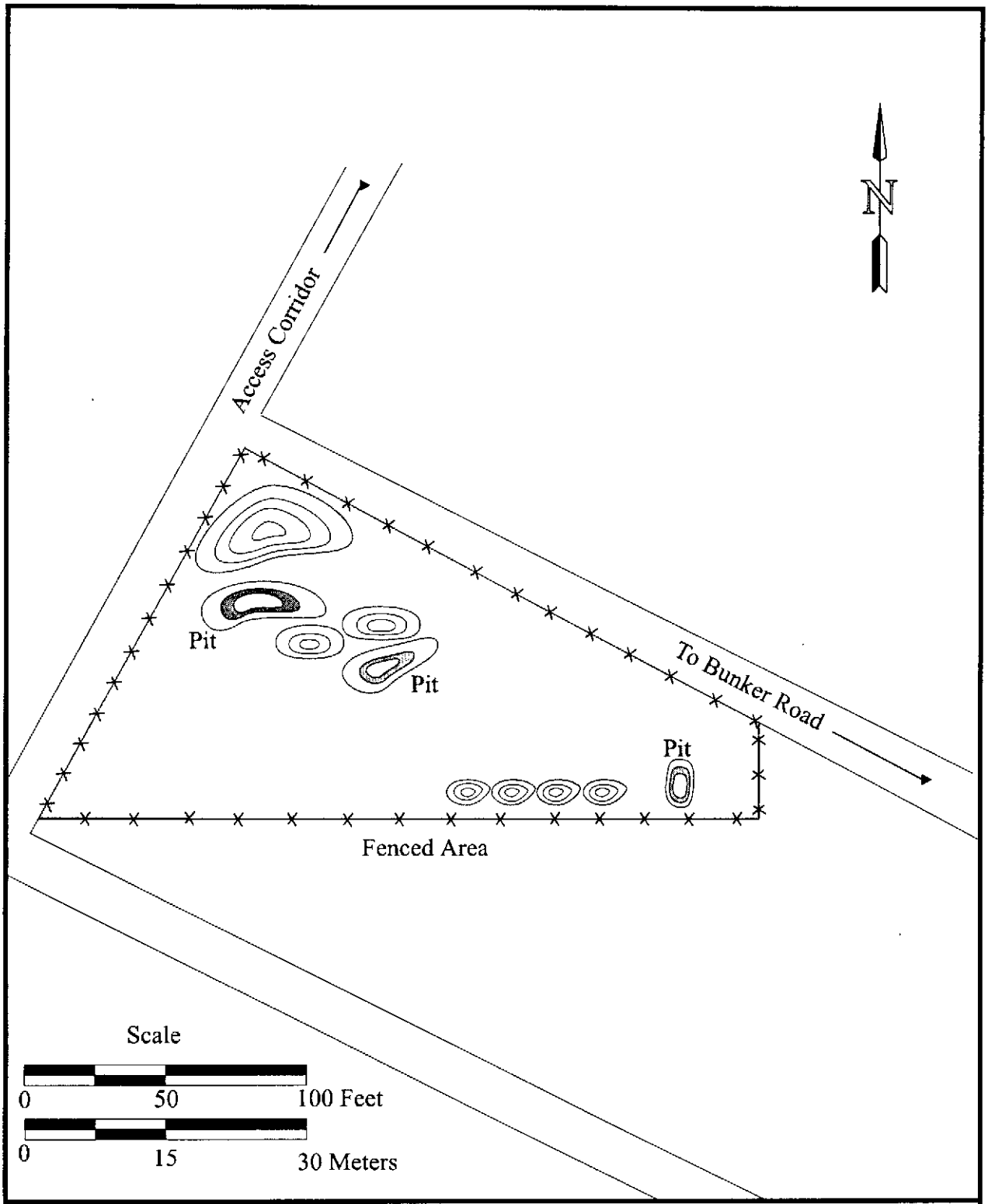

FIGURE 2
CAU 400 BOMBLET PIT LOCATION MAP

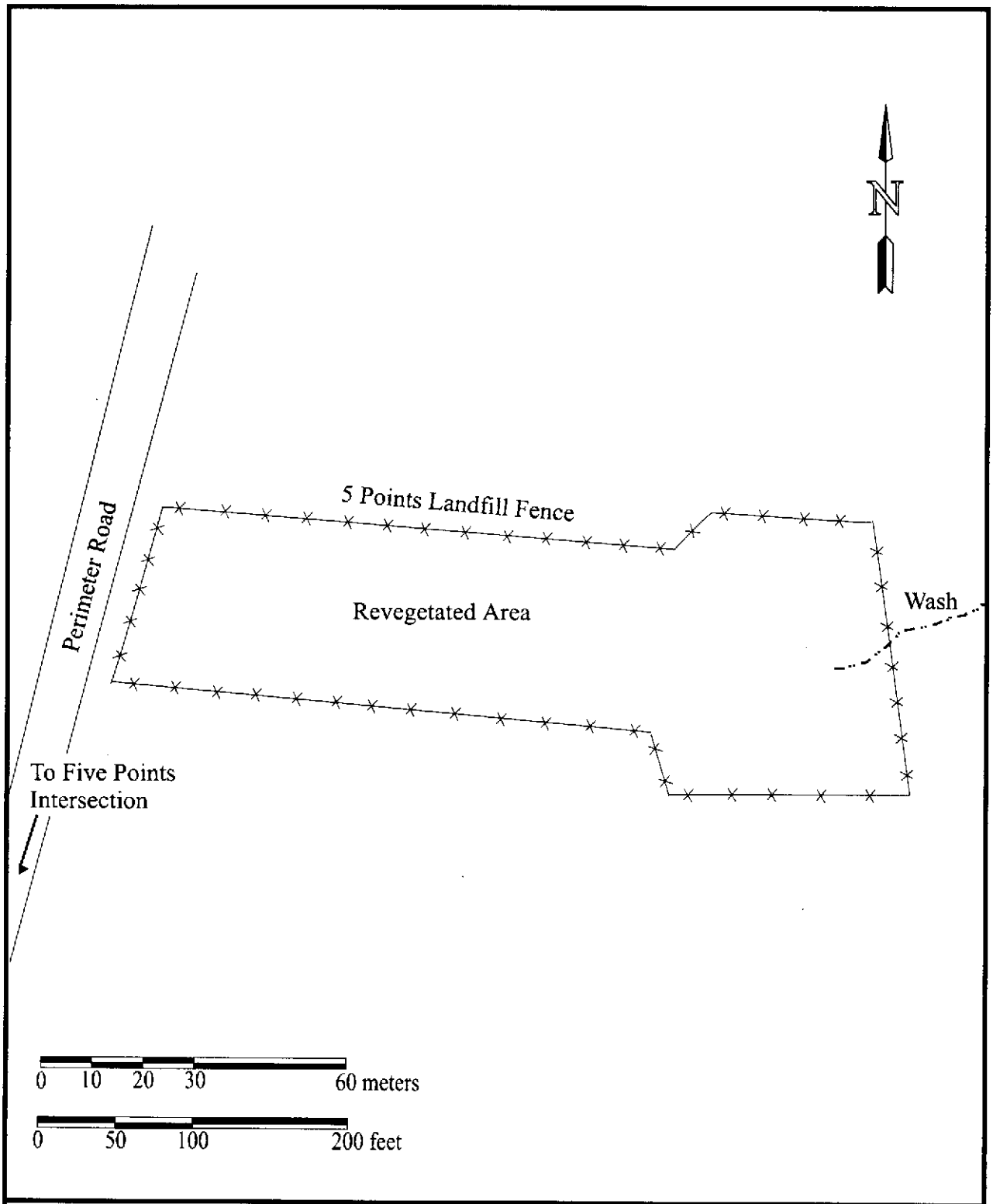

FIGURE 3
CAU 400 5 POINTS LANDFILL LOCATION MAP

noted during the inspection. The vegetation on the cover and inside the fenced area was healthy and very well established. Numerous bomblets and bomb fragments were noted during the site inspection, both inside and outside the fenced area. The overall condition of the site was good, with no evidence of settling or cracking on the cover.

The second semiannual inspection of 2002, for the Five Points Landfill, was completed on November 5, 2002. A small number of animal burrows and horse droppings along the fence perimeter were noted during the inspection. The vegetation on the cover and inside the fenced area was well established and healthy. The overall condition of the site was good, with no evidence of erosion, settling, or cracking on the cover.

2.1.3 CAU 400 Maintenance and Repairs

The only maintenance and repairs conducted at the site during this reporting period occurred concurrently with the first semiannual inspection. Several small mammal burrows along the fence line were backfilled at the Bomblet Pit and the Five Points landfill. In addition, several pieces of surface debris were removed from outside and inside the fenced area at the Five Points Landfill.

2.1.4 CAU 400 Conclusions and Recommendations

Small mammal burrows were present along the fence line of both sites, but did not appear to affect the integrity of the covers. The condition of the covers was good, with healthy and very well established plant species growing within the fenced areas. At the Bomblet Pit, numerous bomblets and bomb fragments were noted during the site inspection, inside and outside the fenced area. The overall condition of both sites was good, with no evidence of settling or cracking on the cover.

As stated in section 3.5.4 of the NDEP-approved Revegetation Plan, the fencing requirement for the Bomblet Pit and the Five-Points Landfill is that both sites be fenced for a minimum of five years in order to give plants sufficient time to become established and able to withstand the effects of herbivory. Based on the results of recent semiannual inspections and a plant census conducted at both sites in June of 2002 (Appendix E), it has been determined that the vegetation inside the fenced areas has not been sufficiently established. It is recommended that both sites remain fenced until a future evaluation determines that the vegetation has matured to the same extent as the surrounding areas.

2.2 CAU 404 Roller Coaster Lagoons and Trench

2.2.1 CAU 404 Introduction

Post-closure monitoring requirements for CAU 404 are described in the CR for CAU 404: Roller Coaster Sewage Lagoons and North Disposal Trench (DOE/NV, 1998a). The CR was submitted to the NDEP on September 11, 1998. Permeability results of soils adjacent to the engineered cover and a request for closure of CAU 404 were transmitted to the NDEP on April 29, 1999.

The CR (containing the Post-Closure Monitoring Plan) was approved by the NDEP on May 18, 1999.

As stated in Section 5.0 of the NDEP-approved CR, post-closure monitoring at CAU 404 consists of the following:

- Visual site inspections conducted twice a year to evaluate the condition of the cover and plant development.
- Additional, non-scheduled inspections may be required after severe weather events.
- Verification that the site is secure and condition of the fence and posted warning signs.
- Notice of any subsidence, erosion, unauthorized excavation, and other deficiencies that may compromise the integrity of the unit.
- Remedy of any deficiencies within 90 days of discovery.
- Preparation and submittal of an annual report.

Site inspections were conducted on May 8, 2002 and November 5, 2002. A diagram showing the site location and configuration can be seen in Figure 4. The site inspections were conducted in accordance with the Post-Closure Monitoring Plan (Attachment A) in the NDEP-approved CR. The Post-Closure Inspection Checklists are located in Attachment B. Copies of the field notes from each inspection are included as Attachment C. Attachment D consists of the photographic logs and photographs.

In addition to the semiannual inspections, vegetative monitoring of the site (a plant census) was conducted in June of 2002. The results are included in Appendix E.

2.2.2 CAU 404 Inspection Results

2.2.2.1 CAU 404 First Semiannual Inspection

The first semiannual inspection of 2002 was completed on May 7, 2002. Several small mammal burrows were observed along the fence line and on the side of the cover. The burrows did not affect the integrity of the unit. The wire fence and the chicken wire mesh fence were in good condition, with no apparent holes or breaches in the fencing. All seven signs at the site were legible but several not securely fastened to the fence. No erosion, subsidence, or cracking of the cover surface was observed. The vegetation inside the fence and on the cover was sparse, but appeared to be healthy. Overall, the cover, fencing, and the area inside the fence were observed to be stable and in good condition.

2.2.2.2 CAU 404 Second Semiannual Inspection

The second semiannual inspection of 2002 was completed on November 5, 2002. A small number of animal burrows was noted during the inspection. The wire fence, chicken wire mesh, and gates were all in excellent condition. All seven signs were legible and securely fastened to the fence. The vegetation on the cover and inside the fenced area was well established and healthy. There was no evidence of erosion, settling, or cracking on the cover. The integrity of the cover unit was excellent.

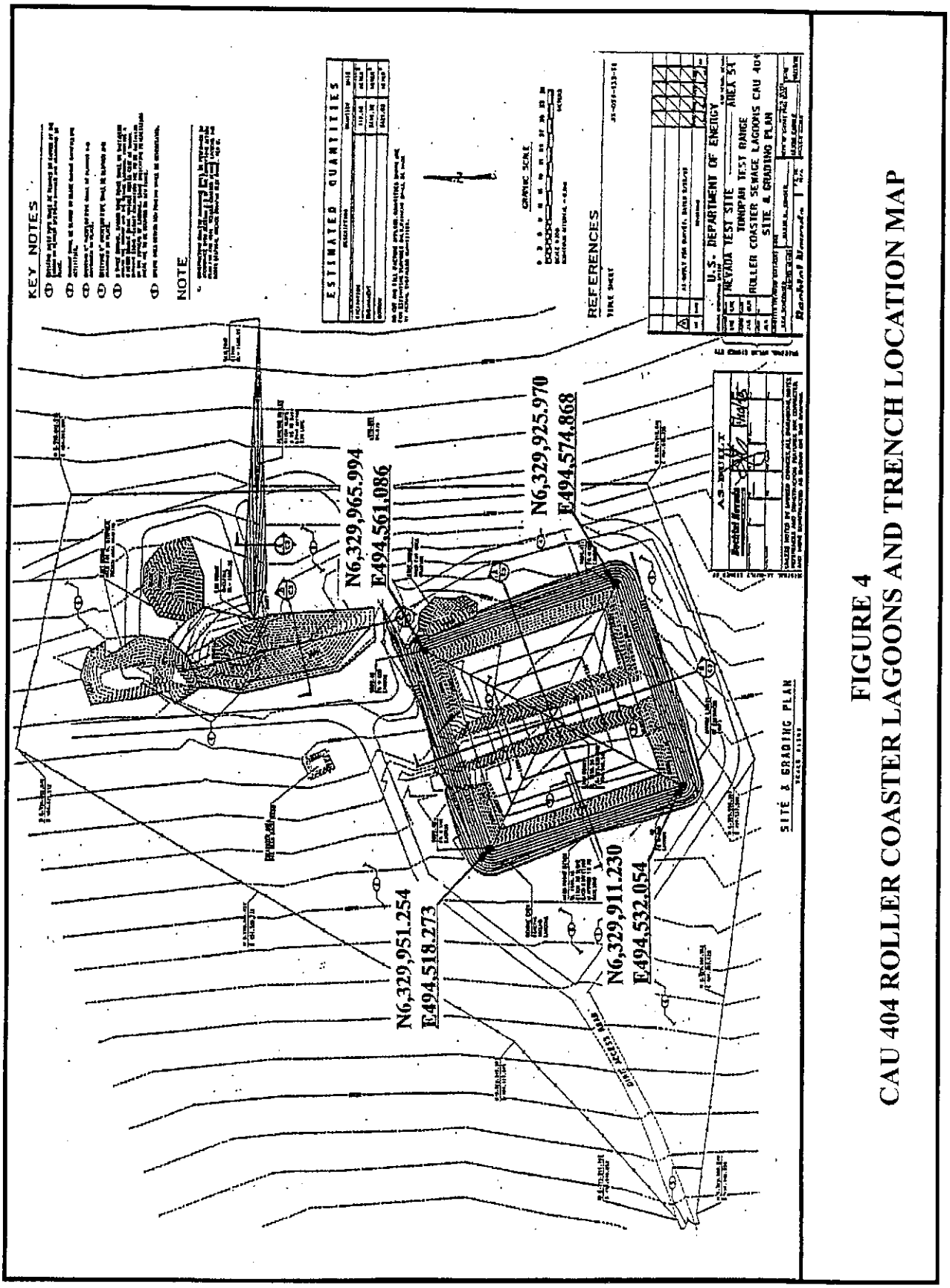

FIGURE 4
CAU 404 ROLLER COASTER LAGOONS AND TRENCH LOCATION MAP

2.2.3 CAU 404 Maintenance and Repairs

Several maintenance and repair activities were conducted at the site during this reporting period. An exposed piece of ceramic pipe from the base of the east slope was removed from the cover. A large animal burrow on the east side of the cover and several small mammal burrows were backfilled. Several warning signs were reattached to the fence with new hog rings to better secure them.

2.2.4 CAU 404 Conclusions and Recommendations

Numerous small mammal burrows were present along the toe of the cover but did not appear to affect the integrity of the cover. The overland runoff was being properly diverted around the site. There was no evidence of drainage or erosion through the site. The condition of the cover was excellent, with a good diversity of plant species growing on the cover and within the fenced area. A detailed plant census at CAU 404 was conducted in June of 2002, and the results are included in Appendix E. Overall, the cover area, fencing, posted warning signs, and gates were all in excellent condition. No further maintenance or repairs to the site are recommended at this time. It is also recommended that the frequency of site inspections remains the same, except in the event of severe weather, where a nonscheduled site inspection may be required.

2.3 CAU 407 Roller Coaster RadSafe Area

2.3.1 CAU 407 Introduction

Post-closure monitoring requirements for the CAU 407 are described in the CR for CAU 407: Roller Coaster RadSafe Area (DOE/NV, 2001). The CR was submitted to the NDEP on April 24, 2001. No issues with the post-closure monitoring plan, Section 5.0, were raised. However, other concerns raised by stakeholders required that the CR be revised. Revision 1 of CR was issued in December of 2001 and was approved by NDEP on February 22, 2002. Section 5.2 of the NDEP-approved CR calls for site inspections to be conducted within the first six months following completion of cover construction. Following the first six months, site inspections are to be conducted twice yearly for the next two years.

As stated in Section 5.2 of the CR, post-closure site inspections at CAU 407 consist of the following:

- Visual site inspections conducted twice a year to evaluate the condition of the cover and plant development.
- Verification that the site is secure and that the fence and posted warning signs are in good condition.
- Notice of any subsidence, erosion, unauthorized excavation, and other deficiencies that may compromise the integrity of the unit.
- Remedy of any deficiencies within 90 days of discovery.
- Preparation and submittal of an annual report.

Site inspections were conducted on May 8, 2002 and November 5, 2002. A diagram showing the site location and configuration can be seen in Figure 5. The site inspections were conducted in accordance with the Post-Closure Monitoring Plan (Attachment A) in the NDEP-approved CR. The Post-Closure Inspection Checklists are located in Attachment B. Copies of the field notes from each inspection are included as Attachment C. Attachment D consists of the photographic logs and photographs.

2.3.2 CAU 407 Inspection Results

2.3.2.1 CAU 407 First Semiannual Inspection

The first semiannual post-closure inspection for 2002 of CAU 407 was completed on May 8, 2002. Numerous small mammal burrows were observed along cover side slopes. The fence is a three-strand barbed-wire fence; no chicken wire mesh is present to prevent small mammals from entering the fenced area. The burrows did not affect the integrity of the cover. The fence was in fair condition with no apparent holes or breaches in the fencing, but the fence was not taught. The underground radioactive material warning signs posted on tee posts were in good condition and firmly attached to the tee posts. The vegetation inside the fence and on the cover appeared to be healthy and well established, but there were some invasive, non-native species present. There were minor erosion rills in the cover side slopes. Overall, the cover, fencing, warning signs, and the area inside the fence appeared to be stable and in fair condition. During a site inspection with NDEP, on December 6, 2001 it was noted that the cover was not constructed to properly minimize erosion, and erosion along the margin would continue unless repairs to the cover were made.

2.3.2.2 CAU 407 Second Semiannual Inspection

The second semiannual post-closure inspection for 2002 of CAU 407 was completed on November 5, 2002. The fencing and signage were in good condition. The cover had been repaired since the May inspection and was in excellent condition. There were no signs of erosion or subsidence on the cover. Because of maintenance performed after the May 2002 inspection, there was not a significant amount of vegetation growing on the cover.

2.3.3 CAU 407 Maintenance and Repairs

Minor erosion and irregularities on the cover were repaired after the May 2002 inspection. Repairs included adding additional soil to low spots, grading, and recontouring of the cover surface and margins. No further maintenance or repairs are needed or planned at this time.

2.3.4 CAU 407 Conclusions and Recommendations

Since repair of the erosion and irregularities discovered during the May 2002 inspection, the cover has remained in excellent condition. The fencing and signage were in good condition. No signs of erosion or subsidence appeared on the cover. Because of the maintenance performed, there was not a significant amount of vegetation growing on the cover. A detailed plant census at CAU 407 was conducted in June of 2002, and the results are included in Appendix E. No plans exist at this time to conduct any revegetation activities. No other repairs to the cover or changes in the frequency of site inspections are recommended at this time.

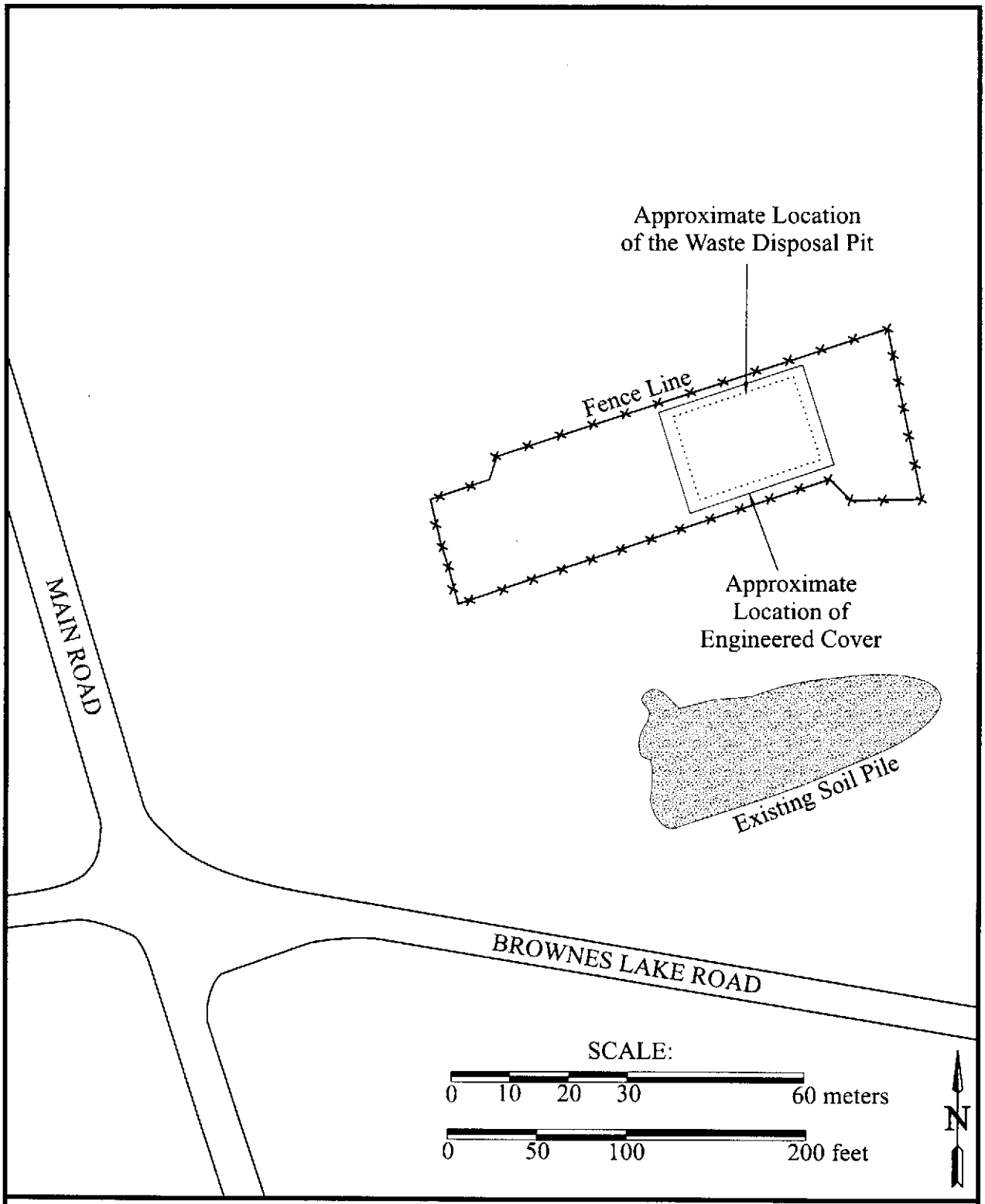

FIGURE 5
CAU 407 ROLLER COASTER RADSAFE AREA LOCATION MAP

2.4 CAU 424 Area 3 Landfill Complexes

2.4.1 CAU 424 Introduction

CAU 424: Area 3 Landfill Complexes, consists of eight Corrective Action Sites (CASs), seven of which are landfill cells that were closed previously by capping. (The eighth CAS, A3-7, was not used as a landfill site and was closed without corrective action.) CAU 424 closure activities included removing small volumes of soil containing petroleum hydrocarbons, repairing cell covers that were cracked or had subsided, and installing above-grade and at-grade monuments to mark the corners of the landfill cells. Post-closure monitoring requirements for CAU 424 are detailed in Section 5.0, Post-Closure Inspection Plan, contained in the CR for CAU 424, Area 3 Landfill Complexes (DOE/NV, 1999a). The CR was approved by the NDEP in July 1999. The CR includes compaction and permeability data for soils that cap the seven landfill cells.

As stated in Section 5.0 of the NDEP-approved CR, post-closure monitoring at CAU 424 consists of the following:

- Site inspections conducted twice a year to evaluate the condition of the unit.
- Additional, non-scheduled inspections, may be required after severe weather events.
- Verification that landfill markers and warning signs are in place, intact, and readable.
- Notice of any subsidence, erosion, unauthorized use, or deficiencies that may compromise the integrity of the landfill covers.
- Remedy of any deficiencies within 90 days of discovery.
- Preparation and submittal of an annual report.

Site inspections were conducted on May 8, 2002 and November 5, 2002. A diagram showing the site location of each of the landfills can be seen in Figure 6. The site inspections were conducted in accordance with the Post-Closure Monitoring Plan (Attachment A) in the NDEP-approved CR. The Post-Closure Inspection Checklists are located in Attachment B. Copies of the field notes from each inspection are included as Attachment C. Attachment D consists of the photographic logs and photographs.

2.4.2 CAU 424 Inspection Results

2.4.2.1 CAU 424 First Semiannual Inspection

The first inspection of CAU 424 was conducted on May 8, 2002.

Landfill A3-1 (CAS 03-08-001-A301): Landfill A3-1 is located at the north end of the CAU and is the largest of the landfill cells. The cover and the seven above-grade concrete monuments that demarcate the landfill cell were examined. All monuments, attached signs, and survey pins capping the monuments were legible and in excellent condition. No coordinates were stamped on the monument. No evidence of subsidence, cracking, or erosion of the landfill cover was observed. Vegetation was present on the cover, but sparse compared to surrounding undisturbed areas. The overall condition of the landfill cover is excellent.

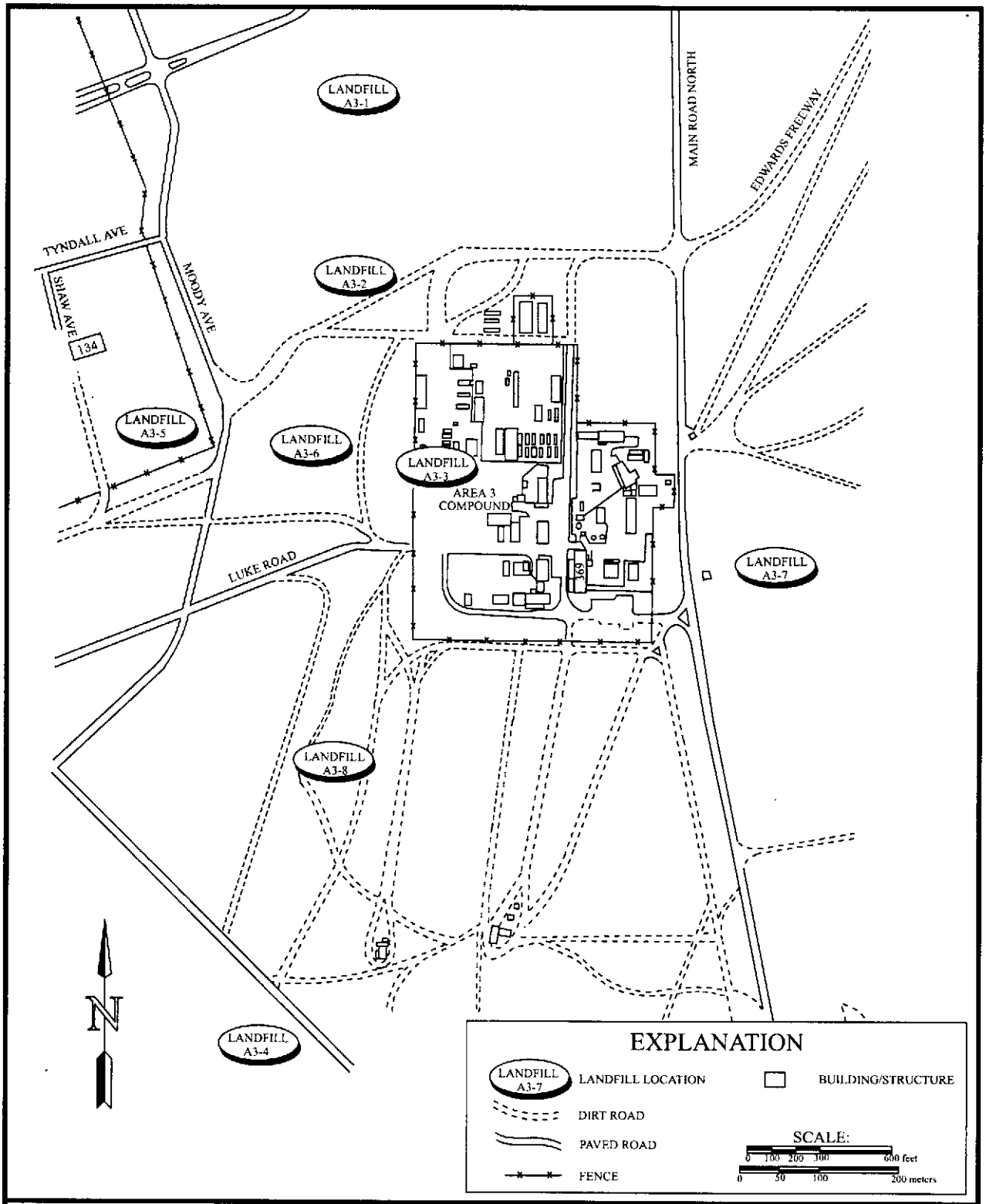

FIGURE 6
CAU 424 AREA 3 LANDFILL COMPLEXES LOCATION MAP

Landfill A3-2 (CAS 03-08-002-A302): Landfill A3-2 is located due south of Landfill A3-1. Four above-grade monuments and the landfill cover were examined. All monuments, attached signs, and survey pins capping the monuments were legible and in excellent condition. No coordinates were stamped on the monuments. No evidence of subsidence, cracking, or erosion of the landfill cover was observed. Vegetation was present and healthy, but sparse compared to the surrounding undisturbed area. The overall condition of the cover was excellent.

Landfill A3-3 (CAS 03-08-002-A303): Landfill A3-3 straddles the western fence line of the Sandia National Laboratories Area 3 Compound, with parts of the landfill outside the fence and parts inside the fence. Three above-grade monuments marking the western edge of the landfill cell located outside the fence were examined. The three above-grade monuments, attached signs, and brass survey pins were legible and in excellent condition. No coordinates were stamped on the monument. Three at-grade brass marker pins demarcating the eastern edge of the landfill were visually located inside the Area 3 fence line and were determined to be in good condition. All were in good condition and legible. The area outside the fence was covered by sparse vegetation. The area inside the fence is heavily trafficked and bare of vegetation.

A small third waste cell approximately 3 by 3 meters (m) (10 by 10 feet [ft]), located immediately east of the dirt access road to the Bechtel Nevada (BN) Field Office (Building 03-78), was inspected. The cell is in a heavily trafficked area and the three recently replaced at-grade brass makers were located. The covers over each of the three cells were in excellent shape with no signs of cracking, subsidence, or erosion.

Landfill A3-4 (CAS 03-08-002-A304): Landfill A3-4 is located just south of Dykes Drive at the south end of the CAU. Five above-grade monuments and one at-grade brass marker were located. The northeastern at-grade monument was visible because of the newly installed sub-grade marker that had been covered with highly visible red-colored rock. All monuments, markers, attached signs, and survey pins were legible and in good condition. No coordinates were stamped on the monument. Vegetation is sparse but well established on the cover. The cover was in excellent shape, with no signs of cracking, subsidence, or erosion.

Landfill A3-5 (CAS 03-08-002-A305): Landfill A3-5 is located west of Moody Avenue inside a fenced area south of the Air Force First-Aid Station. All four above-grade monuments with attached warning signs and survey pins were located. All monuments, attached signs, and survey pins were legible and in excellent condition. The are no coordinates stamped on the monument. The cover area was vegetated with Russian Thistle and sparse grasses. No evidence of cover subsidence, cracking, or erosion was observed. The overall condition of the landfill cover is excellent.

Landfill A3-6 (CAS 03-08-002-A306): Landfill A3-6 is located immediately west of and outside the fence line of the Area 3 Compound. All four above-grade monuments with attached warning signs and brass survey pins were located. All monuments, signs, and pins were in excellent condition. No coordinates were stamped on the monument. The area was sparsely vegetated with native species. No evidence of cover subsidence or erosion was observed. The overall condition of the cover was excellent.

Landfill A3-8 (CAS 03-08-002-A308): Landfill A3-8 is located southwest of the Area 3 Compound in the box car storage yard. The four at-grade brass marker pins were located. After using the land-use restriction coordinates to locate and uncover the buried brass marker pins, they were determined to be in good condition. The area was not vegetated due to heavy traffic. No evidence of subsidence or erosion to the cover was observed. The overall condition of the landfill cover was excellent.

2.4.2.2 CAU 424 Second Semiannual Inspection

The second inspection of CAU 424 was conducted on November 5, 2002.

Landfill A3-1 (CAS 03-08-001-A301): All seven above-grade monuments were located. All monuments, attached signs, and survey pins capping the monuments were legible and in excellent condition. No coordinates were stamped on the monument. Vegetation on the cover is sparse compared to surrounding undisturbed areas, but appears healthy and well established. An area of possible subsidence was noted in the center of the landfill cell. The area of possible subsidence contains numerous small cracks that traverse the site in a North-South orientation.

Landfill A3-2 (CAS 03-08-002-A302): All four above-grade monuments were located. All monuments, attached warning signs, and stamped brass survey pins were in excellent condition. Sparse vegetation is present on the cover. No coordinates were stamped on the monument. No evidence of cover subsidence, cracking, or erosion was observed. The overall condition of the cover was excellent.

Landfill A3-3 (CAS 03-08-002-A303): All three above-grade monuments and three at-grade brass marker pins marking the west cells of the landfill were located. All monuments, marker pins, attached warning signs, and stamped brass survey pins were in good condition. Vegetation outside the Area 3 fence appeared healthy and well established, while the area inside the fence was not vegetated due to traffic. No signs of erosion or subsidence were observed. The overall condition of the landfill cover was excellent.

A small third waste cell approximately 3 by 3 m (10 by 10 ft), located immediately east of the dirt access road to the BN Field Office (Building 03-78), was inspected. The cell is in a heavily trafficked area and the three recently replaced at-grade brass makers were located. The covers over each of the three cells were in excellent shape, with no signs of cracking, subsidence, or erosion.

Landfill A3-4 (CAS 03-08-002-A304): Five above-grade monuments and one at-grade brass marker were located and inspected. All monuments, attached warning signs, and survey pins were in excellent condition. Vegetation is sparse compared to adjacent undisturbed areas, but healthy and well established. A small area of possible subsidence was present in the west central area of the site. Small North-South oriented cracks were present in this area.

Landfill A3-5 (CAS 03-08-002-A305): All four above-grade monuments were located. All monuments, attached signs, and survey pins were in excellent condition. No coordinates were stamped on the monument. The cover area was vegetated by Russian Thistle. No evidence of

cover subsidence, cracking, or erosion was observed. The overall condition of the landfill cover was excellent.

Landfill A3-6 (CAS 03-08-002-A306): All four above-grade monuments were located. All monuments, attached warning signs, and survey pins were in excellent condition. No coordinates were stamped on the monument. Vegetation on the landfill was healthy and well established. No evidence of cover subsidence, cracking, or erosion was observed. The overall condition of the landfill cover was excellent.

Landfill A3-8 (CAS 03-08-002-A308): Four at-grade brass marker pins were located in good condition. An area of subsidence was present in the central portion of the site. The area was elongated and generally oriented in the North-South direction. The south portion of the subsided area had a cave-in that created a 0.3-m (1-ft) diameter hole exposing buried metal and debris (sheet metal and pipe).

2.4.3 CAU 424 Maintenance and Repairs

Several of the at-grade landfill monuments could not be located during previous site inspections, including at-grade monuments at A3-3, A3-4, and A3-8. One at-grade monument at the small eastern landfill cell at A3-3 and one at-grade monument at A3-8 were buried because of their close proximity to high traffic roads. The buried monuments were located by BN surveyors using the land-use restriction coordinates. The buried monuments were uncovered, and the sides and top of the subsurface monuments were filled with red-colored rock to aid in visual location of the monuments. The northeast at-grade monument at cell A3-4 had been accidently destroyed during the excavation and installation of fiber optic cable along the road at this site. The surveyors reinstalled a sub-grade pad and brass monument at this location. The land-use restriction coordinates were stamped onto the brass marker. The monument excavation was backfilled with red rock to aid in the visual location of the monument. Additional maintenance at Landfill A3-8 was required, when a 0.3-m (1-ft) diameter hole posed a safety hazard due to its location in a high traffic area. The hole was repaired in October 2002, during activities at CAU 490, as directed by the NNSA/Nevada Site Office task manager.

2.4.4 CAU 424 Conclusions and Recommendations

All above-grade monuments, at-grade brass markers, and warning signs were in excellent condition. The brass plates on the monuments have spaces for Use Restriction coordinates, but no coordinates were stamped on the plates. It is recommended that surveyors stamp the Use Restriction coordinates onto all of the plates during fiscal year (FY) 2003. Vegetation on landfill cells in low traffic areas was in excellent condition. Vegetation was sparse in high traffic areas, but healthy and well established. Run-off was being properly diverted away from the landfill units and no evidence of drainage or erosion to any of the landfill units was observed. Additional, nonscheduled inspections may be required after severe weather events such as heavy rainfall, flash flooding, and high winds. Signs of settlement/subsidence were observed within landfills A3-1, A3-4, and A3-8. It is recommended that surveys be completed to determine if any settlement has occurred in these landfill cells. If repairs are necessary, they will be completed in FY 2004.

2.5 CAU 426 Cactus Spring Waste Trenches

2.5.1 CAU 426 Introduction

Post-closure monitoring requirements for the CAU 426 are described in the CR for CAU 426: Cactus Spring Waste Trenches (DOE/NV, 1998b). The CR was submitted to the NDEP on August 14, 1998. Permeability data for soils adjacent to the engineered cover and a request for closure of CAU 404 were transmitted to the NDEP on April 29, 1999. The CR (containing the Post-Closure Monitoring Plan) was approved by the NDEP on May 13, 1999.

As stated in Section 5.0 of the NDEP-approved CR, Post-Closure Monitoring Plan, site monitoring at CAU 426 consists of the following:

- Visual site inspections conducted twice a year to evaluate the condition of the cover and plant development.
- Additional, nonscheduled inspections, may be required after severe weather events.
- Verification that the site is secure and that the fence and posted warning signs are in good condition.
- Notice of any subsidence, erosion, unauthorized excavation, and other deficiencies that may compromise the integrity of the unit.
- Remedy of any deficiencies within 90 days of discovery.
- Preparation and submittal of an annual report.

Site inspections were conducted on May 8, 2002 and November 5, 2002. A diagram showing the site location and configuration can be seen in Figure 7. The site inspections were conducted in accordance with the Post-Closure Monitoring Plan (Attachment A) in the NDEP-approved CR. The Post-Closure Inspection Checklists are located in Attachment B.

Copies of the field notes from each inspection are included as Attachment C. Attachment D consists of the photographic logs and photographs. In addition to the semiannual inspections, vegetative monitoring of the site (a plant census) was conducted in June of 2002. The results are included in Appendix E.

2.5.2 CAU 426 Inspection Results

2.5.2.1 CAU 426 First Semiannual Inspection

The first inspection for 2002 was completed on May 8, 2002. The fence, gate, and posted warning signs were all in excellent condition. Many small mammal burrows were present along the fence line and on the cover. The burrows had not affected the integrity of the cover. The vegetation on the cover and in the staging area inside the fence appeared sparse but healthy. No evidence of erosion on the cover or staging area was observed.

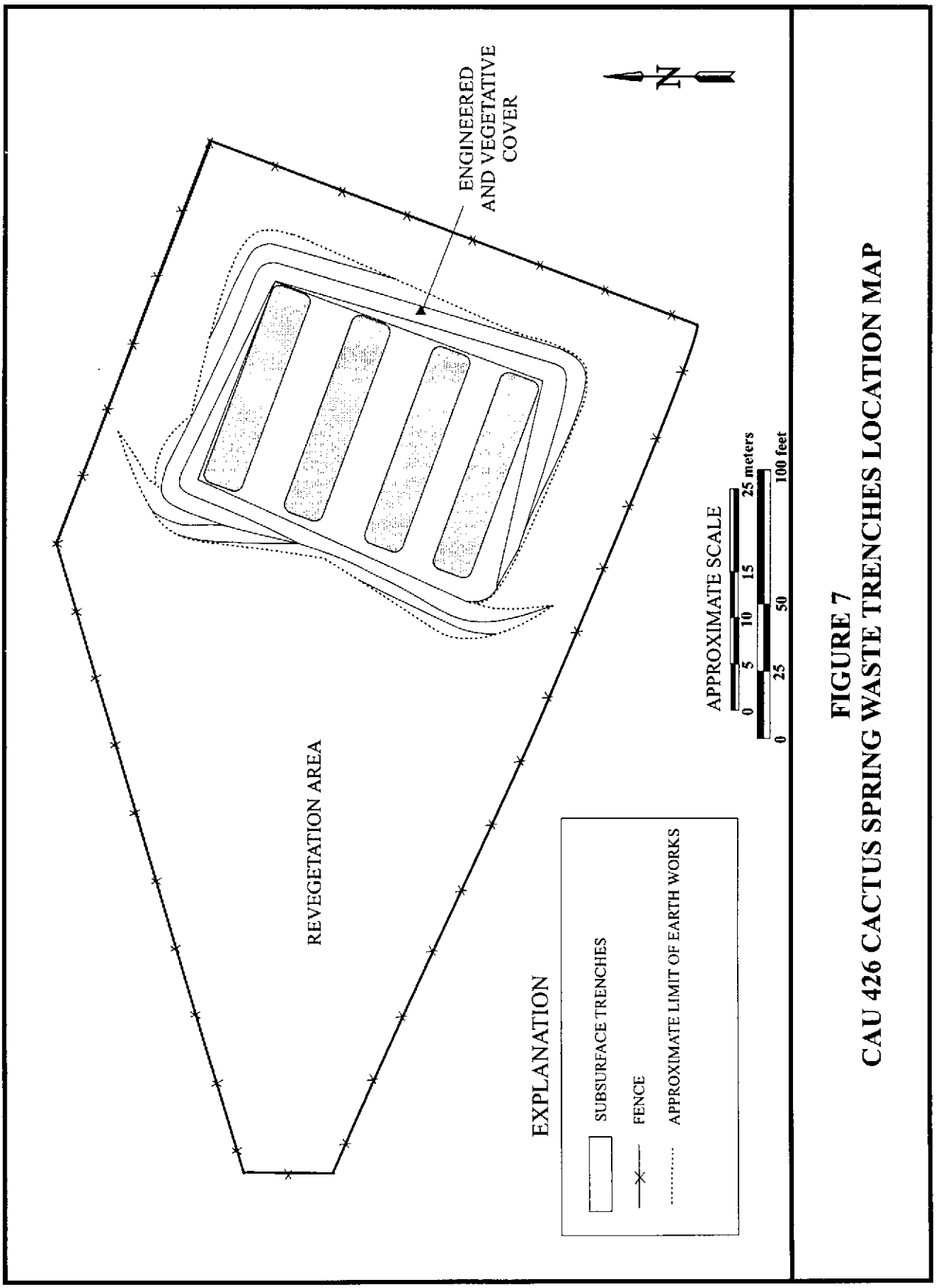

FIGURE 7
CAU 426 CACTUS SPRING WASTE TRENCHES LOCATION MAP

2.5.2.2 CAU 426 Second Semiannual Inspection

The second inspection for 2002 was completed on November 5, 2002. The fence and signage were in good condition. Some animal burrows were present along the fence line and tumble weeds were present inside the fenced area. The cover showed no signs of erosion or subsidence. Vegetation on the cover and within the fence line were in good condition.

2.5.3 CAU 426 Maintenance and Repairs

During the May 2002 inspection, burrows along the fence line were backfilled, tumbleweeds were removed from the area, and the sign attachments were reinforced.

2.5.4 CAU 426 Conclusions and Recommendations

No evidence of erosion on the cover or staging were observed during any of the inspections, indicating that the overland run-off was being properly diverted around the cover. Small mammals had burrowed under the fence in several areas but the presence of burrows in the area had not affected the integrity of the cover. The vegetation on the cover and staging area appeared to be healthy and well established, with a good diversity of native plant species. A detailed plant census at CAU 426 was conducted in June of 2002; the results are included in Appendix E. The overall condition of the vegetative cover was excellent; no further maintenance or repairs are recommended. It is also recommended that the frequency of site inspections remains the same, except in the event of severe weather, where a nonscheduled site inspection may be required.

2.6 CAU 427 Area 3 Septic Waste Systems 2, 6

2.6.1 CAU 427 Introduction

Post-closure inspection requirements for the CAU 427 are described in the CR for CAU 427: Area 3 Septic Waste Systems 2 and 6 (DOE/NV, 1999b). The CR was submitted to the NDEP on August 16, 1999. The CR (containing the Post-Closure Inspection Plan) was approved by the NDEP on August 27, 1999.

As stated in Section 5.1 of the NDEP-approved CR, the annual Post-Closure inspection at CAU 427 consists of the following:

- Verification of the presence of all leachfield and septic tank below-grade markers.
- Verification that all warning signs are in place, intact, and readable.
- Visual observation of the soil and asphalt cover for indications of subsidence, erosion, and unauthorized use.

Site inspections were conducted on May 8, 2002 and November 5, 2002. A diagram showing the site location and configuration can be seen in Figure 8. The site inspections were conducted in accordance with the Post-Closure Monitoring Plan (Attachment A) in the NDEP-approved CR.

The Post-Closure Inspection Checklists are located in Attachment B. Copies of the field notes from each inspection are included as Attachment C. Attachment D consists of the photographic logs and photographs.

2.6.2 CAU 427 Inspection Results

2.6.2.1 CAU 427 First Semiannual Inspection

The first annual inspection was conducted on May 7, 2002. A total of 21 subsurface metal markers were located (Figure 8) at the corners of Leachfield A (four markers), Leachfield B (four markers), Pre-1965 Leachfield (four markers), Abandoned Leachfield (four markers), and Septic Tank 33-5 (five markers). The corners were easily detectible from the addition of contrasting red-colored rock placed in all of the leachfield corners. The four warning signs were observed to be present at the as-built locations on Building 03070T (two signs), Building 0367 (one sign), and east of Building 0367 (one sign). The signs did not appear to be damaged, and were in good, readable condition. The soil and asphalt cover areas are located in high traffic areas. Because of the traffic and yard maintenance activities, no vegetation was present in the areas. No evidence of subsidence, erosion, or unauthorized use (e.g., cracks, depressions, erosional channeling) of the closed sites existed. The site was in good condition.

2.6.2.2 CAU 427 Second Semiannual Inspection

The second inspection was conducted on November 5, 2002. All 21 subsurface metal markers were located at the corners of the Leachfields and five markers at the septic tank. The four warning signs were located as shown on the as-built drawing. The signs did not appear to be damaged, and all were in good, readable condition. The soil and asphalt cover areas are located in high traffic areas. Because of the traffic and yard maintenance activities, no vegetation existed in the areas. No evidence of subsidence, erosion, or unauthorized use of the closed sites was observed. The site was in good condition.

2.6.3 CAU 427 Maintenance and Repair

Several of the subsurface metal markers used for identifying the boundaries of the closed-in-place leachfields are located in high-traffic areas and could not be located in previous inspections. Before the first semiannual inspection, BN surveyors used the land-use restriction coordinates to locate the buried markers. All the sub-grade markers were located and the areas above the
markers were backfilled with red-colored rock to aid in visual location of the markers. No additional modifications or repairs to the leach field covers were conducted or are recommended at this time.

2.6.4 CAU 427 Conclusions and Recommendations

All four signs were in place and in good condition. Because of the traffic and yard maintenance activities, no vegetation existed in the areas. No surface features on the soil and asphalt cover indicating subsidence, erosion, or unauthorized use were observed. The site was in good condition. No further maintenance or repairs are recommended based upon the traffic and yard maintenance activities.

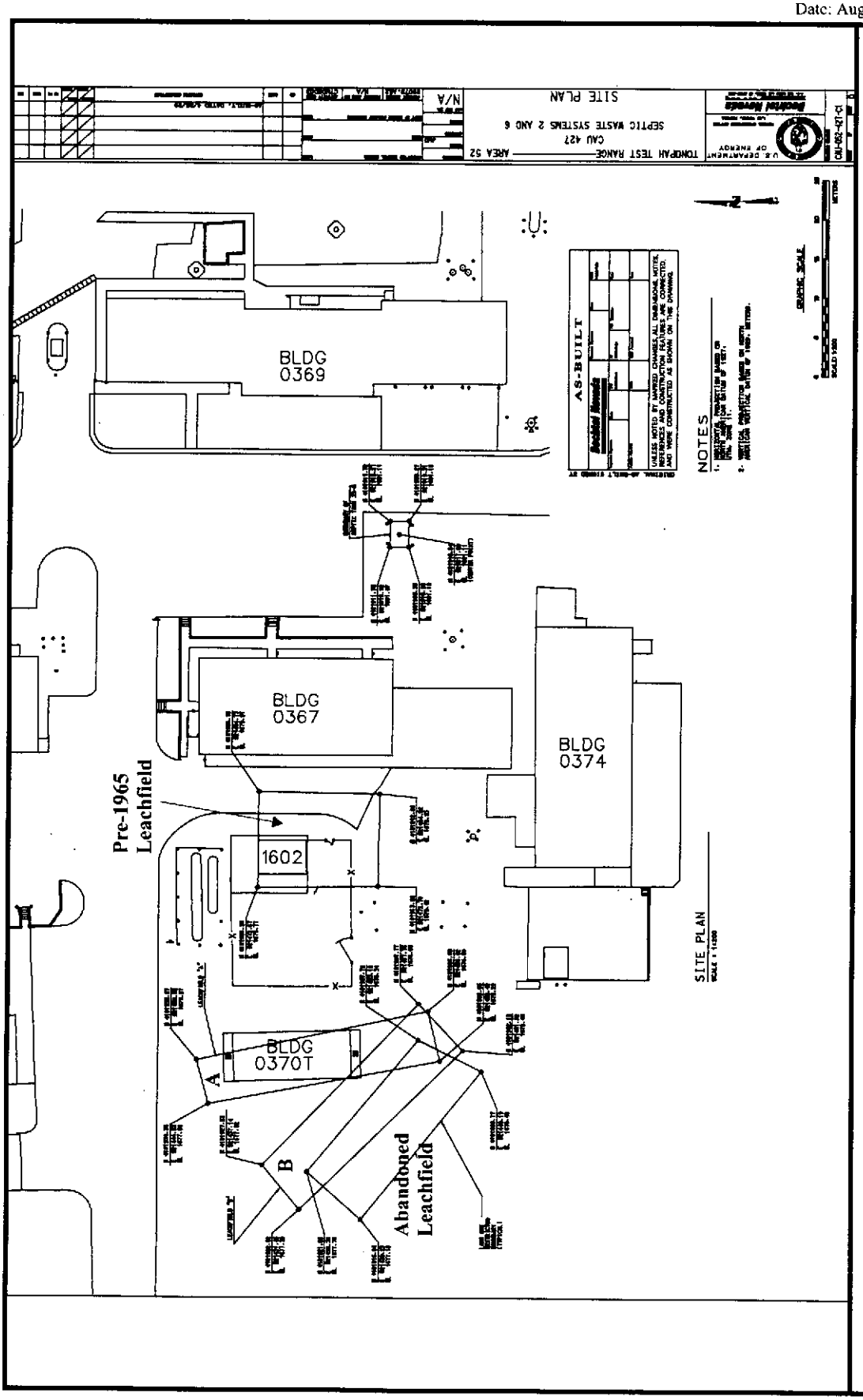

FIGURE 8
CAU 427 AREA 3 SEPTIC WASTE SYSTEMS 2 AND 6
LOCATION MAP

2.7 CAU 453 Area 9 UXO Landfill

2.7.1 CAU 453 Introduction

Post-closure monitoring requirements for the CAU 453 are described in the CR for CAU 453: Area 9 UXO Landfill (DOE/NV, 1999c). The CR was submitted to the NDEP on August 5, 1999. The CR (containing the Post-Closure Monitoring Plan) was approved by the NDEP on September 10, 1999.

As stated in Section 5.0 of the NDEP-approved CR, post-closure monitoring at CAU 453 consists of the following:

- Visual site inspections conducted twice a year to evaluate the condition of the cover.
- Additional, nonscheduled inspections, may be required after severe weather events.
- Verification that the site is secure and that the fence and posted warning signs are in good condition.
- Notice of any subsidence, erosion, unauthorized excavation, and other deficiencies that may compromise the integrity of the unit.
- Remedy of any deficiencies within 90 days of discovery.
- Preparation and submittal of an annual report.

Site inspections were conducted on May 8, 2002, and November 5, 2002. A diagram showing the site location and configuration can be seen in Figure 9. The site inspections were conducted in accordance with the Post-Closure Monitoring Plan (Attachment A) in the NDEP-approved CR. The Post-Closure Inspection Checklists are located in Attachment B. Copies of the field notes from each inspection are included as Attachment C. Attachment D consists of the photographic logs and photographs.

2.7.2 CAU 453 Inspection Results

2.7.2.1 CAU 453 First Semiannual Inspection

The first inspection was completed on May 8, 2002. The perimeter fence and concrete monuments marking the landfill cells were in excellent condition. Some of the signs on the fence appeared loose. Many mammal burrows were observed inside the fence, but had not compromised the integrity of the waste cell covers. It was noted that an area of suspected subsidence exists at the northeast end of trench A9-1. Vegetation inside the fenced area, both on and off the landfill cover area, was sparse but healthy.

2.7.2.2 CAU 453 Second Semiannual Inspection

The second inspection was completed on November 5, 2002. The perimeter fence, concrete monuments, and site postings were in excellent condition. Numerous small mammal burrows were observed inside the fence. The burrows had not compromised the integrity of the waste cell covers. No cracks, erosion, or settling features were observed in the other landfill cover areas. Vegetation within the fenced area was well established except for the area of subsidence that was repaired in May 2002. The cover over the landfill cells was in excellent condition.

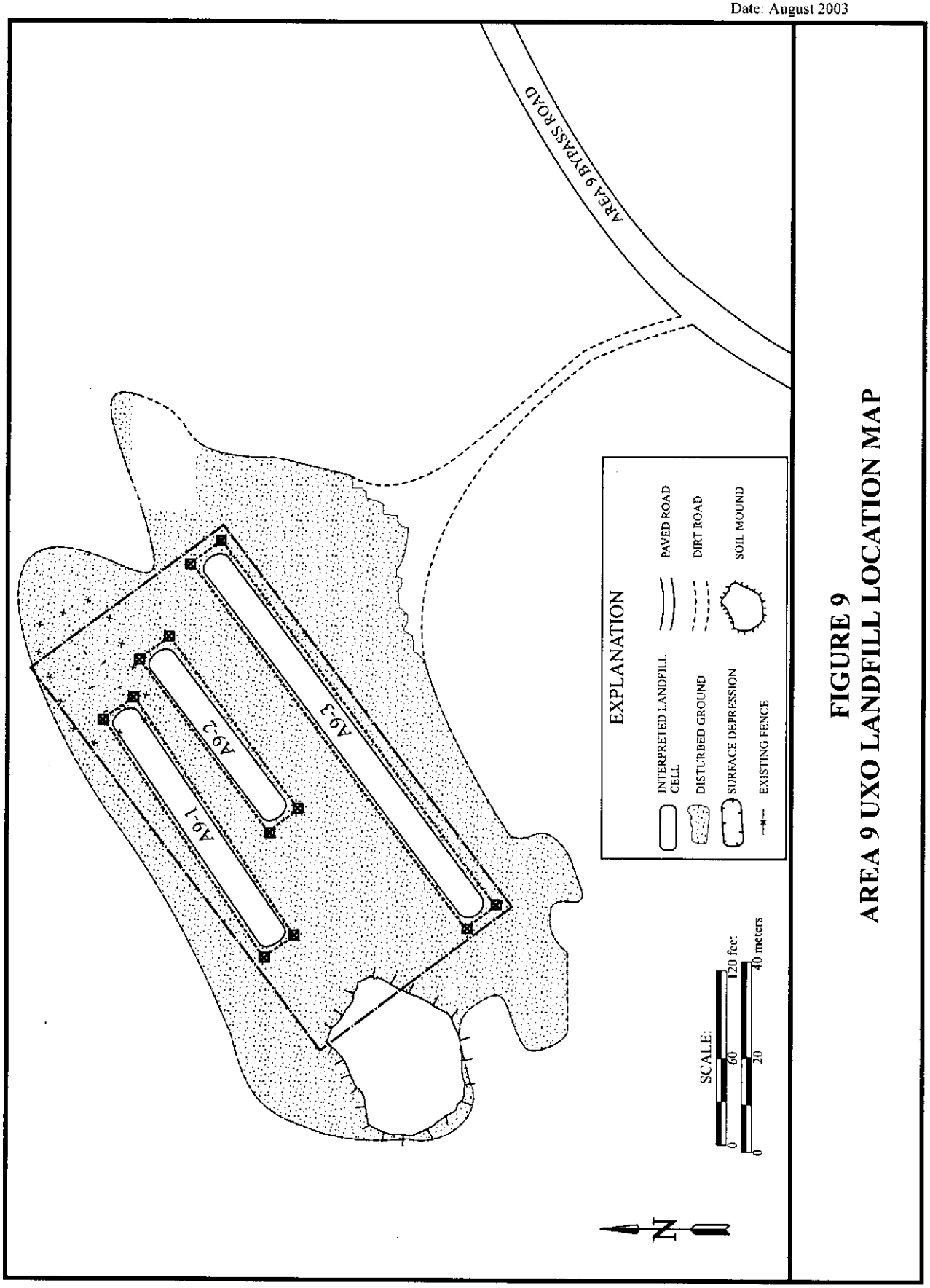

FIGURE 9
AREA 9 UXO LANDFILL LOCATION MAP

2.7.3 CAU 453 Maintenance and Repairs

An area of subsidence was observed at the northeast end of trench A9-1 during the first 2002 semiannual inspection. Repairs were made to the cover by adding clean fill to the depression to bring the area to surrounding grade on May 2, 2002. Additional maintenance included reinforcing all of the sign attachments during the March 2002 inspection. BN surveyors surveyed the subsidence area before and after repairs were made to produce as-built engineering drawings verifying that the cell cover was repaired. No other maintenance or repairs to the site were made during the two site inspections.

2.7.4 CAU 453 Conclusions and Recommendations

The perimeter fence, monuments, and site postings were in excellent condition. Since repair of the area of subsidence, no cracks, erosional features, or settling were observed in the landfill cover area. Plant growth on the landfill cover was sparse and was limited to native grasses and shrubs. Many mammal burrows were observed inside the fence, but had not compromised the integrity of the waste cell covers. The cover on the landfill cells was in excellent condition. No additional modifications or repairs to the cover are recommended at this time. It is also recommended that the frequency of site inspections remains the same, except in the event of severe weather, where a nonscheduled site inspection may be required.

3.0 SUMMARY

3.1 CAU 400 Bomblet Pit and Five Points Landfill

The following conditions were reported for both sites during the post-closure monitoring inspections:

- Small mammal burrows were present along the fence line of both sites.
- Condition of the covers was good, with healthy and very well established plant species.
- Numerous bomblets and bomb fragments were noted inside and outside the fenced area at the Bomblet Pit.
- Both sites were in good condition, with no evidence of settling or cracking on the cover.

The following maintenance and repairs were conducted before and during the post-closure inspections:

- Backfilled several small mammal burrows along the fence line.
- Removed several pieces of debris from outside and inside the fenced area at the Five Points Landfill.

The following recommendation has been proposed for both sites:

- Fencing should remain at both sites until a future evaluation determines that the vegetation has matured to the same extent as the surrounding areas.

3.2 CAU 404 Roller Coaster Lagoons and Trench

The following conditions were reported for the site during the post-closure monitoring inspections:

- Fencing, posted warning signs, and gates were all in excellent condition.
- Numerous small mammal burrows were present along the toe of the cover.
- No evidence of drainage or erosion was observed through the site.
- Cover condition was excellent, with a good diversity of plant species.

The following maintenance and repairs were conducted before and during the post-closure Inspections:

- Removed an exposed piece of ceramic pipe from the base of the east slope of the cover.
- Backfilled one large and several small animal burrows on the east side of the cover.
- Secured signs onto the fence using hog rings.

3.3 CAU 407 Roller Coaster RadSafe Area

The following conditions were reported for the site during the post-closure monitoring inspections:

- Cover remains in excellent condition since repair of the erosion and irregularities discovered during the May 2002 inspection.
- Fencing and signage appeared in good condition.
- No signs of erosion or subsidence were present on the cover.

- A significant amount of vegetation was not present because of recent maintenance activities.

The following maintenance and repairs were conducted before and during the post-closure inspections:

- Repaired minor erosion and irregularities on the cover after the May inspection.
- Added soil to low spots and graded portions of the cover surface and margins.

3.4 CAU 424 Area 3 Landfill Complexes

The following conditions were reported for the site during the post-closure monitoring inspections:

- Above-grade monuments, at-grade brass markers, and warning signs were in excellent condition.
- Brass plates on the monuments had no coordinates stamped on the plates.
- Vegetation on landfill cells in low traffic areas was in excellent condition.
- Vegetation was sparse in high traffic areas but was healthy and well established.
- No evidence of drainage or erosion to any of the landfill units was present.
- Signs of settlement/subsidence within landfills A3-1, A3-4, and A3-8 were noted.

The following maintenance and repairs were conducted before and during the post-closure inspections:

- Located buried at-grade monuments at A3-3 and A3-8 using the land-use restriction coordinates of BN surveyors.
- Located, excavated, and re-covered buried monuments with red-colored rock to aid in visual location.
- Reinstalled one at-grade pad and brass monument at cell A3-4, where the monument had been accidently destroyed. The monument excavation was backfilled with red-colored rock to aid in visual location.
- Backfilled a 0.3-m (1-ft) diameter hole at Landfill A3-8 that posed a safety hazard because of its location.

The following recommendations have been proposed for the sites:

- In order to better identify the buried landfills, it is recommended that the land use restriction coordinates be stamped onto all of the brass markers.
- Landfills A3-1, A3-4, and A3-8 should be surveyed to determine if subsidence is present.

3.5 CAU 426 Cactus Spring Waste Trenches

The following conditions were reported for the site during the post-closure monitoring inspections:

- No evidence of erosion was observed on the cover or staging.
- Small mammals had burrowed under the fence in several areas.
- Vegetation was healthy and well established, with a good diversity of native plant species.

The following maintenance and repairs were conducted before and during the post-closure inspections:

- Backfilled burrows along the fence line.
- Removed tumbleweeds from the area.
- Reinforced sign attachments.

3.6 CAU 427 Area 3 Septic Waste Systems 2, 6

The following conditions were reported for the site during the post-closure monitoring inspections:

- Signs were in place and in good condition.
- No vegetation was observed in the areas of high traffic.
- No surface features affecting the integrity of the cover area were observed.

The following maintenance and repairs were conducted before and during the post-closure inspections:

- Located buried markers using land-use restriction coordinates.
- Exposed sub-grade markers and covered them with red-colored rock to aid in visual location.

3.7 CAU 453 Area 9 UXO Landfill

The following conditions were reported for the site during the post-closure monitoring inspections:

- Perimeter fence, monuments, site postings, and cover were in excellent condition.
- No subsidence, cracks, or erosional features were present since repair of the cover.
- Growth on the landfill cover was sparse and limited to native grasses and shrubs.
- Mammal burrows were observed inside the fence.
- A suspected area of subsidence was observed at the northeast end of trench A9-1 during the first semiannual inspection.

The following maintenance and repairs were conducted before and during the post-closure Inspections:

- Verified and repaired an area of subsidence by adding clean fill to the area.
- Reinforced all sign attachments.

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4.0 REFERENCES

U.S. Department of Energy, Nevada Operations Office. 1997. Tonopah Test Range Closure Sites Revegetation Plan, Nevada, DOE/NV/11718-115 UC-702. Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 1998a. Closure Report for Corrective Action Unit 404: Roller Coaster Sewage Lagoons and North Disposal Trench, Tonopah Test Range, Nevada, DOE/NV/11718-187 UC-702, Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 1998b. Closure Report for Corrective Action Unit 426: Cactus Spring Waste Trenches, Tonopah Test Range, Nevada, DOE/NV/11718-226 UC-702, Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 1999a. Closure Report for Corrective Action Unit 424: Area 3 Landfill Complexes, Tonopah Test Range, Nevada, DOE/NV/11718--283, Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 1999b. Closure Report for Corrective Action Unit 427: Area 3 Septic Waste Systems 2 and 6, Tonopah Test Range, Nevada, DOE/NV--326, Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 1999c. Closure Report for Corrective Action Unit 453: Area 9 UXO Landfill, Tonopah Test Range, Nevada, DOE/NV/11718--284, Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 2001. Closure Report for Corrective Action Unit 407: Roller Coaster RadSafe Area, Tonopah Test Range, Nevada, DOE/NV--694, Las Vegas, NV.

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ATTACHMENT A

POST-CLOSURE INSPECTION PLANS

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CORRECTIVE ACTION UNIT (CAU) 404: ROLLER COASTER LAGOONS AND TRENCH POST-CLOSURE INSPECTION PLAN

The following text appeared in the approved and published Closure Report (CR) for CAU 404: Roller Coaster Sewage Lagoons and North Disposal Trench, Tonopah Test Range, Nevada, Rev. 0, September 1998, DOE/NV/11718-187, UC-702. Las Vegas, Nevada

Post-Closure of the covers is intended to determine:

- If maintenance repairs to the perimeter fence are required.
- If remedial action is necessary to establish a vegetative cover.
- If maintenance and repairs to the engineered cover is required.
- When a cessation to post-closure monitoring can be proposed.

POST-CLOSURE MONITORING

The monitoring will consist of biannual (twice per year) visual inspections of:

- The cover for condition (subsidence, significant erosion, unauthorized excavation, etc.) and plant development.
- The fence and signs to determine if repairs are required.

Additional, nonscheduled inspections may be required after severe weather events such as heavy rainfall, flash flooding, and high winds. Any identified maintenance and repair requirements will be remediated within 90 days of discovery and documented in writing at the time of repair. Additional revegetation work would be conducted during the next revegetation window (October to February).

Intrusion into or sampling of the impacted materials in the East or West Sewage Lagoon is not proposed during the post-closure monitoring period.

Monitoring of the vegetative cover will be conducted during the first, third, and fifth year after revegetation. Monitoring during the first year will determine if germination of seeded plant species has occurred. By the third year, plant establishment will be evaluated. By the fifth year, the objective of determining if burrowing animals have moved onto the site and to what depth they might be expected to penetrate the cover. The erosion condition of the soil will be evaluated using a qualitative erosion condition classification developed by the U.S. Bureau of Land Management: Information gathered will be compared to natural conditions and will be used in assessing whether or not remedial action is necessary so that a viable vegetative cover is established.

ANNUAL REPORTING

An annual report will be prepared that will provide the observations and describe modifications and/or repairs made to the cover and cover area. The annual report will be prepared following the second inspection of each year that post-closure monitoring is conducted. The annual reports will include the following information:

- Discussion of observations.
- Inspection checklist and maintenance record.
- Conclusions and recommendations.

A copy of each annual report will be submitted to the NDEP.

DURATION

The biannual inspections will be performed for five years after the planting of the vegetative covers, and will be documented on inspection forms.

Completion of post-closure monitoring of CAU 404 may be proposed after two consecutive years of visual inspections have not indicated the need to revegetate or provide maintenance to the vegetative covers. Completion of post-closure monitoring may be proposed within five years after the original revegetation of the site and include the removal of the fence since the plants will have attained a maturity to not be significantly affected by the grazing of wild horses.

CAU 407: ROLLER COASTER RADSAFE POST-CLOSURE MONITORING PLAN

The following text appeared in the approved and published Closure Report (CR) for CAU 407: Roller Coaster RadSafe Area, Tonopah Test Range, Nevada, Rev. 1, December 2001, DOE/NV--694. Las Vegas, Nevada

Inspections consist of visually inspecting the cover for signs of erosion, animal burrows, cracks, water ponding, vegetation, and inspecting the fencing and postings. Inspections will be performed twice during the first six months after construction of the cover has been completed. After completion of the quarterly inspections, the cover systems will be inspected and monitored semiannually (twice per year) for the next two years. The frequency after the second year will be determined by NDEP, based on the results of the previous inspections. Any identified maintenance and repair requirements will be remedied within 90 working days of discovery and documented in writing at the time of repair. Results of all inspections in a given year will be addressed in a single annual report. The annual report will include the following information:

- Discussion of observations.
- Inspection checklist and maintenance record.
- Conclusions and recommendations.

A copy of each annual report will be submitted to the NDEP. A copy of the inspection checklist is provided in Appendix B.

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CAU 424: AREA 3 LANDFILL COMPLEXES POST-CLOSURE MONITORING PLAN

The following text appeared in the approved and published Closure Report (CR) for CAU 424: Area 3 Landfill Complexes, Tonopah Test Range, Nevada, Rev. 0, December 1998, DOE/NV/11718--283. Las Vegas, Nevada

Post-Closure of the covers is intended to determine:

- If maintenance repairs to the landfill soil covers are needed.
- If maintenance and repairs to the landfill markers and warning signs are needed.
- If modifications to the use restriction administrative controls are needed.
- If termination of post-closure inspection can be proposed in the future.

POST-CLOSURE INSPECTION

The inspection will consist of biannual (twice per year) visual inspections of:

- The soil cover for indications of subsidence, erosion, unauthorized use, etc.
- The landfill markers and warning signs to verify they are in-place, intact, and readable.
- The inspections will be documented on a checklist (Appendix B) and with photography, if needed.

Repairs to the soil covers (placement and compaction of additional backfill), landfill markers, and warning signs (repair, reposition, and/or replacement) may be required. Additional, non-scheduled inspections may be required after severe weather events such as heavy rainfall, flash flooding, and high winds. Any identified maintenance and repair requirements will be remedied within 90 days of discovery and documented in writing at the time of repair.

ANNUAL REPORTING

An annual report will be prepared that will provide the observations and describe modifications and/or repairs made to the cover and cover area. The annual report will be prepared following the second inspection of each year that post-closure monitoring is conducted. The annual reports will include the following information:

- Discussion of observations.
- Inspection checklist and maintenance record.

- Conclusions and recommendations.

A copy of each annual report will be submitted to the NDEP.

DURATION

The biannual inspections will be performed for five years after the completion of closure activities, and will be documented on inspection forms.

Completion of post-closure monitoring of CAU 424 may be proposed after two consecutive years of visual inspections have not indicated recurrence of subsidence depressions. Completion of post-closure monitoring may be proposed by DOE/NV to the NDEP within five years after the completion of closure activities.

CAU 426: CACTUS SPRING WASTE TRENCHES POST-CLOSURE INSPECTION PLAN

The following text appeared in the approved and published Closure Report (CR) for CAU 426: Cactus Spring Waste Trenches, Tonopah Test Range, Nevada, Rev. 0, August 1998, DOE/NV/ 11718-226-UC-702. Las Vegas, Nevada

Post-Closure of the covers is intended to determine:

- If maintenance repairs to the perimeter fence are required.
- If remedial action is necessary to establish a vegetative cover.
- If maintenance and repairs to the engineered cover is required.
- When a cessation to post-closure monitoring can be proposed.

Post-Closure Monitoring

The monitoring will consist of biannual (twice per year) visual inspections of:

- The cover for condition (subsidence, significant erosion, unauthorized excavation, etc.) and plant development.
- The fence and signs to determine if repairs are required.

Additional, nonscheduled inspections may be required after severe weather events such as heavy rainfall, flash flooding, and high winds. Any identified maintenance and repair requirements will be remediated within 90 days of discovery and documented in writing at the time of repair. Additional revegetation work would be conducted during the next revegetation window.

Intrusion into or sampling of the impacted materials in the East or West Sewage Lagoon is not proposed during the post-closure monitoring period.

Monitoring of the vegetative cover will be conducted during the first, third, and fifth year after revegetation. Monitoring during the first year will determine if germination of seeded plant species has occurred. By the third year, plant establishment will be evaluated. By the fifth year, the objective of determining if burrowing animals have moved onto the site and to what depth they might be expected to penetrate the cover. The erosion condition of the soil will be evaluated using a qualitative erosion condition classification developed by the Bureau of Land Management. Information gathered will be compared to natural conditions and will be used in assessing whether or not remedial action is necessary so that a viable vegetative cover is established.

ANNUAL REPORTING

An annual report will be prepared that will provide the observations and describe modifications and/or repairs made to the cover and cover area. The annual report will be prepared following the second inspection of each year that post-closure monitoring is conducted. The annual reports will include the following information:

- Discussion of observations.
- Inspection checklist and maintenance record.
- Conclusions and recommendations.

A copy of each annual report will be submitted to the NDEP.

DURATION

The biannual inspections will be performed for five years after the planting of the vegetative covers, and will be documented on inspection forms.

Completion of post-closure monitoring of CAU 404 may be proposed after two consecutive years of visual inspections have not indicated the need to revegetate or provide maintenance to the vegetative covers. Completion of post-closure monitoring may be proposed within five years after the original revegetation of the site and include the removal of the fence since the plants will have attained a maturity to not be significantly affected by the grazing of wild horses.

CAU 427: AREA 3 SEPTIC WASTE SYSTEMS 2, 6 POST-CLOSURE MONITORING PLAN

The following text appeared in the approved and published Closure Report (CR) for CAU 427: Area 3 Septic Waste Systems 2 and 6, Tonopah Test Range, Nevada, Rev. 0, July 1999, DOE/NV-- 326. Las Vegas, Nevada

Post-Closure of the covers is intended to determine:

- If maintenance and repairs to the closed leachfield or septic tank soil and asphalt covers are needed.
- If maintenance and repairs to the closed leachfield and septic tank markers and warning signs are needed.
- If modifications to the use restriction administrative controls are needed.
- If termination of post-closure inspection can be proposed in the future.

POST-CLOSURE INSPECTION

The inspection will consist of annual (once per year) visual inspections of:

- The soil and asphalt cover for indications of subsidence, erosion, unauthorized use, etc.
- The leachfield and septic tank markers and warning signs to verify they are in-place, intact, and readable.
- The inspections will be documented on a checklist (Appendix B) and, if needed, with photography.

Repairs to the soil covers (placement and compaction of additional backfill), landfill markers, and warning signs (repair, reposition, and/or replacement) may be required.

Inspections are not required after severe weather events such as heavy rainfall, flash flooding, and high winds, because the leachfield waste is buried in the subsurface. However, any identified maintenance and repair requirements will be remedied within 90 days of discovery and documented in writing at the time of repair.

ANNUAL REPORTING

An annual letter will provide the inspector's observations of CAU 427s land-use restricted areas and describe modifications and/or repairs made to Leachfield A, Leachfield B, pre-1965 Leachfield, 1965-1975 Leachfield, and/or Septic Tank 33-5. The annual post-closure inspection report will be prepared and submitted to NDEP before the completion of the fiscal year in which

the inspection was conducted. The annual reports will include the following information:

- Discussion of observations.
- Inspection checklist and maintenance record.
- Conclusions and recommendations.

A copy of each annual report will be submitted to the NDEP.

DURATION

The annual inspections will be performed for five years after the completion of closure activities, and will be documented on inspection forms.

Completion of post-closure monitoring of CAU 427 may be proposed by the DOE/NV to the NDEP if after two consecutive years of visual inspections, indications of subsidence/depression recurrences have not been detected. Completion of post-closure inspection may be proposed by DOE/NV to the NDEP within five years after the completion of closure activities.

CAU 453: AREA 9 UXO LANDFILL MONITORING PLAN

The following text appeared in the approved and published Closure Report (CR) for CAU 453: Area 9 UXO Landfill, Tonopah Test Range, Nevada, Rev. 0, July 1999, DOE/NV/11718 -- 284. Las Vegas, Nevada

Post-Closure of the covers is intended to determine:

- If maintenance and repairs to the cell soil covers are needed.
- If maintenance and repairs to the perimeter fence, warning signs, and monuments are needed.
- If modifications to the administrative use restrictions are needed.
- If termination of post-closure inspection can be proposed in the future.

POST-CLOSURE INSPECTION

The inspection will consist of biannual (once per year) visual inspections of:

- The cell soil cover for indications of subsidence, erosion, unauthorized use, etc.
- The perimeter fence, warning signs, and monuments for signs of wear disturbance, etc.

The inspections will be documented on a checklist and with photography, if needed. Repairs to the cell soil covers (placement and compaction of additional fill), perimeter fence, warning signs, and monuments (repair, reposition, and/or replacement) may be required. Additional, nonscheduled inspections may be required after severe weather events such as heavy rainfall, flash flooding, and high winds. Any identified maintenance and repair requirements will be remediated within 90 days of discovery and documented in writing at the time of repair.

ANNUAL REPORTING

An annual post-closure inspection report will be prepared that will provide the observations and describe modifications and/or repairs made to the cover and cover area. The annual report will be prepared and submitted to NDEP following the second inspection of each year that post-closure inspection is conducted. The annual reports will include the following information:

- Discussion of observations.
- Inspection checklist and maintenance record.
- Conclusions and recommendations.

DURATION

The biannual inspections will be performed for five years after the completion of closure activities, and will be documented on inspection forms.

Completion of post-closure inspection of CAU 453 may be proposed by DOE/NV to NDEP within five years after the completion of closure activities. Completion of post-closure inspection may also be proposed by DOE/NV to NDEP if two consecutive years of visual inspections do not indicate the recurrence of subsidence depressions.

ATTACHMENT B

INSPECTION CHECKLISTS

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CAU 400: BOMBLET PIT, POST-CLOSURE MONITORING CHECKLIST

Date of Last Inspection: November 6 2001	Reason for Last Inspection: 1st annual insp for 2002
Responsible Agency: NNSA/NV BNER	Project Manager: Jeff Smith BN ER
Inspection Date: 7 May 2002	
Inspector (name, title, organization): Kevin B. Campbell, Technical Lead, BNER	
Assistant Inspector (name, title, organization): NA	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?	✓		Animal burrows backfilled along fence
3. Site maintenance and repair records reviewed.			N/A
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?		✓	NA

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: _____)		✓	NA No signs present
c. Were gates locked?		✓	No locks present

CUA 400: BOMBLET PIT, POST-CLOSURE MONITORING CHECKLIST

	YES	NO	EXPLANATION
3. Waste Unit cover.			
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?	✓		Along fence and inside fence
e. Have the site markers been disturbed by man or natural processes?		✓	
f. Do natural processes threaten to integrity of any cover or site marker?		✓	
g. Other?		✓	
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?		✓	
b. Is there evidence of horses or rabbits on site?		✓	Animal scat present just outside fence
c. Is organic mulch and/or plants adequate to prevent erosion?	✓		
d. Are weedy annual plants present? If yes, are they a problem?		✓	
e. Are seeded plant species found on site?	✓		
f. Is there evidence of plant mortality?		✓	
5. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed (3)			

D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	
5. Is current status/condition of vegetative cover satisfactory?	✓		

6. Rationale for field conclusions: Site in excellent conditions, fence & gate in excellent condition. Vegetation healthy but sparce compared to veg. outside fenced area. Small animal burrows along fence line backfilled.

E. CERTIFICATION

I have conducted an inspection of the Cactus Spring Waste Trenches, CAU 426, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: Kevin B. Campbell	Printed Name: Kevin B. Campbell
Title: BN Technical Lead	Date: 7 May 2002

CAU 400: 5 POINTS LANDFILL, POST-CLOSURE MONITORING CHECKLIST

Date of Last Inspection: November 6, 2001	Reason for Last Inspection:
Responsible Agency: NNSA/NV	Project Manager: Jeff Smith
Inspection Date: 8 May 2002	
Inspector (name, title, organization): Kevin Campbell, Technical Lead, BN Environmental Restoration	
Assistant Inspector (name, title, organization): Mike Krutzik	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. **PREPARATION** (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed	✓		
a. Were anomalies or trends detected on previous inspections?	~~✓~~	✓	
b. Was maintenance performed?	✓		Animal burrows backfilled
3. Site maintenance and repair records reviewed.	~~✓~~	✓	
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?			NA

C. **SITE INSPECTION** (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	NA no signs present
c. Were gates locked?		✓	no lock present

CUA 400: 5 POINTS LANDFILL, POST-CLOSURE MONITORING CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?	✓		Burrows along fence line backfilled
e. Have the site markers been disturbed by man or natural processes?		✓	
f. Do natural processes threaten to integrity of any cover or site marker?		✓	
g. Other?		✓	

4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?		✓	Fencing in excellent shape
b. Is there evidence of horses or rabbits on site?	✓		Horse scat present
c. Is organic mulch and/or plants adequate to prevent erosion?	✓		
d. Are weedy annual plants present? If yes, are they a problem?	✓		Few Russian Thistle present
e. Are seeded plant species found on site?	✓		
f. Is there evidence of plant mortality?		✓	

5. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed ( )			

D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	
5. Is current status/condition of vegetative cover satisfactory?	✓		

6. Rationale for field conclusions: ~~All 12 signs intact~~
Fence, cover in excellent condition, Vegetation very healthy. Minimal animal burrows present along fence line that were backfilled

E. CERTIFICATION

I have conducted an inspection of the Cactus Spring Waste Trenches, CAU 426, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: Kevin Campbell	Printed Name: Kevin Campbell
Title: Technical Lead	Date: ~~8~~ 5/8/02

CAU 404: ROLLER COASTER LAGOONS & N. DISPOSAL TRENCH, POST-CLOSURE MONITORING CHECKLIST

Date of Last Inspection: 6 November 2001	Reason for Last Inspection: Biannual Post-Closure
Responsible Agency: NNSA/NV BNER	Project Manager: Jeff Smith
Inspection Date: 7 May 2002	
Inspector (name, title, organization): Kevin Campbell, Technical Lead, BN ER	
Assistant Inspector (name, title, organization): N/A	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
4. A standard set of color 35mm photographs is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?	✓		signs ~~replaced~~ secured to fence burrows backfilled
3. Site maintenance and repair records reviewed.		✓	NA
a Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?		✓	NA

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	~~All signs~~ Reinforced attachment of all signs to fence
c. Were gates locked?		✓	NA No lock present

CAU 404: ROLLER COASTER LAGOONS & N. DISPOSAL TRENCH, POST-CLOSURE MONITORING CHECKLIST

	YES	NO	EXPLANATION
3. Waste Unit cover.			
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?	✓		several burrows were backfilled
e. Have the site markers been disturbed by man or natural processes?		✓	
f. Do natural processes threaten to integrity of any cover or site marker?		✓	
g. Other?		✓	
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?		✓	Animal
b. Is there evidence of horses or rabbits on site?	✓		Scat present outside fence
c. Is organic mulch adequate to prevent erosion?	✓		
d. Are weedy annual plants present? If yes, are they a problem?		✓	
e. Are seeded plant species found on site?	✓		
f. Is there evidence of plant mortality?		✓	
5. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed ( )			

D. FIELD CONCLUSIONS

1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made: Kevin Cable / NNSA NV			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	
5. Is current status/condition of vegetative cover satisfactory?	✓		

6. Rationale for field conclusions: Cover in good condition, vegetation healthy, larger animal burrows backfilled by hand, all signs securely attached to fence. Gate in excellent condition

E. CERTIFICATION

I have conducted an inspection of the Roller Coaster Sewage Lagoons & North Disposal Trench, CAU 404, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: K. B. Campbell	Printed Name: Kevin Campbell
Title: BN ER Technical Lead	Date: 5/7/02

CAU 407: ROLLER COASTER RADSAFE AREA, POST-CLOSURE MONITORING CHECKLIST

Date of Last Inspection: November 6, 2001	Reason for Last Inspection: 1st Annual inspec of 2002
Responsible Agency: NNSA/NV	Project Manager: Jeff Smith
Inspection Date: 8 May 2002	
Inspector (name, title, organization): Kevin Campbell	
Assistant Inspector (name, title, organization): ~~Katie~~ NA	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
4. A standard set of color 35mm photographs is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?	✓		Fence and cover repair work
b. Was maintenance performed?		✓	scheduled for later 2002
3. Site maintenance and repair records reviewed.		✓	
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?		✓	NA

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	~~All signs in good condition~~ ~~No signs present~~
c. Were gates locked?		✓	No gate at site

CAU 407: ROLLER COASTER RADSAFE AREA, POST-CLOSURE MONITORING CHECKLIST

	YES	NO	EXPLANATION
3. Waste Unit cover.			
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?	✓		Minor erosion rills on side slopes
d. Is there evidence of animal burrowing?	✓		Numerous burrows on cover sideslopes
e. Do natural processes threaten to integrity of any cover or site marker?		✓	
f. Other?		✓	
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?		✓	
b. Is there evidence of horses or rabbits on site?	✓		Horse scat and burrows present
c. Is organic mulch adequate to prevent erosion?	✓		
d. Are weedy annual plants present? If yes, are they a problem?	✓		Some Russian thistles present. Not a problem
e. Are seeded plant species found on site?	✓		
f. Is there evidence of plant mortality?		✓	
5. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed ( )			

D. FIELD CONCLUSIONS

1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?		✓	Repair work scheduled for later 7-2002
4. Is other maintenance/repair necessary?	✓		Some cover work, backfill burrows, fence tensioning
5. Is current status/condition of vegetative cover satisfactory?	✓		

6. Rationale for field conclusions: Cover in good condition

E. CERTIFICATION

I have conducted an inspection of the Roller Coaster Sewage Lagoons & North Disposal Trench, CAU 404, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: Kevin Campbell	Printed Name: Kevin Campbell
Title: BN ER Technical Lead	Date: 5/8/02

CAU 424: AREA 3 LANDFILL COMPLEX, POST-CLOSURE INSPECTION CHECKLIST

Date of Last Inspection: November 6, 2001	Reason for Last Inspection: 1st Annual Inspec 4 2002
Responsible Agency: NNSA/NV	Project Manager: Jeff Smith BN ER
Inspection Date: 8 May 2002	
Inspector (name, title, organization): Kevin Campbell, Technical Lead, BN ER	
Assistant Inspector (name, title, organization): NA	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. **PREPARATION** (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?	✓		
b. Was maintenance performed?	✓		Relocated 7 at grade markers
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?		✓	NA

C. **SITE INSPECTION** (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	All signs/markers in good condition
c. Were gates locked?		✓	NA all site open access

CAU 424: AREA 3 LANDFILL COMPLEX, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?	✓		some small animal burrows, backfilled
e. Have the site markers been disturbed by man or natural processes?		✓	
f. Is the vegetation on the cover?	✓		
g. Do natural processes threaten to integrity of any cover or site marker?		✓	
h. Other?		✓	
4. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed ( )			

D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	
5. Is current status/condition of vegetative cover satisfactory?	✓		

6. Rationale for field conclusions: All monuments, at-grade markers, and signs located and in excellent condition. Vegetation on landfill cells in untrafficked areas in excellent condition. Some small animal burrows present at the base of monuments were backfilled.

E. CERTIFICATION

I have conducted an inspection of the Area 3 Landfill Complex, CAU 424, at the TTR in accordance with the Post-Closure Inspection Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: Kevin Campbell	Printed Name: Kevin Campbell
Title: BNER Technical Lead.	Date: 5/8/2006

CAU 426: CACTUS SPRING WASTE TRENCHES, POST-CLOSURE MONITORING CHECKLIST

Date of Last Inspection: November 6, 2001	Reason for Last Inspection: 1st Annual Inspec.
Responsible Agency: NNSA/NV	Project Manager: Jeff Smith
Inspection Date: 5/8/02	
Inspector (name, title, organization): Kevin Campbell	
Assistant Inspector (name, title, organization): N/A	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection
3. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
4. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
5. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
6. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. **PREPARATION** (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.		✓	NA
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?		✓	

C. **SITE INSPECTION** (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	All signs secure
c. Were gates locked?		✓	No lock on gate

CUA 426: CACTUS SPRING WASTE TRENCHES, POST-CLOSURE MONITORING CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?	✓		Many small burrows present on cover
e Have the site markers been disturbed by man or natural processes?		✓	
f. Do natural processes threaten to integrity of any cover or site marker?		✓	
g. Other?		✓	

4. Vegetative cover			
a. Is perimeter fence or mesh fencing damaged?		✓	
b. Is there evidence of horses or rabbits on site?	✓		Horse scat outside fence
c. Is organic mulch and/or plants adequate to prevent erosion?	✓		
d. Are weedy annual plants present? If yes, are they a problem?	✓		Some Russian thistle present Do not pose a problem
e. Are seeded plant species found on site?	✓		
f. Is there evidence of plant mortality?	✓		Some plants eaten by small animals

5. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed ( )			

D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	
5. Is current status/condition of vegetative cover satisfactory?	✓		

6. Rationale for field conclusions: Vegetation sparse but healty. Fencing and signs in good condition. Cover in excellent condition. Many small animal burrows backfilled along fence line and on cover. All signs reinforced.

E. CERTIFICATION

I have conducted an inspection of the Cactus Spring Waste Trenches, CAU 426, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: Kevin Campbell	Printed Name: Kevin Campbell
Title: BAER	Date: 5/8/02

CAU 427: AREA 3 SEPTIC WASTE SYSTEMS 2 & 6, POST-CLOSURE MONITORING CHECKLIST

Date of Last Inspection: November 6, 2001	Reason for Last Inspection: 2nd Biannual Insp.
Responsible Agency: NNSA/NV	Project Manager: Jeff Smith
Inspection Date: 7 May 2002	
Inspector (name, title, organization): Kevin Campbell Technical Lead BN	
Assistant Inspector (name, title, organization): N/A	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?	✓		

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
2. Security signs.			
a. Displacement of site markers, boundary markers, or monuments? (disturbed by man or natural processes?)		✓	All monuments located
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	
c. Were all subsurface markers detected? (i.e., using a magnatometer or equivalent)	✓		

CAU 427: AREA 3 SEPTIC WASTE SYSTEMS 2 & 6, POST-CLOSURE MONITORING CHECKLIST

	YES	NO	EXPLANATION
3. Soil/asphartt cover.			
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion near use restriction boundaries?		✓	
d. Is there evidence of animal burrowing?		✓	
e. Is there vegetation?		✓	
f. Do natural processes threaten to integrity of any cover or site marker?		✓	
g. Is there evidence suggesting unauthorized excavations have taken place?		✓	
e. Other?		✓	
4. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed (6)			

D. FIELD CONCLUSIONS

1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	

5. Rationale for field conclusions:
All signs in excellent condition, all corner monuments visible and located.
No vegetation due to heavy traffic. No subsidence. Excellent overall condition.

E. CERTIFICATION

I have conducted an inspection of the Cactus Spring Waste Trenches, CAU 426, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: Kevin Campbell	Printed Name: Kevin Campbell
Title: Technical Level	Date: 7 May 2002

CAU 453: AREA 9 UXO LANDFILL, POST-CLOSURE INSPECTION CHECKLIST

Date of Last Inspection: November 6, 2001	Reason for Last Inspection: 1st annual inspection 2002
Responsible Agency: NNSA/NV	Project Manager: Jeff Smith
Inspection Date: 8 May 2002	
Inspector (name, title, organization): Kevin Campbell, Technical Lead, BN ER	
Assistant Inspector (name, title, organization): Mike Kruzic	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. **PREPARATION** (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?	✓		
b. Was maintenance performed?	✓		Additional Fill added to one cell
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?		✓	

C. **SITE INSPECTION** (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	All 12 signs in excellent shape.
c. Were gates locked?		✓	No lock present

CAU 453: AREA 9 UXO LANDFILL, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a Is there evidence of settling?			
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?	✓		minor burrows inside fence
e. Have the site markers been disturbed by man or natural processes?		✓	
f. Is vegetation present?	✓		
g. Do natural processes threaten to integrity of any cover or site marker?		✓	
h. Other?		✓	
4. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed ( )			

D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	
5. Is current status/condition of vegetative cover satisfactory?	✓		

6. Rationale for field conclusions: All signs reinforced on chain link fence.
Minimal number of small animal burrows were backfilled
Cover over cells in excellent condition
Pile of soil at west end of site still present

E. CERTIFICATION

I have conducted an inspection of the Area 9 UXO Landfill, CAU 453, at the TTR in accordance with the Post-Closure Inspection Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: Kevin Campbell	Printed Name: Kevin Campbell
Title: BN ER Technical Lead	Date: 8/5/02

CAU 400: BOMBLET PIT, POST-CLOSURE MONITORING CHECKLIST

Date of Last Inspection: 5/7/2002	Reason for Last Inspection: 2nd Annual Insp.
Responsible Agency: NNSA/NV	Project Manager: Jeff Smith
Inspection Date: 5/Nov 2002	
Inspector (name, title, organization): Brad Jackson, TM, BN	
Assistant Inspector (name, title, organization): N/A	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?	✓		

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	
c. Were gates locked?	✓		

CAU 400: BOMBLET PIT, POST-CLOSURE MONITORING CHECKLIST

	YES	NO	EXPLANATION
3. Waste Unit cover.			
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?		✓	
e. Have the site markers been disturbed by man or natural processes?		✓	
f. Do natural processes threaten to integrity of any cover or site marker?		✓	
g. Other?		✓	
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?		✓	
b. Is there evidence of horses or rabbits on site?	✓		some burrows, horses or cattle
c. Is organic mulch and/or plants adequate to prevent erosion?		✓	
d. Are weedy annual plants present? If yes, are they a problem?		✓	
e. Are seeded plant species found on site?		✓	
f. Is there evidence of plant mortality?		✓	
5. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed ( )			

D. FIELD CONCLUSIONS

1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	
5. Is current status/condition of vegetative cover satisfactory?		✓	

6. Rationale for field conclusions: Site is in good condition and vegetation is well established. Propose removal of fence.

E. CERTIFICATION

I have conducted an inspection of the Cactus Spring Waste Trenches, CAU 426, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: [signature]	Printed Name: Brad Jackson
Title: TM	Date: 5/11/2002

CAU 400: 5 POINTS LANDFILL, POST-CLOSURE MONITORING CHECKLIST

Date of Last Inspection: 5/8/2002	Reason for Last Inspection: 2nd Annual Inspec.
Responsible Agency: NNSA/NV	Project Manager: Jeff Smith
Inspection Date: 5 Nov 02	
Inspector (name, title, organization): Brad Jackson, TM, BN	
Assistant Inspector (name, title, organization): N/A	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
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3. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?	✓		

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	
c. Were gates locked?			

CAU 400: 5 POINTS LANDFILL, POST-CLOSURE MONITORING CHECKLIST

	YES	NO	EXPLANATION
3. Waste Unit cover.			
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?	✓	✓	minor
e. Have the site markers been disturbed by man or natural processes?		✓	
f. Do natural processes threaten to integrity of any cover or site marker?		✓	
g. Other?		✓	
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?		✓	
b. Is there evidence of horses or rabbits on site?	✓		minor rabbit burrows, horses outside
c. Is organic mulch and/or plants adequate to prevent erosion?		✓	
d. Are weedy annual plants present? If yes, are they a problem?		✓	
e. Are seeded plant species found on site?		✓	
f. Is there evidence of plant mortality?		✓	
5. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed ( )			

D. FIELD CONCLUSIONS

1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	
5. Is current status/condition of vegetative cover satisfactory?		✓	

6. Rationale for field conclusions: Site is in good condition and vegetation is well established. Propose removal of fence.

E. CERTIFICATION

I have conducted an inspection of the Cactus Spring Waste Trenches, CAU 426, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: [signature]	Printed Name: Brad Jackson
Title: TM	Date: 5/11/2002

CAU 404: ROLLER COASTER LAGOONS & N. DISPOSAL TRENCH, POST-CLOSURE MONITORING CHECKLIST

Date of Last Inspection: 5/8/2002	Reason for Last Inspection: 2nd Annual Inspect
Responsible Agency: NNSA/NV	Project Manager: Jeff Smith
Inspection Date: 5 Nov 02	
Inspector (name, title, organization): Brad Jackson, TM, IBN	
Assistant Inspector (name, title, organization): N/A	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
4. A standard set of color 35mm photographs is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. **PREPARATION** (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	* During 2002 visit of site previous inspection
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?	✓		

C. **SITE INSPECTION** (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	
c. Were gates locked?	✓		

CAU 404: ROLLER COASTER LAGOONS & N. DISPOSAL TRENCH, POST-CLOSURE MONITORING CHECKLIST

	YES	NO	EXPLANATION
3. Waste Unit cover.			
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?	✓		* Minor
e. Have the site markers been disturbed by man or natural processes?		✓	
f. Do natural processes threaten to integrity of any cover or site marker?		✓	
g. Other?		✓	
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?		✓	
b. Is there evidence of horses or rabbits on site?	✓		* rabbit burrows and horses off site.
c. Is organic mulch adequate to prevent erosion?		✓	
d. Are weedy annual plants present? If yes, are they a problem?		✓	
e. Are seeded plant species found on site?		✓	
f. Is there evidence of plant mortality?		✓	
5. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed ( )			

D. FIELD CONCLUSIONS

1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	
5. Is current status/condition of vegetative cover satisfactory?		✓	

6. Rationale for field conclusions: Site is in good condition.

E. CERTIFICATION

I have conducted an inspection of the Roller Coaster Sewage Lagoons & North Disposal Trench, CAU 404, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: Brad Jackson	Printed Name: Brad Jackson
Title: TM	Date: 5/11/2002

CAU 407: ROLLER COASTER RADSAFE AREA, POST-CLOSURE MONITORING CHECKLIST

Date of Last Inspection: 5/8/2002	Reason for Last Inspection: 2nd Annual Inspec.
Responsible Agency: NNSA/NV	Project Manager: Jeff Smith
Inspection Date: 5/Nov 02	
Inspector (name, title, organization): Brad Jackson, TM, BN	
Assistant Inspector (name, title, organization): N/A	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
4. A standard set of color 35mm photographs is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. **PREPARATION** (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	* Cover repaired prior to inspection
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?	✓		

C. **SITE INSPECTION** (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 9)		✓	
c. Were gates locked?	✓		

CAU 407: ROLLER COASTER RADSAFE AREA, POST-CLOSURE MONITORING CHECKLIST

	YES	NO	EXPLANATION
3. Waste Unit cover.			
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?		✓	
e. Do natural processes threaten to integrity of any cover or site marker?		✓	
f. Other?		✓	
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?		✓	
b. Is there evidence of horses or rabbits on site?		✓	* around edge of fence
c. Is organic mulch adequate to prevent erosion?		✓	
d. Are weedy annual plants present? If yes, are they a problem?		✓	
e. Are seeded plant species found on site?		✓	
f. Is there evidence of plant mortality?		✓	
5. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed ( )			

D. FIELD CONCLUSIONS

1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	
5. Is current status/condition of vegetative cover satisfactory?	✓		* No vegetation present on cover

6. Rationale for field conclusions: Minor erosion and irregularities on the cover were repaired during 2002. Currently no vegetation is present.

E. CERTIFICATION

I have conducted an inspection of the Roller Coaster Sewage Lagoons & North Disposal Trench, CAU 404, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: [signature]	Printed Name: Brad Jackson
Title: TM	Date: 5/11/2002

CAU 424: AREA 3 LANDFILL COMPLEX, POST-CLOSURE INSPECTION CHECKLIST

Date of Last Inspection: 5/8/2002	Reason for Last Inspection: 2nd Annual Inspec.
Responsible Agency: NNSA/NV	Project Manager: Jeff Smith
Inspection Date: 5 Nov 02	
Inspector (name, title, organization): Brad Jackson, TM, BN	
Assistant Inspector (name, title, organization): N/A	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?	✓		

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	
c. Were gates locked?	N/A		

CAU 424: AREA 3 LANDFILL COMPLEX, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?	✓		Cell A3-1, A3-4, & A3-8 show signs of settlement/subsidence
b. Is there cracking?	✓		Cell A3-1 has a series of perpendicular cracks in the area of subsidence.
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?		✓	* minor
e. Have the site markers been disturbed by man or natural processes?		✓	
f. Is the vegetation on the cover?	✓		vegetation is on the cover
g. Do natural processes threaten to integrity of any cover or site marker?		✓	
h. Other?		✓	
4. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed ( )			

D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?		✓	additional evaluation should be made to determine if subsidence has occurred
4. Is other maintenance/repair necessary?	✓		* Possibly, if settlement is occurring
5. Is current status/condition of vegetative cover satisfactory?	✓		

6. Rationale for field conclusions: Signs of settlement/subsidence is evident within cells A3-1, A3-4, and A3-8. A series of perpendicular cracks is present in the potentially subsided area within cell A3-1.
Several site markers do not contain the use restriction wording.
Propose minor maintenance for 2003.

E. CERTIFICATION

I have conducted an inspection of the Area 3 Landfill Complex, CAU 424, at the TTR in accordance with the Post-Closure Inspection Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: Brad Jackson	Printed Name: Brad Jackson
Title: TM	Date: 5/11/02

CAU 426: CACTUS SPRING WASTE TRENCHES, POST-CLOSURE MONITORING CHECKLIST

Date of Last Inspection: 5/8/02	Reason for Last Inspection: 2nd Annual Inspec.
Responsible Agency: NNSA/NV	Project Manager: Jeff Smith
Inspection Date: 5 Nov 02	
Inspector (name, title, organization): Brad Jackson, TM, B&V	
Assistant Inspector (name, title, organization): N/A	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
3. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
4. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
5. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
6. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. **PREPARATION** (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?	✓		

C. **SITE INSPECTION** (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	
c. Were gates locked?	✓		

CAU 426: CACTUS SPRING WASTE TRENCHES, POST-CLOSURE MONITORING CHECKLIST

	YES	NO	EXPLANATION
3. Waste Unit cover.			
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?		✓	* Minor
e. Have the site markers been disturbed by man or natural processes?		✓	
f. Do natural processes threaten to integrity of any cover or site marker?		✓	
g. Other?		✓	
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?		✓	
b. Is there evidence of horses or rabbits on site?		✓	* Minor burrows & horses outside of fence.
c. Is organic mulch and/or plants adequate to prevent erosion?		✓	
d. Are weedy annual plants present? If yes, are they a problem?		✓	
e. Are seeded plant species found on site?		✓	
f. Is there evidence of plant mortality?		✓	
5. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed ( )			

D. FIELD CONCLUSIONS

1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	
5. Is current status/condition of vegetative cover satisfactory?	✓		

6. Rationale for field conclusions: Minor repair to the fencing & signage was completed during 2002. Presently the site is in good condition.

E. CERTIFICATION

I have conducted an inspection of the Cactus Spring Waste Trenches, CAU 426, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: [signature]	Printed Name: B. J. Jarboe
Title: TM	Date: 11/5/2002

CAU 427: AREA 3 SEPTIC WASTE SYSTEMS 2 & 6, POST-CLOSURE MONITORING CHECKLIST

Date of Last Inspection: 5/7/2002	Reason for Last Inspection: 2nd Annual Inspec.
Responsible Agency: NNSA/NV	Project Manager: Jeff Smith
Inspection Date: 5 Nov 02	
Inspector (name, title, organization): Brad Jackson, TM, BN	
Assistant Inspector (name, title, organization): N/A	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
2. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
3. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?	✓		

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
2. Security signs.			
a. Displacement of site markers, boundary markers, or monuments? (disturbed by man or natural processes?)		✓	* All use restriction boundary locations
b. Have any signs been damaged or removed? (Number of signs replaced: 0)		✓	
c. Were all subsurface markers detected? (i.e., using a magnatometer or equivalent)	✓		

CAU 427: AREA 3 SEPTIC WASTE SYSTEMS 2 & 6, POST-CLOSURE MONITORING CHECKLIST

3. Soil/asphalt cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion near use restriction boundaries?		✓	
d. Is there evidence of animal burrowing?		✓	
e. Is there vegetation?		✓	
f. Do natural processes threaten to integrity of any cover or site marker?		✓	
g. Is there evidence suggesting unauthorized excavations have taken place?		✓	
e. Other?		✓	
4. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed (6)			

D. FIELD CONCLUSIONS

1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	

5. Rationale for field conclusions: Sites are in good condition and all boundary monuments were located.

E. CERTIFICATION

I have conducted an inspection of the Cactus Spring Waste Trenches, CAU 426, at the TTR in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: RL Jackson	Printed Name: B L Jackson
Title: TM	Date: 5/11/2022

CAU 453: AREA 9 UXO LANDFILL, POST-CLOSURE INSPECTION CHECKLIST

Date of Last Inspection: 5/8/2002	Reason for Last Inspection: 2nd Annual Inspec.
Responsible Agency: NNSA/NV	Project Manager: Jeff Smith
Inspection Date: 5 Nov 02	
Inspector (name, title, organization): Brad Jackson, TM, BN	
Assistant Inspector (name, title, organization): N/A	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
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3. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
4. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
5. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. **PREPARATION** (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.	✓		
a. Has site repair resulted in a change from as-built conditions?		✓	
b. Are revised as-builts available that reflect repair changes?	✓		

C. **SITE INSPECTION** (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?		✓	
b. Are there any new roads or trails?		✓	
c. Has there been a change in the position of nearby washes?		✓	
d. Has there been lateral excursion or erosion/deposition of nearby washes?		✓	
e. Are there new drainage channels?		✓	
f. Change in surrounding vegetation?		✓	
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?		✓	
b. Have any signs been damaged or removed? (Number of signs replaced: 4)		✓	
c. Were gates locked?	✓		

CAU 453: AREA 9 UXO LANDFILL, POST-CLOSURE INSPECTION CHECKLIST

	YES	NO	EXPLANATION
3. Waste Unit cover.			
a. Is there evidence of settling?		✓	
b. Is there cracking?		✓	
c. Is there evidence of erosion around the cap (wind or water)?		✓	
d. Is there evidence of animal burrowing?		✓	
e. Have the site markers been disturbed by man or natural processes?		✓	
f. Is vegetation present?		✓	
g. Do natural processes threaten to integrity of any cover or site marker?		✓	
h. Other?		✓	
4. Photo Documentation			
a. Has a photo log been prepared?	✓		
c. Number of photos exposed ( )			
D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)		✓	
Person/Agency to whom report made:			
2. Are more frequent inspections required?		✓	
3. Are existing maintenance/repair actions satisfactory?	✓		
4. Is other maintenance/repair necessary?		✓	
5. Is current status/condition of vegetative cover satisfactory?		✓	
6. Rationale for field conclusions: Site is in good condition.			

E. CERTIFICATION

I have conducted an inspection of the Area 9 UXO Landfill, CAU 453, at the TTR in accordance with the Post-Closure Inspection Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: [signature]	Printed Name: Brad Jackson
Title: TM	Date: 5/11/2002

ATTACHMENT C

FIELD NOTES

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CAU 404 Post-Closure Monitoring & Maintenance

0530 Arrived on site CAU 404 Roller Coaster Lagoons
Personel Joe Jablonski - Laborer
Michael Fletcher - Laborer
Kevin Campbell - TL
Crane safety briefing - covered slip trip fall, biological hazards.
Reinforced sign attachment to fencing. 7 signs in total all legible
Burned several barrows along fence line and a few of cover
Some horse droppings present outside of fence line. Observed mouse at toe of cover.
Vegetation sparse but healthy. All native species of plants.
Fence in excellent condition.
Each sign is now attached to fence/chicken wire by six hogrings.
1400 Depart site

1420 Arrive at Bomblet CAU 400
Gate/Fence in excellent condition
No signs present.
Laborers back filling burrows ~~to~~ along fence line
Horse droppings and coyote scat present outside of fenced area
Vegetation ~~and~~ healthy but sparse inside fenced area. Majority of species appear native, no thistle present

SIGNATURE

Kevin Campbell

DISCLOSED TO AND UNDERSTOOD BY DATE WITNESS DATE

Work continued to Page _____

DATE 5-7-02

1700 Arrived on site at CAU 427 Area 3.
Heavily traveled area.
All posted signs in excellent condition. Four signs in all.
Subsurface corner marked for septic leachfield recently relocated and visually enhanced to make locating easier. Contrasting red rock marked corner locations.
A total of 21 marker locations were observed.
16 corner locations for 4 leachfields and
5 - 4 corner and 1 center locations for a closed UST.

630 Arrive at 407 Roller Coaster RadSafe site

Fence in fare condition barbed wire not taught. Tee posts all in good condition

Vegetation inside fence healthy looking some invasive non native species present

Cover is sound with plants & mulch present on top.

Many small animal burrows present in cover side slopes

Some erroson & rills present on cover side slopes.

All signs in good condition and firmly attached to tee posts.

No chicken wire present only 3 strand barbed wire

Nine signs total

Cover surface/top somewhat hummocky

640 Depart site

730 Arrive at 5 Points Landfill

Healthy looking vegetation

Fence in excellent condition

No lock on gate

No signs on fence

Laborers backfilling animal burrows and raking/removing debris

Signs of horses on site, scat

Very little debris present inside fence

805 Depart site

Work continued to Page 36

SIGNATURE Kevin Campbell

DATE 5-8-02

DISCLOSED TO AND UNDERSTOOD BY

DATE

WITNESS

DATE

 PROJECT NO.

Work continued from Page 35 **BOOK NO.**

0813 Arrive at CAU 453 Area 9 UXO
Laborers reinforcing attachment of signs
Vegetation inside fence sparse but healthy.
Monuments for landfill cells in excellent conditions
Chain link fence in excellent shape
No lock on gate
Signs all legible and in excellent shape
Many animal burrows present inside fence. Fence does not restrict access of small mamals. Burrows were not backfilled.
0845 Depart site.

0930 Arrive at CAU 426 Cactus Spring Waste Trenches
Vegetation inside fence very healthy.
Fencing & signs in excellent condition
Laborers reinforcing sign attachments, backfilling burrows, and clearing tumble weeds.
No lock on gate. Backfilled many small animal burrows
10:00 Depart site

10:20 Arrive at 424 site
A3-1 Small animal burrows at base of monuments. All burrows backfilled. Vegetation and monument and signs all in good condition
A3-2 Monuments, sign in good condition
A3-3 3 above grade monuments in good condition. 3 at grade monuments located and in good condition. 3 at-grade monuments for small earlier waste cell also located and in excellent condition.
A3-4 All 5 above-grade and 1 at-grade monuments in excellent cond. Veg. healthy
A3-5 All 4 above-grade monuments and signs in excellent cond. Veg healthy
A3-6 All 4 above-grade monuments and signs in excellent cond. Veg healthy
A3-8 All 4 at-grade monuments located and in excellent cond. No veg high traffic area.

Work continued to Page N/A

SIGNATURE [signature] DATE 5-8-02

DISCLOSED TO AND UNDERSTOOD BY DATE WITNESS DATE

5 November 2002 - TTR Post Closure Inspections - second for 2002

CAU 424 Cx

0815 A3-1

All seven monuments and signs are present and in good condition. Vegetation is present but sparse. The central portion of the landfill cell appears to be lower than the surrounding ground surface. The area of possible subsidence also contains numerous small cracks that traverse the site in a generally North & South orientation. No signs of erosion. Coordinates are not stamped on monument

0842 A3-2

All four monuments and signs are present and in good condition. Vegetation is present. No signs of subsidence or erosion are present. Coordinates are not stamped on the monuments

0907 A3-3

All three above-grade monuments and all three at-grade monuments within the Area-3 fence are present and in good condition. No signs of erosion or subsidence are present. Coordinates are not stamped on the monuments.

0919 A3-4

All four above-grade monuments and two at-grade monuments are present and in good condition. Coordinates are not stamped on the above-grade monuments. There appears to be a small area of subsidence in the west central area of the site. Some small North-South oriented cracks are present in this area.

SIGNATURE [signature] DATE 11/5/03

DISCLOSED TO AND UNDERSTOOD BY DATE WITNESS DATE

TTR PCI NNSA 502 continued

0928 A3-5

All four above-grade monuments are present and in good condition. Vegetation is present. No signs of erosion or subsidence is present. Coordinates are not stamped on the monuments.

0942 A3-6

All four above-grade monuments are present and in good condition. Vegetation is present. No signs of erosion or subsidence are present. Coordinates are not stamped on the monuments.

A3-7

No inspection required

0958 A3-8

The southwest corner at-grade monument was removed during corrective actions for CAU 490. The three remaining at-grade monuments are present and in good condition. An area of subsidence is present in the central portion of the site. The area is elongated and oriented generally North-south. The south portion of the area of subsidence has caved in to form a ~1 foot diameter hole exposing buried debris (sheet metal & pipe). This area of subsidence was reported during the CAU 490 fieldwork, at the direction of the NNSA TM. The caved-in area posed a safety hazard due to its location in a high-traffic area.

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DATE 11/5/03

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TTR PCI Nov 5, 02 continued

1045 CAU 426

Fence and signage are in good condition. Some animal burrows are present along the fence line. The cover is in good condition and no signs of erosion or subsidence were observed. Vegetation on the cover and within the fence line are in good condition.

1352 CAU 400

Five-Points Landfill

Vegetation is well established and the site is in good condition. Propose to remove the site fencing during 2003.

1447 Bomblet Pit

Vegetation is well established and the site is in good condition. Numerous bomblets and bomblet fragments are present on the ground surface within and outside of the site fencing. Propose to remove the site fencing and remove metal fragments during 2003.

1532 CAU 407

Roller Coaster Radiation

Fencing and signage is in good condition. The cover is in excellent condition (regrowth in some areas) and no signs of erosion subsidence were observed. No vegetation is present on the cover.

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TTR FCI Nov 5, 02 continued

1603 CAV 404

Gate, fencing, and signage are in good condition. The cover is in good condition and vegetation is well established on all parts of the cover. No erosion or subsidence is present on the cover. Repairs made during 2002 were effective. Some animal burrows are present at the site. Evidence of horses is present along the fence exterior.

1641 CAV 453

Gate, fence, and signage are in good condition. Vegetation within the fence is well established, except for the area of subsidence that was repaired in 2002. No vegetation is present in this area. No subsidence is present on any of the landfill cells. Some minor burrows and signs of horses outside of the fence are present.

1712 CAV 427

All landfield monuments/markers were located and are in good condition. No signs of erosion or unapproved excavation were observed. All use restriction signage is in place and in good condition.

FOR

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DATE 11/5/03

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ATTACHMENT D

PHOTOGRAPHS

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PHOTOGRAPH LOG

PHOTO NUMBER	DATE	DESCRIPTION
1	05/07/2002	Corrective Action Unit (CAU) 400 Bomblet Pit looking east.
2	11/05/2002	CAU 400 Bomblet Pit looking east.
3	05/08/2002	CAU 400 Five Points Landfill looking east.
4	11/05/2002	CAU 400 Five Points Landfill looking east
5	05/07/2002	CAU 404 Roller Coaster Lagoons and Trench looking east.
6	11/05/2002	CAU 404 Roller Coaster Lagoons and Trench looking east.
7	05/08/2002	CAU 407 Roller Coaster RadSafe Area before repairs.
8	05/08/2002	CAU 407 Roller Coaster RadSafe Area during repairs.
9	05/08/2002	CAU 407 Roller Coaster RadSafe Area during repairs.
10	11/05/2002	CAU 407 Roller Coaster RadSafe Area after repairs.
11	05/08/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-1, western edge looking north.
12	11/05/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-1, western edge looking north.
13	05/08/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-2, looking north.
14	11/05/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-2, looking north.
15	05/08/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-3, western edge looking north.
16	11/05/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-3, western edge looking north.
17	11/05/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-3, at-grade monuments, eastern edge looking west.
18	11/05/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-3, at-grade monuments, eastern edge looking west.
19	05/08/2002	CAU 424 Small Landfill Cell east of Cell A3-3, looking west.
20	11/05/2002	CAU 424 Small Landfill Cell east of Cell A3-3, looking east.

PHOTO NUMBER	DATE	DESCRIPTION
21	05/08/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-4, western edge looking south.
22	11/05/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-4, western edge looking south.
23	04/24/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-4, locating and unearthing at-grade markers covered by the road.
24	04/24/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-4, marker covered with red-colored rock for high visibility.
25	05/08/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-5, looking north over landfill cells.
26	11/05/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-5, looking north over landfill cells.
27	05/08/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-6, looking north over landfill cells.
28	11/05/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-6, looking north over landfill cells.
29	05/08/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-8, at grade monuments, looking south over landfill cells.
30	11/05/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-8, looking southeast over landfill cells.
31	05/08/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-8. Picture of a hole that developed. This hole was repaired after its discovery, since it was a safety hazard.
32	05/08/2002	CAU 424 Area 3 Landfill Complexes Landfill Cell A3-8, looking west over subsided area.
33	05/08/2002	CAU 426 Cactus Spring Waste Trenches, looking east over cover.
34	11/05/2002	CAU 426 Cactus Spring Waste Trenches, looking east over cover.
35	04/23/2002	CAU 424 Area 3 Landfill Complexes. Locating, identifying, and removing soil from around at-grade monuments for Cell east of Cell A3-3.

PHOTO NUMBER	DATE	DESCRIPTION
36	04/23/2002	CAU 424 Area 3 Landfill Complexes. Backfilling area around at-grade monuments with red-colored rock for high visibility.
37	04/25/2002	CAU 427 Area 3 Septic Waste Systems 2, 6. Located and exposed buried septic tank #33-5 marker.
38	04/25/2002	CAU 427 Area 3 Septic Waste Systems 2, 6. Exposing the septic tank marker and backfilling with red-colored rock for better visibility.
39	05/07/2002	CAU 427 Area 3 Septic Waste Systems 2, 6, looking south over buried leachfield A and B.
40	07/09/2002	CAU 427 Area 3 Septic Waste Systems 2, 6, looking north over buried leachfield A and B.
41	05/07/2002	CAU 453 Area 9 UXO Landfill, looking east over repaired landfill cell A9-1.
42	11/05/2002	CAU 453 Area 9 UXO Landfill, looking east over repaired landfill cell A9-1.

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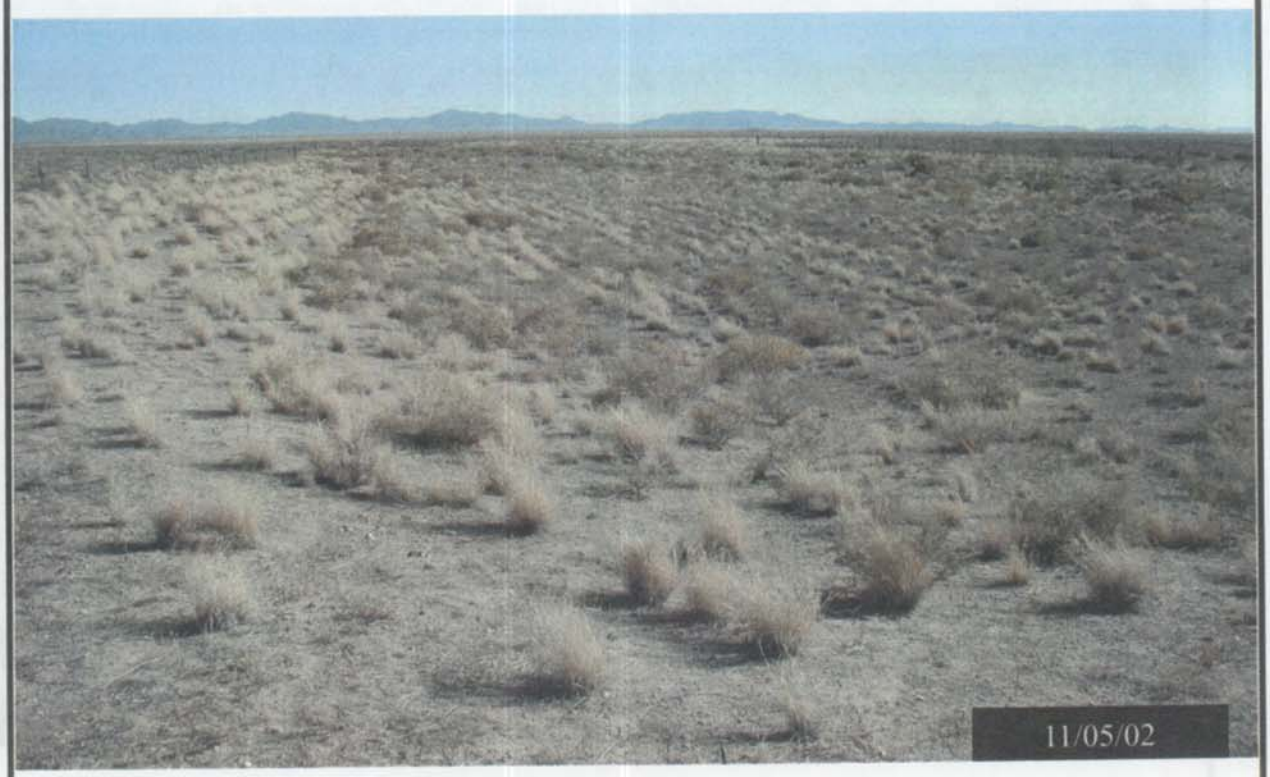

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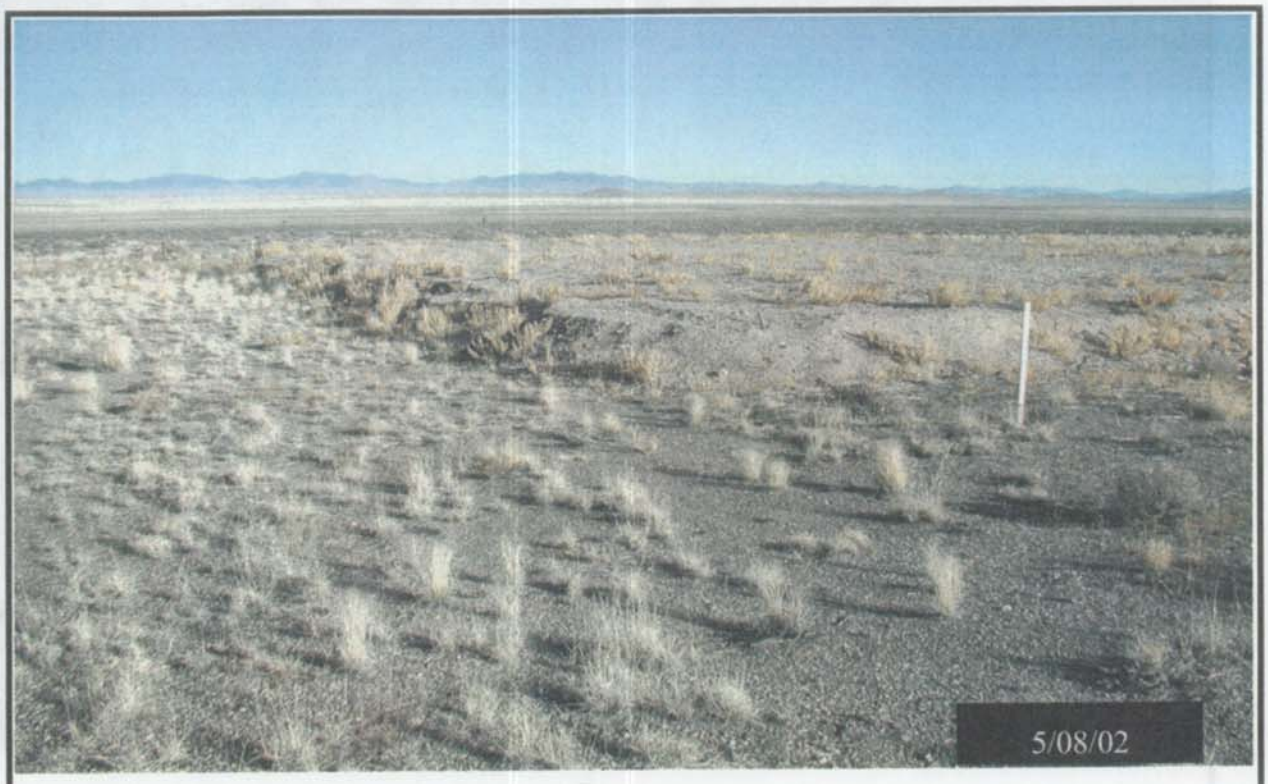

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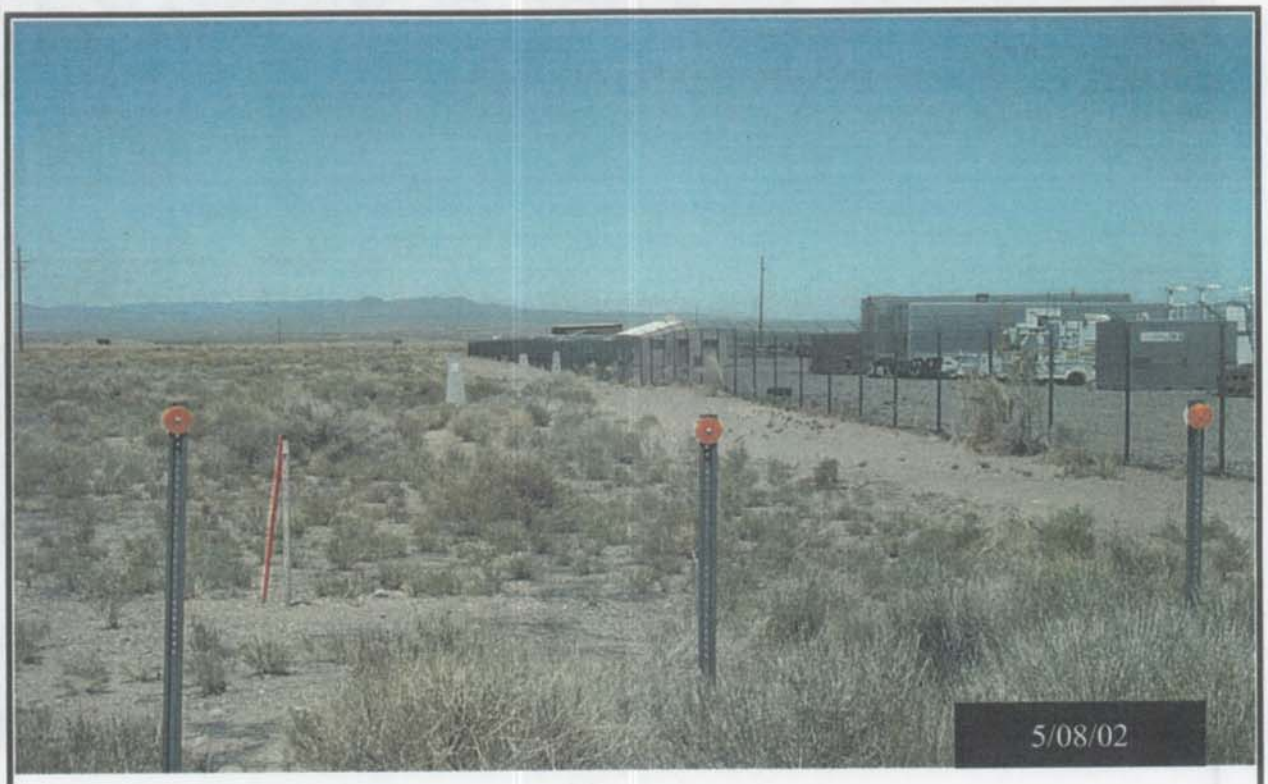

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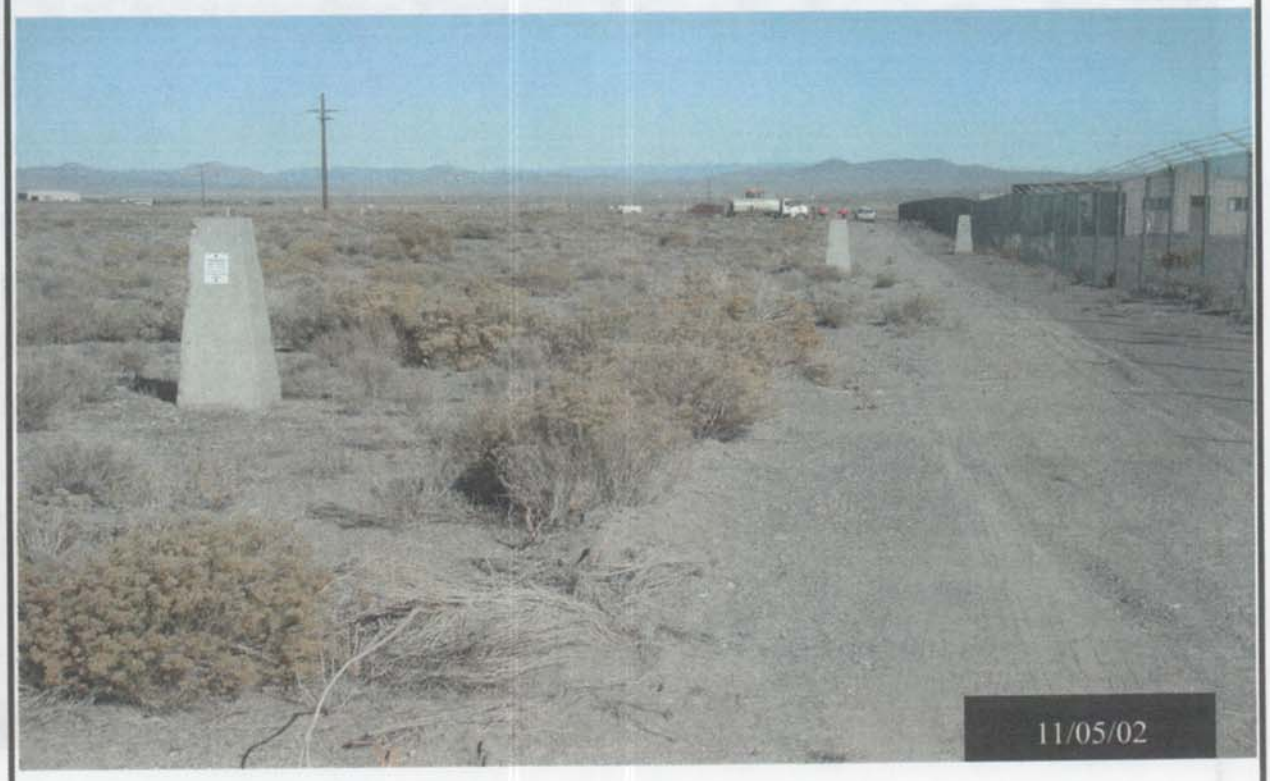

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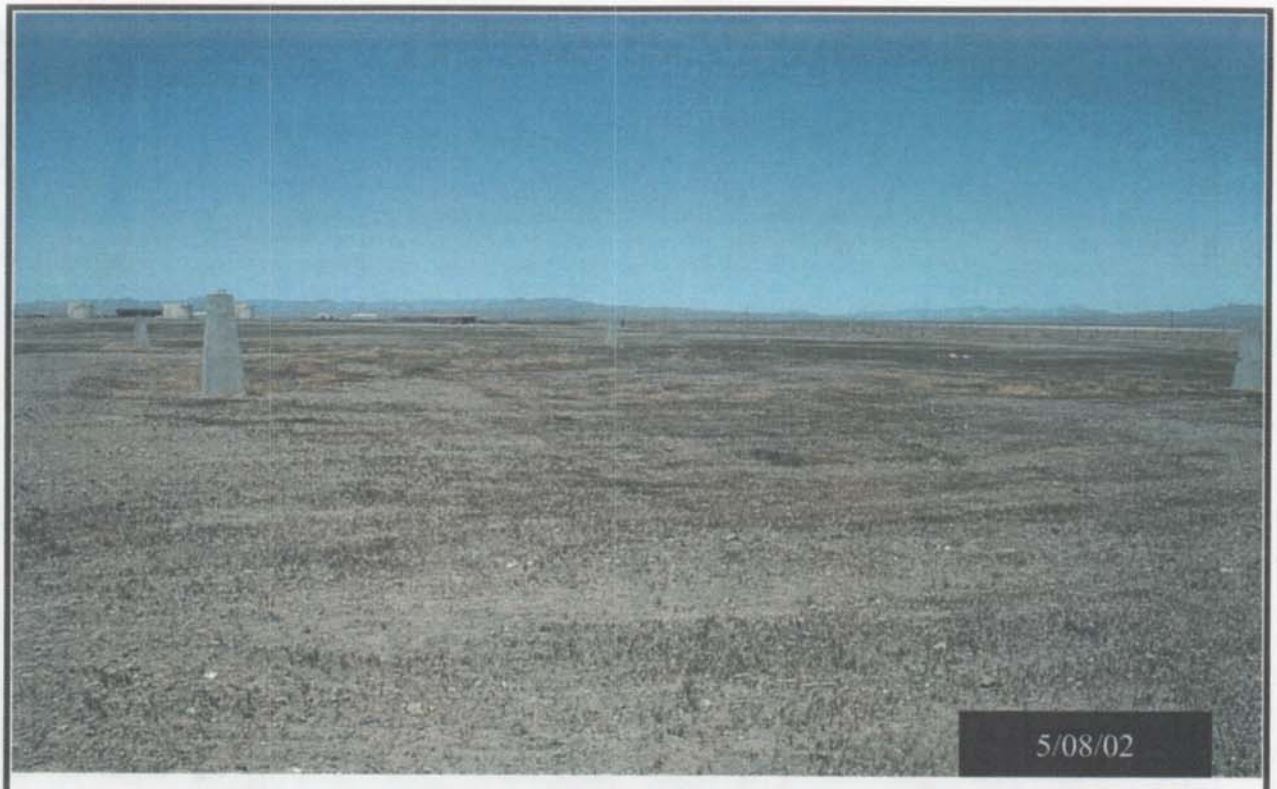

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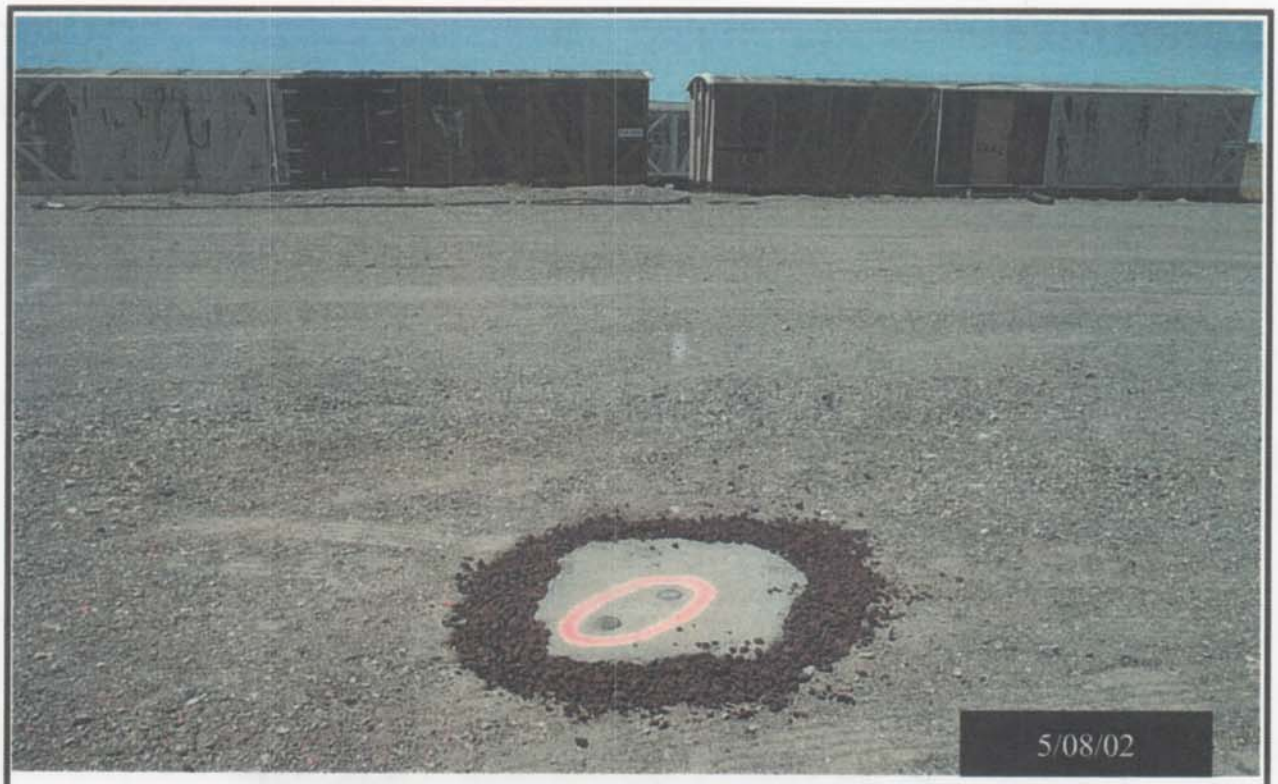

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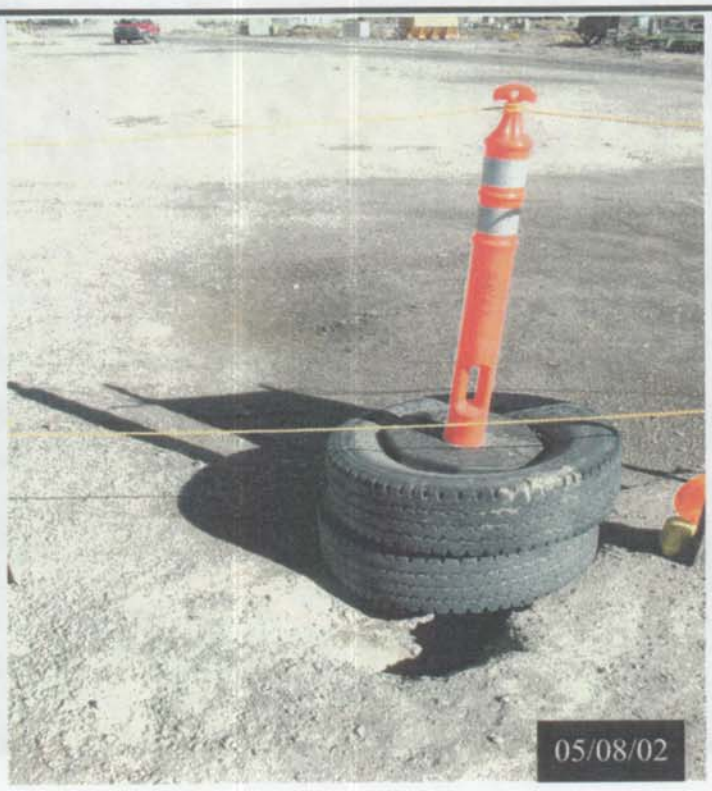
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WARNING
IN PROGRESS
ALL PERSONNEL
MUST REPORT TO
SITE SUPERVISOR
BEFORE ENTERING
05/08/02

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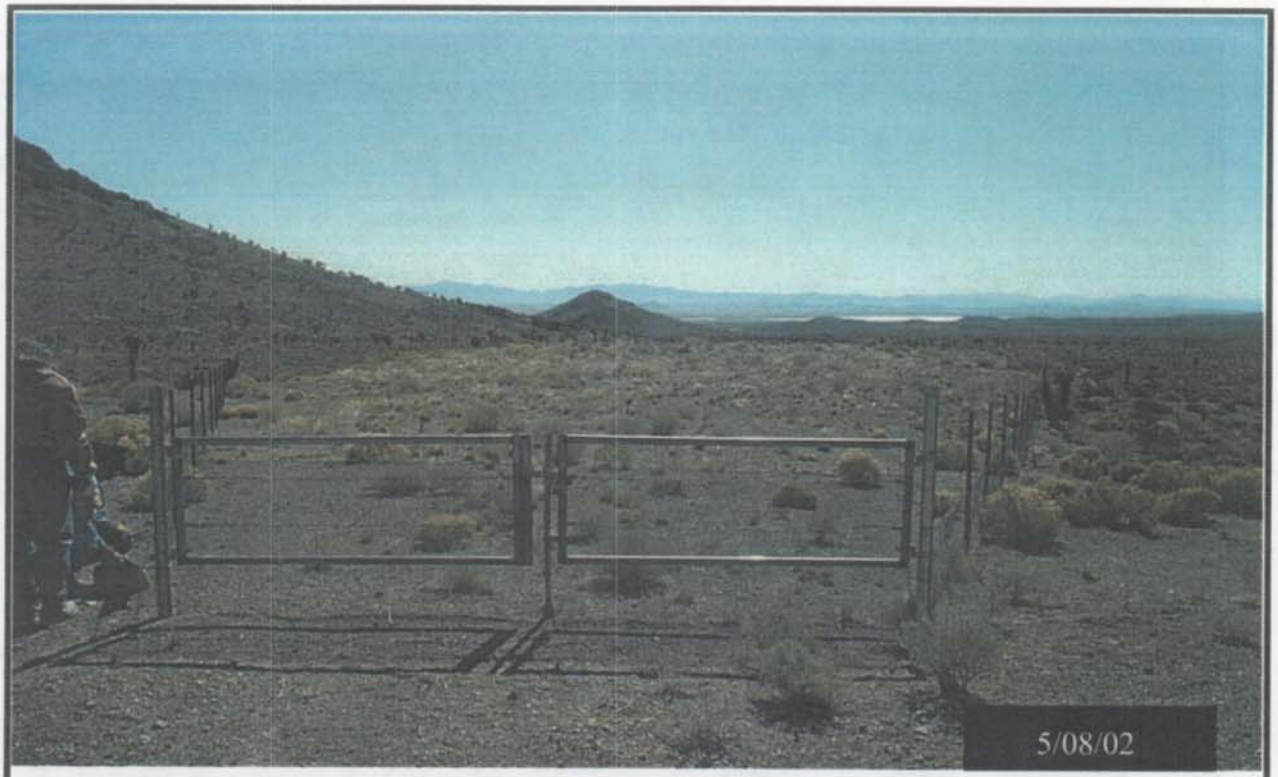

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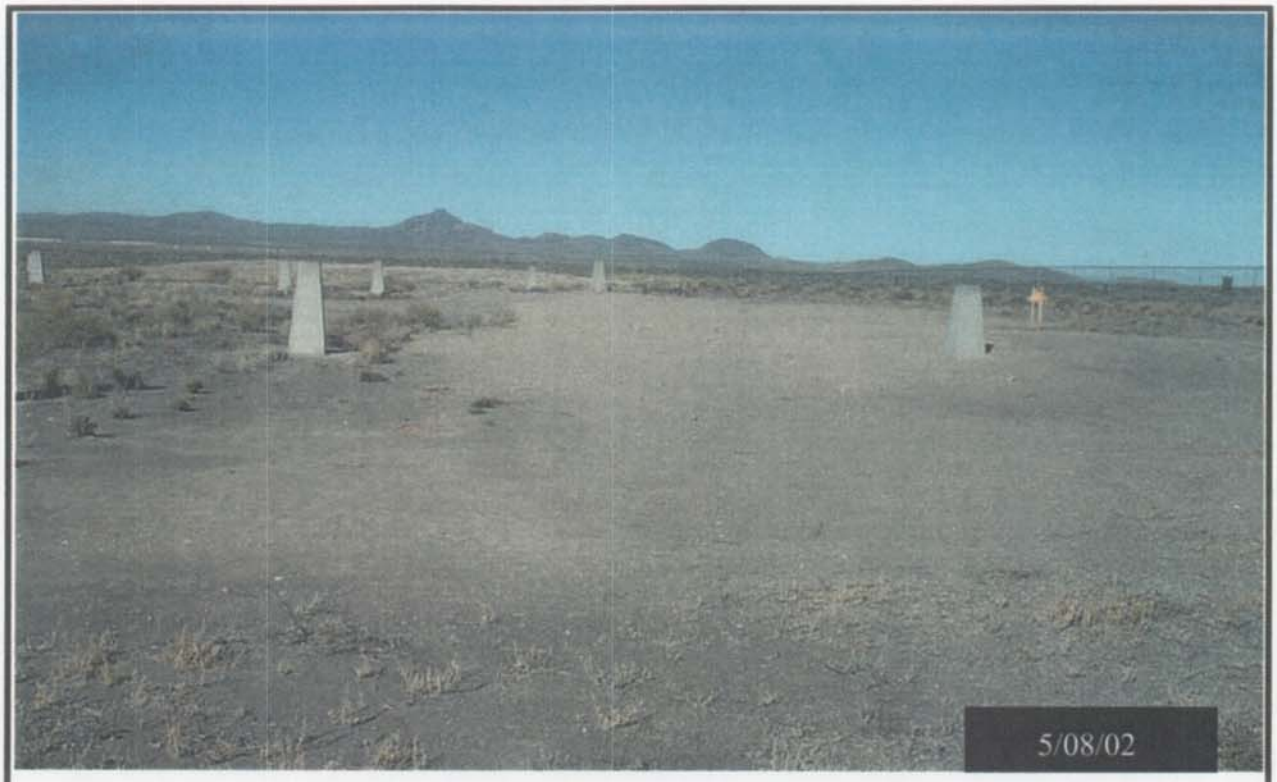

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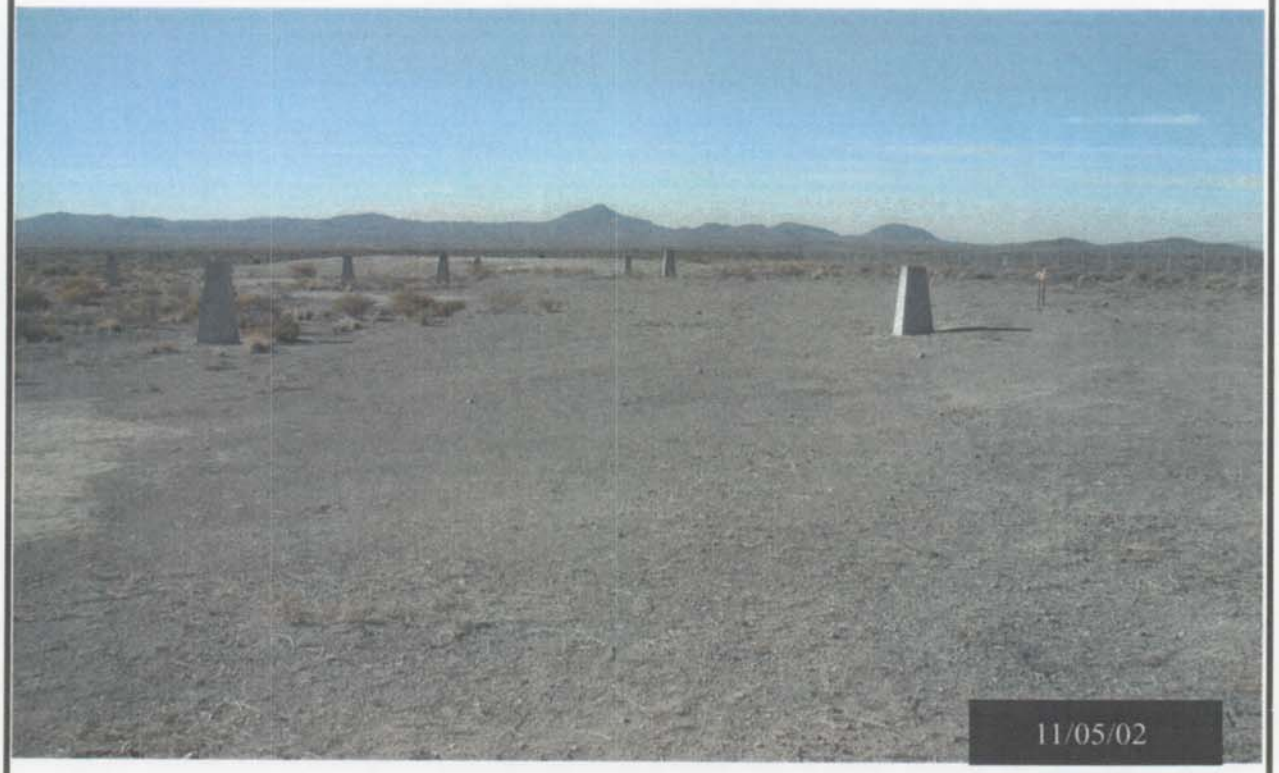

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ATTACHMENT E

POST-CLOSURE VEGETATIVE MONITORING REPORT (JUNE 2002)

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POST CLOSURE MONITORING REPORT
TONOPAH TEST RANGE CLOSURE SITES
JUNE 2002

Background

The closure of the Five Points Landfill, Bomblet Pit, Roller Coaster Sewage Lagoons, and Cactus Springs Waste Trenches was completed during the summer of 1997. In the fall of 1997 the closure sites were seeded with a mix of seeds of native shrubs and grasses. The site was mulched with straw and the straw was crimped into the ground. The site was protected from grazing animals (primarily horses and rabbits) by installing a four-strand barbed wire fence with two-foot high chicken wire fence along the base.

The vegetation was monitored in 1998, 2000 and again in June 2002, five years after revegetation was completed. Monitoring during the first year was designed to determine if germination of seeded-plant species had occurred. Monitoring during the third and fifth years was designed to document plant establishment, evaluate long-term vegetation survival, and compare plant cover and density with adjacent undisturbed sites (reference areas). Concurrently with vegetation monitoring, wildlife use of the site and the erosion condition of the soil were evaluated. This report documents the status of the vegetative cover after the fifth growing season on these four closure sites.

Methodology

BN Ecological Services staff scientists inspected the Five Points Landfill, Bomblet Pit, Roller Coaster Sewage Lagoons, and Cactus Springs Waste Trenches during the week of June 3, 2002. Conditions related to the vegetative cover as described in the post-closure monitoring checklist were recorded. Scientists collected cover and density data for plant species that had established on the site, noted wildlife usage of the site, and recorded the soil erosion condition. Cover data were taken using a cover point projection device at pre-determined intervals along linear transect. Four cover points were taken at the starting point of each quadrat. Plant density was determined by recording the number of plants found within a pre-determined number of 1-meter (m) by 1-meter square quadrats. Quadrat placement starts from 0 on the right side of the tape and then alternates to left side every other quad.

Plant density and cover data were also recorded on an undisturbed reference area just north of the closure site. The data collected from the reference area were used as a standard in evaluation the success of revegetation. The number of quadrats and cover points sampled at each reference area was equal to the number of quadrats and cover points sampled on the revegetation site. At the Roller Coaster sewage lagoons and Cactus Springs Waste Trenches the number of quadrats and cover points were equal to the staging area sampling.

In the fall of 2000 the cover cap at the Roller Coaster RADSAFE area was revegetated with a mix of native shrubs and grasses (Table 1). The site was mulched with a straw-mulch and the mulch crimped into the soil. The site was fenced with several strands of wire with the primary purpose of preventing inadvertent entry to site. The fence would also prevent horses from entering the site.

Table 1. Plant species included in seed mix used to reseed Roller Coaster RADSAFE area in the fall of 2000.

Lifeform	Common Name	Lbs of Pure Live Seed (PLS)
Shrubs	Budsage	0.2
	Fourwing Saltbush	2.6
	Shadscale	10.0
	Winterfat	9.0
Grasses	Indian Ricegrass	3.0
	Bottlebrush Squirreltail	2.0
	Galleta	3.0
Forbs	Desert Globemallow	0.4
Total PLS lbs of seed		30.2

The specific sampling design was as follows:

Five Points Landfill - 20 quadrats at 4 m intervals along an 80-m transect, diagonal NW to SE; 10 quadrats at 4 m intervals on east end of the site along 40-m transect, W to E. Reference Area - Starting rebar is about 10m north of north fence and 10 m east of road, ending rebar is about 30 m N of brace post. Transect parallels the north fence. Transect is 120 m long, quad every 4 m, W to E.

Bomblet Pit - 20 quadrats at 4 m intervals along 80 m transect, NW to SE). Reference Area - Starting rebar is 50 m east of gate and transect parallels east fence. Transect is 80 m long, 20 quadrats at 4-m intervals, N to S.

Roller Coaster Well Staging Area - 50 quadrats at 3 m interval along 150 m transect, SW to NE. Cover cap-20 quadrats at 2.5 m interval along 50-m transect, NE to SW. Reference Area - Starting rebar is about 23 m NW of gate and somewhat parallels west fence. Transect is 150 m long, 50 quadrats at 3-m intervals, S to N.

Cactus Springs Staging Area - 30 quadrats at 2-m intervals along 60 m transect, W to E. Cover cap-15 quadrats at 2-m intervals along 30 m transect, NE to SW. Reference Area-Starting rebar is about 25 m N of gate and parallels north fence. Transect is 60 m long, 30 quadrats at 2-m intervals, W to E.

Roller Coaster RADSAFE Area – Only observations from outside the fence were made on this site. Photographs were taken, but no field data, i.e., cover or density, were taken.

Wildlife usage of the site was determined by recording the presence of animal scat within the quadrats and noting any wildlife or wildlife sign, i.e., burrows, observed during sampling. The erosion condition of the soil over the site in general was determined using a modified Bureau of Land Management erosion condition classification (Appendix F).

Results

The results of field monitoring in June 2002 is summarized for each of the closure sites in the following sections. Plant cover and density data, Post-Closure Monitoring Checklists, photographic reference points, and plant establishment photographs are included as Appendices to this report.

Five Points Landfill - Both plant cover and plant density on the Five Points Landfill exceed plant cover and density found on the reference area. Overall, conditions of the vegetative cover at this site are excellent. Many species have flowered and set seed. In spite of the below normal precipitation experienced the last couple years the amount of cover on this closure site has doubled since May 2000. About two-thirds of the cover is from grasses. In contrast grasses account for less than one-third of the cover on the reference area.

Annual forbs and grasses as well as many perennial forbs were absent from the area this year. Thus, plant density declined to 4.7 plants/m^2 this year, down from almost 18 plants/m^2 in May 2000. Plant density is till higher on the revegetated area than on the reference area. Although overall density is down this year, shrub density is actually higher than it was in 2000. Grass density decreased from 2000 levels, however, the amount of cover from those grasses is almost double what it was in 2000.

There were no signs of herbivory on the site. The presence of small mammal is evident by the numerous burrows found over much of the site, but particularly abundant in the southeast section of the site. There was no evidence of erosion on the site. The slopes created during site preparation are well vegetated and show no signs of erosion.

Bomblet Pit - Plant cover and density at this closure site is essentially the same as on the adjacent undisturbed habitat and reference area. Plants, especially shrubs, are becoming established on the site and although shrub density is declining slightly, the amount of cover from shrubs is increasing. Plant density is almost entirely from shrubs. Only a few grasses were encountered during sampling. Cover on the reference area is all (100%) shrub, and grass density values (0.5 plants/m^2) suggest that grasses are not an important component of the undisturbed vegetation. It is encouraging however than grasses are becoming established on the closure site.

There were no signs of herbivory nor erosion. Overall conditions of the vegetative cover at this site are excellent. There is a good diversity of native shrubs and grasses, and as with several other sites many plants have or are flowering and setting seed.

The concern at this closure site as mentioned in previous reports was the potential for invasion of halogeton, a noxious weed found abundantly on the site prior to revegetation. Although 2002 was a dry year, the density of halogeton continues to decline. It is anticipated that as native perennial species become established, halogeton will not be able to successfully compete for water and other resources, and will become an insignificant component at this closure site. At other locations on the Tonopah Test Range where vegetation has been removed or disturbed, and the site has not been revegetated, i.e., Clean Slate 1 and 2 remediation sites, halogeton dominates and there is no indication that native species will reestablish on the sites.

Roller Coaster Sewage Lagoons - The Roller Coaster Sewage Lagoons is divided into two areas, the cover cap and the area around the cover cap, referred to as the staging area. Plant cover and density is excellent on the cover cap. Shrub cover on the cover cap is more than three times the the vegetative cover on the reference area. Even more significant is that grass cover on the cap is more than double the total cover on the reference area. Protection from herbivores may account for the success of the grasses.

The number of individual plants found on the cap has decreased as was predicted in previous reports, however, plant vigor is good as is manifest in the total amount of plant cover (three times the amount of plant cover on the reference area).

Plant cover on the staging area is about double what is found on the reference area. Plant density is about double that plant density on the reference area with shrubs accounting for 8.2 of the 9.8 plants/m^2.

There were some signs of herbivory, mainly on fourwing saltbush on the staging area. Many shadscale plants had dried and appeared to be dead on the staging area also. This decline in shadscale may just be the result of increased competition for water and nutrients. Even with its decline, shadscale is still the most abundant plant at this site.

There are signs of erosion at this closure site, mainly on the sideslopes of the cover cap. Halogeton is present on the site, but in much lower numbers than in previous years. This may be due to the lack of sufficient moisture this year. Overall conditions of the vegetative cover at this site are excellent with a good diversity of native shrubs and grasses established. As at other sites many individual plants have flowered and set seed.

Cactus Springs Waste Trenches - This closure site, like the Roller Coaster Sewage Lagoons, is comprised of two areas, the cover cap and the staging area. Plant cover on the cover cap at the Cactus Springs waste trenches was about the same as on adjacent undisturbed habitat. Cover was comprised of equal amounts of shrub and grass, unlike the reference area where the majority of the cover is from shrubs. Density was slightly less than was measured on the reference area. There was a significant reduction in two key species, winterfat and rubber rabbitbrush on the cover cap. Both species are palatable and their decrease in density may be the result of herbivory.

On the staging area cover was a little higher than on the reference area. Again the majority of the cover was from grasses, unlike the shrub dominated reference area. The density of winterfat and rabbitbrush increased on the staging area as did the amount of shrub cover.

There were signs of wildlife usage of the closure site. Rabbit pellets were found throughout the site. The rabbit fence at this site was not buried and access was possible under the fence at several locations. There were no signs of erosion on the cover cap or the staging area. Overall conditions of the vegetative cover at this site are good with a good diversity of native shrubs and grasses established. The upward trend in shrub cover and density is encouraging for the long-term.

Roller Coater RADSAFE Area - Based on observations from the perimeter of the area there appears to be a few shrubs establishing on the site. It appears to be predominantly shadscale, although with closer investigation other shrubs may be present. There appears to still be some straw mulch on the site. Halogeton was also found on the site, which would be expected because much of the surrounding area at this particular site is disturbed habitat and halogeton is abundant.

The use of the site could not be determined, other than there was a several burrows, one quite large, along the edge of the cover. A photograph of the burrows is included in Appendix C.

Summary/Discussion/Recommendations

The following two figures summarize plant density data and plant cover data collected over the past five years from the four closure sites. As shown in Figure 1, plant cover at all of the sites exceeded the amount of plant cover found on their corresponding reference area. Plant cover increased at all sites from 2000 to 2002. After five years plant cover at Five Points Landfill was the highest of any of the sites and was about twice what is found on the reference area. Whereas at Roller Coaster Sewage Lagoon, plant cover was just over 25%, but it was almost four times higher than the plant cover on the associated reference area.

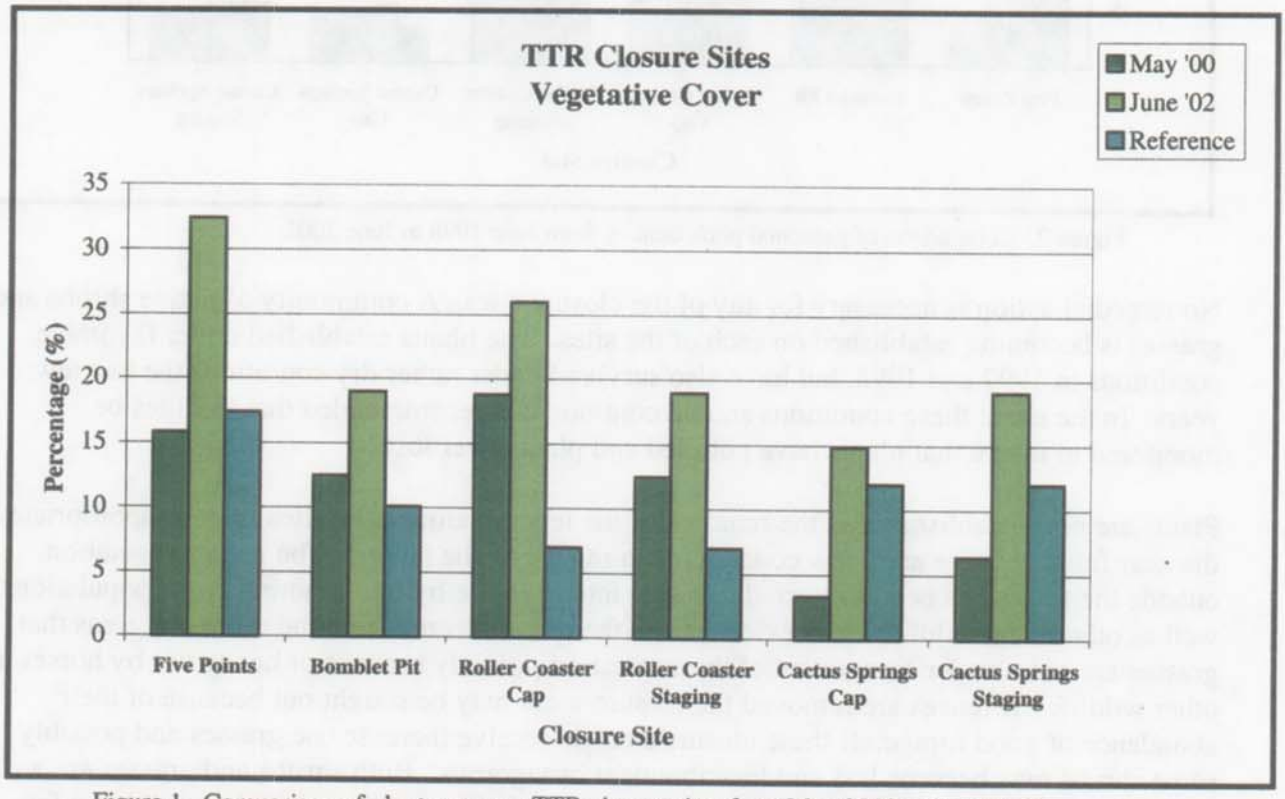


Figure 1. Comparison of plant cover on TTR closure sites from May 2000 to June 2002.

Plant density increased from 1998 to 2000, but overall has decreased the last two years. Plant density is the highest at Roller Coaster Sewage Lagoons, and overall plant density is higher on the revegetated areas than on the adjacent reference areas.

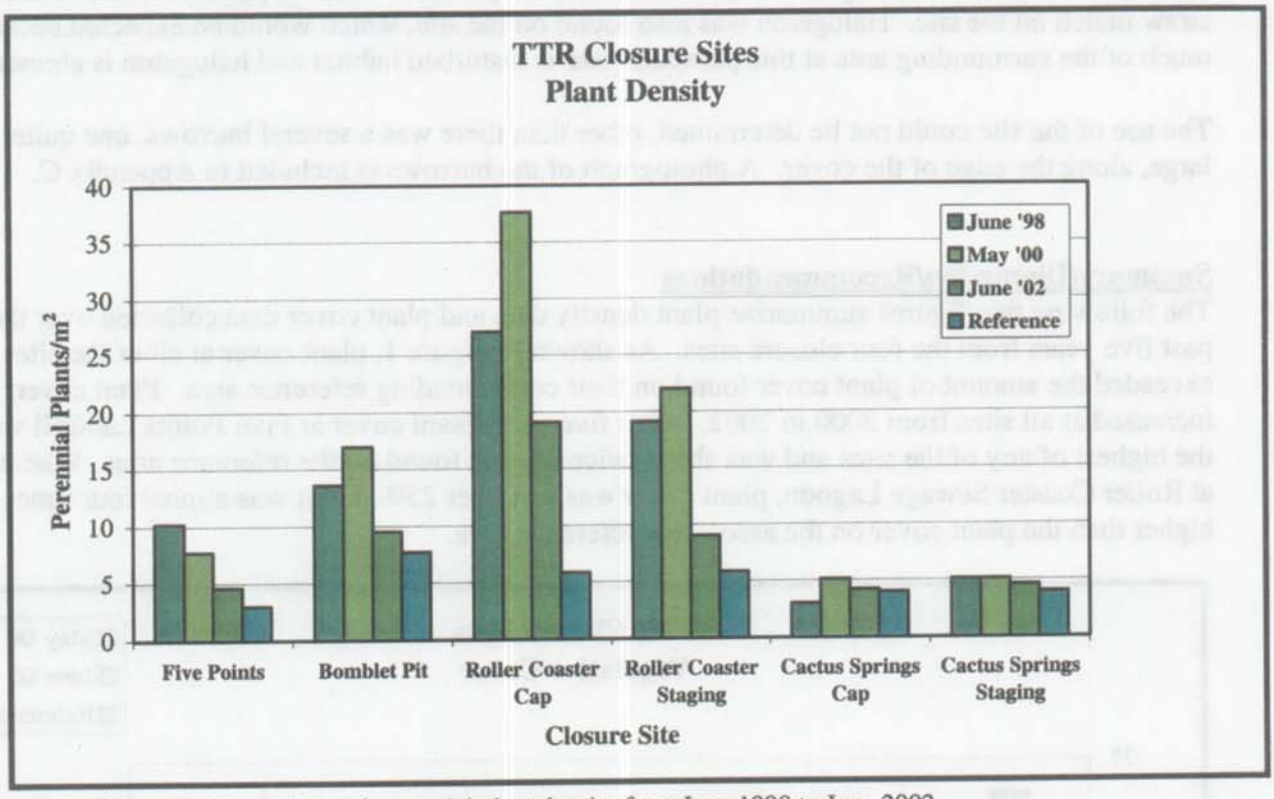


Figure 2. Comparison of perennial plant density from June 1998 to June 2002.

No remedial action is necessary for any of the closure sites. A community of native shrubs and grasses is becoming established on each of the sites. The plants established under favorable conditions in 1997 and 1998, but have also survived under rather dry conditions the last few years. In the event these conditions should continue it is recommended that the sites be monitored to insure that plants have not died and plant cover lost.

Plants are now established and the removal of the fencing around the sites may be appropriate in the near future. There are a few concerns with removing the fences. The native vegetation, outside the fence, has been subjected to rather intensive use by free roaming horse populations as well as other local wildlife. It is evident from the data collected from the reference areas that grasses are not a major component of the vegetation possibly because of heavy use by horses and other wildlife. If fences are removed the closure areas may be sought out because of their abundance of good forage. If these closure sites do receive increase use grasses and possibly some shrubs may become less and less abundant or vigorous. Both shrubs and grasses are well established on these sites at this time. If they survive the current dry conditions, within a few years they may be able to survive without protection from grazing animals.

APPENDIX E-1
Plant Cover and Density Data

Five Points Landfill

Plant Cover (%)

Cover category	Reference	May '00	June '02
Shrubs	10.8	2.5	8.3
Grasses	5.0	13.3	23.3
Forbs	0.8	0.0	0.0
Annuals	0.8	0.0	0.8
Total Vegetative Cover	17.4	15.8	32.4
Bare Ground	65.0	43.3	49.2
Rock/Gravel/Cobble	5.0	23.3	0.8
Litter/Mulch	13.3	17.5	17.5

Plant Density (Plants/m^2)

	Reference	June '98	May '00	June '02
Shrubs				
Bud Sagebrush	0.0	0.1	0.0	0.1
Fourwing saltbush	0.2	2.6	0.7	1.0
Winterfat	0.0	0.0	0.0	0.03
Greene's rabbitbrush	0.9	0.1	0.0	0.0
Total Shrubs	1.1	2.8	0.7	1.13
Grasses				
Indian ricegrass	1.6	3.8	4.8	3.2
Bottlebrush squirreltail	0.0	3.6	2.2	0.3
Galleta grass	0.0	0.0	0.03	0.0
Total Grasses	1.6	7.4	7.03	3.5
Forbs				
Apricot globemallow	0.3	0.0	0.0	0.0
Total Forbs	0.3	0.0	0.0	0.0
Total Perennial Plants	3.0	10.2	7.73	4.63
Annuals				
Forbs (Halogeton)	0.5 (0.0)	9.8 (0.0)	10.1 (0.0)	0.1 (0.0)
Grasses (wheat)	0.0 (0.0)	3.2 (3.2)	0.1 (0.0)	0.0
Total Annual Plants	0.5	13.0	10.2	0.1
Total Plant Density	3.5	23.2	17.93	4.73
Erosion classification	Stable	Stable	Stable	Stable

Bomblet Pit

Plant Cover (%)

Cover category	Reference	May '00	June '02
Shrubs	10.1	12.5	19.0
Grasses	0.0	0.0	0.0
Annuals	0.0	0.0	0.0
Total Vegetative Cover	10.1	12.5	19.0
Bare Ground	28.8	42.5	35.0
Rock/Gravel/Cobble	42.5	32.5	26.0
Litter/Mulch	18.8	12.5	20.0

Plant Density (Plants/m^2)

	Reference	June '98	May '00	June '02
Shrubs				
Bud Sagebrush	5.5	1.2	3.8	2.5
Fourwing saltbush	0.0	0.1	0.5	0.3
Shadscale saltbush	1.4	5.3	6.8	6.5
Winterfat	0.3	0.0	0.3	0.0
Total Shrubs	7.2	6.6	11.4	9.3
Grasses				
Indian ricegrass	0.3	2.3	2.5	0.2
Bottlebrush squirreltail	0.1	4.4	3.1	0.0
Galleta grass	0.1	0.3	0.0	0.0
Total Grasses	0.5	7.0	5.6	0.2
Forbs				
Apricot globemallow	0.0	0.0	0.0	0.0
Total Forbs	0.0	0.0	0.0	0.0
Total Perennial Plants	7.7	13.6	17.0	9.5
Annuals				
Forbs (Halogeton)	0.5 (0)	16.0 (5.1)	5.4 (2.1)	0.1 (0.1)
Grasses (Wheat)	0.0 (0)	4.2 (4.0)	0.0	0.0
Total Annual Plants	0.5	20.2	5.4	0.1
Total Plant Density	8.2	33.8	22.4	9.6
Erosion classification	Stable	Stable	Stable	Stable

Roller Coaster Sewage Lagoons-Cover Cap

Plant Cover-Cover Cap

Cover Category	Reference	May '00	June '02
Shrubs	5.0	6.3	10.0
Grasses	2.0	12.5	16.0
Annuals	0.0	0.0	0.0
Total Vegetative Cover	7.0	18.8	26.0
Bare Ground	34.0	73.7	50.0
Rock/Gravel/Cobble	41.0	51.3	15.0
Litter/Mulch	18.0	7.5	9.0

Plant Density (Plants/m^2)-**Cover Cap**

	Reference	June '98	May '00	June '02
Shrubs				
Bud sagebrush	3.3	1.8	2.1	1.7
Fourwing saltbush	0.0	0.9	0.9	0.6
Shadscale saltbush	0.9	13.5	10.9	7.0
Cheesebush	0.0	0.0	0.0	0.0
Winterfat	0.04	0.3	0.3	0.1
Total Shrubs	4.30	16.5	14.2	9.4
Grasses				
Indian ricegrass	0.5	4.0	3.8	2.8
Bottlebrush squirreltail	0.1	6.6	10.8	1.6
Low woollygrass	0.0	0.0	0.0	0.0
Galleta grass	0.8	0.0	8.6	4.7
Total Grasses	1.4	10.6	23.2	9.1
Forbs				
Apricot globemallow	0.12	0.0	0.2	0.0
Total Forbs	0.12	0.0	0.2	0.0
Total Perennial Plants	5.82	27.1	37.6	19.1
Annuals				
Forbs (Halogeton)	1.2 (0.0)	0.2 (0.2)	0.3 (0.2)	0.3 (0.0)
Grasses (Wheat)	0.0 (0.0)	0.2 (0.0)	0.0 (0.0)	0.0 (0.0)
Total Annual Plants	1.2	6.1	0.3	0.3
Total Plant Density	7.02	33.2	37.9	19.4
Erosion classification	Stable	Moderate	Stable	Stable

Roller Coater Sewage Lagoons-Staging Area

Plant Cover-Staging Area

Cover Category	Reference	May '00	June '02
Shrubs	5.0	9.0	18.5
Grasses	2.0	3.5	0.5
Annuals	0.0	0.0	0.0
Total Vegetative Cover	7.0	12.5	19.0
Bare Ground	34.0	37.5	45.0
Rock/Gravel/Cobble	41.0	19.0	8.0
Litter/Mulch	18.0	31.0	28.0

Plant Density (Plants/m^2)Staging-Area

		Reference	June '98	May '00	June '02
Shrubs					
	Bud sagebrush	3.3	1.7	1.7	1.2
	Fourwing saltbush	0.0	0.2	0.3	0.2
	Shadscale saltbush	0.9	6.7	10.0	6.9
	Cheesebush	0.06	0.0	0.0	0.0
	Winterfat	0.04	0.2	0.4	0.1
	Total Shrubs	4.30	8.8	12.4	8.2
Grasses					
	Indian ricegrass	0.5	2.5	2.5	0.5
	Bottlebrush squirreltail	0.1	7.7	6.2	0.1
	Low woollygrass	0.0	0.0	0.0	0.0
	Galleta grass	0.8	0.0	0.8	0.3
	Total Grasses	1.4	10.2	9.5	0.8
Forbs					
	Apricot globemallow	0.12	0.1	0.1	0.0
	Total Forbs	0.12	0.1	0.1	0.0
Total Perennial Plants		5.82	19.1	22.0	9.0
Annuals					
	Forbs (Halogeton)	1.2 (0.0)	0.3 (0.2)	3.8 (3.0)	0.7 (0.5)
	Grasses (Wheat)	0.0	5.8 (5.6)	0.0	0.1 (0.1)
Total Annual Plants		1.2	6.1	3.8	0.8
Total Plant Density		7.02	33.2	25.8	9.8
Erosion classification		Stable	Moderate	Stable	Slight

Cactus Springs Waste Trenches-Cover Cap

Plant Cover (%)-Cover Cap

Cover category	Reference	May '00	June '02
Shrubs	11.0	0.0	6.6
Grasses	1.0	3.3	8.3
Annuals	0.0	0.0	0.0
Total Vegetative Cover	12.0	3.3	14.9
Bare	38.0	10.0	73.3
Rock/Gravel/Cobble	40.0	75.0	5.0
Litter/Mulch	10.0	11.7	43.4

Plant Density (Plants/m^2)-Cover Cap

		Reference	June '98	May '00	June '02
Shrubs					
	Bud sagebrush)	0.3	0.0	0.0	0.0
	Black Sagebrush	0.7	0.0	0.0	0.0
	Fourwing saltbush	0.0	0.2	0.0	0.0
	Shadscale saltbush	0.2	0.3	0.0	0.0
	Low rabbitbrush	0.0	0.0	0.1	0.1
	Nevada jointfir	0.03	0.0	1.0	1.3
	Rubber rabbitbrush	0.0	0.4	0.1	1.1
	Winterfat	0.0	0.0	0.1	0.0
	Black greasewood	0.03	0.1	0.1	0.0
	Total Shrubs	1.26	1.0	1.4	2.6
Grasses					
	Indian ricegrass	0.1	1.1	1.3	0.7
	Bottlebrush squirreltail	0.2	0.9	1.0	0.2
	Galleta grass	2.4	0.0	1.4	0.7
	Total Grasses	2.7	2.0	3.7	1.6
Forbs					
	Apricot globemallow	0.03	0.0	0.0	0.0
	Total Forbs	0.03	0.0	0.0	0.0
Total Perennials		3.99	3.0	5.1	4.2
Annuals					
	Forbs (Halogeton)	0.1 (0.0)	0.9 (0.6)	0.1 (0.0)	0.0
	Grasses (Wheat)	0.0	5.9 (5.4)	0.0	0.0
Total Annuals		0.1	6.8	0.1	0.0
Total Plant Density		4.09	9.8	5.2	4.2
Erosion classification		N/A	Stable	Stable	Stable

Cactus Springs Waste Trenches-Staging Area

Plant Cover (%)-Staging Area

Cover category	Reference	May '00	June '02
Shrubs	11.0	0.8	5.0
Grasses	1.0	5.8	12.5
Annuals	0.0	0.0	1.6
Total Vegetative Cover	12.0	6.4	19.1
Bare	38.0	29.2	40.8
Rock/Gravel/Cobble	40.0	20.8	1.7
Litter/Mulch	10.0	43.3	38.3

Plant Density (Plants/m^2)-Staging Area

Shrubs	Reference	June '98	May '00	June '02
Bud sagebrush)	0.3	0.0	0.0	0.0
Black Sagebrush	0.7	0.0	0.0	0.1
Fourwing saltbush	0.0	0.1	0.1	0.0
Shadscale saltbush	0.2	0.1	0.1	0.0
Low rabbitbrush	0.0	0.0	0.1	0.1
Nevada jointfir	0.03	0.0	0.3	0.2
Rubber rabbitbrush	0.0	0.3	0.1	0.8
Winterfat	0.03	0.0	0.03	0.03
Black greasewood	0.0	0.0	0.03	0.0
Total Shrubs	1.26	1.0	0.76	1.23
Grasses				
Indian ricegrass	0.1	1.0	1.4	0.6
Bottlebrush squirreltail	0.2	3.1	5.2	2.9
Galleta grass	2.4	0.0	0.2	0.1
Total Grasses	2.7	4.1	6.8	3.6
Forbs				
Apricot globemallow	0.0	0.0	0.0	0.0
Total Forbs	0.0	0.0	0.0	0.0
Total Perennials	3.96	5.1	5.1	4.6
Annuals				
Forbs (Halogeton)	0.1 (0.0)	3.2 (3.2)	16.0 (15.1)	1.3 (1.2)
Grasses (Wheat)	0.0	0.0 (0.0)	0.9	0.0
Total Annuals	0.1	3.2	16.9	1.3
Total Plant Density	4.07	8.3	22.0	5.9
Erosion classification	N/A	Stable	Stable	Stable

APPENDIX E-2
Photographic Reference Points

FIVE POINTS LANDFILL

Five Points Landfill photo reference point, June 1998, one growing season after revegetation. Much of vegetation is wheat as a result of straw mulch.

Five Points Landfill photo reference point, June 2000, three growing seasons after revegetation. Grasses, primarily Indian Ricegrass and some bottlebrush squirreltail are becoming well established. Shrubs are primarily fourwing saltbush.

Five Points Landfill photo reference point, June 2002, five growing seasons after revegetation. After five years there is an excellent mix of shrubs and grasses. Slopes on both sides of basin are well vegetated and there are no signs of erosion.

BOMBLET PIT

Bomblet Pit closure site photo reference point, June 1998, one growing season after revegetation. Majority of vegetation is wheat that germinated from wheat straw used during mulching.

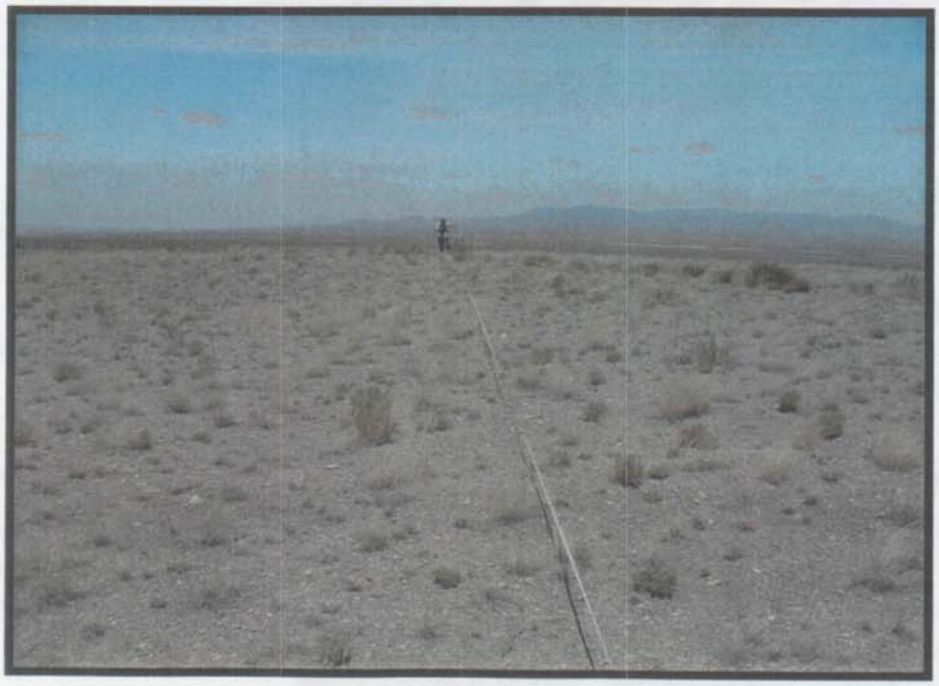
Bomblet Pit reference photo point, June 2000, three growing seasons after revegetation. Vegetation appears dry because photo taken late in growing season and wheat is no longer present on the site.

Bomblet Pit reference photo point, June 2002, five years after revegetation. The site looks barren but there is an abundance of native shrubs and grasses. The vegetation at the site is doing relatively well considering the site has received below normal precipitation for the last three years. Of note is the absence of halogeton, a noxious weed common to the site and very abundant on the site prior to revegetation.

ROLLER COASTER SEWAGE LAGOONS COVER CAP

Roller Coaster Sewage Lagoons cover cap photo reference point, June 1998, one year after revegetation. As at other sites wheat dominants much of the site.

Roller Coaster Sewage Lagoons cover cap photo reference point, June 2000, three years after revegetation. Grasses and shrubs are becoming well established on cover cap. Shrubs are smaller in height and width than those found on the staging area, but shrub vigor is very good.



Roller Coaster Sewage Lagoons cover cap photo reference point, June 2002, five years after revegetation. The site does not look as good as it did in 2000, but the density of shrubs and grasses is good. Few plants were able to put on much growth this year and last year because of the dry conditions.

ROLLER COASTER SEWAGE LAGOONS STAGING AREA

Roller Coaster Sewage Lagoons staging area photo reference point, June 1998, one year after revegetation. Wheat dominants the overall appearance of the site, however, there are numerous seedlings of grasses and shrubs emerging through the layer of straw mulch.

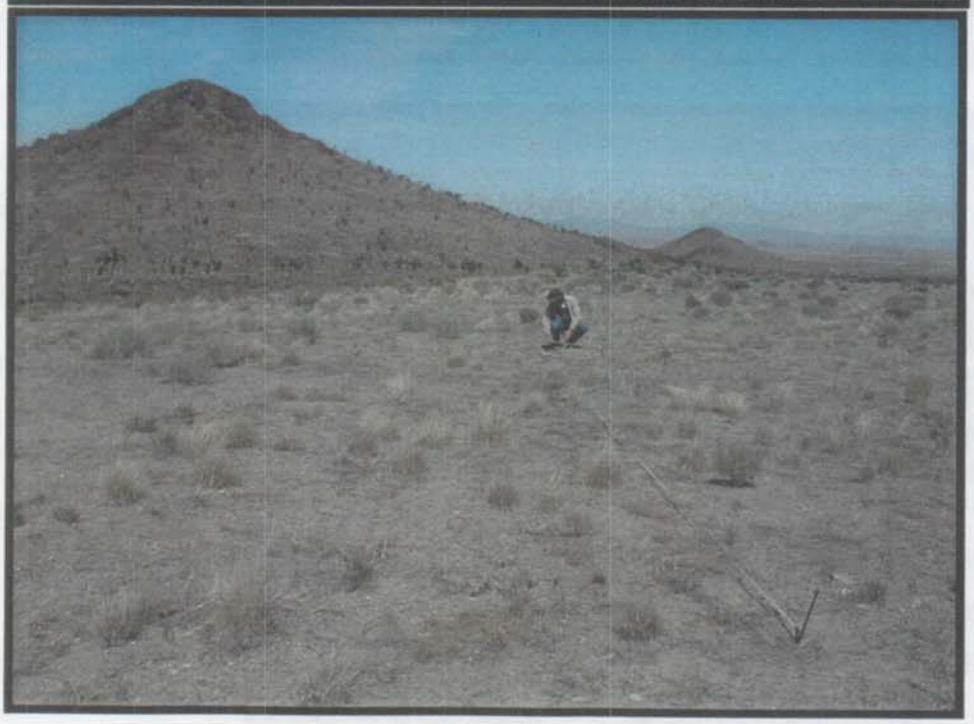
Roller Coaster Sewage Lagoons staging area photo reference point, June 2000, three years after revegetation. Little, if any, wheat is seen on the site. A good mix of shrubs and grasses are establishing. In the foreground several plants of halogeton are seen invading the site. The dominant shrub is shadscale with some fourwing saltbush and budsage.

Roller Coaster Sewage Lagoons staging area photo reference point, June 2002, five years after revegetation. Dry conditions over the last couple years have left the site looking barren and brown, but there is a good mix of shrubs and grasses on the site, but they have not shown much growth this year. There was some evidence of die-off of some individuals of shadscale, but this was expected.

CACTUS SPRINGS WASTE TRENCH COVER CAP

Cactus Springs Waste Trench cover cap photo reference point, June 1998, one year after revegetation. Plant density on the cover cap was low the first year and growth was minimal. A few wheat plants established but were not present by the third year.

Cactus Springs Waste Trench cover cap photo reference point, June 2000, three years after revegetation. Shrubs are established as well as a several grasses. Grasses were smaller, but density was high.

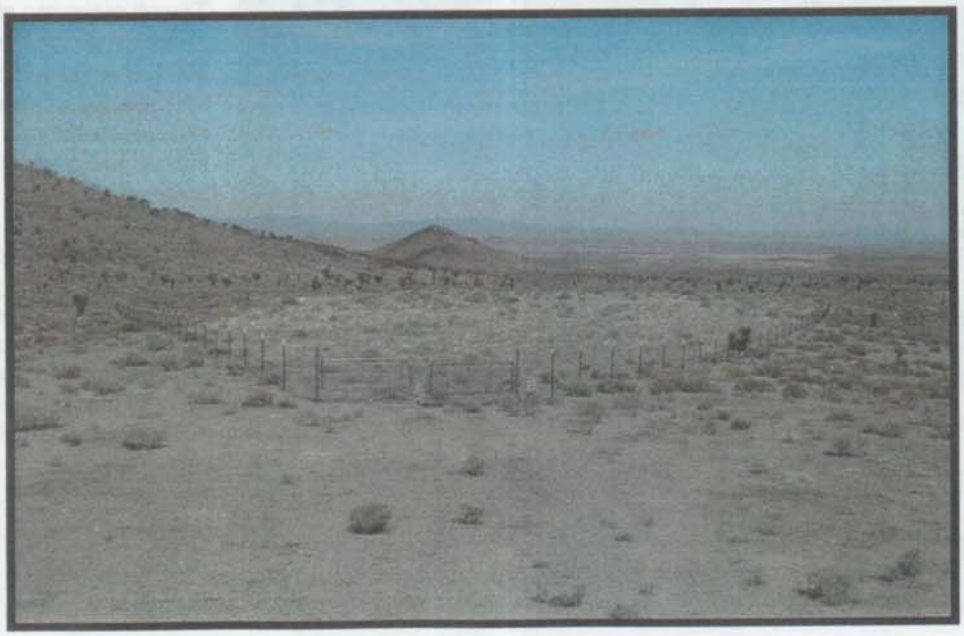


Cactus Springs Waste Trench cover cap photo reference point, June 2002, five years after revegetation. Grasses and shrubs are still present but growth in 2002 was minimal. There is still good density of shrubs and grasses despite the poor showing the first year. Vegetation is becoming established on the cover cap and there are no signs of erosion off the cap. There are numerous signs of rabbits on the site.

CACTUS SPRINGS STAGING AREA

Cactus Springs Waste Trench staging area photo reference point, June 1998, one year after revegetation. As with most sites the first year's vegetation appears dominated by wheat. There is a mix of young shrub and grass seedlings beneath the canopy of wheat stalks.

Cactus Springs Waste Trench staging area photo reference point, June 2000, three years after revegetation. As is apparent there are numerous shrubs and grasses becoming established on the site. Because plant density and cover is lower there are barren areas that are quickly invaded by halogeton (foreground, dark tan appearance).



Cactus Springs Waste Trench staging area photo reference point, June 2002, five years after revegetation. Shrubs and grasses are becoming well established on the site. Plant cover and density values are a little lower at this site than at the other closure sites.

ROLLER COASTER RADSAFE AREA

Roller Coaster RADSAFE site photograph taken June 2002. Some shrubs are established on the site as are annual weeds, primarly halogeton.

Roller Coaster RADSAFE area showing erosion channel off east edge of cover cap. Some remedial action may be necessary if erosion channel deepens. Some protection from erosion may occur as plant cover increases over the next few years.

Animal burrows along edge of cover cap at the Roller Coaster RADSAFE area.

APPENDIX E-3
Plant Establishment

Indian ricegrass (left) and bottlebrush squirreltail (right) were the two most common grasses encountered on the closure sites. They most common and showed the greatest growth at the Five Points Landfill site.

Budsage seed is not available commercially so it was custom collected from the immediate vicinity of the closure sites and used with great success in the seed mix. Budsage was well established at Five Points Landfill (left), Bomblet Pit (right) and Roller Coaster Sewage Lagoons and many individuals flowered and produced seed.

Nevada jointfir was a prominent component of the vegetation on the Cactus Springs closure site. Plant density was excellent, as was the growth of the plants over the last five years as noted in this photograph. Nevada jointfir is common in the immediate vicinity of the Cactus Springs closure site.

Another common component of the vegetation at the Cactus Springs closure site is rubber rabbitbrush. The site occurs close to a natural drainage and rabbitbrush is a major component of the vegetation along the drainage. It is establishing well on the site in spite of the the pressure from browsers, such as rabbits. This particular individual on the Cactus Springs staging area flowered last season and has shown very good growth in just five years.

One of the most common shrubs found at all of the closure sites is shadscale. It germinates well, is resistant to dry conditions and to browsing. The first couple years the density of shadscale was were high, but as plants mature and competition for resources (water) increases density has decreased. At the same time the amount of cover from this species and others has increased, indicated good plant growth and apparent plant establishment on the sites.

APPENDIX E-4
Plant Species List

Plant Species

Lifeform	Scientific Name	Common Name
Shrub	*Artemisia nova*	Black sagebrush
	Artemisia spinescens	Bud sagebrush
	Atriplex canescens	Fourwing saltbush
	Atriplex confertifolia	Shadscale saltbush
	Chrysothamnus greenei	Greene's rabbitbrush
	Chrysothamnus viscidiflorus	Low rabbitbrush
	Ephedra nevadensis	Nevada jointfir
	Ericameria nauseosa	Rubber rabbitbrush
	Krascheninnikovia lanata	Winterfat
	Sarcobatus vermiculatus	Black greasewood
Grass	*Achnatherum hymenoides*	Indian ricegrass
	Elymus elymoides	Bottlebrush squirreltail
	Pleuraphis jamesii	Galleta grass
	Sporobolus cryptandrus	Sand dropseed
Forb	*Sphaeralcea ambigua*	Desert globemallow
Annual	*Halogeton glomeratus*	Halogeton
	Triticum aestivum	Wheat

APPENDIX E-5
Erosion Condition Classification

Erosion Condition Classification

Surface Litter	Pedestalling	Rills <9"	Rills > 9"
1 Accumulating in place	1 No visual evidence	1 No visual evidence	1 No visual evidence
2 Slight Movement	2 Slight pedestalling	2 Rills in evidence at intervals > 10'	2 Rills in evidence at intervals > 10'
3 Moderate Movement	3 Small rock and plant pedestalling	3 Rills at 10' intervals	3 Rills at 10' intervals
4 Extreme movement	4 Pedestalling plants roots exposed	4 Rills at 5-10' intervals	4 Rills at 5-10' intervals
5 Very little remaining litter	5 Most plants and rocks pedestalled and roots exposed	5 Rills at <5' intervals	5 Rills at <5' intervals
Rating _____	Rating _____	Rating _____	Rating _____
			Total _____

Numerical Rating	Erosion Condition Class
0.0 to 4.0	Stable
4.1 to 8.0	Slight
8.1 to 12.0	Moderate
12.1 to 16.0	Critical
16.1 to 20.0	Severe

ATTACHMENT F

NEVADA ENVIRONMENTAL RESTORATION PROJECT DOCUMENT REVIEW SHEET

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NEVADA ENVIRONMENTAL RESTORATION PROJECT
DOCUMENT REVIEW SHEET

1. Document Title/Number Tonopah Test Range Post-Closure Inspection Annual Report, Tonopah Test Range, Nevada
2. Document Date May 2003
3. Revision Number 0
4. Originator/Organization Bechtel Nevada
5. Responsible NNSA/NV ERP Project Mgr. Janet Appenzeller-Wing
6. Date Comments Due July 10, 2003
7. Review Criteria Federal Facility Agreement and Consent Order
8. Reviewer/Organization/Phone No. Ted Zaferatos (702) 486-2856
9. Reviewer's Signature _____

10. Comment Number/ Location	11. Type[a]	12. Comment	13. Comment Response	14. Accept
1) Section 1.1 Page 1 and 2	M	Closure Report Contents: The listing is incomplete. Sections 3.0, Section 4.0, Attachments C, D, E and the Distribution List are not listed.	Sections 3.0, 4.0, Attachments C, D, E and the Distribution List were added to the Closure Report Contents.	
2) Section 2.1.4 Page 7, Section 3.1 Page 26	M	These sections recommended that the fencing be removed from both sites. An in-person review of the sites suggests that the vegetation has not matured to the same extent as the surrounding area. The Nevada Division of Environmental Protection does not concur with the proposal at this time. The fences must be kept intact and the site will be evaluated next year.	The section of text recommending removal of the fencing surrounding the CAU 400 Bomblet Pit and Five Points Landfill has been removed from the document. Text was added to indicate that the fences will be kept intact and the site will be re-evaluated next year.	
3) Section 3.4 Page 27	M	The last bullet suggests that landfills A3-1 and A3-5 should be surveyed for subsidence. Section 2.4.4, on page 27, suggests that landfills A3-1, A3-4, and A3-8 should be surveyed.	The last bullet on page 27 was changed to read, "Landfills A3-1, A3-4, and A3-8 should be surveyed to determine if subsidence is present."	

[a]Comment Types: M = Mandatory, S = Suggested.

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