Post-Closure Inspection Report for Corrective Action Unit 407: Roller Coaster RadSafe Area Tonopah Test Range, Nevada Calendar Year 2001

Environmental Restoration Division

U.S. Department of Energy
National Nuclear Security Administration
Nevada Operations Office
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POST-CLOSURE INSPECTION REPORT FOR CORRECTIVE ACTION UNIT 407: ROLLER COASTER RADSAFE AREA TONOPAH TEST RANGE, NEVADA CALENDAR YEAR 2001

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UNCONTROLLED
POST-CLOSURE INSPECTION REPORT FOR CORRECTIVE ACTION UNIT 407: ROLLER COASTER RADSsafe AREA TONOPAH TEST RANGE, NEVADA CALENDAR YEAR 2001

Approved by: Janet L. Appenzeller-Wing, Project Manager Industrial Sites Project

Date: 1-28-02

Approved by: Runore C. Wycoff, Division Director Environmental Restoration Project

Date: 1-28-02
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1.0 INTRODUCTION

Post-closure monitoring requirements for the Roller Coaster RadSafe Area (Corrective Action Unit [CAU] 407) (Figure 1) are described in Closure Report for Corrective Action Unit 407, Roller Coaster RadSafe Area, Tonopah Test Range, Nevada, report number DOE/NV-694, October 2001. The Closure Report (CR) was submitted to the Nevada Division of Environmental Protection (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 January 7, 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 inspection are to be conducted twice yearly for the next two years. This report provides the results of the six month post-construction site inspection.

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

- Visual site inspections done twice a year to evaluate the condition of the cover and plant development.
- Verification that the site is secure and condition of the fence and posted warning signs.
- Notice of any subsidence, erosion, unauthorized excavation, etc., 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.

To meet the fiscal year 2002 post-closure inspection schedule, the first post-closure site inspection was conducted on November 6, 2001. The site inspection was conducted after completion of the revegetation activities (October 24, 2000) and submittal of revision 0 of the CR (October 31, 2001). All site inspections were conducted in accordance with the Post-Closure Inspection requirements stated in revision 0 of the CR.

This report includes copies of inspection checklist, photographs, recommendations, and conclusions. The Post-Closure Inspection Checklist is found in Attachment A, a copy of the field notes is found in Attachment B, and copies of the inspection photographs are found in Attachment C.

2.0 INSPECTION RESULTS

2.1 November 6, 2001 Inspection

The first biannual post-closure inspection of CAU 407 was completed on November 6, 2001. Numerous small mammal burrows were observed along cover side slopes and in the area inside
FIGURE 1
ROLLER COASTER RADSAFE AREA
CAU 407 LOCATION MAP
the fence. 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 average burrow measured approximately 5 centimeters (2 inches) in diameter and extended to an observed depth of approximately 0.3 meters (1 foot). The burrows did not effect the integrity of the cover. The fence was in good repair with no apparent holes or breaches in the fencing. The signs warning of the presence of underground radioactive material posted on tee posts are in good condition. No erosion, subsidence, or cracking of the cover surface was observed. The vegetation inside the fence and on the cover appeared to be healthy and well established. Overall, the cover, fencing, warning signs, and the area inside the fence were observed to be stable and in good condition. No further maintenance or repairs were recommended.

3.0 CONCLUSIONS AND RECOMMENDATIONS

Numerous small mammal burrows are present along the toe of the cover but do not appear to effect the integrity of the cover. Small mammal have burrowed under the fence at several locations; these burrows were backfilled using a shovel. There is no evidence of drainage or erosion through the site. The condition of the is good, with a healthy cover of plant species growing on the cover and within the fenced area. Overall, the area fencing and posted warning signs are in excellent condition. Some portions of the cover are mounded or uneven and cover maintenance work is scheduled for mid 2002. Maintenance work will include grading and contouring portions of the existing cover. No other modifications or repairs to the cover, or changes in the frequency of site inspections, are recommended at this time.
ATTACHMENT A

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

<table>
<thead>
<tr>
<th>Date of Last Inspection:</th>
<th>N/A</th>
<th>First Site Inspection</th>
<th>Reason for Last Inspection:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsible Agency:</td>
<td>NNSA/NV</td>
<td>BN-ER</td>
<td>Project Manager:</td>
<td>Wayne Johnson</td>
</tr>
<tr>
<td>Inspection Date:</td>
<td>6 November 2001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspector (name, title, organization):</td>
<td>Kevin B. Campbell, IT Technical Lead, BN-ER</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 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)

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>EXPLANATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>✔</td>
<td>This is first site inspection</td>
</tr>
</tbody>
</table>

1. Site as-built plans and site base map reviewed.

2. Previous inspection reports reviewed.
   a. Were anomalies or trends detected on previous inspections? ✔ N/A
   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? ✔ N/A no repairs/changes made

### C. SITE INSPECTION (To be completed during inspection)

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>EXPLANATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>✔</td>
<td></td>
</tr>
</tbody>
</table>

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: 2) ✔
   c. Were gates locked? ✔ N/A no gate present
### CAU 407: ROLLER COASTER RADSAFE AREA, POST-CLOSURE MONITORING CHECKLIST

#### 3. Waste Unit cover.
- a. Is there evidence of settling? **Yes**
- b. Is there cracking? **Yes**
- c. Is there evidence of erosion around the cap (wind or water)?
- d. Is there evidence of animal burrowing? **Yes** numerous small mamal burrows present
- e. Do natural processes threaten to integrity of any cover or site marker? **Yes**
- f. Other?

#### 4. Vegetative cover.
- a. Is perimeter fence or mesh fencing damaged? **Yes**
- b. Is there evidence of horses or rabbits on site? **Yes** Burrows & horse dropping outside fence
- c. Is organic mulch adequate to prevent erosion? **Yes** Minor problem on cover Halogen present
- d. Are weedy annual plants present? If yes, are they a problem? **Yes**
- e. Are seeded plant species found on site? **Yes**
- f. Is there evidence of plant mortality? **Yes**

#### 5. Photo Documentation
- a. Has a photo log been prepared? **Yes**
- c. Number of photos exposed (7)

#### D. FIELD CONCLUSIONS
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required) **Yes**
   - Person/Agency to whom report made:

2. Are more frequent inspections required? **Yes**
3. Are existing maintenance/repair actions satisfactory? **NA**
4. Is other maintenance/repair necessary? **Yes**
5. Is current status/condition of vegetative cover satisfactory? **Yes**
6. Rationale for field conclusions: Area in good condition. Fences and warning signs in good condition. No bunny fencing present. Numerous small mamal burrows present but they do not appear to effect the integrity of the cover. Healthy vegetation inside fence.

#### 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 O. Campbell**
Printed Name: **Kevin O. Campbell**
Title: **BNER Technical Lead**
Date: **06 November 2001**
1233 Arrive on site

- Gates, fence, signs all in excellent condition
- Cover vegetation healthy and more dense than outside fence.
- Small burrows present at base of fence line, back-filled by hand.
- Numerous small mamal burrows present inside fence. Burrow fencing
  is not burned as at other sites allowing animals access under fencing.
- No burrows present on top of raised area.
- No evidence of erosion of cover, side slopes.

1300 Depart site

1310 Rollercoaster Rad Safe site (CAU 407)

- Barbed wire fencing in good condition. No burrow fencing present.
- Postings "Underground Radioactive Material" still up in place.
- Vegetation inside fence very healthy.
- Numerous small mamal burrows present inside fenced area and
  on side of slopes of cover.
- No threat to integrity of cover
- All signs in good shape

1326 Depart site

1335 A3-4 site (CAU 423)

- All 5 above-grade monuments in good condition.
- All attached signs in good condition.
- Vegetation, mainly hegetenite some native species all healthy but sparse.
- Many small mamal burrows present.
ATTACHMENT C

PHOTOGRAPH LOG AND PHOTOGRAPHS
# PHOTOGRAPH LOG

<table>
<thead>
<tr>
<th>PHOTO NUMBER</th>
<th>DATE</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>11/06/2001</td>
<td>View looking east from outside fence at site.</td>
</tr>
<tr>
<td>2</td>
<td>11/06/2001</td>
<td>View looking northeast from outside the fence. Note the presence of sparse healthy native grass and shrub species on and about cover.</td>
</tr>
<tr>
<td>3</td>
<td>11/06/2001</td>
<td>Small mammal burrow holes inside fence line.</td>
</tr>
<tr>
<td>4</td>
<td>11/06/2001</td>
<td>View to southeast of cover from outside fence.</td>
</tr>
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**NEVADA ENVIRONMENTAL RESTORATION PROJECT**
**DOCUMENT REVIEW SHEET**

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<th>Type</th>
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<th>Comment Response</th>
<th>Accept</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>M</td>
<td>The Final Closure Report, Revision 1, for CAU 407 was dated December 2001. NDEP approval was issued on January 7, 2002. Therefore inspections conducted prior to 2002 were not Post-Closure Inspections</td>
<td>In Section 5.2 of Revision 0 of the 407 Closure Report (April 2001) stated that an site inspection would be made within six months of finishing construction of the cover. The first site inspection was done in November of 2001. Revision 1 of the Closure Report was approved on January 7, 2002. Section 5.2 was unchanged from Revision 0, and so a site inspection within six months of completion of cover construction was still required. Technically the November site inspection was not a Post-Closure inspection, but rather, a Post-Construction inspection. Text has been added to the Introduction section to clarify why the site inspection was performed prior to NDEP approval of the Closure Report.</td>
<td>YES</td>
</tr>
</tbody>
</table>

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