

# 2002 Annual Compliance Report Ambrosia Lake, New Mexico, Disposal Site

## Compliance Summary

The site, inspected on May 8, 2002, was in excellent condition. Several perimeter signs were realigned and resecured. Deep-rooted vegetation was observed on and around the cell cover and will be removed. DOE conducted the first post-closure ground water sampling event for the site. Inspectors identified no requirement for a follow-up or contingency inspection.

## Compliance Requirements

Requirements for the long-term surveillance and maintenance of the Ambrosia Lake, New Mexico, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I disposal site are specified in the *Long-Term Surveillance Plan for the Ambrosia Lake, New Mexico, Disposal Site* (DOE/AL/62350–211, Rev. 1, U.S. Department of Energy [DOE], Albuquerque Operations Office, July 1996) and in procedures established by the DOE Grand Junction Office to comply with requirements of Title 10 *Code of Federal Regulations* Part 40.27 (10 CFR 40.27). Table 1–1 lists these requirements.

Table 1–1. License Requirements for the Ambrosia Lake, New Mexico, Disposal Site

Requirement	Long-Term Surveillance Plan	This Report
Annual Inspection and Report	Section 6.0	Section 1.0
Follow-up or Contingency Inspections	Sections 6.0 and 7.0	Section 2.0
Routine Maintenance and Repairs	Section 8.0	Section 3.0
Ground Water Monitoring	Section 5.0	Section 4.0
Corrective Action	Section 9.0	Section 5.0

## Compliance Review

### 1.0 Annual Inspection and Report

The site, north of Grants, New Mexico, was inspected on May 8, 2002. Results of the inspection are described below. Features mentioned in this report are shown on Figure 1–1. Numbers in the left margin of this report refer to items summarized in the Executive Summary table.

### 1.1 Specific Site Surveillance Features

**Access Road, Entrance Sign, Perimeter Signs**—The Ambrosia Lake Disposal Site is accessed via a gravel road that leads to the site (and beyond) from New Mexico State Highway 509. The site is reached by passing through a locked gate and traveling east along this road for approximately 1 mile. The gate is locked because the road leads to private mining and grazing interests that lie farther to the east. Numerous locks are connected in series to allow other users

passage through the gate. The access road passes through the DOE-owned property along the south boundary of the site.

The entrance and all perimeter signs were in good condition. Several perimeter signs along the western property boundary had rotated on their posts; the movement most likely caused by prevailing winds. Inspectors realigned the signs to their proper position and resecured the associated hardware. Future inspections will continue to monitor the condition of the signs.

**Site Markers, Survey and Boundary Monuments**—The two granite site markers, three combined survey and boundary monuments, and five additional boundary monuments were all undisturbed and in excellent condition.

**Monitor Wells**—Twenty monitor wells were decommissioned in September 2001. All decommissioned monitor well sites were reclaimed at the time of decommissioning. There is little to no evidence of land disturbance associated with these reclaimed sites, and the vegetation, although sparse, is expected to be restored to a condition representative of the surrounding, undisturbed areas. There is no further need to inspect these decommissioned sites during future inspections.

Only two monitor wells (0675 and 0678) remain at this site. Both wells were inspected and found to be secure and in excellent condition.

**Mine Vents**—Two mine vent shafts, associated with abandoned underground mines, are within the site boundary; a third vent is west of the site within DOE's restrictive easement that prohibits mining. The mine vent located north of the disposal cell is the only one that has a spot-welded cover that can be considered a permanent closure. The other two vents have bolted-on covers that do not constitute a permanent closure. All vents were secure at the time of the inspection.

## 1.2 Transects

To ensure a thorough and efficient inspection, the site was divided into four areas referred to as transects: (1) the riprap-covered top of the disposal cell; (2) the riprap-covered side slopes and apron of the cell; (3) the graded and revegetated area between the disposal cell and the site perimeter; and (4) the outlying area.

1A **Top of Disposal Cell**—The top of the disposal cell was in excellent condition. With exception of one location there was no evidence of cracking, settling, slumping, or erosion. A shallow depression around settlement plate SP-4 was first noted during the 1997 inspection; however, there has been no visible indication to suggest the depression holds water. At the time of the 2002 annual inspection, the subsidence was estimated to measure approximately 20 feet across and approximately 1 foot in depth. The depression will continue to be monitored to ensure the integrity of the cell cover.

1B Several isolated four-wing saltbush shrubs were observed at various locations on the cell cover. These deep-rooted shrubs growing on the disposal cell will be removed before the next inspection.

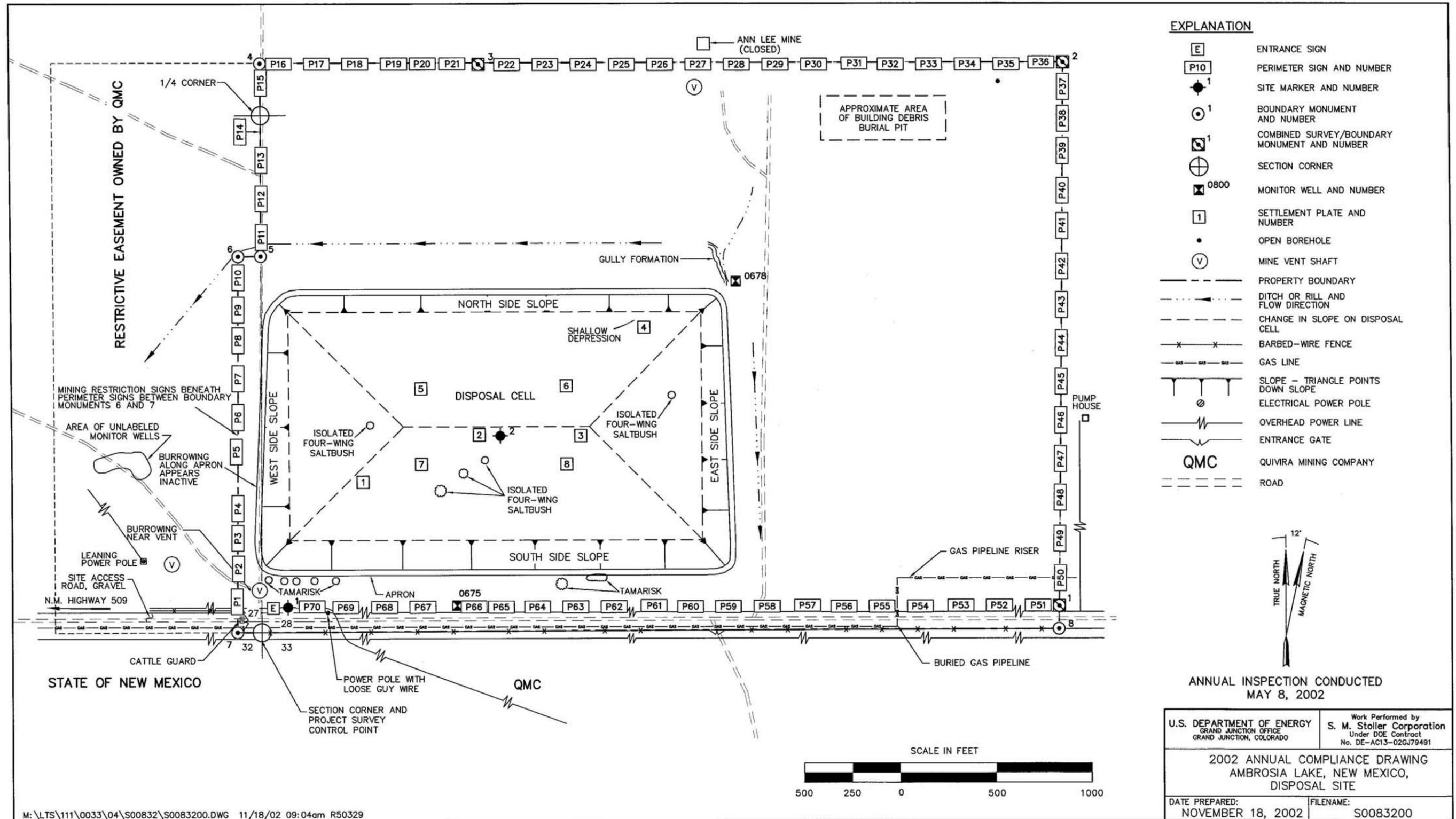


Figure 1-1. 2002 Annual Compliance Drawing for the Ambrosia Lake, New Mexico, Disposal Site

**1C** **Side Slopes and Apron**—The side slopes and apron were in excellent condition and showed no evidence of cracking, settling, slumping, or erosion. Tamarisk was observed growing in several locations along the southern edge of the disposal cell apron and will be removed before the next inspection. No evidence of recent animal burrowing was noted during this year’s inspection. No standing water was observed in the apron along the south side slope, as had been noted during previous inspections.

**Graded and Revegetated Site Area**—In general, site vegetation was healthier than vegetation in the surrounding areas. Some areas were windswept with little growth, while other areas had excellent coverage. Inspectors observed little evidence of cattle grazing adjacent to the disposal cell and the outlying portions of the DOE property. To date, grazing in the revegetated areas of the site has not been a problem. The perennial grasses planted in the graded areas adjacent to the disposal cell are well established.

For several years, inspectors have monitored rills and gullies within the DOE property north and east of the disposal cell. The gullies are located at sufficient distances from the disposal cell that they do not present an immediate threat to the cell. The gullies appeared to be stabilizing.

**Outlying Area**—The area within 0.25 mile of the site boundary was inspected and found to be unchanged.

## **2.0 Follow-up or Contingency Inspections**

No follow-up or contingency inspections were required in 2002.

## **3.0 Routine Maintenance and Repairs**

Other than realigning several perimeter signs, no maintenance or repairs were required in 2002.

## **4.0 Ground Water Monitoring**

The Long-Term Surveillance Plan establishes that ground water monitoring is not required at this site because (1) the ground water is heavily contaminated from underground uranium mining and naturally occurring mineralization, and (2) the uppermost aquifer is of limited use due to low yield. However, at the request of the New Mexico Environment Department, DOE conducts limited monitoring at two locations. Monitor well 0675 is completed in the alluvium, and monitor well 0678 is completed in the uppermost sandstone bed. DOE samples these locations once every third year, for up to 30 years, and evaluates the results after every third sampling event.

**1D** The first post-closure sampling event was conducted on December 7, 2001. The data from this sampling event are presented in Table 1–2.

Table 1-2. Analytical Results from the December 7, 2001, Sampling Event

Well	pH	Electrical Conductivity μOhms/cm	Uranium mg/L	Molybdenum mg/L	Selenium mg/L	Nitrate (as N) mg/L	Sulfate mg/L
0675	6.72	7,000	3.17	3.92	0.433	41.7	4,040
0678	7.26	14,280	0.073	0.023	0.169	479	7,340

μOhms/cm = micro-ohms per centimeter  
mg/L = milligrams per liter

## 5.0 Corrective Action

Corrective action is action taken to correct out-of-compliance or hazardous conditions that create a potential health and safety problem or that may affect the integrity of the disposal cell or compliance with 40 CFR 192.

No corrective action was required in 2002.