2.0 Burrell, Pennsylvania, Disposal Site

2.1 Compliance Summary

The Burrell, Pennsylvania, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I Disposal Site, inspected on October 14, 2008, was in excellent condition. The disposal cell, its cover, and associated drainage features are performing as designed. Deep-rooted plants continue to be allowed to establish on the disposal cell in accordance with the LTSP. A vegetation management plan was implemented to control noxious and invasive plants on site. The entrance sign and four perimeter signs were replaced. No other maintenance needs were found. Groundwater monitoring is required every 5 years and is not due again until 2009; previous monitoring results indicated that there is no contamination being released from the disposal cell. No cause for a follow-up or contingency inspection was identified.

2.2 Compliance Requirements

Requirements for the long-term surveillance and maintenance of the Burrell Disposal Site are specified in the *Long-Term Surveillance Plan* [LTSP] *for the U.S. Department of Energy Burrell Vicinity Property, Blairsville, Pennsylvania* (GJO−2002−331−TAR, U.S. Department of Energy [DOE] Grand Junction, Colorado, April 2000) and in procedures established by DOE to comply with requirements of Title 10 *Code of Federal Regulations* Part 40.27 (10 CFR 40.27). These requirements are listed in Table 2–1.

Table 2–1. License Requirements for the Burrell Disposal Site

Requirement	Long-Term Surveillance Plan	This Report
Annual Inspection and Report	Section 3.3	Section 2.3.1
Follow-Up or Contingency Inspections	Section 3.5	Section 2.3.2
Routine Maintenance and Repairs	Section 3.6	Section 2.3.3
Groundwater Monitoring	Section 3.7	Section 2.3.4
Corrective Action	Section 3.6.3	Section 2.3.5

Institutional Controls—Institutional controls at the disposal site, as defined by DOE Policy 454.1, consist of federal ownership of the property, a site perimeter fence, warning/no-trespassing signs placed along the property boundary, and locked gates.

The 72-acre disposal site is owned by the United States of America and was accepted under the U.S. Nuclear Regulatory Commission (NRC) general license (10 CFR 40.27) in 1994. DOE is the licensee and, in accordance with the requirements for UMTRCA Title I sites, is responsible for the custody and long-term care of the site.

Inspectors found no evidence that these institutional controls were ineffective or violated.

2.3 Compliance Review

2.3.1 Annual Inspection and Report

The site, located southeast of Blairsville, Pennsylvania, was inspected on October 14, 2008. Results of the inspection are described below. Features and photograph locations (PLs)

mentioned in this report are shown on Figure 2−1. Numbers in the left margin of this report refer to items summarized in the "Executive Summary" table.

2.3.1.1 Specific Site-Surveillance Features

Site Access, Fence, Gates, and Signs—Access to the site is off Strangford Road on an access road that lies within a perpetual right-of-way through private property (Tract 201−E). The access road continues across DOE-leased land, and crosses the Norfolk Southern Railroad tracks to the entrance gate located at the east end of the site. Authorized personnel needing access to the railroad tracks and several nearby natural gas wells also use the road.

The chain-link security fence, replaced in 2007, was in excellent condition. A vegetation-free corridor has been established along the fence line (PL–1). The entrance gate and four personnel gates were in good condition.

2A The entrance sign and four perimeter signs were replaced in 2008. Of the 17 perimeter signs mounted on the security fence, 16 were in good condition. Perimeter sign P16 has bullet holes in it but still remains legible.

Site Markers and Monuments—Site marker SMK–1, located at the east end of the site near the entrance gate, was in excellent condition.

The site has seven boundary monuments and three survey monuments. Of the seven boundary monuments, five were in good condition. Boundary monument BM–4 was missing, and boundary monument BM–5 was damaged; replacement and repair will be performed in 2009. All four pairs of erosion control markers were located during the inspection and were in good condition. Vegetation control efforts near the erosion control markers have improved. There was no sign of erosion at the site.

Monitor Wells—The site has four pairs of monitor wells. Each well pair consists of a shallow (alluvial) completion and a deeper (bedrock) completion. All wells were located and found to be secured with a lock, labeled with identification numbers, and in good condition. The protective casings, although rusted, remain functional.

2.3.1.2 Transects

To ensure a thorough and efficient inspection, the site was divided into four transects: (1) the disposal cell, (2) the area between the disposal cell and site boundary, (3) the site perimeter, and (4) the outlying area.

The area inside each transect was inspected by walking a series of traverses. Within each transect, the inspectors examined specific site-surveillance features, drainage structures, vegetation, and other features. Inspectors also looked for evidence of settlement, erosion, or other modifying processes that might affect the site's integrity or long-term performance.

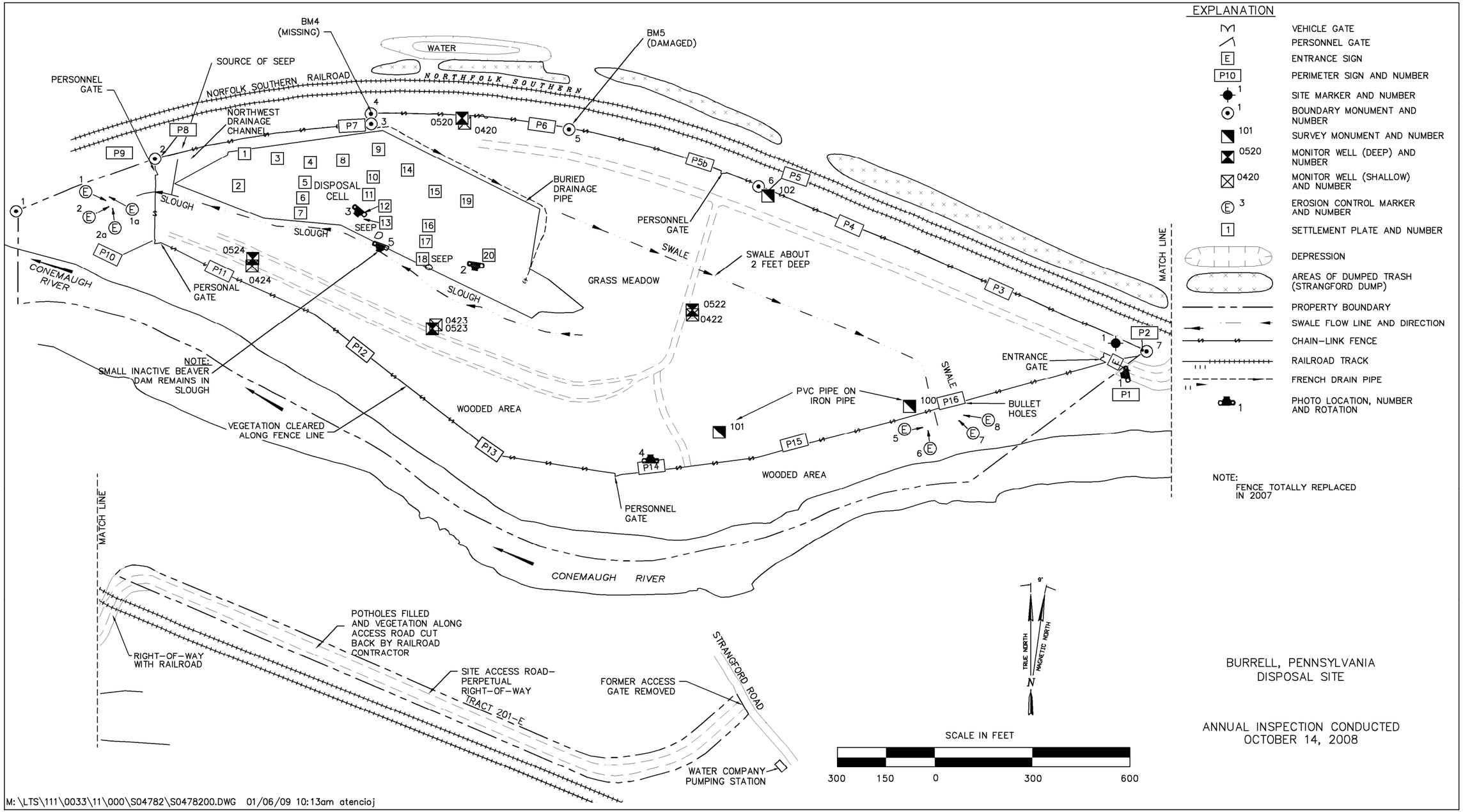

Figure 2–1. 2008 Annual Compliance Drawing for the Burrell Disposal Site

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Disposal Cell—The riprap-covered disposal cell is in excellent condition. There were no indications of cell instability, such as slumping, bulging, or differential settlement. Rock quality is excellent; degradation of the limestone riprap was not evident.

Trees and shrubs continue to establish in the riprap on the disposal cell (PL–2 and PL–3). Studies at the Burrell Site concluded that plant growth on the cell poses no added public or environmental risk of exposure to contaminants within the disposal cell. It was concluded that vegetation growth at this site might actually enhance cover performance through evapotranspiration processes. These studies further concluded that plant growth would not be detrimental to the proper functioning of the radon barrier. NRC concurred in the revised LTSP, which no longer requires active control of vegetation on the cell cover. NRC has suggested that DOE reevaluate the effects of vegetation on cover performance in 10 or 20 years to confirm performance parameters and predictions. As the trees mature, there is some concern that uprooting could occur and cause damage to the disposal cell cover, which would require repair. Vegetative growth on the disposal cell will continue to be monitored.

2B

Two seeps that have been previously observed on the south slope of the disposal cell were dry at the time of the 2008 inspection.

Area Between the Disposal Cell and Site Boundary—The area surrounding the disposal cell and inside the security fence was cleared during reclamation and is covered by thick grass and reestablishing hardwood trees. Periodic mowing has maintained access to monitor wells; the area east of the cell remains grassland (PL–4).

In 2008, a new vegetation management plan was implemented to control noxious and invasive plants across the site. All of the invasive plants observed in 2007 were significantly reduced in 2008. The combination of spot herbicide application and more-frequent mowing is proving to be effective.

In 1998, a drain consisting of a perforated pipe within a rock-filled trench was installed along the base of the north side slope of the disposal cell to prevent ponding and to intercept water that was suspected to be flowing under the cell and emerging as seeps along the south side of the cell. In 2008, the area along the drain was dry, and no seeps were observed on the south side of the cell.

An inactive beaver dam (PL–5) remains within the slough at the base of the south slope of the disposal cell; several feet of water continue to collect behind the dam. In November 2005, DOE coordinated with State wildlife officials to remove the beavers, in accordance with State regulations, and then breached a dam downstream of the site that caused the water to backup against the base of the cell. The water levels behind the inactive dam are not high enough to saturate the tailings or impact the integrity of the disposal cell. Therefore, DOE has elected not to mobilize equipment to remove the dam. Instead, DOE will continue to monitor the dam and possible impacts to the disposal site.

2C

Site Perimeter—In the past, an active seep has been observed along the north security fence, about 60 feet east of perimeter sign P8 and west of the disposal cell. Although the seep was not flowing in 2008, the soil in the area was moist, and wetland-type vegetation (e.g., cattails, willows) was observed nearby, indicating that the area remained saturated. This area will

continue to be monitored for seeps to determine if they pose a threat to the integrity of the disposal cell. Conceivably, the seeps also could destabilize the nearby railroad embankment. The water for the seep along the fence line is potentially coming from seeps on the bluffs, just north of the railroad tracks.

In 2007, Japanese knotweed, a State-listed noxious weed, was and encroaching on the new security fence. Spraying and mowing appear to be effective in maintaining a 15-foot buffer zone around the security fence. Access to erosion control markers was much improved in 2008.

Outlying Area—The area beyond the site boundary for a distance of 0.25 mile was visually examined for signs of erosion, development, and other changes that might affect the site. North of the site, a dirt road parallels the railroad tracks and provides access to a long, narrow, wooded area that has been used as an illegal dump over the years. In 2008, no new trash was observed. The dump is not a threat to the disposal site but is an indication of the overall level of activity near the disposal site and may be a predictor of vandalism. For this reason, the area will continue to be monitored. All other areas around the site remained unchanged.

2.3.2 Follow-Up or Contingency Inspections

DOE will conduct follow-up inspections if (1) a condition is identified during the annual inspection or other site visit that requires a return to the site to evaluate the condition, or (2) DOE is notified by a citizen or outside agency that conditions at the site are substantially changed.

No follow-up or contingency inspections were required in 2008.

2.3.3 Routine Maintenance and Repairs

In 2008, the entrance sign and four perimeter signs were installed. Noxious and invasive weed control continues, and the routes to the monitor wells are mowed annually.

2.3.4 Groundwater Monitoring

In accordance with the LTSP, DOE monitors groundwater at this site as a best management practice to evaluate the performance of the disposal cell. The groundwater monitoring network consists of eight wells (in four pairs) that are monitored for four target analytes: lead, molybdenum, selenium, and uranium. The revised LTSP stipulates that monitoring is to be performed every 5 years. DOE last conducted groundwater monitoring in November 2004 (presented in the 2005 report); the results indicated that there is no contamination being released and that the disposal cell is performing as designed. The next monitoring is scheduled for October 2009.

2.3.5 Corrective Action

Corrective action is 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 2008.

2.3.6 Photographs

Table 2–2. Photographs Taken at the Burrell Disposal Site

Photograph Location Number	Azimuth	Description
PL–1	260	Vegetation-free corridor along south perimeter fence.
PL–2	185	Vegetation growth on the disposal cell.
PL–3	220	Vegetation growth on the disposal cell.
PL–4	0	Grass meadow east of the cell.
PL–5	190	Inactive beaver dam in drainage slough directly south of the disposal cell.

BUR 10/2008. PL–1. Vegetation-free corridor along south perimeter fence.

BUR 10/2008. PL–2. Vegetation growth on the disposal cell.

BUR 10/2008. PL–3. Vegetation growth on the disposal cell.

BUR 10/2008. PL–4. Grass meadow east of the cell.

BUR 10/2008. PL–5. Inactive beaver dam in drainage slough directly south of the disposal cell.