

2.0 Annual Inspection of the Burrell, Pennsylvania, UMTRCA Title I Disposal Site

2.1 Compliance Summary

The Burrell, Pennsylvania, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I Disposal Site, inspected on October 17, 2012, was in excellent condition. The disposal cell and all associated drainage diversion structures were in good condition and functioning as designed. No maintenance needs or cause for a follow-up or contingency inspection was identified.

Groundwater monitoring is required every 5 years and was last conducted in October 2009. The next sampling event is scheduled for 2013. Monitoring is being coordinated with the Canonsburg, Pennsylvania, UMTRCA Title I Disposal Site (which is also on a 5-year sampling schedule) to improve efficiency and reduce costs. Past monitoring results have indicated that the disposal cell is not releasing any contamination and is performing as designed.

Numbers in the left margin of this report refer to items summarized in the “Executive Summary” table.

2.2 Inspection Requirements

Requirements for the long-term surveillance and maintenance of the site are specified in the *Long-Term Surveillance Plan for the U.S. Department of Energy, Burrell Vicinity Property, Blairsville, Pennsylvania* (GJO-2002-231-TAR, U.S. Department of Energy [DOE], April 2000; LTSP) and in procedures established by DOE to comply with the requirements of Title 10 *Code of Federal Regulations* Part 40.27 (10 CFR 40.27). Table 2-1 lists these requirements.

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 2.4
Follow-Up or Contingency Inspections	Section 3.5	Section 2.5
Maintenance and Repairs	Section 3.6	Section 2.6
Groundwater Monitoring	Section 3.7	Section 2.7.1
Corrective Action	Section 3.6.3	Section 2.8

2.3 Institutional Controls

The 72-acre 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. Institutional controls at the site include federal ownership of the property and the following features that are inspected annually: a site marker, survey and boundary monuments, warning/no-trespassing signs, a site perimeter fence, and locked gates at the site entrances.

2.4 Inspection Results

The site, east of Blairsville, Pennsylvania, was inspected on October 17, 2012. M. Miller, K. Broberg, and J. Homer, all with the S.M. Stoller Corporation, the Legacy Management Support contractor, conducted the inspection. C. Carpenter, with the DOE Office of Legacy Management, participated in the inspection.

The purposes of the inspection were to confirm the integrity of visible features at the site, to identify changes in conditions that may affect site integrity, and to determine the need, if any, for maintenance or additional inspections and monitoring.

2.4.1 Site Surveillance Features

The locations of site surveillance features are shown in Figure 2–1. Inspection results and recommended maintenance activities associated with site surveillance features are included in the following subsections. Photographs to support specific observations are identified in the text and in Figure 2–1 by photograph location (PL) numbers.

2.4.1.1 Entrance Gates, Entrance Signs, and Access Road

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 at the east end of the site. Authorized personnel who need access to the railroad tracks and to the several natural-gas wells nearby also use the road. The entrance gate and four personnel gates were in good condition, and gate locks remain serviceable.

2.4.1.2 Perimeter Fence and Perimeter Signs

The chain-link security fence, replaced in 2007, remains in excellent condition, with the exception of a bent rail on the south fence (PL–1). The fence rail was damaged when a tree fell across it in 2011. The tree was safely removed from the fence shortly after being discovered. The top rail of the fence needs to be replaced. A vegetation-free corridor remains established along the fence line (PL–2). Several of the 17 perimeter signs mounted on the security fence have been damaged by bullet holes, but they remain serviceable (PL–3).

2.4.1.3 Site Markers

Site marker SMK–1 was in excellent condition (PL–4).

2.4.1.4 Survey Monuments and Boundary Monuments

The site has 10 monuments (three survey monuments and seven boundary monuments). All three survey monuments (SM–100, SM–101, and SM–102) are located at points on the property that originally afforded a sweeping view of the site during construction. Several years ago, inspectors installed tall pieces of white PVC pipe near SM–100 and SM–101 to make them easier to locate (PL–5).

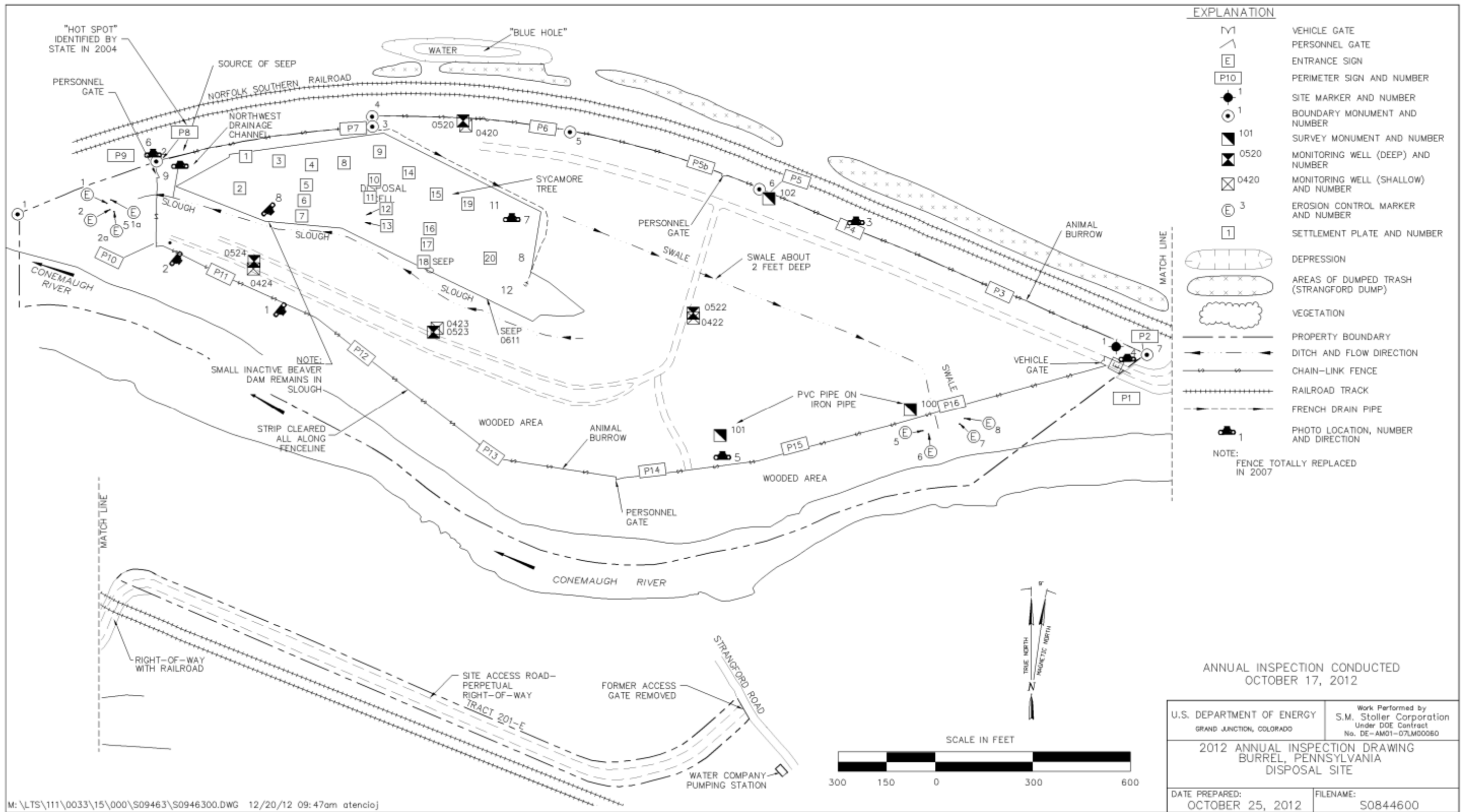


Figure 2-1. 2012 Annual Compliance Drawing for the Burrell Disposal Site

This page intentionally left blank

Survey monuments SM-101 and SM-102 were in good condition. Although the PVC pipe near SM-100 was located, the actual boundary monument plate was not located. Additional efforts will be made during next year's inspection to find the monument plate.

Seven boundary monuments are located along the north perimeter fence. Five of the seven boundary monuments (BM-2, BM-3, BM-4, BM-5, and BM-7) were located during the inspection and observed to be in good condition (PL-6). Vegetation near boundary monument BM-1 was too dense to allow access. It is recommended that the site maintenance contractor be asked to clear a path through the vegetation for the inspection next year. Boundary monument BM-6 could not be located. Extra effort will be made during next year's inspection to find boundary monument BM-6.

2.4.1.5 Erosion Control Markers

All eight erosion control markers were located during the inspection, and in excellent condition. Dense vegetation was cleared from all of the erosion control markers, making them easy to locate.

2.4.1.6 Monitoring Wells

The site has four pairs of monitoring wells. Each pair consists of a shallow (alluvial) completion and a deeper (bedrock) completion. Monitoring wells were not inspected in 2012. The water sampling crew last inspected them in 2009. The monitoring wells will be inspected again when they are sampled in 2013. All wells encountered during the 2012 site inspection were locked and secured.

2.4.2 Inspection Areas

In accordance with the LTSP, the site is divided into four inspection areas (referred to as "transects" in the LTSP) to ensure a thorough and efficient inspection: (1) the disposal cell, (2) the area between the disposal cell and site boundary, (3) the site perimeter, and (4) the outlying area.

Within each area, inspectors examined specific site surveillance features, such as monitoring wells, boundary monuments, and signs. Inspectors examined each area for evidence of erosion, settling, slumping, or other disturbances that might affect the site's integrity, protectiveness, or long-term performance.

2.4.2.1 Disposal Cell

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

Active control of vegetation on the cell cap has not been required since 2000 (PL-7). Past studies at the site concluded that deep-rooted plant growth on the cell puts the public and the environment at no greater risk of exposure to contaminants within the disposal cell. Vegetation growth on the cell might actually enhance cover performance through evapotranspiration. These studies further concluded that plant growth would not impede the proper functioning of the radon

barrier. NRC concurred on the revised LTSP, which no longer requires active control of deep-rooted vegetation on the cell cover. NRC has suggested that DOE reevaluate the effects of vegetation on cover performance in 10 to 20 years to confirm performance parameters and predictions. The timing for this assessment is, therefore, between 2007 and 2017.

No active seeps were found along the south slope of the disposal cell during the site inspection.

2.4.2.2 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 now covered by thick grass and reestablishing hardwood trees. Periodic mowing maintains access to monitoring wells. The area east of the cell remains grassland.

A French drain was installed along the base of the north side slope of the disposal cell in 1998 to prevent water from ponding next to the cell. Inspection findings dating back to 1998 indicate that, before the French drain was installed, rainwater and snowmelt would collect off the north side of the disposal cell. Saturated soil and wetland vegetation (cattails and purple loosestrife) were present. At the same time that wetland vegetation was growing on the north slope of the disposal cell, seeps were occurring on the south slope of the disposal cell. It was thought that the source of water for the seeps could be the ponded water north of the cell. No water has been observed flowing from the seeps on the south slope of the disposal cell since the French drain was installed. In spring 2010, though, a new seep was observed on the south slope (seep 0611). The seep was sampled. No maximum concentration limit exceedances were measured in the sample. Inspectors in 2010 and 2011 observed cattails and purple loosestrife growing between the north slope of the disposal cell and the location of the French drain, which indicates that the area might not be draining efficiently. This area was revisited during the 2012 inspection, and no cattails were present—just purple loosestrife. Inspection of the outlet to the French drain indicates that the drain outlet is clear of obstructions.

A small, inactive beaver dam remains within the slough at the base of the south slope of the disposal cell, and water continues to collect behind it. The water level behind the dam is not high enough to saturate the tailings or impact the integrity of the disposal cell (PL-8). Therefore, DOE has elected not to remove the dam. Instead, DOE will continue to monitor the dam and its possible impacts on the disposal site.

2.4.2.3 Site Perimeter

A known seep along the north security fence, about 60 feet east of perimeter sign P8 and west of the disposal cell, was flowing at the time of the 2012 inspection (PL-9). It appeared to be about the same as observed in 2011. This area will continue to be monitored for seeps to determine if they threaten the disposal cell's integrity. Conceivably, the seeps also could destabilize the nearby railroad embankment. The water for this seep may be coming from other seeps on the bluffs, above and just north of the railroad tracks.

2.4.2.4 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 2012, 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.

2.5 Follow-Up or Contingency Inspections

DOE will conduct follow-up inspections if (1) an annual inspection or other site visit reveals a condition that must be reevaluated during a return to the site, or (2) a citizen or outside agency notifies DOE that conditions at the site are substantially changed.

No need for a follow-up or contingency inspection was identified during the inspection.

2.6 Maintenance and Repairs

- 2A The routes to the monitoring wells were mowed.

2.7 Environmental Monitoring

2.7.1 Groundwater Monitoring

- 2B In accordance with the LTSP, DOE monitors groundwater at the site as a best management practice to evaluate the disposal cell's performance. 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 be performed every 5 years. DOE last conducted monitoring in 2009 (presented in the 2010 report). The results indicated that no contamination was being released and that the disposal cell was performing as designed. The next monitoring is scheduled for October 2013. Monitoring at Burrell is being coordinated with monitoring at Canonsburg to improve efficiency and decrease costs. Both sites are now on a 5-year monitoring schedule.

2.8 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 2012.

2.9 Photographs

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

Photograph Location Number	Azimuth	Description
PL–1	130	Fence damage.
PL–2	130	Southwest fence line.
PL–3	NA	Bullet holes in perimeter fence sign P4.
PL–4	NA	Site marker SMK–1.
PL–5	NA	Survey monument SM–101.
PL–6	NA	Boundary monument BM–2.
PL–7	NA	Examining tree at base of disposal cell.
PL–8	135	Small inactive beaver dam.
PL–9	NA	Active seep; north fence.



BUR 10/2012. PL-1. Fence damage.



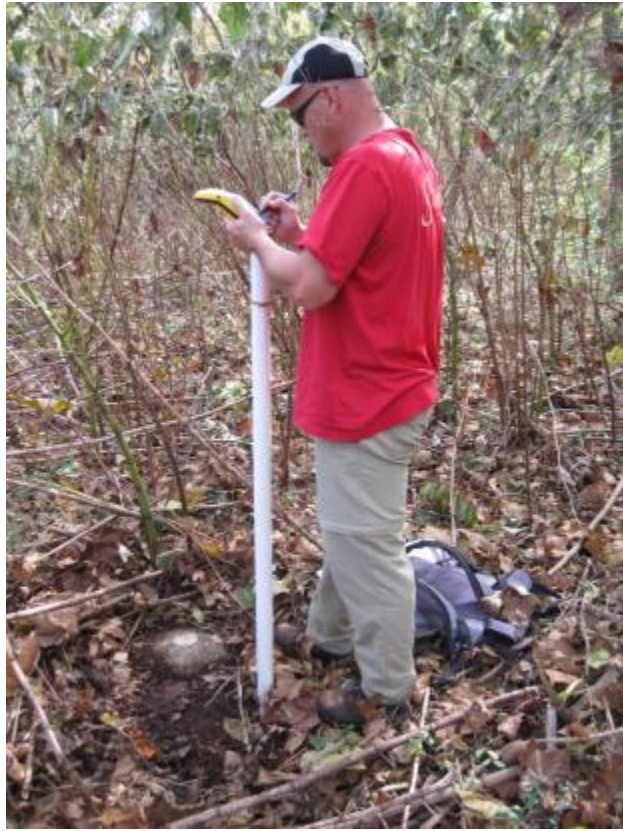
BUR 10/2012. PL-2. Southwest fence line.



BUR 10/2012. PL-3. Bullet holes in perimeter fence sign P4.



BUR 10/2012. PL-4. Site marker SMK-1.



BUR 10/2012. PL-5. Survey monument SM-101.



BUR 10/2012. PL-6. Boundary monument BM-2.



BUR 10/2012. PL-7. Examining tree at base of disposal cell.



BUR 10/2012. PL-8. Small inactive beaver dam.



BUR 10/2012. PL-9. Active seep; north fence.

This page intentionally left blank