

18.0 Spook, Wyoming, Disposal Site

18.1 Compliance Summary

The Spook, Wyoming, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I Disposal Site, inspected on June 10, 2008, was in excellent condition. No evidence of settling or erosion was observed over the encapsulated waste materials. Minor erosion on site has stabilized. The access road to the site had been improved (widened and surfaced with gravel) due to significant oil well drilling activity near the site. The spalling concrete base of a site marker was repaired. No other maintenance needs or cause for a follow-up or contingency inspection was identified.

18.2 Compliance Requirements

Requirements for the long-term surveillance and maintenance of the Spook Disposal Site are specified in the *Long-Term Surveillance Plan [LTSP] for the Spook, Wyoming, Disposal Site* (DOE/AL/350215.000, Rev. 0, U.S. Department of Energy [DOE], Albuquerque Operations Office, January 1993) 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 license requirements are listed in Table 18–1.

Table 18–1. License Requirements for the Spook Disposal Site

Requirement	Long-Term Surveillance Plan	This Report
Annual Inspection and Report	Section 6.0	Section 18.3.1
Follow-Up or Contingency Inspections	Section 7.0	Section 18.3.2
Routine Maintenance and Repairs	Section 8.0	Section 18.3.3
Groundwater Monitoring	Section 5.2	Section 18.3.4
Corrective Action	Section 9.0	Section 18.3.5

Institutional Controls—The 14-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 1993. 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 disposal site, as defined by DOE Policy 454.1, consist of federal ownership of the property and warning/no-trespassing signs placed along the property boundary; the site is not fenced. Verification of these institutional controls is part of the annual inspection. Inspectors found no evidence that these institutional controls were ineffective or violated.

18.3 Compliance Review

18.3.1 Annual Inspection and Report

The site, located in north central Converse County, Wyoming, was inspected on June 10, 2008. Results of the inspection are described below. Features and the photograph locations (PLs) mentioned in this report are shown on Figure 18–1. The number in the left margin of this report refers to items summarized in the “Executive Summary” table.

18.3.1.1 Specific Site-Surveillance Features

Access Road and Signs—Access to the site, located northwest of Douglas, Wyoming, is via Highway 93 to County Road 31 onto the Hornbuckle Ranch road. Site access is maintained through perpetual easements across the Hornbuckle Ranch. The road to the site is graded and hard packed. Prior to the 2008 inspection, the last portion of access road north of the Dry Fork of the Cheyenne River was a seldom-used dirt track. However, this portion has been widened and surfaced with gravel to support significant oil well drilling activity near the site (PL-1). The road continues and enters the Hardy Ranch about 0.5 mile north of the site, and is the access route to the Bear Creek, Wyoming, UMTRCA Title II site, which is located approximately a mile north of the Spook Disposal Site.

The site is open-range and unfenced. All 10 perimeter signs and one entrance sign were in place and legible. Several perimeter signs have bullet holes, perimeter sign P7 is slightly bent and the paint is cracked, and the wind has scoured soil from base of perimeter sign P10; however, the signs remain legible, and there is no need for repairs at this time.

18A **Site Markers and Monuments**—Site marker SMK-2 and the eight boundary monuments and three survey monuments were in excellent condition. The concrete base of site marker SMK-1 continues to deteriorate. The spalling concrete base was chipped, cleaned, and sprayed with a concrete sealant (PL-2). Wind has scoured soil from beneath the surface concrete collar around boundary monument BM-6; however, the monument is stable.

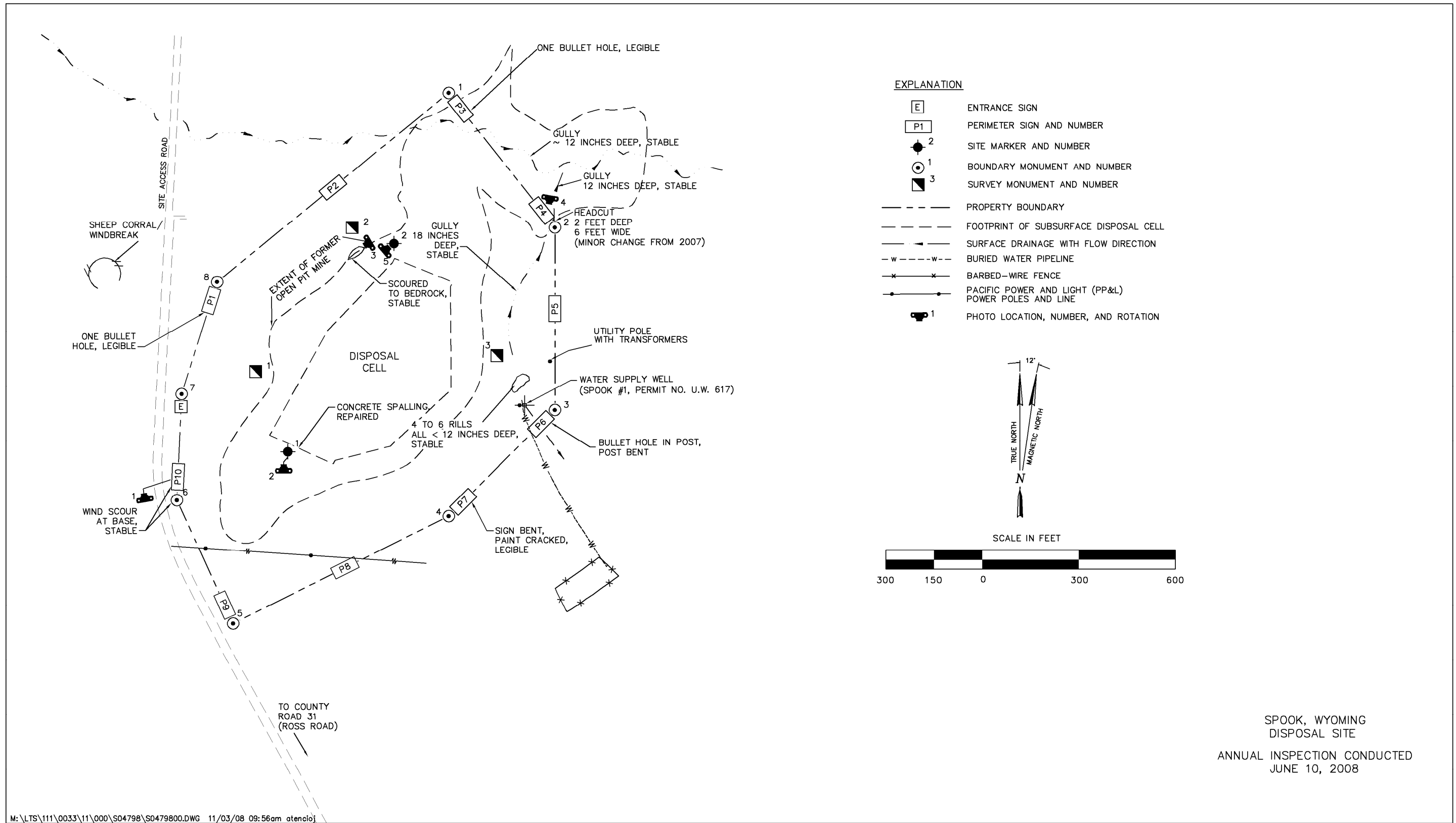
Monitor Wells—Groundwater monitoring is not required at this site. DOE abandoned all monitor wells in October 2000 and closed out the permits.

A water supply well remains on the site. The well, Spook #1 (Wyoming Permit No. U.W. 617), was installed in 1961 by the former landowner and predates site mining and milling activities. Well ownership was transferred to DOE when DOE acquired the site. It is completed in a deeper aquifer not affected by regional uranium mineralization and is permitted for 100 gallons per minute. DOE granted use of the well for agricultural and other purposes to Hornbuckle Ranch Limited Partnership, the owner of record of the surrounding ranch, through a perpetual access agreement (DE-RO13-02GJ67289). The agreement stipulates that users will hold DOE harmless from all liability associated with use of the well. A new power pole and electrical panel were installed adjacent to the well in 2007, and a buried pipeline carries water to a storage area located southeast of the site. It appears that the water currently is being used to support drilling operations in the vicinity of the site.

18.3.1.2 Transects

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

Within each transect, the inspectors examined specific site-surveillance features, vegetation, and other features. Inspectors also looked for evidence of settlement, erosion, or other modifying processes.



SPOOK, WYOMING
DISPOSAL SITE
ANNUAL INSPECTION CONDUCTED
JUNE 10, 2008

Figure 18-1. 2008 Annual Compliance Drawing for the Spook Disposal Site

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Disposal Site—The Spook Disposal Site is unique among Title I sites in that tailings were encapsulated in the bottom of an open pit mine and covered with 40 to 60 feet of clean fill and topsoil. As such, many of the observations and concerns routinely associated with above-grade disposal cells—such as the quality of the riprap, the stability of side slopes, or the presence of deep-rooted plants (biointrusion) above the radon barrier—do not apply to this site.

The surface of the 5-acre disposal cell, completed in 1989, was in excellent condition. No evidence of settling was observed over the former mine pit. Vegetation across the site, consisting of grasses and forbs, appears healthy and is indistinguishable from that which grows on the surrounding hills and valleys. The same species are present, and the overall health and density of vegetation are similar.

The site is not fenced, and the local landowner controls the grazing of cattle on DOE property as an extension of his ranching activities. Pronghorn antelope also graze on the site. The range appears healthy and has not been overgrazed.

The Pacific Power and Light Company owns a transmission line that crosses the southern end of the site. The company also owns the new utility pole with transformers that provide power to the submersible pump in the water supply well on site.

Most erosion features observed during previous inspections within the property boundary have stabilized, as indicated by vegetation growing in the channels; only minor change was observed (PL-3).

Site Perimeter—Inspectors walked the site perimeter, and this transect was in excellent condition. If there were no perimeter signs along the boundary, the perimeter of the site would be indistinguishable from the adjacent open range.

Most erosion features observed during previous inspections along and adjacent to the property boundary have stabilized. Only one gully, near perimeter sign P4, displays minimal activity, although new vegetation continues to be establishing within the gully (PL-4). Monitoring of this erosion feature will continue until stabilization occurs and to ensure that perimeter sign P4 is not impacted.

The noxious weed Canada thistle had persisted at the site for many years, primarily along the site perimeter. Annual spraying had been conducted by the Converse County weed control agent through 2005. No Canada thistle or other noxious weeds have been observed since then.

Outlying Area—The area beyond the site boundary for a distance of about 0.25 mile was examined for erosion, disturbance, change in land use, or other features of possible concern. As noted above, the access road to the site has been improved to support oil field operations. New oil well pads have been constructed northwest and northeast of the disposal site (PL-1 and PL-5), and a new oil well access road has been constructed north of the site. However, none of these activities have affected the site, and no evidence of trespassing or vandalism was observed.

18.3.2 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.

18.3.3 Routine Maintenance and Repairs

The concrete base of a site marker was repaired in 2008. No other maintenance was necessary.

18.3.4 Groundwater Monitoring

Groundwater in the uppermost aquifer at this site is contaminated as a result of widespread, naturally occurring uranium mineralization. The aquifer is of limited use because its yield is marginal and because it cannot be cleaned up by methods reasonably employed in public water systems. Therefore, in accordance with 40 CFR 192.21 (g), narrative supplemental standards have been applied to the site, and groundwater monitoring is not required.

18.3.5 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 at the site in 2008.

18.3.6 Photographs

Table 18-2. Photographs Taken at the Spook Disposal Site

Photograph Location Number	Azimuth	Description
PL-1	350	Improved access road and a new oil well pad northwest of the site.
PL-2	0	Site marker SMK-1 with freshly applied concrete sealant.
PL-3	240	Stable erosion area near the northwest edge of the disposal cell.
PL-4	190	Gully near perimeter sign P4.
PL-5	50	Site marker SMK-2 and a new oil well pad northeast of the site.



SPK 6/2008. PL-1. Improved access road and a new oil well pad northwest of the site.



SPK 6/2008. PL-2. Site marker SMK-1 with freshly applied concrete sealant.



SPK 6/2008. PL-3. Stable erosion area near the northwest edge of the disposal cell.



SPK 6/2008. PL-4. Gully near perimeter sign P4.



SPK 6/2008. PL-5. Site marker SMK-2 and a new oil well pad northeast of the site.

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