

## 18.0 Spook, Wyoming, Disposal Site

### 18.1 Compliance Summary

The Spook, Wyoming, Disposal Site, inspected on June 12, 2007, was in excellent condition. Minor erosion occurring at several locations displayed little change from the previous year. The old water supply well on the site had a new power supply and buried pipeline to an offsite location indicating use of the well by a local rancher under the perpetual access agreement. No 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, Wyoming, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I 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, Wyoming, 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 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.

### 18.3 Compliance Review

#### 18.3.1 Annual Inspection and Report

The site, located in north central Converse County, Wyoming, was inspected on June 12, 2007. 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. North of the Dry Fork of the Cheyenne River, the road narrows to a seldom-used dirt track. The track is not surfaced and is difficult to use in wet weather. 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.

The site is open range and unfenced. All 10 perimeter signs and one entrance sign were in place and legible (PL-1). Several perimeter signs have bullet holes and perimeter sign P7 is slightly bent and the paint is cracked; however, the signs remain legible and there is no need for repairs at this time.

**Site Markers and Monuments**—The two site markers, eight boundary monuments, and three survey monuments are in excellent condition. In 2005, spalling concrete at the base of site marker SMK-1 was patched to prevent additional damage. The patch has deteriorated and additional repairs will be made in 2008. Wind has scoured soil from beneath the surface concrete collar around boundary monument BM-6 and perimeter sign P10; however, both features are stable.

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

18A 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. Mr. Hornbuckle put the well to use since the 2006 inspection. A new power pole and electrical panel were installed adjacent to the well and a buried pipeline runs southeast from the well to an offsite location. A new utility pole with transformers was also installed on DOE property approximately 150 feet northeast of the well to supply power to the well, replacing the prior aging electrical support structure (PL-2).

### 18.3.1.2 Transects

To ensure a thorough and efficient inspection, the site was divided into three areas referred to as transects: (1) the disposal site; (2) the site perimeter; and (3) 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.

**Disposal Site**—The Spook, Wyoming, 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. None of the observations and concerns routinely associated with above-grade disposal cells, such as quality of the riprap, stability of side slopes, or the presence of deep-rooted plants (biointrusion) above the radon barrier 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.

Pacific Power and Light Company (PP&L) owns a transmission line that crosses the southern end of the site. They also own the new utility pole with transformers that provides 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. No changes or concerns were noted.

### **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 2007.

### **18.3.3 Routine Maintenance and Repairs**

No maintenance or repairs occurred at the site in 2007.

### 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 due to marginal yield and because it cannot be cleaned up by methods reasonably employed in public water systems. Therefore, supplemental standards have been applied, 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 2007.

### 18.3.6 Photographs

*Table 18–2. Photographs Taken at the Spook, Wyoming, Disposal Site*

<b>Photograph Location Number</b>	<b>Azimuth</b>	<b>Description</b>
PL-1	250	View across the site from perimeter sign P5.
PL-2	200	New utility pole with transformers; new power pole for the onsite water supply well in background.
PL-3	175	Gully southwest of perimeter sign P4; minor change from 2006.
PL-4	180	Gully adjacent to perimeter sign P4; minor change from 2006.



*SPK 6/2007. PL-1. View across the site from perimeter sign P5.*



*SPK 6/2007. PL-2. New utility pole with transformers; new power pole for the onsite water supply well in background.*



*SPK 6/2007. PL-3. Gully southwest of perimeter sign P4; minor change from 2006.*



*SPK 6/2007. PL-4. Gully adjacent to perimeter sign P4; minor change from 2006.*