

18.0 Spook, Wyoming, Disposal Site

18.1 Compliance Summary

The Spook, Wyoming, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I Disposal Site was inspected on July 8, 2015. The site was in excellent condition. Three perimeter signs were delaminating but remained legible. These three signs were replaced in September when staff was in the area. One broken perimeter sign was replaced during the inspection. Inspectors identified no other maintenance needs or cause for a follow-up or contingency inspection.

18.2 Compliance Requirements

Requirements for the long-term surveillance and maintenance of the site are specified in the *Final Long-Term Surveillance Plan for the Spook, Wyoming, Disposal Site* (LTSP) (DOE/AL/350215.0000, Rev. 0, U.S. Department of Energy [DOE], January 1993) and in procedures that DOE established to comply with the requirements of Title 10 *Code of Federal Regulations* Section 40.27 (10 CFR 40.27). Table 18-1 lists these requirements.

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 18.4
Follow-Up or Contingency Inspections	Section 7.0	Section 18.5
Maintenance	Section 8.0	Section 18.6
Groundwater Monitoring	Section 5.0	Section 18.7
Corrective Action	Section 9.0	Section 18.8

18.3 Institutional Controls

The 14-acre site (Figure 18-1) 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 include federal ownership of the property and the following physical features that are inspected annually: perimeter warning signs, site markers, and survey and boundary monuments.

18.4 Inspection Results

The site, northeast of Casper, Wyoming, was inspected on July 8, 2015. The inspection was conducted by D. Traub, R. Johnson, and S. Kaufman of the DOE Legacy Management Support contractor. B. Dam (DOE Site Manager) and R. Evans (NRC) also attended the inspection.

The purposes of the inspection were to confirm the integrity of visible features at the site, to identify changes in conditions that might affect site integrity, and to determine the need, if any, for maintenance or additional inspections and monitoring. Numbers in the left margin of this report refer to items summarized in Table ES-1 of the “Executive Summary.”

18.4.1 Site Surveillance Features

Figure 18-1 shows the locations of site surveillance features. 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 18-1 by photograph location (PL) numbers.

18.4.1.1 Access Road and Entrance Sign

Access to the site is via State Highway 95 from Glenrock or State Highway 93 from Douglas, to County Road 31, and 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 and is maintained by the ranch. The road and entrance sign were in good condition.

18.4.1.2 Perimeter Signs

The site is surrounded by 10 perimeter signs and the entrance sign. All of the signs were legible; however, perimeter signs P1, P4, and P7 (PL-1) (which are constructed of thin, bonded aluminum sheets) were delaminating. These three signs were replaced in mid-September when staff was in the area. Perimeter sign P2 was broken and was replaced during the 2015 inspection.

18.4.1.3 Site Markers

Two granite site markers identify the site. Both site markers were in excellent condition (PL-2). The concrete base of site marker SMK-1 is damaged due to spalling but is stable; there were no apparent changes from the previous year.

18.4.1.4 Survey Monuments and Boundary Monuments

Eight boundary monuments and three survey monuments are present at the site. Except for boundary monument BM-6, which was observed to be bent during last year's inspection, all other monuments were in excellent condition (PL-3).

The boundary monuments and a survey monument, as well as the perimeter signs, are located outside the property boundary. The owner of the surrounding property (Hornbuckle Ranch) is aware they are on his property but is not concerned; therefore, the monuments and signs will remain at their current locations.

18.4.2 Inspection Areas

The site is divided into three inspection areas to ensure a thorough and efficient inspection. The inspection areas are: (1) the disposal cell, (2) the site perimeter, and (3) the outlying area.

Within each area, the inspectors examined specific site surveillance features. Inspectors observed the condition of site vegetation and looked for evidence of erosion, settling, slumping, or other disturbances that might affect the site's integrity, protectiveness, or long-term performance.

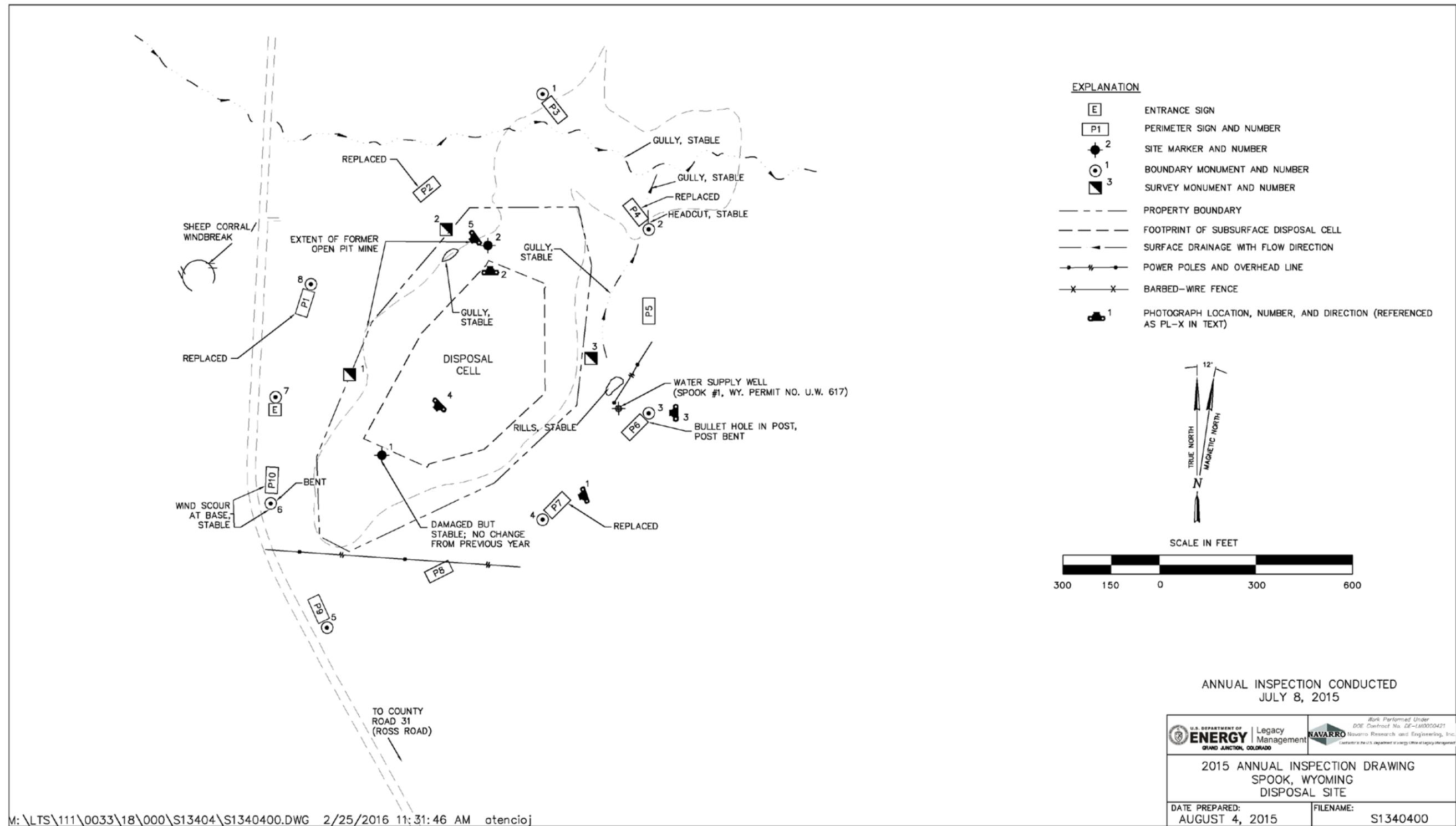


Figure 18-1. 2015 Annual Inspection Drawing for the Spook Disposal Site

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18.4.2.1 Disposal Cell

The site is unique among Title I sites in that tailings were encapsulated in the bottom of an open pit mine and covered with 40–60 feet of clean fill and topsoil. Therefore, many of the observations and concerns routinely associated with above-grade disposal cells—such as the quality of the riprap and the stability of side slopes—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 on the cell cover, consisting of grasses and forbs, was healthy and indistinguishable from that growing on the remainder of the site and on the surrounding ranch land (PL-4).

18.4.2.2 Site Perimeter

There is no perimeter fence at the site. The area between the disposal cell and the perimeter was in excellent condition with no evidence of settling or active erosion.

18.4.2.3 Outlying Area

The area beyond the site boundary for a distance of about 0.25 mile was visually observed for erosion, disturbance, change in land use, or other phenomena that might affect the long-term integrity of the site. Several minor rills and gullies are near the site (PL-5), and they appeared to be stable. The erosion is not harming the function of the cell cover or other site features, and it is not a concern at this time.

The access road has frequent truck traffic to service and maintain the oil wells in the area. Even though oil field activity has greatly increased near the site, no evidence of trespassing or vandalism on the site was observed. No other such impacts were observed.

18.5 Follow-Up or Contingency Inspections

DOE will conduct follow-up or contingency inspections if (1) an annual inspection or other site visit identifies a condition that requires a return to the site to evaluate the condition, or (2) a citizen or outside agency notifies DOE that conditions at the site or in the vicinity of the site are substantially changed. No need for a follow-up or contingency inspection was identified.

18.6 Maintenance

- 18A Damaged perimeter sign P2 was identified and replaced during the 2015 inspection. Delaminated perimeter signs (P1, P4, and P7) were replaced in September after the site inspection. A t-post will be placed adjacent to bent boundary monument BM-6 to identify its location when it is buried by snow. No other maintenance needs were identified.

18.7 Groundwater Monitoring

- 18B Groundwater monitoring is not required at the site, in accordance with the LTSP. The uppermost aquifer is of limited use because of marginal yield, and the groundwater is contaminated as a result of widespread, naturally occurring uranium mineralization. NRC concurred with DOE's application of supplemental standards.

18.8 Corrective Action

In accordance with the LTSP, corrective action is taken to correct conditions that threaten the integrity of the disposal cell or compliance with 40 CFR 192. No need for corrective action was identified.

18.9 Photographs

Photograph Location Number	Azimuth	Photograph Description
PL-1	250	Perimeter sign P7 and boundary monument BM-4.
PL-2	0	Site marker SMK-2.
PL-3	0	Boundary monument BM-3.
PL-4	310	View southwest from north of site marker SMK-1, swirled grass due to sheet flow.
PL-5	235	Gully in sandstone bedrock, view to southwest



SPK 7/2015. PL-1. Perimeter sign P7 and boundary monument BM-4.



SPK 7/2015. PL-2. Site marker SMK-2.



SPK 7/2015. PL-3. Boundary monument BM-3.



SPK 7/2015. PL-4. View southwest from north of site marker SMK-1, swirled grass due to sheet flow.



SPK 7/2015. PL-5. Gully in sandstone bedrock, view to southwest.

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