13.0 Naturita, Colorado, Disposal Site

13.1 Compliance Summary

The Naturita, Colorado, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I Disposal Site was inspected on May 30, 2024. No changes were observed on the disposal cell or in the associated drainage features. Inspectors identified a minor maintenance item but found no cause for a follow-up inspection.

Groundwater monitoring is not required and was discontinued in 2014. The site-specific *Long-Term Surveillance Plan for the Naturita, Colorado, Disposal Site* (DOE 2019) (LTSP) was revised in 2019 to remove the groundwater monitoring requirement.

13.2 Compliance Requirements

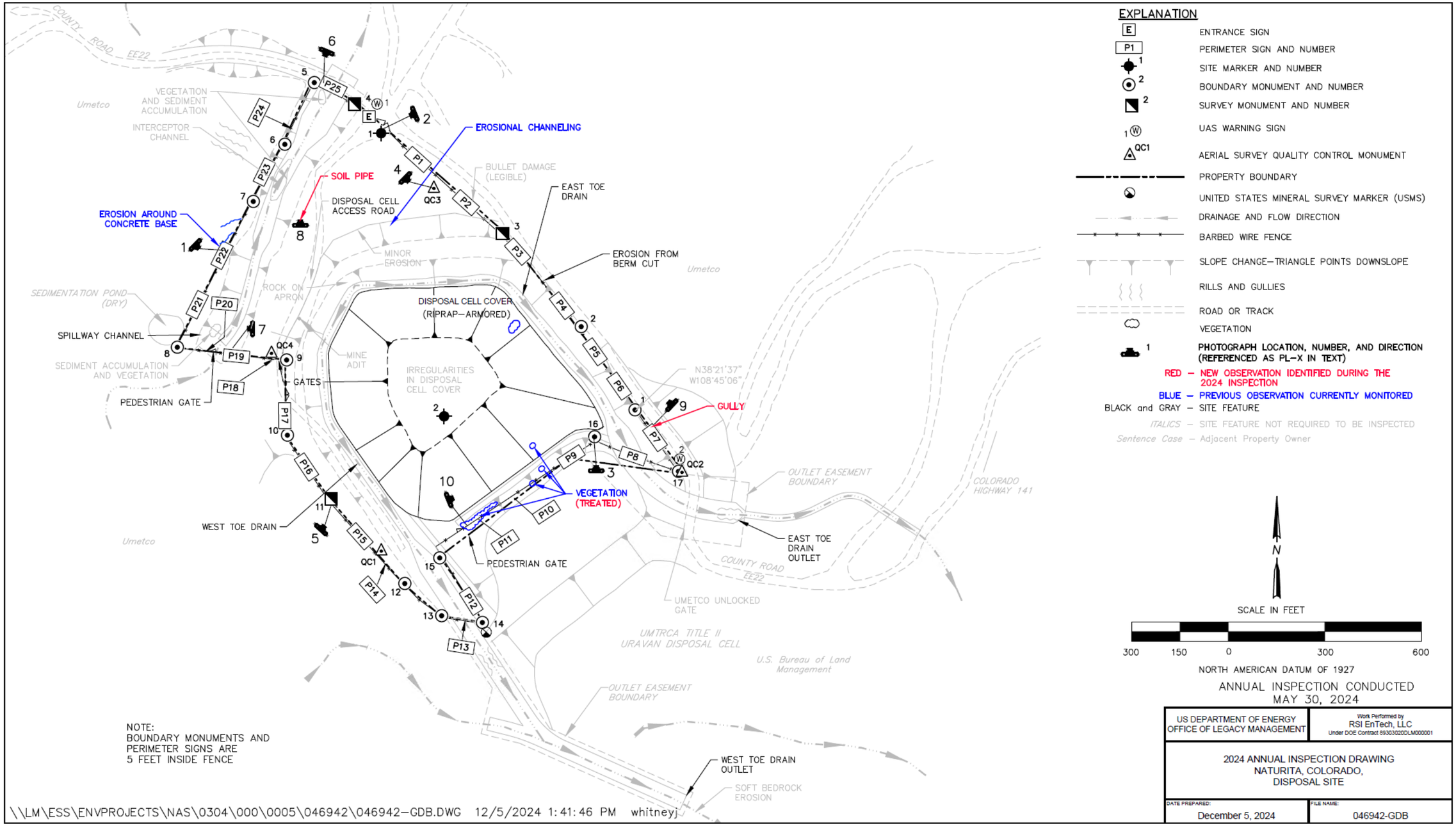
Requirements for the long-term surveillance and maintenance of the site are specified in the site-specific LTSP (DOE 2019) in accordance with procedures established to comply with the requirements of the U.S. Nuclear Regulatory Commission (NRC) general license at Title 10 *Code of Federal Regulations* Section 40.27 (10 CFR 40.27). Table 13-1 lists these requirements.

Table 13-1. License Requirements for the Naturita, Colorado, Disposal Site

Requirement	LTSP	This Report	10 CFR 40.27
Annual Inspection and Report	Sections 3.2, 3.3	Section 13.4	(b)(3)
Follow-Up Inspections	Section 3.4	Section 13.5	(b)(4)
Site Maintenance	Section 3.5.1	Section 13.6	(b)(5)
Environmental Monitoring	Section 3.6	Section 13.7	(b)(2)
Emergency Measures	Section 3.5.2	Section 13.8	—

13.3 Institutional Controls

The 26.65-acre site, identified by the property boundary shown in Figure 13-1, is owned by the United States and was accepted under the NRC general license in 1999. The U.S. Department of Energy (DOE) is the licensee and, in accordance with the requirements for UMTRCA Title I sites, the Office of Legacy Management (LM) is responsible for the custody and long-term care of the site. Institutional controls (ICs) at the site include federal ownership of the property, administrative controls, and the following physical ICs that are inspected annually: the disposal cell and associated drainage features, entrance gate and sign, perimeter fence and signs, site markers, survey and boundary monuments, and aerial survey quality control monuments.



Abbreviation: UAS = uncrewed aircraft system

Figure 13-1. 2024 Annual Inspection Drawing for the Naturita, Colorado, Disposal Site

13.4 Inspection Results

The site, 13 miles northwest of Naturita, Colorado, was inspected on May 30, 2024. The inspection was conducted by K. Meadows, M. Guziak, E. Gaasche, and N. McDonald of the Legacy Management Support (LMS) contractor. M. Hurt, the LM site manager, along with M. Cosby and A. Lawrence from the Colorado Department of Public Health and Environment, also attended the inspection. The purposes of the inspection were to confirm the integrity of visible features at the site, identify changes in conditions that might affect conformance with the LTSP, and evaluate whether maintenance or follow-up inspection and monitoring are needed.

13.4.1 Site Surveillance Features

Figure 13-1 shows the locations of site features, including site surveillance features and inspection areas, in black and gray font. Some site features that are present but not required to be inspected are shown in italic font. Observations from previous inspections that are currently monitored are shown in blue, and new observations identified during the 2024 annual inspection are shown in red. Inspection results and recommended maintenance activities associated with site surveillance features are described in the following subsections. Photographs to support specific observations are noted in the text and in Figure 13-1 by photograph location (PL) numbers. The photographs and photograph log are presented in Section 13.10.

13.4.1.1 Site Access, Entrance Gate, and Entrance Sign

Access to the site is from Colorado Highway 141 to Montrose County Road EE22, which borders the northeast side of the site. The main entrance to the site is through a locked steel gate directly off County Road EE22. The entrance sign next to the entrance gate was intact at the inspection. No maintenance needs were identified.

13.4.1.2 Perimeter Fence and Signs

A barbed-wire perimeter fence encloses the site. There are 25 perimeter signs positioned along the perimeter fence that are attached to steel posts set in concrete and set back 5 feet from the property boundary. Erosion around the concrete base of perimeter sign P22 is continually present and will be monitored (PL-1). No other maintenance needs were identified.

13.4.1.3 Site Markers

The site has two granite site markers. Site marker SMK-1 is just inside the entrance gate (PL-2), and site marker SMK-2 is on the top slope of the disposal cell. No maintenance needs were identified.

13.4.1.4 Survey and Boundary Monuments

Three survey monuments and 14 boundary monuments delineate the property boundary (PL-3). Boundary monuments BM-3, BM-4, and BM-11 are dual-purpose monuments that also represent survey monuments SM-3, SM-4, and SM-11, respectively. No maintenance needs were identified.

13.4.1.5 Aerial Survey Quality Control Monuments

Four aerial survey quality control monuments used during aerial surveys for ground control were inspected (PL-4). No maintenance needs were identified.

13.4.2 Inspection Areas

In accordance with the LTSP, 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 remainder of the site, and (3) the outlying area. Inspectors examined specific site surveillance features within each area and looked for evidence of erosion, settling, slumping, or other modifying processes that might affect the site's conformance with LTSP requirements.

13.4.2.1 Disposal Cell

The disposal cell, completed in 1998, occupies 10 acres (PL-5). The disposal cell is armored with riprap to control erosion. The riprap is rounded, with larger diameter rock on the side slopes than on the top slope. There was no evidence of settling, slumping, erosion, rock degradation, or other modifying processes that might affect the integrity of the disposal cell.

The top slope of the disposal cell appears to have slightly darker rock than the surrounding areas but seems to have not changed over time.

Vehicle tracks in the apron area on the west side of the disposal cell continue to be observed. Inspectors will continue to monitor these areas for potential impacts.

Sediment is accumulating in the apron on the northeast side of the disposal cell from erosion caused by the culvert break along County Road EE22. Vegetation is becoming established in this area. No maintenance needs were identified.

13.4.2.2 Remainder of the Site

Two riprap-armored toe drains (the west and east toe drains) collect water from the disposal cell side slopes and divert it to the southeast. The west toe drain outlet is south of the site in an easement. Soft bedrock is being eroded near the west toe drain outlet, but that erosion does not threaten the performance of the toe drain, and repairs are not necessary. The east toe drain outlet is southeast of the site in an easement. Water is conveyed to the east toe drain outlet through the east toe drain and five culverts under County Road EE22. Erosion has exposed resistant bedrock near the east toe drain outlet but does not threaten the performance of the toe drain, and repairs are not necessary. Some sediment has accumulated in the upper end of the east and west toe drains, allowing scattered vegetation to grow, but this has not adversely affected the performance of the toe drains.

A riprap-armored interceptor channel, upgradient and northwest of the disposal cell, diverts stormwater and snowmelt runoff to the northeast under County Road EE22. Some sediment has eroded from the offsite area upslope from the channel and is being deposited in the channel. Sediment accumulation and associated vegetation have not adversely affected the performance of the interceptor channel (PL-6). Herbicide is applied to rabbitbrush plants when it is deemed necessary by LMS ecologists. Due to trace amounts of woody vegetation on the southeastern apron of the disposal cell, herbicide treatments are only performed intermittently.

Headcutting erosion has been observed within the spillway channel below the sedimentation pond on the outlying area northwest of the site. Inspectors noted minor increases in rock slumping in this area during the 2023 inspection and will continue to monitor this area (PL-7).

The disposal cell access road along the northwest side of the site descends through shale and sandstone units of the Salt Wash Member of the Morrison Formation. The road provides access to the disposal cell on the west side of the site. A vertical soil pipe is forming 60 feet west of the road on the upper bench of the site (PL-8). Although there are no current concerns, inspectors will continue to monitor this feature. The road surface was in good condition at the time of inspection and no maintenance needs were identified.

Erosion in the steep cliff below the previous berm cut alongside County Road EE22 does not threaten the integrity of the disposal cell or site features. The berm cut was repaired in 2020. Inspectors continue to monitor this area.

Inspectors confirmed the small erosional channeling reported in 2022 occurring along the cliff north of the disposal cell. These channels appear to be formed from small soil pipes. Inspectors will continue to monitor the area for further signs of erosion. No maintenance needs were identified.

13.4.2.3 Outlying Area

The 0.25-mile area beyond the site boundary was visually observed for erosion, changes in land use, or other phenomena that might affect the long-term integrity of the site. The area has been highly disturbed by mining, quarrying, reclamation, and road building.

The gully that has formed on the outlying area along the northern site boundary near perimeter signs P22 and P23 has naturally filled in near the fence and is not currently posing any potential threat to the fence line. Inspectors will continue to monitor this area for ongoing erosion and resulting impacts.

A gully has formed outside of and perpendicular to the fence near the southeast corner of the site (PL-9). Inspectors will continue to monitor to ensure that it does not cut under the fence line. No maintenance needs were identified.

13.5 Follow-Up Inspections

LM 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) LM is notified by a citizen or outside agency that conditions at the site are substantially changed. No need for a follow-up inspection was identified.

13.6 Maintenance and Repair

Inspectors noted the following maintenance item that was completed after the inspection:

- Woody vegetation was treated on the southeast slope and apron of the disposal cell

No other maintenance needs were identified.

13.7 Environmental Monitoring

In accordance with the LTSP, LM ensures that a plant specialist or other qualified person conducts vegetation monitoring periodically.

If volunteer plant growth or sedimentation becomes extreme enough to potentially degrade the function of engineered structures, LM will evaluate the potential impact and select appropriate responses. Woody vegetation (rabbitbrush) is beginning to grow on the southeast slope and apron (PL-10). This vegetation was treated after the inspection.

13.8 Emergency Measures

Emergency measures are actions DOE will take in response to "unusual damage or disruption" that threatens or compromises site safety, security, or integrity (10 CFR 40 Appendix A Criterion 12). No need for emergency measures was identified.

13.9 References

Note

Site-related documents are available on the LM public webpages at https://lmpublicsearch.lm.doe.gov/SitePages.

10 CFR 40 Appendix A. U.S. Nuclear Regulatory Commission, "Criteria Relating to the Operation of Uranium Mills and the Disposition of Tailings or Wastes Produced by the Extraction or Concentration of Source Material from Ores Processed Primarily for Their Source Material Content," *Code of Federal Regulations*.

10 CFR 40.27. U.S. Nuclear Regulatory Commission, "General License for Custody and Long-Term Care of Residual Radioactive Material Disposal Sites," *Code of Federal Regulations*.

DOE (U.S. Department of Energy), 2019. *Long-Term Surveillance Plan for the Naturita, Colorado, Disposal Site*, LMS/NAD/S13227, Office of Legacy Management, December.

13.10 Photographs

Photograph Location Number	Azimuth	Photograph Description
PL-1	135	Erosion Around Concrete Base of Perimeter Sign P22
PL-2	248	Site Marker SMK-1
PL-3	—	Boundary Monument BM-16
PL-4	135	Aerial Survey Quality Control Monument QC-3
PL-5	45	Disposal Cell
PL-6	202	Interceptor Trench on North Side of Site
PL-7	270	Rocks in Spillway
PL-8	—	Soil Piping West of Access Road
PL-9	315	Gully near Southeast Fence Line
PL-10	68	Woody Vegetation Growth on Southeast Slopes of Disposal Cell

Note:
— = Photograph taken vertically from above.

PL-1. Erosion Around Concrete Base of Perimeter Sign P22

PL-2. Site Marker SMK-1

PL-3. Boundary Monument BM-16

PL-4. Aerial Survey Quality Control Monument QC-3

PL-5. Disposal Cell

PL-6. Interceptor Trench on North Side of Site

PL-7. Rocks in Spillway

PL-8. Soil Piping West of Access Road

PL-9. Gully near Southeast Fence Line

PL-10. Woody Vegetation Growth on Southeast Slopes of Disposal Cell