



Department of Energy
Washington, DC 20585

April 1, 2016

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U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Deputy Director
Mail Stop T8-F5
Washington, DC 20555-0001

Subject: Draft Long-Term Surveillance Plan for the Bear Creek, Wyoming,
(UMTRCA Title II) Disposal Site, Converse County, Wyoming, and Draft
Long-Term Care Fee Estimate and Bear Creek Draft Estimated Annual Cost to
Perform Long-Term Surveillance, Bear Creek, WY, UMTRCA Title II Site

To Whom It May Concern:

Enclosed for U.S. Nuclear Regulatory Commission (NRC) review and comment are four copies of the Draft *Long-Term Surveillance Plan for the Bear Creek, Wyoming, (UMTRCA Title II) Disposal Site, Converse County, Wyoming (LTSP)* and four copies of the Draft Long-Term Care Fee Estimate. This draft LTSP is intended to satisfy the requirements set forth in Title 10 *Code of Federal Regulations* Section 40.28 (10 CFR 40.28) whereby the long-term custodian must provide a draft LTSP to NRC as a final step in the site transition process (i.e., termination of Bear Creek Uranium Company's specific license with NRC and inclusion of the site under the NRC general license at 10 CFR 40.28 for long-term care). This draft LTSP captures information provided in licensee and NRC documents and establishes the post-closure care program for the site.

The draft LTSP contains placeholders for items requiring a site visit to finalize. These items include a final photograph of the site entrance sign, locations of perimeter signs and fence, and updated realty information relating to the transfer of approximately 25 acres under U.S. Bureau of Land Management ownership to U.S. Department of Energy Office of Legacy Management (DOE-LM) ownership. Photo and location information will be updated after a planned site visit in April 2016 and incorporated in the final version of this document. Realty work on the withdrawal is underway but is not anticipated to delay the transfer, as the land in question is under federal ownership.

An earlier version of this document was submitted to NRC in 2009. NRC review of groundwater conditions at the time indicated concerns with the predictive accuracy of the groundwater model. NRC requested the licensee prepare a new risk-based alternate concentration limit (ACL) application incorporating the groundwater data collected over the 14 years subsequent to the original ACL application. After subsequent evaluation of the revised groundwater model, NRC determined that a groundwater compliance monitoring program was not required at the Bear Creek site (letter to the licensee dated

NMSS20



April 1, 2016

February 27, 2013). Following a decision by the Wyoming Department of Environmental Quality to classify the groundwater at Bear Creek as industrial use only due to an elevated concentration of mercury (Wyoming Water Quality Division, letter to Anadarko Petroleum Company dated October 15, 2014), NRC concluded that "even a limited groundwater monitoring period was not needed."

On February 2, 2015, NRC requested DOE-LM to prepare a revised draft of the LTSP. This draft was prepared after a due diligence review of the licensee's groundwater model and evaluation of all available site documents possessed by DOE-LM.

Also enclosed are four copies of the Draft *Bear Creek Long-Term Care Fee Estimate*. This includes the activities and costs that DOE-LM requires to perform annual long term surveillance and maintenance at the site. DOE-LM has agreed to provide NRC an estimate of the annual costs for NRC evaluation in determining the transfer fee assessed the site licensee.

Please call William Dam, site manager for the Bear Creek, WY disposal site at (970) 248-6484, if you have any questions. Please send any correspondence to:

U.S. Department of Energy
Office of Legacy Management
2597 Legacy Way
Grand Junction, CO 81503

Sincerely,



April Gil, Ph.D.
Environmental Team Lead

Enclosures

cc:

D. Orlando, NRC
R. Bush, DOE-LM (e)
W. Dam, DOE-LM (e)
A. Gil, DOE-LM (e)
J. Carman, Navarro (e)
D. Miller, Navarro (e)
D. Traub, Navarro (e)
File: BRC 0505.15 (rc-grand.junction)

DRAFT

Estimated Annual Cost to Perform Long-Term Surveillance

Bear Creek, WY, UMTRCA Title II Site

Summary of Long-Term Care Fees

Long-Term Surveillance Activities	Annual Cost	Assumptions
LMS Project Management	\$5,000	Estimate assumes routine costs required to perform project management activities as a DOE operated and managed site. Activities include stakeholder and regulator communications, budgets, scheduling, and other activities necessary as a DOE owned property asset; total time estimated to be 48hours.
LMS Inspection and Reporting	\$13,200	Estimate assumes two DOE contractor staff will perform the annual inspection. Activities include preparation, travel, 8 hours on site, and reporting; total time estimated to be 112 hours. Travel costs include lodging and per diem for two inspectors; (2 nights,3 days), and GSA vehicle (3 days).
Maintenance	\$50	Estimate assumes periodic replacement of one perimeter or entrance sign every three years, with work being performed by DOE contractor staff during annual inspections. Estimate includes material cost only, time included under inspection.
15% Contingency	\$1,800	A 15% contingency fee has been included to cover costs for unplanned events such as storm water erosion, access route repairs, or damaged survey marker replacement. The 15% value is based on the contingency fee requested by NRC for licensee reclamation contingency in NUREG-1620, Rev. 1, Appendix C, (Section VII).
NRC Regulatory Oversight	\$26,000	The NRC oversight fee is based on the amount NRC charged DOE for regulatory oversight of the 25 currently licensed UMTRCA Title I and II sites in FY15 (\$666,000 in the June 30, 2015 Federal Register, no site-specific cost breakdown was provided). This cost was divided by 26; the number of DOE licensed sites including Bear Creek. As the fee charged by NRC varies from year to year, the FY16 Final annual fee anticipated to be available in summer 2016 will be used to determine the NRC oversight value for this site prior to site transfer.
Total Annual Long-Term Surveillance Cost	\$46,050	

LMS - Legacy Management Support (DOE Contractor)

Draft

**Long-Term Surveillance Plan for
the Bear Creek, Wyoming,
(UMTRCA Title II) Disposal Site
Converse County, Wyoming**

March 2016



**U.S. DEPARTMENT OF
ENERGY**

Legacy
Management

Contents

Abbreviations.....	iii
1.0 Introduction.....	1
1.1 Purpose.....	1
1.2 Legal and Regulatory Requirements.....	1
1.3 Role of the U.S. Department of Energy.....	2
2.0 Final Site Conditions.....	3
2.1 General Description of the Disposal Site and Vicinity.....	3
2.1.1 Site Ownership and Access.....	6
2.1.2 Directions to the Disposal Site.....	6
2.2 Site History.....	7
2.3 Disposal Site Description.....	8
2.3.1 Description of Surface Conditions.....	8
2.3.2 Permanent Site Surveillance Features.....	8
2.4 Tailings Impoundment Design.....	13
2.4.1 Embankment.....	13
2.4.2 Tailing Impoundment Cover.....	14
2.4.3 Riprap Chute.....	17
2.4.4 Diversion Channel.....	17
2.4.5 Rock Weir.....	17
2.5 Geology, Hydrology, and Groundwater.....	17
2.5.1 Site Geology and Hydrology.....	17
2.5.2 Groundwater Remedy.....	20
2.5.3 Final Groundwater Conditions.....	26
2.6 Surface Water.....	26
2.7 Institutional Controls.....	27
3.0 Long-Term Surveillance Program.....	27
3.1 General License for Long-Term Custody.....	27
3.2 Requirements of the General License.....	28
3.3 Annual Site Inspections.....	28
3.3.1 Frequency of Inspections.....	28
3.3.2 Inspection Procedure.....	28
3.3.3 Inspection Checklist.....	30
3.3.4 Personnel.....	30
3.4 Annual Inspection Report.....	30
3.5 Follow-up Inspections.....	31
3.5.1 Criteria for Follow-up Inspections.....	31
3.5.2 Personnel.....	32
3.5.3 Reports of Follow-up Inspections.....	32
3.6 Routine Site Maintenance and Emergency Measures.....	32
3.6.1 Routine Site Maintenance.....	32
3.6.2 Emergency Measures.....	32
3.6.3 Criteria for Routine Site Maintenance and Emergency Measures.....	33
3.6.4 Reporting Maintenance and Emergency Measures.....	33
3.7 Environmental Monitoring.....	34
3.7.1 Groundwater Monitoring.....	34
3.7.2 Vegetation Monitoring.....	34

3.8	Land Use Monitoring	34
3.9	Institutional Control Monitoring	34
3.10	Records	35
3.11	Quality Assurance	35
3.12	Safety and Health	35
4.0	References	35

Figures

Figure 1.	General Location Map of the Bear Creek, Wyoming, Disposal Site	4
Figure 2.	Bear Creek, Wyoming, Disposal Site Location Map	5
Figure 3.	Site Map, Bear Creek, Wyoming, Disposal Site	9
Figure 4.	Site Marker at the Bear Creek, Wyoming, Disposal Site	11
Figure 5.	Entrance Sign at the Bear Creek, Wyoming, Disposal Site	12
Figure 6.	View Across the Bear Creek Disposal Cell.....	14
Figure 7.	Tailings Embankment and Impoundment Cross Section	15
Figure 8.	Cross Section Lines	19
Figure 9.	Geologic Cross Sections of the Bear Creek, Wyoming Disposal Site	21
Figure 10.	Former Groundwater Monitoring Network at the Bear Creek Site.....	24
Figure 11.	Map of Inspection Areas for the Bear Creek, Wyoming, Disposal Site.....	29

Tables

Table 1.	LTSP and the Long-Term Custodian (DOE) Requirements for the Bear Creek, Wyoming, Disposal Site.....	2
Table 2.	Summary of ACLs, Background, and Model-Predicted Values for Groundwater	25
Table 3.	2012 Results for ACL Constituents	26
Table 4.	Inspection Areas Used During First Inspection of the Bear Creek, Wyoming, Disposal Site.....	28
Table 5.	DOE Criteria for Maintenance and Emergency Measures	33

Appendixes

Appendix A	Real Estate Documentation
Appendix B	Correspondence
Appendix C	Initial Site Inspection Checklist and Map

Abbreviations

ACL	alternate concentration limit
APC	Anadarko Petroleum Corporation
BCUC	Bear Creek Uranium Company
CAP	corrective action plan
CFR	<i>Code of Federal Regulations</i>
D ₅₀	median diameter
DOE	U.S. Department of Energy
EMS	environmental management system
ft	feet
LM	Office of Legacy Management
LTS&M	long-term surveillance and maintenance
LTSP	Long-Term Surveillance Plan
MW	monitoring well
NRC	U.S. Nuclear Regulatory Commission
POC	point of compliance
POE	point of exposure
UMTRCA	Uranium Mill Tailings Radiation Control Act
UPR	Union Pacific Resources, Inc.
USC	<i>United States Code</i>

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1.0 Introduction

1.1 Purpose

The Bear Creek, Wyoming, Disposal Site is regulated under Title II of the Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978 (Title 42 *United States Code* Section 7901 et seq. [42 USC 7901 et seq.]) and licensed by the U.S. Nuclear Regulatory Commission (NRC). This Long-Term Surveillance Plan (LTSP) explains how the U.S. Department of Energy (DOE) will fulfill general license requirements of Title 10 *Code of Federal Regulations* Part 40.28 (10 CFR 40.28) as the long-term custodian of the former Union Pacific Resources, Inc. (UPR) Bear Creek uranium mill tailings disposal site in Converse County, Wyoming. The DOE Office of Legacy Management (LM) is responsible for preparing, revising, and implementing this LTSP, which specifies requirements for inspections, monitoring, maintenance, reporting, and maintaining site records.

This LTSP updates a 2009 draft LTSP that NRC had provisionally accepted (NRC 2010). It reflects the current understanding of the site and the recent classification by the State of Wyoming of the shallow groundwater (<160 feet [ft] below the surface) in the site area (WDEQ 2014; included in Appendix B). Based on this classification, NRC has determined that no long-term groundwater monitoring is necessary (NRC 2015b; included in Appendix B); that decision is incorporated into this LTSP.

1.2 Legal and Regulatory Requirements

Uranium mill sites are operated under a specific license for possession of radioactive source and byproduct materials. The license is regulated by NRC or the host states to which NRC has delegated Agreement State authority. The State of Wyoming is not an Agreement State (though it initiated the process to become an Agreement State in 2015), and the specific license for the Bear Creek site was regulated by NRC. When uranium production operations cease, the specific licensee must remediate (reclaim) the site to a stable and protective condition that is sustainable long-term in accordance with criteria specified in Appendix A of 10 CFR 40. Title II of UMTRCA addresses reclamation, custody, and long-term care of uranium and thorium mill sites operating under a specific license as of January 1, 1978.

NRC regulations at 10 CFR 40.28 establish a general license for the long-term custody and care of reclaimed UMTRCA Title II disposal sites, including the Bear Creek disposal site. NRC regulates the general license. If the host state decides not to accept responsibility for long-term custody and care of the site, DOE is designated as the licensee, unless the President designates the responsibility to another federal agency. The general license becomes effective for a particular site when NRC (1) determines that reclamation requirements have been satisfied, (2) terminates the specific license, (3) verifies that the licensee has paid the long-term surveillance charge to defer the cost of long-term surveillance and maintenance, and (4) accepts a site-specific LTSP.

Long-term custody and care includes managing land use and institutional controls and conducting inspections, monitoring, maintenance, and other measures to ensure that remediated UMTRCA disposal sites continue to perform as designed and protect public health, safety, and the environment. Table 1 lists the requirements of 10 CFR 40.28 for the Bear Creek disposal site

and the sections in this LTSP where each requirement is addressed. Long-term custody and care also include DOE's site-specific administrative activities (i.e., annual schedule and budget management) and NRC's oversight activities.

Table 1. LTSP and the Long-Term Custodian (DOE) Requirements for the Bear Creek, Wyoming, Disposal Site

LTSP Requirements		
	Requirement	Reference
1.	Description of final site conditions	Section 2.0
2.	Legal description of the site	Appendix A
3.	Description of the long-term surveillance program	Section 3.0
4.	Criteria for follow-up inspections	Section 3.5.1
5.	Criteria for maintenance and emergency measures	Section 3.6
Long-Term Custodian (DOE) Requirements		
	Requirement	Reference
1.	Notification to NRC of changes to the LTSP	Section 3.1
2.	NRC permanent right-of-entry	Section 3.1
3.	Notification to NRC of significant construction, actions, or repairs at the site	Sections 3.5 and 3.6

The plans, procedures, and specifications in this revised LTSP are based on the *Guidance for Developing and Implementing the Long-Term Surveillance Plans for UMTRCA Title I and Title II Disposal Sites* (DOE 2012). That document cites the most current regulations, executive orders, DOE orders and other requirements that DOE must meet in performing long-term surveillance and maintenance (LTS&M) activities, including compliance with the National Environmental Policy Act. The current version of the guidance document and this LTSP constitute DOE's operational plan for the long-term custody and care of the Bear Creek disposal site.

1.3 Role of the U.S. Department of Energy

In 1988, DOE designated the Grand Junction, Colorado, facility as the program office for managing LTS&M of (1) DOE disposal sites that contained regulated, low-level radioactive materials, (2) portions of sites that did not have a DOE mission after cleanup, and (3) other sites (including Title II disposal sites) as assigned. The Grand Junction office was established as the program office for the security, surveillance, monitoring, and maintenance of those sites (DOE 1988). This assignment was subsequently reaffirmed in 1992 (DOE 1992) and 1998 (DOE 1998).

In December 2003, DOE formally established the Office of Legacy Management. The LM mission includes implementing long-term surveillance and maintenance at sites to ensure sustainable protection of human health and the environment. LM is responsible for implementing the LTSP for a reclaimed UMTRCA Title II disposal site after the NRC general license becomes effective for the site.

During the course of long-term stewardship, site conditions, new data, or reuse opportunities may require changes to the LTS&M program for a particular site. In such circumstances, LM will revise the LTSP to describe these changes to site conditions or the LTS&M program

for the impacted site. The revised LTSP will be submitted to NRC for acceptance (10 CFR 40.28(c)(3)).

DOE sites must implement sound stewardship practices that are protective of the air, water, land, and other natural and cultural resources potentially affected by their operations. DOE is required to have an Environmental Management System (EMS) to implement these practices. The LM EMS incorporates federal mandates specified in applicable executive orders and DOE orders as specified in the DOE LTSP guidance document (DOE 2012).

2.0 Final Site Conditions

Reclamation at the former Bear Creek Uranium Company (BCUC) mill in Converse County, Wyoming, consisted of demolishing site structures and consolidating contaminated materials in the mill tailings impoundment (i.e., disposal cell) according to an NRC-accepted reclamation plan (UPR 1991). This reclamation included a 10-year groundwater corrective action program in which groundwater that had seeped past the retaining dam was pumped back to the disposal cell for evaporation. This program ceased when it was no longer practical because of lowered water levels. NRC concurred that site reclamation was complete in 2001 (NRC 2001). BCUC determined that it was impractical to meet original licensed groundwater standards and instead proposed alternate concentration limits (ACLs; UPR 1997), which NRC accepted in 1997 (NRC 1997a). As of October 30, 2008, all Wyoming mine reclamation requirements had been completed (APC 2008). In 2013, NRC amended the license to eliminate groundwater monitoring requirements (NRC 2013). The grass-covered disposal cell occupies 101 acres of the 1,002-acre site.

2.1 General Description of the Disposal Site and Vicinity

The Bear Creek disposal site is located in rural Converse County, approximately 45 miles northeast of Casper and about 37 miles north-northwest of Douglas, Wyoming (Figure 1 and Figure 2). The nearest sizeable town is Glenrock, about 29 miles south-southwest of the site. The UMTRCA Title I Spook disposal site is approximately 1 mile south of the Bear Creek site.

The Bear Creek site is approximately 5,100 ft above sea level. The climate is semiarid, with a mean annual precipitation of 12 inches (based on data for Glenrock). More than 50 percent of the annual precipitation occurs from April through August in the form of rain and some wet snow (Western Regional Climate Center data from 1948 to 2005; <http://www.wrcc.dri.edu/summary/Climsmwy.html>). Heavy snowfalls can occur during both spring and fall. Late-spring and summer thunderstorms are scattered, and the amounts of rain from such storms is extremely variable, in terms of both location and intensity. The mean annual snowfall at Glenrock, averaged over a 57-year period ending in 2005, was 21 inches. Prevailing winds are from the west and southwest. Temperatures in the vicinity of the Bear Creek disposal site vary from summer highs near 100 °F to winter lows near -40 °F. The seasons are distinct, with mild summers (highs averaging in the 80s) and harsh winters (lows averaging in the teens).

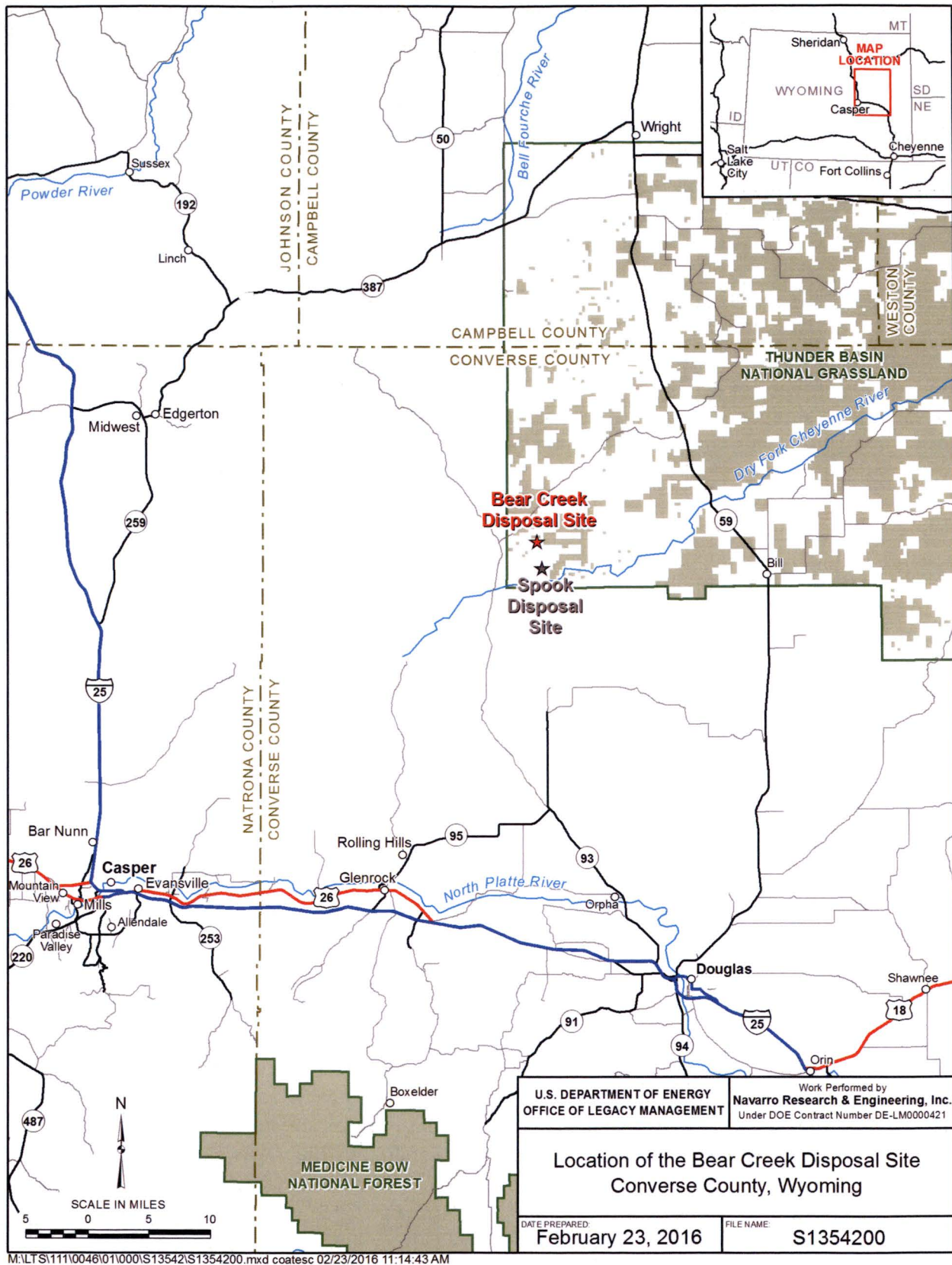


Figure 1. General Location Map of the Bear Creek, Wyoming, Disposal Site

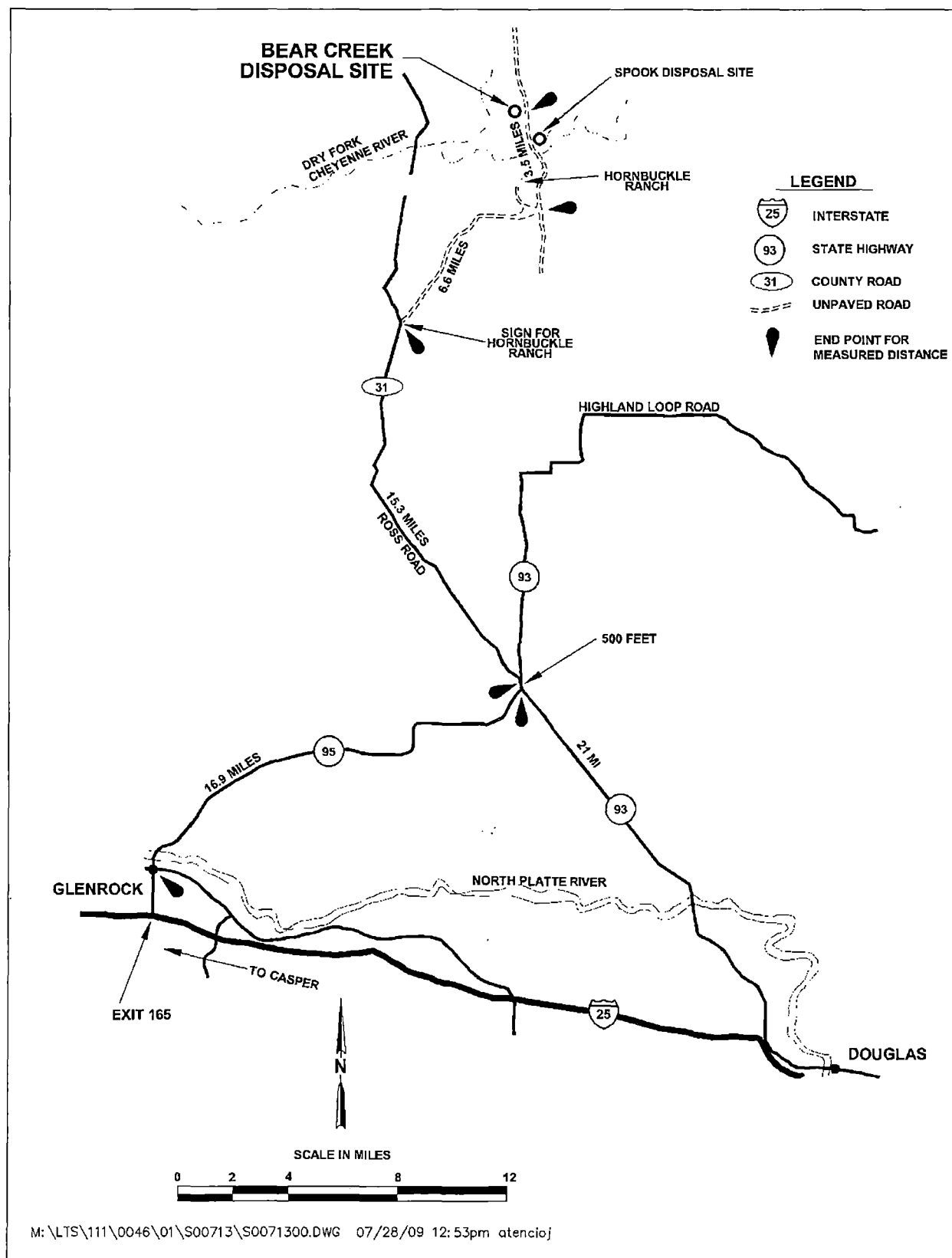


Figure 2. Bear Creek, Wyoming, Disposal Site Location Map

The estimated population of Converse County was 14,008 in July 2012, a 16% increase from the 2000 census. More than half the residents live in the cities of Douglas and Glenrock; population density is 3.28 people per square mile (Converse County 2015). The customs and culture of Converse County have historically been driven by open rangeland used for livestock and agricultural production. Hunting and nonconsumptive use of wildlife are also important. About 25% of the total land area in Converse County is government owned; however, over 60% of the subsurface minerals are federally managed (Converse County 2015). In more recent years, development of energy resources (including coal, oil, gas, uranium, and wind) has become increasingly dominant. In tax year 2013, over two-thirds of the County's taxable value was from energy resources (Converse County 2015). Over 8.0 million barrels of oil were produced from Converse County in 2013. The Hornbuckle area, which encompasses the Bear Creek site, is one of four important oil and gas development centers in Converse County. According to a BLM environmental assessment for the further development of the Hornbuckle area (BLM 2011), over 100 oil and gas wells were already present or permitted for that area. Nearly 100 additional wells were being proposed (BLM 2011). Most well depths ranged from 5,500 to 17,000 ft; the average production life is expected to be about 30 years.

Land in the immediate vicinity of the Bear Creek disposal site is primarily used for ranching, livestock grazing, wildlife habitat, and mineral/oil and gas exploration. The reclaimed open pits of the Bear Creek Uranium Mine, which supplied uranium ore to the mill, are in the immediate vicinity of the site. Other open-pit mining operations in the district also supplied uranium ore to the mill. The Thunder Basin National Grassland, which is made up of federal, state, and privately owned lands, encompasses the site area (Figure 1).

2.1.1 Site Ownership and Access

The federal government owns 977 acres of fee land and has jurisdiction over 25 acres of federal land that comprises the 1,002-acre Bear Creek disposal site property. Access to the disposal site is provided by non-exclusive road easements granted by adjacent property owners. Copies of the easements and other real estate documentation are included in Appendix A. The site was transferred from Bear Creek Uranium Company to DOE on November 4, 2009 (see Appendix A).

2.1.2 Directions to the Disposal Site

From Casper, Wyoming, travel east on Interstate 25 approximately 15 miles to exit 165 for Glenrock, Wyoming. Exit Interstate 25 and proceed north to the stoplight at the intersection in the center of Glenrock. Proceed north and northeast 16.9 miles on State Highway 95 to the intersection with State Highway 93. Turn left (north) and proceed about 500 ft on State Highway 93 to the intersection with County Road 31 (Ross Road). Turn left (northwest) on to County Road 31 and proceed north northwest for 15.3 miles to the entrance to the Hornbuckle Ranch, on the right side of the road. Turn right (northeast) on to the Hornbuckle Ranch road (a gravel road), and proceed 6.6 miles to its junction with another gravel road. Turn left (north) on this gravel road and travel 3.5 miles, passing the Spook Title I site on the right at about 2.5 miles, to the Bear Creek site (Figure 2).

2.2 Site History

The Bear Creek uranium mill was owned and operated by BCUC, which was a joint venture of Rocky Mountain Energy, the operating partner, and Southern California Edison. Company reorganization incorporated Rocky Mountain Energy into UPR (UPR 1999). Anadarko Petroleum Corporation (APC) acquired UPR in 2000.

Milling commenced in September 1977 under NRC License SUA-1310 and continued until January 20, 1986. The mill processed ore from the Bear Creek uranium mine, which consisted of five open pits near the mill. Ore in these pits was mined mostly from the Wasatch Formation at depths of 100 to 200 ft below the surface. The milling processes incorporated sulfuric acid leaching, sodium chlorate oxidant, liquid ion-exchange, solvent extraction and concentration, drying, and packaging. This process resulting in a tailings solution that had a total dissolved solids concentration of approximately 20,000 milligrams per liter and a pH of 1.5 to 2.5 (UPR 1997). The primary constituents in the tailings solution were chloride and sulfate as well as trace metals that were found in the ore. As a result of these operations, approximately 4.7 million tons of tailings were produced and discharged as a slurry into an adjacent above-grade tailings basin (UPR 1997). The mill and mill buildings were dismantled in 1988, and the tailings were reclaimed in place. All tailings and other contaminated materials were encapsulated in a 101-acre impoundment.

The disposal site lies within an ephemeral drainage known as Lang Draw. Another ephemeral drainage referred to as the Northern Flow Path branches off from Lang Draw in the northern portion of the site. The tailings basin was installed in 1977 in Lang Draw and consisted of a zone-fill dam and compacted soil-lined basin. Although state-of-the-art dam and liner construction techniques were used, BCUC anticipated that some seepage would occur and constructed a seepage catchment structure below (downgradient of) the tailings embankment to intercept the seepage and pump it back to the tailings basin. Surface seepage was first observed in 1978. Several wells were installed to determine groundwater contamination potential, and elevated chloride levels were observed (believed to be indicative of tailings seepage). Additional wells were completed as recovery wells, and seepage recovery began in 1979. In 1985, NRC required the implementation of a groundwater detection-monitoring program. Indicator parameters designated in the license were arsenic, selenium, and pH.

After 1986, an interim cover and three evaporation ponds were constructed on top of the tailings area. The evaporation ponds were part of a groundwater corrective action program (UPR 1999) that resulted in the evaporation of some 477 million gallons of water from within the disposal cell and the area below the embankment. The program ceased when it was no longer effective due to lowered water levels within the cell and the area below the embankment and a lack of water in the recovery wells. The mill and adjacent solvent extraction buildings were decommissioned in 1988.

NRC concurred with the reclamation plan in 1984 and with modifications to the plan in 1986. Following the 10-year commitment to perform groundwater corrective action, BCUC closed the tailings impoundment in December 1999. NRC documented concurrence that the reclamation plan was implemented in 2001 (NRC 2001). NRC documented acceptance of the application for ACLs in 1997 (NRC 1997a) but requested a subsequent revision of the ACLs after monitoring results showed that a point-of-exposure well had concentrations exceeding model predictions.

NRC subsequently approved a revised ACL application (APC 2011) and associated license amendment (NRC 2013).

A more detailed discussion of the groundwater compliance history is presented in Section 2.5.2, “Groundwater Conditions.”

2.3 Disposal Site Description

2.3.1 Description of Surface Conditions

The Bear Creek site incorporates a combination of rock armoring, contouring, and revegetation to achieve the necessary surface water drainage control and erosion protection to satisfy the longevity design requirements. The revegetated surfaces have been planted with a mix of prairie grasses that have proven to be successful in reclaiming nearby surface mine areas and will help provide soil stability.

2.3.2 Permanent Site Surveillance Features

Permanent long-term surveillance features at the Bear Creek site consist of boundary monuments, a site marker, an entrance sign, and perimeter signs. These features will be inspected and maintained as necessary as part of the passive institutional controls for the site.

Ten monuments mark the final site boundary (Figure 3). One monument is located at each of the six corners of the 1,002-acre disposal site. Three additional monuments are located along the east property boundary, and one additional monument is located along the west property boundary. In addition to marking the site boundary, 4 of the 10 monuments also mark section corners.

One polished granite marker with an incised message identifying the site of the Bear Creek disposal cell is placed northeast of the tailings embankment. There are no roads on the site, but the marker is adjacent to the commonly used vehicle access route to the embankment. The marker is shown in Figure 4.

An entrance sign is located at the main gate at the southeast corner of the site. The sign displays the DOE 24-hour telephone number and the address for the LM website (Figure 4). Perimeter signs stating “No Trespassing” are mounted on steel posts set in concrete and located periodically along site perimeter fences (Figure 5). A drawing of the entrance sign including specifications is included in Appendix C.

The positions of the permanent site surveillance features are shown on Figure 3 and Figure C-1.

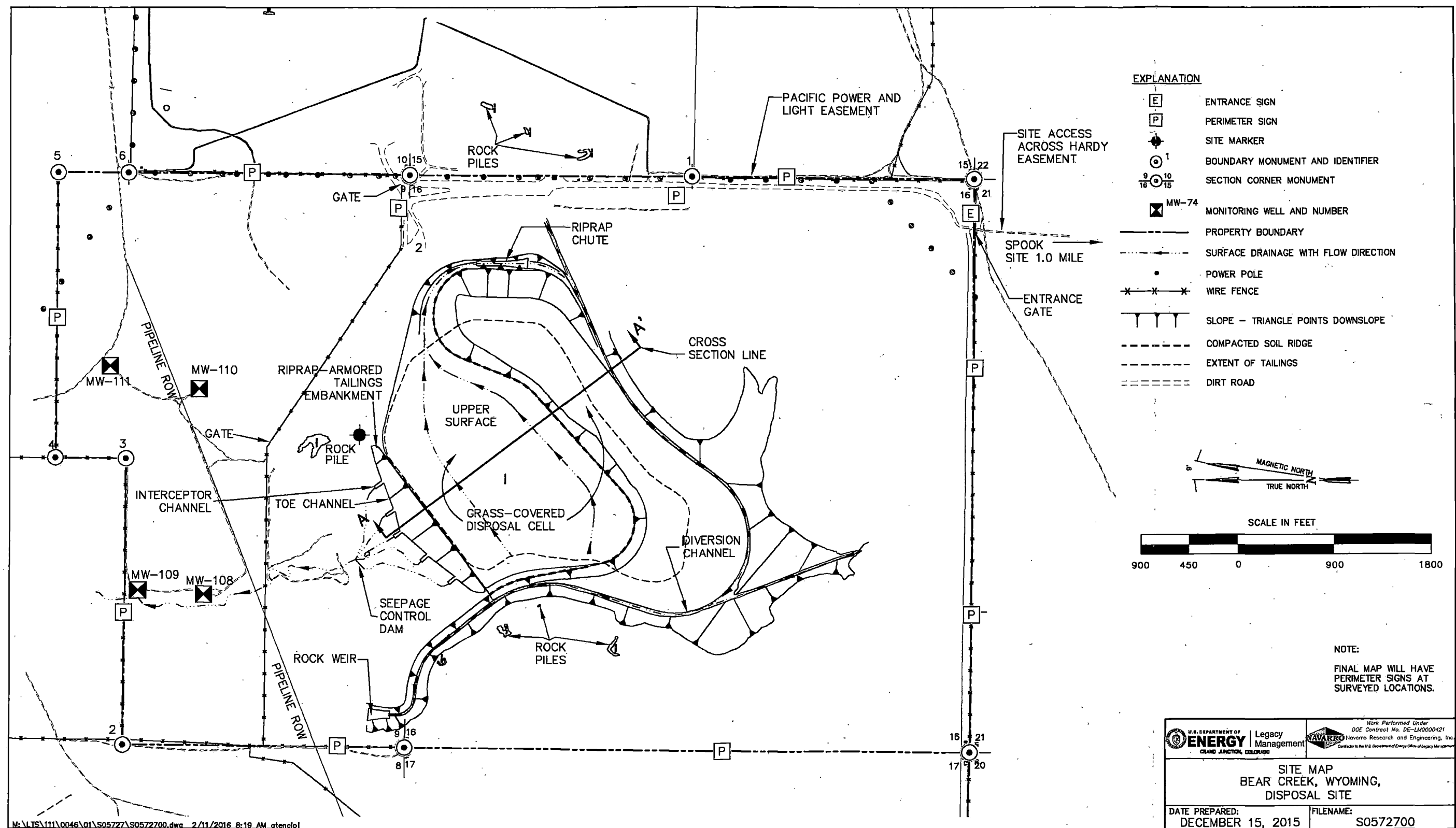


Figure 3. Site Map, Bear Creek, Wyoming, Disposal Site

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Figure 4. Site Marker at the Bear Creek, Wyoming, Disposal Site



Figure 5. Entrance Sign at the Bear Creek, Wyoming, Disposal Site
(final LTSP will have DOE website address in figure)

2.4 Tailings Impoundment Design

The objective of the tailings impoundment system is to isolate the uranium mill tailings from the surrounding environment. This is accomplished by reducing radon gas emission rates to below regulatory standards, minimizing infiltration of meteoric water that could potentially leach contaminants into the subsurface, and physically containing the contaminated materials within a durable containment structure to prevent dispersion. NRC approved discontinuation of settlement monitoring of the cell cover in January 1997, indicating that more than 90% of settlement had been completed (NRC 1997b). A self-sustaining vegetative cover was established over the tailings cell in accordance with the reclamation plan (NRC 2001).

The original tailings impoundment was created by constructing an embankment across Lang Draw. Tailings slurry was deposited behind the embankment, forming a tailings pond. To improve stability, seepage through the tailings embankment foundation was controlled by excavating a cutoff trench to the top of the claystone bedrock unit beneath the center of the embankment and backfilling with impermeable material. As an additional measure to contain seepage from the tailings pond that daylights to the ground surface, BCUC constructed a dam across Lang Draw approximately 600 ft downstream of the tailings embankment (NRC et al. 1977).

The tailings pile was reclaimed in place by grading and armoring the embankment face and grading and covering the tailings. Figure 6 shows a general view of the site looking across the embankment. The entire reclaimed tailings impoundment system occupies approximately 163 acres, of which approximately 101 acres contain tailings and are covered by a radon barrier. The material type, placement, and compaction methods specified for the radon barrier layer resulted in the desired density of the barrier (NRC 2001). The construction data for the placed radon barrier substantiated that the measured barrier values (density, moisture, and percent fines) were more conservative than the estimated values used in the radon flux model (NRC 2001). A storm water diversion system hydraulically isolates the tailings from meteoric water, preventing erosion over the long-term and helping to achieve the necessary impoundment stability, as shown on Figure 3 (UPR 1991). A cross section of the tailings embankment and impoundment is shown on Figure 7.

The drainage area above (upgradient of) the tailings embankment and diversion channel is 706 acres. The tailings embankment, cell cover, and storm water diversion system were designed to withstand a design storm of 13.84 inches of rainfall in 6 hours on a previously saturated soil to produce the maximum runoff (UPR 1999).

2.4.1 Embankment

The face of the embankment is protected by riprap. The upper portion of the embankment is at a slope of 4 (horizontal) to 1 (vertical) (4:1) and armored with a 6-inch-thick layer of durable rock having a median diameter (D_{50}) of 3 inches. The lower portion of the embankment is at a slope of 5:1 and armored with an 8-inch-thick layer of rock having a D_{50} of 4 inches. All riprap is underlain by a 6-inch-thick bedding and filter layer of gravel.



Figure 6. View Across the Bear Creek Disposal Cell

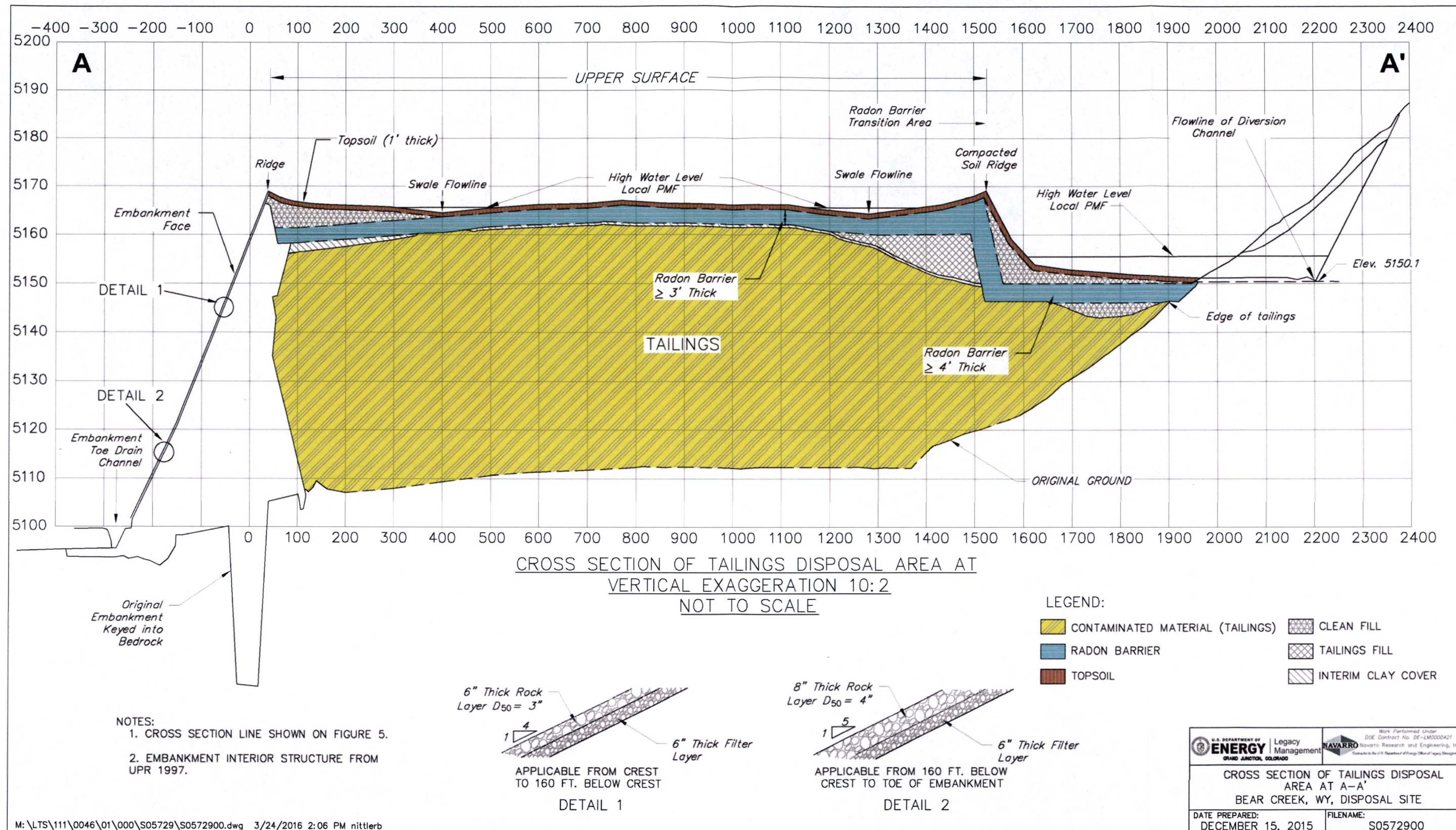
Toe drain channels along the toe of the embankment convey runoff water to five interceptor channels that carry the water downslope to the north. The toe drain channels and the upper 100 ft of the interceptor channels are protected by riprap with a D_{50} of 9 inches.

2.4.2 Tailing Impoundment Cover

An interim clay cover was placed over the tailings during construction for protection prior to placement of the final cover materials.

BCUC placed a minimum of 3 ft of compacted soil radon barrier over the upper surface (78 acres) and a minimum of 4 ft over the fine-grained tailings (“slimes”) area (23 acres) that lies outside the compacted soil ridge. The entire radon barrier covers 101 acres of tailings.

The final surface of the radon barrier was graded and clean fill placed where needed. Clean fill is uncontaminated material that has not been processed for particle size. One foot of topsoil on top of this final graded and planted with shallow-rooted grasses (UPR 1999).



A ridge of compacted soil was constructed around the south edge of the upper portion of the disposal cell top slope to reduce the catchment area on the cell top to 78 acres and isolate the upper surface from the rest of the cell. The top of the cell is grass covered and contoured to convey storm water eastward to a chute located on a bedrock outcrop east of the cell. The top slopes are flat enough to withstand erosion, and the vegetation was not calculated in the design to account for the additional erosion protection that it provides.

2.4.3 Riprap Chute

A chute collects storm water from the swales located on the cell top slope and conveys it to the diversion channel. The chute was excavated into claystone and sandstone. It is armored with riprap in three zones with D_{50} s of 24 inches, 15 inches, and 9 inches, respectively, from the inlet of the chute to the discharge point. As riprap size decreases, the side slopes of the chute flatten from 2:1 to 3:1 and then to 5:1. The entire chute is underlain by a 6-inch-thick layer of filter gravel that is covered by a 6-inch-thick layer of rocks with a D_{50} of 3 inches.

2.4.4 Diversion Channel

A diversion channel conveys storm water around the south side of the disposal cell from the inlet of the chute to a discharge point west of the embankment. As the diversion channel curves around the tailings area, surface drainage from the approximately 85-acre reclaimed surface immediately adjacent to the former tailings pile also flows into the channel. The grass-covered diversion channel is approximately 2,000 ft long and constructed with a nearly flat slope and wide bottom to control erosion.

2.4.5 Rock Weir

The mouth of the diversion channel empties to a rock weir. This structure is engineered to act as a check dam and absorb the erosive force of a probable maximum flood and discharge the reduced flow to Lang Draw downslope of the embankment. The weir is constructed in outcrops of sandstone and claystone. The structure has sides with a 2:1 slope and broadens toward the discharge. The entire structure is underlain by 6-inch-thick layers of filter rock that is then covered by rock with a D_{50} of 3 inches. Riprap armoring has a D_{50} of 15 inches in the approach section at the head of the weir, a D_{50} of 24 inches in the central control section, and a D_{50} of 15 inches in the lower transition section. The riprap is as much as 48 inches thick.

2.5 Geology, Hydrology, and Groundwater

2.5.1 Site Geology and Hydrology

The Bear Creek site is in the central Southern Powder River Basin. The basin lies between the Black Hills on the east and the Bighorn Mountains on the west. South of the site are the Laramie Mountains, the Hartville uplift, and the Powder River lineament (Wright 1975). The regional dip is to the northwest.

The Bear Creek site is situated on the lower part of the Eocene-age Wasatch Formation. The Wasatch Formation typically consists of unconsolidated and discontinuous fluvial braided stream deposits of clayey sand interspersed with claystone and siltstone. Three sandstone layers of the

Wasatch Formation that are near the surface or crop out in this area are, in order of increasing depth, the K Sand, the N Sand, and the Ore Sand. The Wasatch Formation is in turn conformably underlain by the Fort Union Formation. Thin, limited deposits of alluvial material fill low areas on the bedrock surface and surface drainages.

Groundwater occurs in the Wasatch Formation under both confined and unconfined conditions. Limited amounts of groundwater are present in some discontinuous sand lenses in the Wasatch Formation, such as the N Sand, which is located beneath the tailings impoundment. The deeper Ore Sand is the main source of stock water in the area. Groundwater in the Fort Union Formation is confined. In some cases, the hydrostatic head is sufficient for flow to occur at the land surface (NRC et al. 1977).

At the Bear Creek site, the K Sand ranges from 5 to 40 ft in thickness in the vicinity of the tailings. It is a limited path for groundwater flow because it has been removed by erosion along Lang Draw, is of limited areal extent, and is generally found at elevations above the level of the tailings.

The N Sand and Lang Draw alluvial deposits are in hydraulic communication and collectively make up the uppermost water-bearing unit at the Bear Creek site in the area affected by tailings seepage. These units have therefore been the main focus of groundwater investigations and corrective action at the site. Alluvial deposits are on the order of 5 to 10 ft thick along Lang Draw; the N Sand ranges from 4 to 40 ft in thickness and is interlayered with finer-grained clay layers across portions of the site (Stoller 1997). Groundwater in these units reportedly occurs only as “pockets” and is not continuous over large areas (Stoller 1997). Precipitation in the form of rain and snow is considered to be the primary form of recharge to the N Sand and alluvium in Lang Draw (UPR 1997).

Locally, seepage from the tailings impoundment saturated the alluvium and N Sand after milling commenced. The amount of water that originally resided in these units is unknown (UPR 1997). Results of characterization and monitoring indicated there were two flow paths associated with the seepage: the “Lang Draw” flow path on the west and the “Northern” flow path on the east (Figure 8). These two flow paths are separated by a facies change characterized by fining and thinning of the N Sand, which restricts groundwater flow through that zone. The flow paths define the seepage plume as two narrow lobes downgradient of the tailings impoundment (Stoller 1997).

The N Sand is separated from the tailings by siltstones and claystones beneath most of the tailings impoundment; the impoundment embankment was keyed into the underlying claystone at the downgradient side of the impoundment in an attempt to contain tailings seepage (Figure 7). However, installation of the northeast portion of the embankment stopped short of the claystone (APC 2011). This allowed for leakage from the impoundment into the N Sand and alluvium along the Lang Draw flow path and into the N Sand along the Northern flow path. An additional source of contamination may have been from the recovery and monitoring wells located in the seepage catchment basin between the tailings embankment and seepage control dam. The casings in these wells were perforated from top to bottom and may have served as conduits for tailings fluids to the N Sand in Lang Draw when the pumps were not operating (APC 2011).

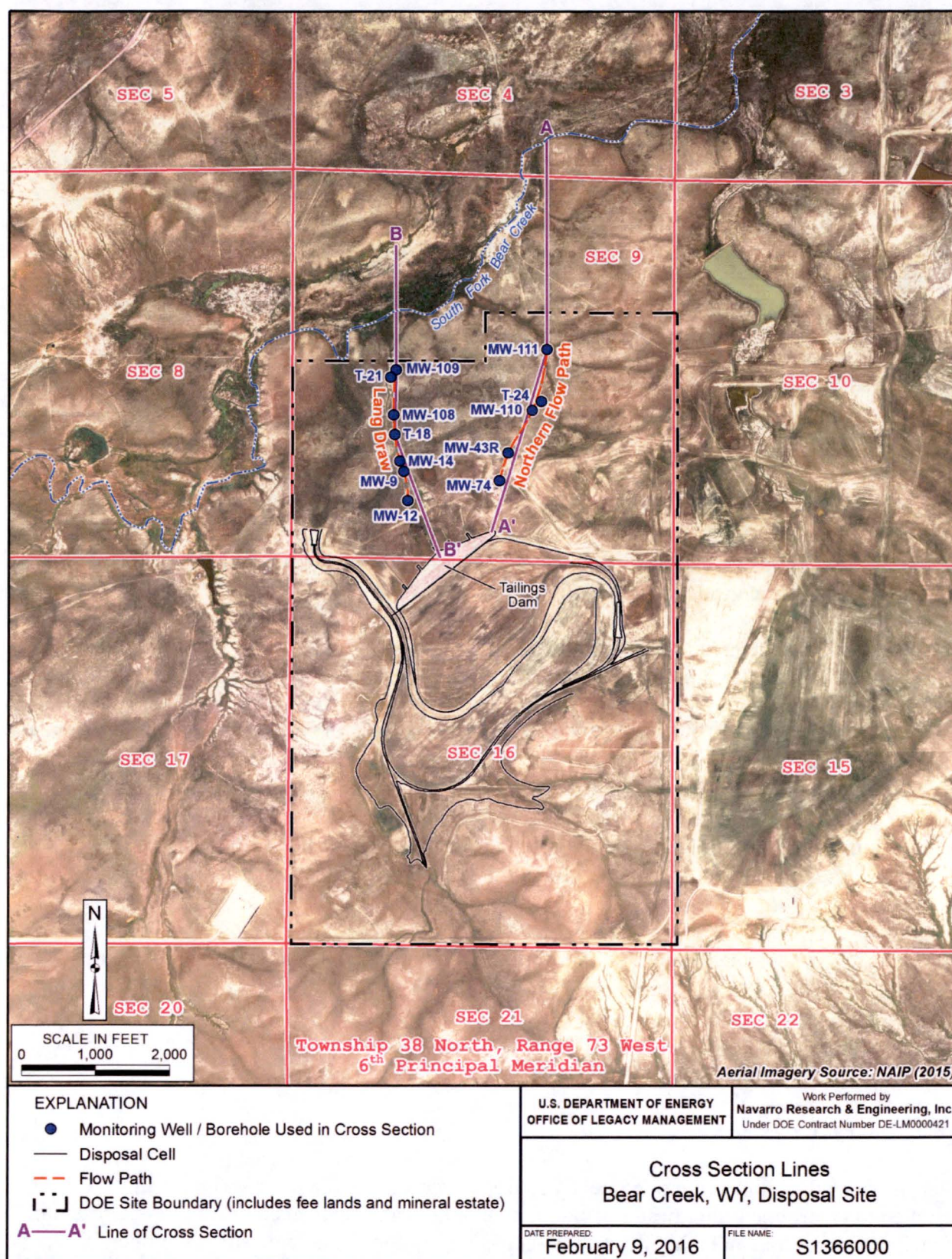


Figure 8. Cross Section Lines

The N Sand pinches out into claystones northeast of the tailings impoundment. In the Lang Draw area, the N Sand pinches out into the alluvium downgradient of the tailings impoundment (Stoller 1997). Any groundwater in the Lang Draw flow path discharges from the N Sand into the alluvium. There are no records of past water use associated with the alluvium and the N Sand in the vicinity of the Bear Creek site, most likely due to the limited amount of groundwater and limited extent of these formations (APC 2011).

Groundwater development in the region has been mostly for stock water and, to a limited extent, domestic water. An environmental assessment completed by the BLM for the Hornbuckle area, which encompasses the Bear Creek site, inventoried groundwater use in the project area (BLM 2011). Forty-six permitted wells were identified; four of these were for domestic use, two were for domestic and livestock use, and the remainder were for livestock use only. Wells ranged from a minimum of 44 ft to a maximum of 1,000 ft in depth, with an average of approximately 344 ft. While the Wasatch was present at the surface throughout the study area, it is not an important aquifer. The primary fresh water aquifer was the Tongue River Member of the underlying Fort Union Formation. Wells used for domestic purposes were all drilled to depths greater than 300 ft. The project for which BLM's environmental assessment was conducted requires the use of large quantities of fresh water (1.47 million gallons per each well to be drilled). It was proposed that this water would be obtained from commercial sources rather than groundwater or surface water.

The N Sand in the site area is not hydraulically connected to a usable aquifer or any surface water resource. The alluvium in the vicinity of the site does not contain appreciable water and has been determined to not be a viable aquifer (Stoller 1997). Estimated yields for wells MW-108 and MW-109 (Figure 9) at the northern edge of the property boundary are on the order of 0.01 gpm (UPR 1997; NRC 2015b). Significant groundwater was not encountered in any of the boreholes along Lang Draw during a 1997 drilling effort at the site (Stoller 1997). Drilling results were independently verified by NRC staff and NRC concluded that there is no viable aquifer at the site (NRC 2013). No groundwater seeps have been noted in Lang Draw from discharge of either the N Sand or alluvium by DOE or contractor personnel during site visits.

The Ore Sand is separated from the shallower sands by at least 50 ft of claystones and siltstones (Stoller 1997). This unit was the source of most of the uranium produced at the Bear Creek mill from open-pit mines located east and northeast of the Bear Creek site. The Ore Sand beneath the disposal site is located 100 to 200 ft below the surface (NRC et al. 1977). As with the K Sand, there is no evidence that the Ore Sand was affected by milling activities.

2.5.2 Groundwater Remedy

Seepage from the tailings impoundment was first observed in 1978 after several wells were installed to determine groundwater contamination potential. Elevated chloride levels, present in the tailings pore fluid and a highly mobile seepage indicator, were detected. In October 1979, several extraction wells were installed for recovering tailings seepage. Seepage was pumped back into the tailings impoundment (UPR 1997). In addition, a seepage control dam was constructed in 1979 about 600 ft downstream of the tailings embankment, and a "pump back" recovery system was operated to return seepage to the tailings impoundment for evaporation.

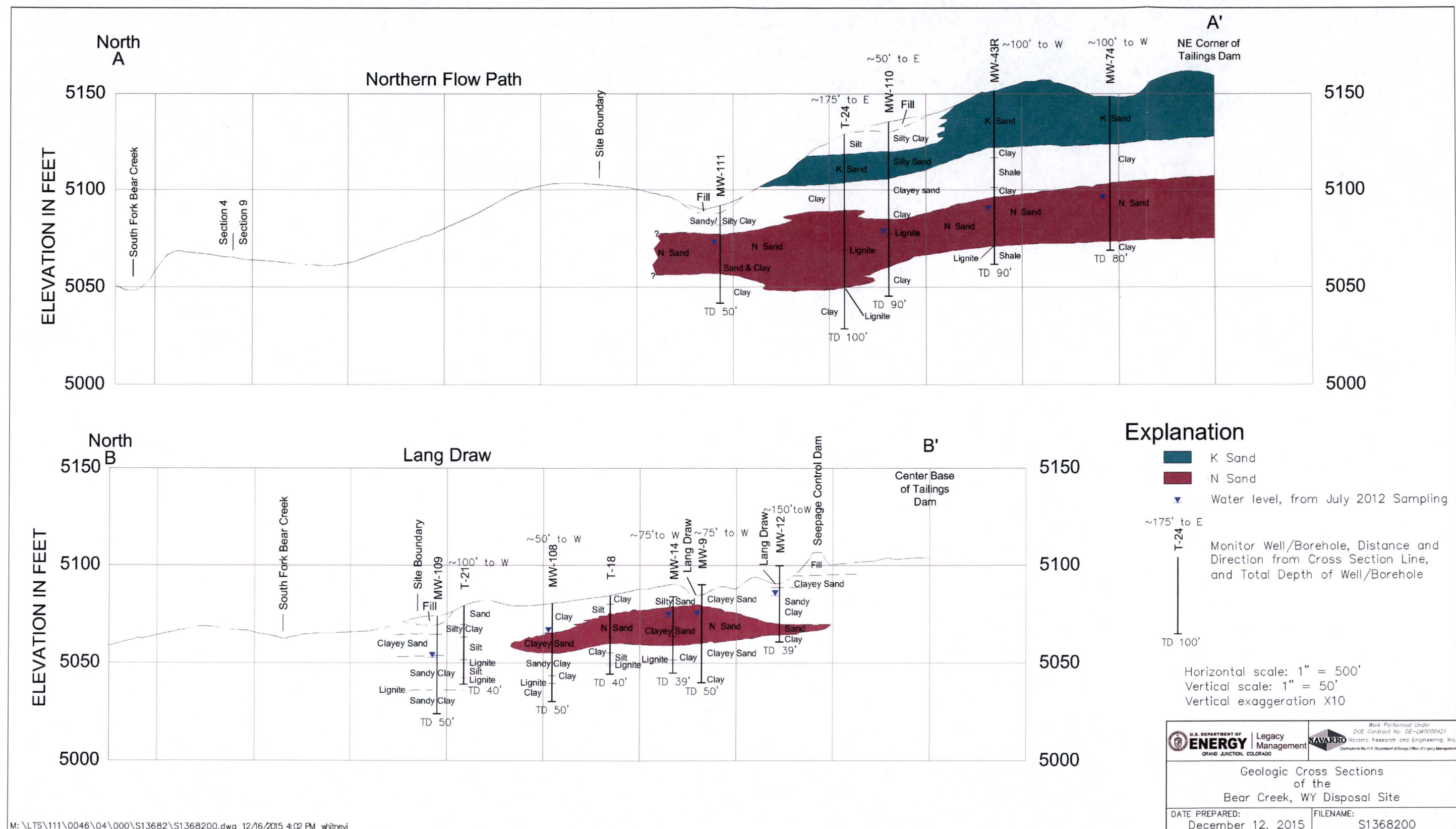


Figure 9. Geologic Cross Sections of the Bear Creek, Wyoming Disposal Site

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Additional efforts included pumping the wells downgradient of the tailings embankment and installing wells in the tailings to dewater the tailings. This water was evaporated, through various enhanced evaporation systems, on top of the tailings.

In 1985, NRC amended license SUA-1310 to formally require a groundwater detection-monitoring program. Indicator parameters were arsenic, selenium, and pH, and threshold values were established for point-of-compliance (POC) wells. NRC required a groundwater Corrective Action Plan (CAP), which BCUC implemented in 1986 and operated until 1996. Threshold values for pH and selenium were exceeded in 1987. The CAP was formally approved by NRC in 1989 and incorporated as part of the BCUC byproduct materials license. The plan specified a monitoring network, a list of site constituents (including beryllium, cadmium, chromium, molybdenum, nickel, radium-226 & -228, selenium, thorium-230, and uranium), and groundwater protection standards (UPR 1997). The approximate extent of the contaminant plume was defined on the basis of a slightly acidic pH (Figure 10).

The CAP was designed to recover contaminated groundwater and control and minimize the spread of the tailings seepage. From the CAP inception through 1996, approximately 301,000,000 gallons of seepage water was recovered and pumped back into the tailings pond (UPR 1997). Clay capping of the tailings began in 1988 and continued until 1991. Subsequently, water from the recovery system was evaporated in clay-lined ponds on top of the tailings. This significantly improved the dewatering of the tailings impoundment.

The CAP was operated for more than 10 years and successfully reduced hazardous constituent levels, with the exception of uranium, to less than the license-established background standards as measured at the POC locations. The CAP pulled the highly acidic plume back to within and under the tailings impoundment area and reduced the saturated thickness of the alluvium, N Sand, and tailings. Corrective action was terminated when evaluations indicated that further remediation would have little or no effect on controlling movement of the acid front. Further groundwater recovery was also determined to be impracticable due to the reduction in saturated thickness of the units. An application for ACLs was subsequently submitted and approved by NRC (UPR 1997 and NRC 1997a).

ACLs were granted for uranium, combined radium-226 and radium-228, and nickel (Table 2). At the time ACLs were established, all constituents except uranium were below background concentrations at the points of exposure (POEs; originally designated as MW-14 and MW-43R). However, modeling suggested that the low pH plume associated with the tailings would eventually move downgradient to the POEs, and elevated concentrations of uranium, radium, and nickel would move with the pH plume. Modeling was conducted to estimate the maximum concentrations of these constituents expected to occur at the POC and POE locations. The POE concentrations were determined to be protective and the maximum POC values were approved as the ACLs. Out of concerns expressed by the State of Wyoming (WDEQ 1999), the original site boundary was extended approximately 1,400 ft to the north (downgradient) to accommodate uncertainty regarding contaminant migration. Following this action DOE first submitted a draft LTSP to NRC for review in 2002, as it was assumed the site was ready for transfer to DOE. After subsequent iterations and revisions, NRC concurred upon a draft final LTSP for the site in 2010 (NRC 2010).

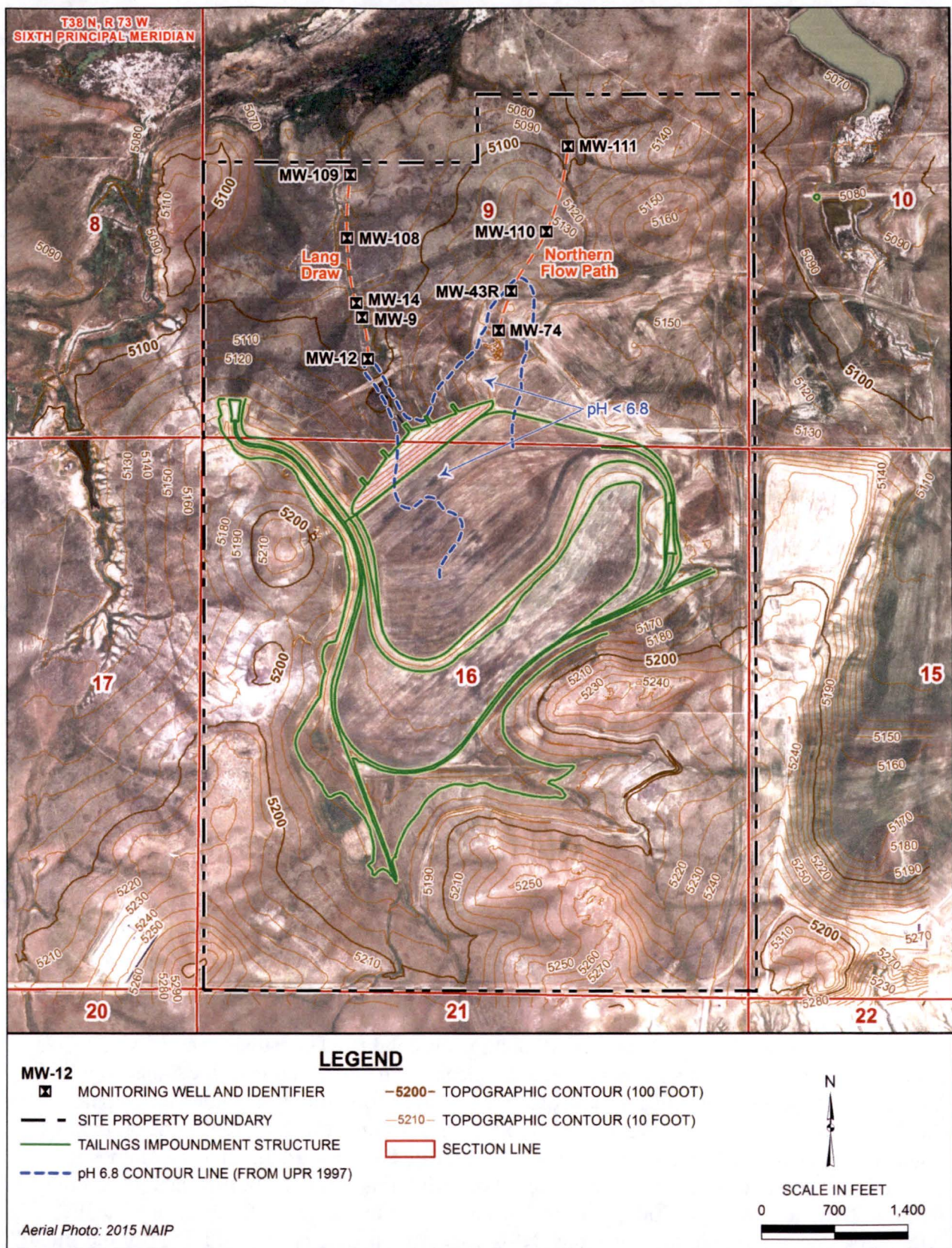


Figure 10. Former Groundwater Monitoring Network at the Bear Creek Site

Table 2. Summary of ACLs, Background, and Model-Predicted Values for Groundwater

Constituent	ACLs	Background	Predicted at POE ^a (Lang Draw)	Predicted at POE ^a (Northern Flow Path)
Nickel (mg/L)	3.8	0.05	0.032	0.034
Ra-226 & -228 (pCi/L)	46	9.7	2.1	5.8
Uranium (pCi/L)	2038	98.7	460	75

^a UPR 2011

mg/L = milligrams per liter

pCi/L = picocuries per liter

In preparation for transfer of the Bear Creek site to DOE, NRC reviewed groundwater monitoring results and found that observed concentrations at well MW-14 exceeded model predictions included in the 1997 ACL application by more than an order of magnitude. As a result, NRC requested that APC (the licensee) submit a revision of ACLs (NRC 2010). The licensee evaluated the modeling approach and assumptions and revised the model predictions (APC 2011). The revised model predictions took into account the expanded site boundary (Table 2). Revised predictions were in better agreement with observed values. The licensee indicated that ACL values did not require revision based on modeling results, but that POE concentrations would be higher than originally projected.

The 2011 modeling results matched sampling data in monitoring wells close to the tailings impoundment, but the simulated concentrations at two downgradient wells (MW-108 and MW-109) were significantly higher than observed. NRC staff asked the licensee to calibrate their model to better match observed concentrations in these two wells. A revised model, submitted in September 2012, focused on Lang Draw (Tetra Tech Geo 2012) and predicted increasing concentrations of chloride and sulfate from tailings-derived water in well MW-109 (Figure 10) starting in the year 2002. In addition, this modeling effort also indicated a slight increase in uranium concentrations in MW-109 starting in 2004 with a greater increase starting in 2040. Uranium concentrations are predicted to peak at approximately 410 micrograms per liter in the year 2057. To date, sampling of MW-109 has shown (1) a delayed chloride increase from the model with an increase in chloride around 2008, (2) no sulfate increase, and (3) a slight increase in uranium in 2004. Along the Northern flow path, modeling was not completed, but well MW-111 (Figure 10) does show concentrations of chloride and sulfate with slightly increasing trends that are likely due to tailings-derived water.

APC performed a hazard assessment as part of the revised ACL application (APC 2011). Although there are no current or projected future uses of alluvial or N Sand groundwater at or beyond the POE, the risk assessment assumed drinking water use using maximum-modeled POE concentrations in groundwater. Results indicated that risks associated with predicted concentrations would not be significantly different from those associated with background concentrations. The existing ACLs were therefore determined to be protective. Table 3 summarizes 2012 monitoring results for ACL constituents in Lang Draw and Northern Flow path wells.

Table 3. 2012 Results for ACL Constituents

Constituent	Lang Draw					Northern Flow Path			
	MW-9	MW-12	MW-14	MW-108	MW-109	MW-43	MW-74	MW-110	MW-111
Nickel (mg/L)	0.029	0.042	0.135	0.018	0.006	0.02	0.074	0.014	0.006
Ra-226 & -228 (pCi/L)	1.79	3.23	2.77	3.33	1.28	6.2	6.6	11.5	1.13
Uranium (pCi/L)	250	408	452	131	52.2	38.6	14.6	2.3	16.7

mg/L = milligrams per liter

pCi/L = picocuries per liter

NRC approved ACLs and also concurred with the APC's request to terminate groundwater monitoring in a license amendment, although they recommended that DOE include limited monitoring (i.e., 30 years) in its LTSP to validate the licensee's model predictions (NRC 2013). In response to this letter, the State of Wyoming expressed concern that contaminants could migrate beyond the property boundary, resulting in a violation of their rules and regulations (WDEQ 2013). Subsequently, the State of Wyoming, at the request of APC, issued a groundwater classification of the Upper Wasatch Formation in the area that encompasses both the Bear Creek site and the area directly downgradient of the site (WDEQ 2014), indicating that ambient groundwater in the Upper Wasatch (to 160 ft) was classified as Class IV (Industrial). Based on this classification, NRC indicated that long-term groundwater monitoring at the site is not required and requested that DOE prepare a revised LTSP for the site (NRC 2015b; see Appendix B).

2.5.3 Final Groundwater Conditions

APC's revised ACL application (APC 2011) included revised predicted concentrations for site-related constituents in groundwater at the POEs for Lang Draw and the Northern flow path. Only the predicted uranium concentration for Lang Draw was higher than established background concentrations. Alluvium is present at the POE and downgradient locations in Lang Draw. As noted in Section 2.5.1, the alluvium is not considered to be an aquifer based on its low yield (Stoller 1997). Furthermore, groundwater at the site has been classified as industrial use to a depth of 160 ft. NRC concluded that the only viable aquifer at the site was greater than 400 ft below the surface and that it was not connected with the mill tailings (NRC 2015b). Based on the low yield and industrial classification, it is likely and reasonable to assume that only minor incidental contact with site-impacted shallow groundwater could occur (e.g., conducting activities that require subsurface excavation). The quantity of groundwater at the site is likely to continue to decline as the groundwater system returns to its pre-milling configuration.

There have been no observed surface expressions of groundwater within or downgradient of the site boundary. Protectiveness at the site will be maintained as long as land and groundwater use do not change significantly.

2.6 Surface Water

The licensee acquired a State of Wyoming water appropriations permit to impound as much as 10.76 acre-ft of surface runoff water behind the seepage control dam. The seepage reservoir capacity exceeds the runoff from a 100-year storm event. The permit was transferred to DOE,

and DOE is responsible for maintaining the dam in a safe and structurally sound condition. DOE sampled impounded water in September 2009 and analyzed for constituents typically associated with UMTRCA disposal cells. All constituent concentrations were below applicable water quality standards.

The dam is located in Lang Draw, which is an intermittent tributary to the South Fork of the Cheyenne River. There are no requirements for maintaining or managing any wetland area that may develop as a result of the impounded water, nor are there any requirements to test for surface water quality (DOE 2009b).

2.7 Institutional Controls

Institutional controls at the Bear Creek site consist of federal ownership of fee land and DOE jurisdiction over the public land. Federal ownership of the property ensures effective land-use control. Construction of groundwater supply wells (for any purpose) and residences on the disposal site property will be prohibited in perpetuity.

3.0 Long-Term Surveillance Program

3.1 General License for Long-Term Custody

States have right of first refusal for long-term custody of Title II disposal sites (UMTRCA, Section 202 (a)). On July 15, 1994, the State of Wyoming exercised its right of first refusal and declined the long-term custody of the Bear Creek site (WDEQ 1994). Because the State declined this right, the site was transferred to DOE for long-term custody.

When NRC accepted this LTSP and terminated Anadarko Petroleum's license, SUA-1310, the site was included under NRC's general license for long-term custody (10 CFR 40.28 (b)). Title to the site transferred from Anadarko Petroleum to DOE in 2010 prior to specific license termination. Although disposal cells are designed to last "for up to 1,000 years, to the extent reasonably achievable, and, in any case, for at least 200 years" (10 CFR 40, Appendix A, Criterion 6), there is no termination of the general license for DOE's long-term custody of the site (10 CFR 40.28 (b)).

Should changes to this LTSP be necessary, NRC must be notified of the changes, and the changes must not conflict with the requirements of the general license. Additionally, representatives of NRC must be guaranteed permanent right-of-entry for the purpose of periodic site inspections. DOE has acquired perpetual easements to access the site across private land located between the Bear Creek site and the Spook UMTRCA Title I site to the south (Appendix A).

3.2 Requirements of the General License

To meet the requirements of the NRC license at 10 CFR 40.28, and 10 CFR 40, Appendix A, Criterion 12, the long-term custodian must, at a minimum, fulfill the following requirements. The section in this LTSP in which each requirement is addressed is in parentheses.

- Annual site inspection (Section 3.3).
- Annual inspection report (Section 3.4).
- Follow-up inspections and inspection reports, as necessary (Section 3.5).
- Site maintenance, as necessary (Section 3.6).
- Emergency measures in the event of catastrophe (Section 3.6).
- Environmental monitoring, if required (Section 3.7).

3.3 Annual Site Inspections

3.3.1 Frequency of Inspections

At a minimum, sites must be inspected annually to confirm the integrity of visible features at the site and to determine the need, if any, for maintenance, additional inspections, or monitoring (10 CFR 40, Appendix A, Criterion 12).

To meet this requirement, DOE will inspect the Bear Creek disposal site once each calendar year. The date of the inspection may vary from year to year, but DOE will endeavor to inspect the site approximately once every 12 months unless circumstances warrant variance. Any variance to this inspection frequency will be explained in the inspection report. DOE will notify NRC of the inspection at least 30 days in advance of the scheduled inspection date.

3.3.2 Inspection Procedure

For the purposes of inspection, the Bear Creek disposal site will be divided into different inspection areas. Each inspection area is inspected by walking a series of traverses across each area so that the entire surface is inspected. Within each area, inspectors examine specific site surveillance features, such as survey and boundary monuments, signs, site markers, drainage ditches, and other features listed on the Inspection Checklist (Appendix C). Table 4 lists the inspection areas for the Bear Creek site; these inspection areas are shown on Figure 11.

Table 4. Inspection Areas Used During First Inspection of the Bear Creek, Wyoming, Disposal Site

Inspection Area	Description
Cover of Tailings Impoundment	Repository impoundment top slopes and side slopes.
Tailings Embankment and Diversion Channel	Riprap-armored embankment face and storm water management structures.
Site Perimeter and Balance of Site	Site perimeter, including 0.25 mile beyond site boundary, area between tailings impoundment and site boundary, site entrance, boundary monuments, entrance sign, and site marker.

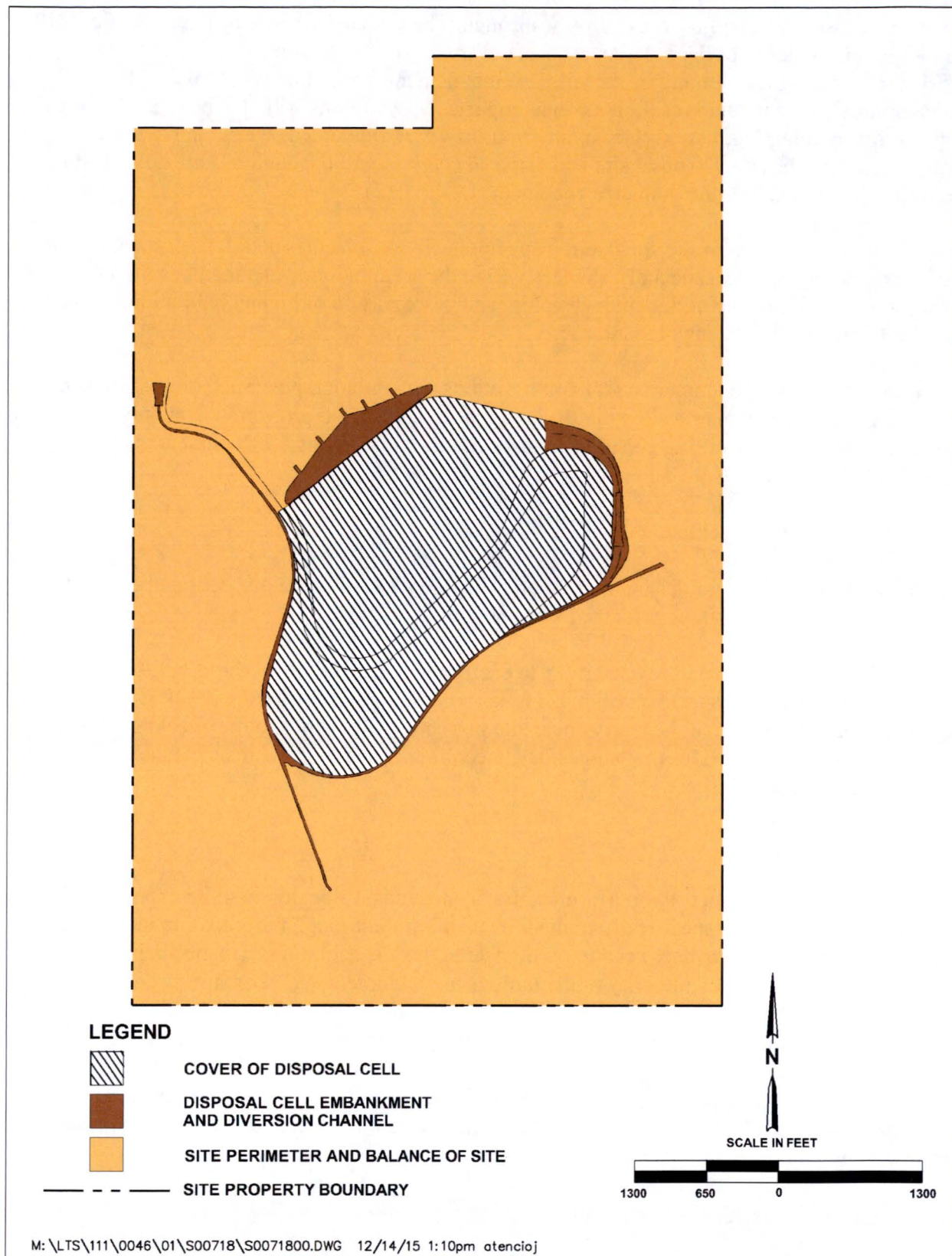


Figure 11. Map of Inspection Areas for the Bear Creek, Wyoming, Disposal Site

The annual inspection will be a visual walk-through. The primary purpose of the inspection will be to look for evidence of degradation such as cover cracking or settlement, wind or water erosion, structural discontinuity of the tailings embankment, vegetation condition, and animal or human intrusions that could result in adverse impacts. Observations will also be made for any signs of illegal dumping, new surface expressions of water, oil and gas wells, and uranium exploration near the site. Disposal site and disposal cell inspection techniques are described in detail in Attachment 3 of the guidance document (DOE 2012).

In addition to inspection of the site itself, inspectors will note changes and developments in the area surrounding the site, especially changes within the surrounding watershed basin. Significant changes within this area could include development or expansion of human habitation, erosion, road building, or other change in land use.

It may be necessary to document certain observations with photographs. Such observations may be evidence of vandalism or a slow modifying process, such as rill erosion, that should be monitored more closely during general site inspections. Photographs are documented on the Field Photograph Log.

3.3.3 Inspection Checklist

The inspection checklist guides the inspection. The initial site-specific inspection checklist for the Bear Creek disposal site is presented in Appendix C.

The checklist is reviewed and revised prior to each annual inspection. At the conclusion of the annual site inspection, inspectors will make notes regarding revisions to the checklist, if necessary, in anticipation of the next annual site inspection. Revisions to the checklist will include such items as new discoveries or changes in site conditions that must be inspected and evaluated during the next annual inspection.

3.3.4 Personnel

At least two inspectors normally perform annual inspections. Inspectors will be experienced scientists who have been specifically trained for the purpose through participation in previous site inspections. Engineers may need to participate in the inspection if the inspectors identify potential concerns with the integrity of the tailings impoundment and diversion structures.

Scientists will include geologists, hydrologists, biologists, and environmental scientists representing various fields (e.g., ecology, soils, range management). Engineers will typically be trained in civil, geotechnical, or geological engineering. Additional scientists or engineers specialized in specific fields may be assigned to the inspection to evaluate serious or unusual problems and make recommendations.

3.4 Annual Inspection Report

Results of the annual Bear Creek site inspection are included in an annual inspection report that is submitted to NRC within 90 days of the last UMTRCA Title II site inspection of that calendar year (10 CFR 40, Appendix A, Criterion 12). If the annual report cannot be submitted within

90 days, DOE will notify NRC of the circumstances. The annual inspection report includes the annual inspection results for all UMTRCA Title II sites licensed under 10 CFR 40.28.

3.5 Follow-up Inspections

3.5.1 Criteria for Follow-up Inspections

Follow-up inspections are unscheduled inspections. Criteria necessitating follow-up inspections are defined at 10 CFR 40.28 (b)(4). DOE will conduct follow-up inspections should the following occur:

- A condition is identified during the annual site inspection or other site visit that requires personnel, perhaps with specific expertise, to return to the site to evaluate the condition; or
- DOE is notified by a citizen or outside agency that conditions at the site are substantially changed.

With respect to citizens and outside agencies, DOE will establish and maintain lines of communication with local law enforcement and emergency response agencies to facilitate notification in the event of significant trespassing or vandalism or a natural disaster. Because the Bear Creek site is remote, DOE recognizes that local agencies may not necessarily be aware of current conditions there; however, these agencies will be requested to notify DOE or provide information should they become aware of a significant event that might affect the security or integrity of the site.

DOE may request the assistance of local agencies to confirm the seriousness of a condition before conducting a follow-up inspection or emergency response. The public may use the 24-hour DOE telephone number posted prominently on the entrance sign to request information or to report a problem at the site.

Once a condition or concern is identified at the site, DOE will evaluate the information and determine whether a follow-up inspection is warranted. Conditions that may require a routine follow-up inspection include erosion; changes in vegetation; storm damage; trespassing; minor vandalism; or the need to evaluate, define, or perform maintenance tasks.

Conditions that threaten the safety or the integrity of the disposal site may require a more immediate (non-routine) follow-up inspection. Slope failure, a disastrous storm, a major seismic event, and deliberate human disturbance of an engineered structure are among these conditions.

DOE will use a graded approach with respect to follow-up inspections. The urgency of the follow-up inspection will be in proportion to the seriousness of the condition. The timing of the inspection may be governed by seasonal considerations. For example, a follow-up inspection to investigate a vegetation problem may be scheduled for a particular time of year when growing conditions are optimum. A routine follow-up inspection to perform maintenance or to evaluate an erosion problem might be scheduled to avoid snow cover or frozen ground.

In the event of “unusual damage or disruption” (10 CFR 40, Appendix A, Criterion 12) that threatens or compromises site safety, security, or integrity, DOE will:

- Notify NRC pursuant to 10 CFR 40, Appendix A, Criterion 12, or 10 CFR 40.60, whichever is determined to apply;
- Begin the DOE environmental, safety, and health reporting process;
- Respond with an immediate follow-up inspection or emergency response team; and
- Implement measures as necessary to contain or prevent the dispersion of radioactive materials (Section 3.6).

3.5.2 Personnel

Inspectors assigned to follow-up inspections will be selected on the same basis as for the annual site inspection (Section 3.3.4).

3.5.3 Reports of Follow-up Inspections

Results of routine follow-up inspections will be included in the next annual inspection report (Section 3.4). Separate reports will not be prepared unless DOE determines that it is advisable to notify NRC or another outside agency of a problem at the site.

If follow-up inspections are required for more serious or emergency reasons, DOE will submit to NRC a preliminary report of the follow-up inspection within the required 60 days (10 CFR 40, Appendix A, Criterion 12).

3.6 Routine Site Maintenance and Emergency Measures

3.6.1 Routine Site Maintenance

UMTRCA disposal sites are designed and constructed so that “ongoing active maintenance is not necessary to preserve isolation” of radioactive material (10 CFR 40, Appendix A, Criterion 12). The tailings impoundment has been designed and constructed to minimize the need for routine maintenance. However, DOE will perform routine site maintenance, where and when needed, to maintain site protectiveness.

If an inspection reveals damaged or missing site surveillance features (e.g., signs, site marker, and boundary monuments), the features will be repaired or replaced as necessary. If a structure has failed or has been degraded in a way that might compromise site protectiveness (but is not considered to be an emergency), repairs will be conducted to establish integrity of the disposal system. If undesirable plants (e.g., noxious weeds) are observed, they will be controlled as necessary to comply with county, state, or federal requirements.

3.6.2 Emergency Measures

Emergency measures are the actions that DOE will take in response to “unusual damage or disruption” that threatens or compromises site safety, security, or integrity. DOE will contain or prevent the dispersal of radioactive materials in the unlikely event of a breach in cover materials.

3.6.3 Criteria for Routine Site Maintenance and Emergency Measures

Site intervention measures, from minor routine maintenance to large-scale reconstruction following potential disasters, lie on a continuum. Although 10 CFR 40.28 (b)(5) requires that increasingly serious levels of intervention trigger particular DOE responses, the criteria for those responses are not easily defined because the nature and scale of all potential problems cannot be foreseen. The information in Table 5, however, serves as a guide for appropriate DOE responses. The table shows that the primary differences between routine maintenance and an emergency response is the urgency of the activity and the degree of threat or risk. DOE's priority level, in the left column of Table 5, bears an inverse relationship with DOE's estimate of the probability of occurrence; the highest-priority response is believed to be the least likely.

Table 5. DOE Criteria for Maintenance and Emergency Measures

Priority	Description ^a	Example	Response
1	Breach of disposal cell with dispersal of radioactive material.	Seismic event that exceeds design basis and causes massive discontinuity in cover.	Notify NRC. Immediate follow-up inspection by DOE emergency response team. Emergency actions to prevent further dispersal, recover radioactive materials, and repair breach.
2	Breach without dispersal of radioactive material.	Partial or threatened exposure of radioactive materials.	Notify NRC. Immediate follow-up inspection by DOE emergency response team. Emergency actions to repair the breach.
3	Breach of site security.	Human intrusion, vandalism.	Restore security; urgency based on assessment of risk.
4	Maintenance of specific site surveillance features.	Deterioration of site marker, signs, boundary monuments.	Repair at first opportunity.
5	Minor erosion or undesirable changes in vegetation.	Erosion not immediately affecting disposal cell, invasion of undesirable plant species.	Evaluate, assess impact, and respond as appropriate.

^a Other changes or conditions will be evaluated and treated similarly on the basis of perceived risk.

3.6.4 Reporting Maintenance and Emergency Measures

Routine maintenance completed during the previous 12 months will be summarized in the annual inspection report.

In accordance with 10 CFR 40.60, within 4 hours of discovery of any Priority-1 or -2 event such as those listed in Table 5, DOE will notify the following group at NRC:

Materials Decommissioning Branch

Division of Decommissioning, Uranium Recover, and Waste Programs

Office of Nuclear Material Safety and Safeguards

The phone number for the required 4-hour contact to the NRC 24-Hour Operations Center for Emergencies is (301) 816-5100.

3.7 Environmental Monitoring

3.7.1 Groundwater Monitoring

Based on the State of Wyoming classification of the shallow groundwater at the Bear Creek site as Class IV, Industrial Use, NRC has determined that groundwater monitoring at the site is no longer needed (NRC 2015b) and that the monitoring wells should be decommissioned (NRC 2015a). However, to have a higher degree of confidence in modeling projections, DOE may conduct a limited groundwater monitoring program or conduct other activities to improve its understanding of the groundwater system and reduce the uncertainties discussed in Section 2.5.2 of this LTSP. Because this monitoring is being conducted strictly at the discretion of DOE, future adjustments or termination of the monitoring or other activities will not require prior approval by NRC.

3.7.2 Vegetation Monitoring

The disposal site was revegetated as part of the site reclamation. Vegetation at the disposal site is expected to help maintain surface stability and reduce erosion potential. DOE conducted a baseline soil and vegetation characterization of the Bear Creek site in 2009 to assess rangeland and cell cover vegetation conditions and vitality and to identify local areas with erosion or noxious weed infestation (DOE 2009a).

Annual visual inspections will be conducted by the site inspectors to verify the continued health of the onsite vegetation and to ensure that undesirable plant species do not proliferate at the site. Vegetation specialists may accompany inspections or visit the site as needed to evaluate vegetation health. Undesirable plants (e.g., noxious weeds) will be controlled as necessary. Natural plant community succession caused by fire or other natural processes is expected and will be evaluated to ensure that it does not adversely impact the performance of the containment system.

3.8 Land Use Monitoring

During each annual site inspection, DOE will monitor land use in the area surrounding the site to ensure that changes in land or water use do not affect site protectiveness. For example, oil and gas development or a resurgence in uranium mining and processing could lead to increased activity in the vicinity of the site and an increased potential for site disturbance.

3.9 Institutional Control Monitoring

Monitoring of ICs will be conducted during the annual inspection. DOE will confirm that unauthorized entry and disturbance of site features has not occurred.

Although groundwater monitoring is no longer required at the site, once every 5 years, beginning in 2016, DOE will check the records at the Wyoming State Engineer's Office to determine if there have been significant changes in water demands in the vicinity of the site.

3.10 Records

DOE receives and maintains selected records to support post-closure site maintenance. Inactive records are preserved in DOE collections or at a Federal Records Center. Site records contain critical information required to protect human health and the environment, manage land and assets, protect the legal interests of DOE and the public, and mitigate community impacts resulting from the cleanup of legacy waste. The records are managed in accordance with the appropriate records management requirements as specified in the DOE LTSP development guidance document (DOE 2012).

3.11 Quality Assurance

All activities related to the surveillance and maintenance of the Bear Creek disposal site will comply with appropriate DOE orders and other requirements as specified in the DOE LTSP development guidance document (DOE 2012). Quality assurance requirements are routinely fulfilled by use of a work-planning process, standard operating procedures, trained personnel, documents and records maintenance, and assessment activities. Requirements will be transmitted through procurement documents to subcontractors when appropriate.

3.12 Safety and Health

Safety and health requirements and procedures for DOE activities are consistent with DOE orders, federal regulations, and applicable codes and standards as specified in the DOE LTSP development guidance document (DOE 2012). The DOE Integrated Safety Management process serves as the basis for the Contractor's Safety and Health Program. Project-specific safety plans are used to identify specific hazards associated with the anticipated scope of work and provide direction for the control of these hazards. During the pre-inspection briefing, inspectors are required to review project-specific safety plans and the LTSP to ensure that they have an understanding of the site. Prior to entering the site, all personnel accessing the site are briefed on the safety and health requirements associated with the site and any work to be performed such as ATV use, sign replacement, or noxious weed control.

4.0 References

10 CFR 40. U.S. Nuclear Regulatory Commission, "Domestic Licensing of Source Material," *Code of Federal Regulations*.

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Converse County, Wyoming, 2015. Converse County Wyoming Land Use Plan, Resolution 03-15, April 7.

DOE (U.S. Department of Energy), 1988. *Disposal Site Long-Term Surveillance and Maintenance*, memorandum from John E. Baublitz to Don Ofte, December 5.

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NRC (U.S. Nuclear Regulatory Commission), 1997a. "Review of Request for Alternate Concentration Limits," letter from J. Holonich, NRC, to G. Chase, Bear Creek Uranium Company, includes Technical Evaluation Report, June 30.

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NRC (U.S. Nuclear Regulatory Commission), 2001. "Review of the Bear Creek Tailings Reclamation Construction Report, Amendment No. 45 to Source Material License SUA-1310," letter to E. Scott, Bear Creek Uranium Company from M. Leach, NRC, includes Technical Evaluation Report, July 3.

NRC (U.S. Nuclear Regulatory Commission), 2010. "Review of the Draft Final Long-Term Surveillance Plan for the Bear Creek UMTRCA Title II Disposal Site, Converse County, Wyoming," letter to Scott Surovchak, DOE, from Rebecca Tadesse, NRC, January 6.

NRC (U.S. Nuclear Regulatory Commission), 2013. "License Amendment No. 51 Approving Alternate Concentration Limits and Eliminating License Condition No. 47 for the Bear Creek Uranium Company Mill Site, License SUA-1310," letter to Harry Nagel, APC, from Andrew Persinko, NRC, including Environmental Assessment and Safety Evaluation Report, February 27.

NRC (U.S. Nuclear Regulatory Commission), 2015a. "Request to Plug and Abandon All Wells at the Bear Creek Uranium Company Mill Site, License SUA-1310," letter to Harry Nagel, APC, from Andrew Persinko, NRC.

NRC (U.S. Nuclear Regulatory Commission), 2015b. "Request from the U.S. Nuclear Regulatory Commission for a Long-Term Surveillance Plan for the Anadarko Bear Creek Uranium Mill Tailings Site," letter to Tom Pauling, DOE, from Andrew Persinko, NRC, February 2.

Stoller (The S.M. Stoller Corporation), 1997. *Delineation of N-Sand and Lang Draw Alluvium, Bear Creek Uranium Tailings Area*, March 19, 1997.

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WDEQ (Wyoming Department of Environmental Quality), 2014. "Groundwater Classification, Bear Creek Uranium Company, Converse County, WY," letter to Anadarko Petroleum Company from Don Fischer, WDEQ, October 15.

Western Regional Climate Center, <http://www.wrcc.dri.edu/summary/Climsmwy.html>, last accessed February 8, 2016.

Wright, 1975. *Preliminary Ground Water Hydrological Report, Bear Creek Project*, Wright Water Engineers, Denver, Colorado, March.

Appendix A

Real Estate Documentation

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Legal Description of Site Boundary

The legal description of the 1,002-acre Bear Creek disposal site is:

All of Section 16, the S $\frac{1}{2}$ of Section 9, the S $\frac{1}{2}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 9, and the S $\frac{1}{2}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 9, all in T38N, R73W, 6th p.m., Converse County, Wyoming.

Contains 1,002 acres.

The real estate correspondence and instruments are maintained and filed by the U.S. Department of Energy, Office of Legacy Management.

The permanent withdrawal of the 25 acres of Federal land within the transfer boundary is pending action by the U.S. Bureau of Land Management. The Federal land is administered by the U.S. Forest Service as part of the Thunder Basin National Grassland.

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968319 Book - 1367 Page - 661

Recorded 1/11/2010 At 1:35 PM

Lucile, K. Taylor, Converse County Clerk & Recorder

BOOK 1367 PAGE 661

DEED OF CONVEYANCE

THIS CONVEYANCE, made this 4th day of November, 2009, between BEAR CREEK URANIUM COMPANY, a general partnership established under the laws of the State of Colorado, whose address is P.O. Box 1330, Houston, Texas 77251-1330 ("Grantor"), and the UNITED STATES OF AMERICA, of Washington, DC, ("Grantee"), consists of three sections.

1. **Section 1: Conveyance with General Warranty of Title.** For and in consideration of TEN AND NO/100 DOLLARS (\$10.00) in hand paid, together with other valuable consideration, Grantor conveys and warrants to the Grantee the following described real estate situate in the County of Converse, Wyoming:

Township Thirty-eight (38) North, Range Seventy-three (73) West, 6th P.M.

All of Section Sixteen (16), containing 640.00 acres, more or less, AND

The North Half of the South Half (N1/2S1/2), the Southeast Quarter of the Southeast Quarter (SE1/4SE1/4), the South Half of the Southwest Quarter of the Northeast Quarter (S1/2SW1/4NE1/4), and the South Half of the Southeast Quarter of the Northeast Quarter (S1/2SE1/4NE1/4) of Section Nine (9), AND

Bear Creek Uranium Mill Site No. 1 claim embracing:
Section 9: E1/2NE1/4SW1/4SE1/4;

Bear Creek Uranium Mill Site No. 2 claim embracing:
Section 9: E1/2SE1/4SW1/4SE1/4;

Bear Creek Uranium Mill Site No. 3 claim embracing:
Section 9: W1/2NE1/4SW1/4SE1/4;

Bear Creek Uranium Mill Site No. 4 claim embracing:
Section 9: W1/2SE1/4SW1/4SE1/4;

Bear Creek Uranium Mill Site No. 5 claim embracing:
Section 9: E1/2NW1/4SW1/4SE1/4;

Bear Creek Uranium Mill Site No. 6 claim embracing:
Section 9: E1/2SW1/4SW1/4SE1/4;

Bear Creek Uranium Mill Site No. 7 claim embracing:
Section 9: W1/2NW1/4SW1/4SE1/4;

Bear Creek Uranium Mill Site No. 8 claim embracing:
Section 9: W1/2SW1/4SW1/4SE1/4;

Bear Creek Uranium Mill Site No. 9 claim embracing:
Section 9: E1/2NE1/4SE1/4SW1/4;

Bear Creek Uranium Mill Site No. 10 claim embracing:
Section 9: E1/2SE1/4SE1/4SW1/4;

Bear Creek Uranium Mill Site No. 11 claim embracing:
Section 9: W1/2NE1/4SE1/4SW1/4;

Bear Creek Uranium Mill Site No. 12 claim embracing:
Section 9: W1/2SE1/4SE1/4SW1/4;

Figure A-1. Warranty Deed



968319 Book - 1367 Page - 662
Recorded 1/11/2010 At 1:35 PM
Lucile, K. Taylor, Converse County Clerk & Recorder
Bear Creek Uranium Mill Site No. 13 claim embracing:
Section 9: E1/2NW1/4SE1/4SW1/4;

Project: DOE UMTRA
Converse County, Wyoming

BOOK 1367 PAGE 662

Bear Creek Uranium Mill Site No. 14 claim embracing:
Section 9: E1/2SW1/4SE1/4SW1/4;

Bear Creek Uranium Mill Site No. 15 claim embracing:
Section 9: W1/2NW1/4SE1/4SW1/4;

Bear Creek Uranium Mill Site No. 16 claim embracing:
Section 9: W1/2SW1/4SE1/4SW1/4;

Bear Creek Uranium Mill Site No. 18 claim embracing:
Section 9: E1/2SE1/4SW1/4SW1/4;

Bear Creek Uranium Mill Site No. 20 claim embracing:
Section 9: W1/2SE1/4SW1/4SW1/4;

Bear Creek Uranium Mill Site No. 22 claim embracing:
Section 9: E1/2SW1/4SW1/4SW1/4;

The acquiring federal agency is the Department of Energy.

To have and to hold the above described land, together with all and singular the rights and appurtenances in any way belonging to the land including all right, title and interest of Grantor in and to any alleys, streets, ways, strips or gores abutting or adjoining the above-described land and in any means of ingress or egress appurtenant thereto.

2. **Section 2: Conveyance with Special Warranty of Title. FOR THE SAME CONSIDERATION SET OUT ABOVE**, Grantor hereby grants and conveys to Grantee the following water and water rights used on or appurtenant to the above described lands, to wit:

- (a) the MW-9 monitoring well, Permit Number U.W. 55245;
- (b) the MW-12 monitoring well, Permit Number U.W. 58889;
- (c) the MW-14 monitoring well, Permit Number U.W. 55800;
- (d) the MW-43 monitoring well, Permit Number U.W. 62114;
- (e) the MW-74 monitoring well, Permit Number U.W. 80233;
- (f) the MW-108 monitoring well, Permit Number U.W. 116442;
- (g) the MW-109 monitoring well, Permit Number U.W. 116443;
- (h) the MW-110 monitoring well, Permit Number U.W. 116444;
- (i) the MW-111 monitoring well, Permit Number U.W. 116445; and
- (j) the Bear Creek-Wetland Reservoir, Permit Number 12271 R.

TO HAVE AND TO HOLD the above premises bargained, unto the Grantee, its successors and assigns forever.

The Grantor, for itself and its successors, does covenant and agree that it will **WARRANT AND FOREVER DEFEND** title to the above described water and water rights and appurtenances thereto unto the Grantee, its successors and assigns, against all and every person or persons claiming the whole or any part thereof, by, through, or under the Grantor.

3. **Section 3: Quitclaim of Certain Interests. FOR THE SAME CONSIDERATION SET OUT ABOVE**, Grantor, for itself, its successors and assigns, hereby releases and quitclaims to the Grantee, all right, title, and interest which the Grantor may have in the banks, beds, and waters of any streams bordering the Subject Lands, and also all interest in alleys, roads, streets, ways, strips, gores, or railroad rights of way abutting or adjoining said land and in any means of ingress or egress appurtenant thereto.

968319 Book - 1367 Page - 663

Recorded 1/11/2010 At 1:35 PM
Lucile, K. Taylor, Converse County Clerk & Recorder

Project: DOE UMTRA
Converse County, Wyoming

BOOK 1367 PAGE 663

IN WITNESS WHEREOF, the Grantor has set its hand and seal this 4 day of November, 2009.

BEAR CREEK URANIUM COMPANY
By Mono Power Company, Partner

By: Robert C. Boada
Name: Robert C. Boada
Title: Vice President

By Anadarko Petroleum Corporation, Partner

By: R.A. Walker
Name: R.A. Walker
Title: Chief Operating Officer

ACKNOWLEDGMENT

State of California)
County of Los Angeles) ss.

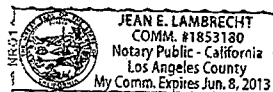
Before me, the undersigned, a Notary Public in and for said County and State, on this day personally appeared Robert Boada, as Vice President of Mono Power Company, a Partner of Bear Creek Uranium Company, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same in the capacity therein stated on behalf of Bear Creek Uranium Company.

Given Under My Hand and Seal of Office this 4 day of November, 2009.

Jean E. Lambrecht
Notary Public

My Commission Expires:

June 8, 2013



ACKNOWLEDGMENT

State of Texas)
County of Montgomery) ss.

Before me, the undersigned, a Notary Public in and for said County and State, on this day personally appeared R.A. Walker, as Senior Vice President of Anadarko Petroleum Corporation, a Partner of Bear Creek Uranium Company, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same in the capacity therein stated on behalf of Bear Creek Uranium Company.

Given Under My Hand and Seal of Office this 1st day of December, 2009.

Patsy L. Holmes
Notary Public

My Commission Expires:

5/24/2010



This deed was prepared by David V. Chipman, Attorney, Omaha District, Corps of Engineers, 1616 Capitol Avenue, Omaha, Nebraska 68102-9000, (402) 995-2596.

DEED OF CONVEYANCE

FILING NO. 968319	
OFFICE OF THE REGISTER OF DEEDS	
STATE OF WYOMING	} ss JAN 11 2010
County of Converse	
This instrument was filed for record on _____	
at _____	1:35 o'clock P M. and duly
recorded in Book _____	1367 on Page 661
<i>Heidi K. Taylor</i>	
County Clerk and Ex-Officio Register of Deeds	

Figure A-1 (continued). Warranty Deed

PHOTOSTATED /
INDEXED /
ABSTRACTED /

Anadarko Petroleum Corp
Box 1330
Houston, TX 77251-9874
Attn: M. Pasquero-ALR
5021
#14

Sec. 1, lots 1 and 2, S½NE¼, SE¼SE¼;
 Sec. 2, SE¼SW¼, SW¼SE¼;
 Sec. 11, NW¼NE¼, NE¼NW¼;
 Sec. 12, W½NE¼.

The area described contains approximately 749.08 acres of public surface and Federal minerals in Fremont County.

T. 29 N., R. 91 W.,

Sec. 6, lot 5, SE¼NW¼, SW¼SE¼;
 Sec. 7, lots 3 and 4, E½SW¼, SW¼SE¼;
 Sec. 18, lot 1, NE¼NW¼.

T. 29 N., R. 92 W.,

Sec. 1, lot 4, SW¼, W½SE¼;
 Sec. 2, NE¼SW¼, SW¼SW¼, N½SE¼, SE¼SE¼;
 Sec. 3, SE¼SE¼;
 Sec. 11, NE¼NE¼, NW¼NW¼, S½N½, S½;
 Sec. 12, E½NE¼, NW¼, S½;
 Sec. 13, N½;
 Sec. 14, NE¼, NE¼NW¼.

The area described contains approximately 2559.13 acres of Federal reserved minerals underlying private surface in Fremont County.

The purpose of the proposed withdrawal and transfer of jurisdiction is to allow the United States Department of Energy perpetual administration over the land as a hazardous material site under the authority of the Uranium Mill Tailings Radiation Control Act of 1978, 42 U.S.C. 7902, *et seq.*

For a period of 90 days from the date of publication of this notice, all persons who wish to submit comments, suggestions, or objections in connection with the proposed action may present their views in writing to the Wyoming State Director, BLM, at the address noted above.

Comments, including names and street addresses of respondents, and records relating to the proposed withdrawal will be available for public review during regular business hours at the BLM Wyoming State Office at the address specified above. Before including your address, phone number, e-mail address, or other personal identifying information in your comments, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comments to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

This application will be processed in accordance with the regulations set forth in 43 CFR 2300.

Rights-of-way, leases, permits, cooperative agreements and other discretionary land use authorizations of a temporary nature would continue under the BLM during the 2-year segregation period.

No water rights would be needed to fulfill the purpose of this withdrawal.

Effective on the date of publication of this notice, the lands will be segregated from location and entry under the United States mining laws. The segregative effect of this application will terminate April 14, 2010, unless final withdrawal action is taken or the application is denied or cancelled prior to that date (43 CFR 2310.2). Notice of any action will be published in the Federal Register.

Notice is hereby given that an opportunity for a public meeting is afforded in connection with the proposed withdrawal and transfer of jurisdiction. All interested persons who desire a public meeting for the purpose of being heard on the proposed withdrawal and transfer of jurisdiction must submit a written request to the BLM Wyoming State Director at the address indicated above within 90 days from the date of publication of this notice. If the authorized officer determines that a public meeting will be held, a notice of the time and place will be published in the Federal Register at least 30 days before the scheduled date of the meeting.

(Authority: 43 CFR 2310.3-1)

Dated: March 24, 2008.

Michael Madrid,
 Chief, Branch of Fluid Mineral Operations,
 Lands and Appraisal.

[FR Doc. E8-7837 Filed 4-11-08; 8:45 am]

BILLING CODE 6450-01-P

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[WY-921; WYW 164606, WYW 164607]

Notice of Proposed Withdrawal and Transfer of Jurisdiction; Wyoming

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice.

SUMMARY: The United States Department of Energy (DOE) has filed application requesting the Secretary of the Interior segregate from the mining laws approximately 1345 acres of public land associated with the proposed withdrawal and transfer of jurisdiction. The proposed withdrawal will protect public health and safety on lands contaminated by previous mining and milling operations. This notice temporarily segregates the lands for up to 2 years from location and entry under the United States mining laws while the withdrawal application is being processed.

DATES: Comments must be received on or before July 14, 2008.

ADDRESSES: Comments should be sent to the State Director, BLM Wyoming State Office, 5353 Yellowstone Road, P.O. Box 1828, Cheyenne, Wyoming 82003-1828.

FOR FURTHER INFORMATION CONTACT: Janet Booth, Realty Specialist, BLM Wyoming State Office, at the above address, 307-775-6124.

SUPPLEMENTARY INFORMATION: The United States Department of Energy has filed an application with the Bureau of Land Management to segregate from the United States mining laws the public lands described below. Jurisdiction over approximately 1345 acres will ultimately be withdrawn and transferred from the Department of the Interior to the Department of Energy, subject to valid existing rights.

Sixth Principal Meridian

T. 38 N., R. 73 W.,

Sec. 9, W½SW¼SW¼SW¼,
 N½SW¼SW¼.

T. 33 N., R. 89 W.,

Sec. 9, SE¼;
 Sec. 10, S½;
 Sec. 15, N½, SE¼SE¼;
 Sec. 21, NE¼; and
 Sec. 22, N½.

The area described contains approximately 1345 acres in Converse, Fremont and Natrona Counties.

The purpose of the proposed withdrawal and transfer of jurisdiction is to allow the United States Department of Energy perpetual administration over the land as a hazardous material site under the authority of the Uranium Mill Tailings Radiation Control Act of 1978, 42 U.S.C. 7902, *et seq.*

For a period of 90 days from the date of publication of this notice, all persons who wish to submit comments, suggestions, or objections in connection with the proposed action may present their views in writing to the Wyoming State Director, BLM, at the address noted above.

Comments, including names and street addresses of respondents, and records relating to the proposed withdrawal will be available for public review during regular business hours at the BLM Wyoming State Office at the address specified above. Before including your address, phone number, e-mail address, or other personal identifying information in your comments, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comments to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Figure A-2. Segregation Notice

This application will be processed in accordance with the regulations set forth in 43 CFR 2300.

Rights-of-way, leases, permits, cooperative agreements and other discretionary land use authorizations of a temporary nature would continue under the BLM during the 2-year segregation period.

No water rights would be needed to fulfill the purpose of this withdrawal.

Effective on the date of publication of this notice, the lands will be segregated from location and entry under the United States mining laws. The segregative effect of this application will terminate April 14, 2010, unless final withdrawal action is taken or the application is denied or cancelled prior to that date (43 CFR 2310.2). Notice of any action will be published in the Federal Register.

Notice is hereby given that an opportunity for a public meeting is afforded in connection with the proposed withdrawal and transfer of jurisdiction. All interested persons who desire a public meeting for the purpose of being heard on the proposed withdrawal and transfer of jurisdiction must submit a written request to the BLM Wyoming State Director at the address indicated above within 90 days from the date of publication of this notice. If the authorized officer determines that a public meeting will be held, a notice of the time and place will be published in the Federal Register at least 30 days before the scheduled date of the meeting.

(Authority: 43 CFR 2310.3-1)

Dated: March 24, 2008.

Michael Madrid,
Chief, Branch of Fluid Mineral Operations,
Lands and Appraisal.

[FR Doc. E8-7840 Filed 4-11-08; 8:45 am]

BILLING CODE 6450-01-P

INTERNATIONAL TRADE COMMISSION

[Investigation Nos. 701-TA-455 and 731-TA-1149-1150 (Preliminary)]

Certain Circular Welded Carbon Quality Steel Line Pipe From China and Korea

AGENCY: United States International
Trade Commission.

ACTION: Institution of countervailing
duty and antidumping duty
investigations and scheduling of
preliminary phase investigations.

SUMMARY: The Commission hereby gives
notice of the institution of investigations
and commencement of preliminary

phase countervailing duty investigation
No. 701-TA-455 (Preliminary) and
antidumping duty investigation Nos.
731-TA-1149-1150 (Preliminary) under
sections 703(a) and 733(a) of the Tariff
Act of 1930 (19 U.S.C. 1671b(a) and
1673b(a)) (the Act) to determine
whether there is a reasonable indication
that an industry in the United States is
materially injured or threatened with
material injury, or the establishment of
an industry in the United States is
materially retarded, by reason of
imports from China and Korea of certain
circular welded carbon quality steel line
pipe, provided for in subheadings
7306.19.10 and 7306.19.51¹ of the
Harmonized Tariff Schedule of the
United States, that are alleged to be
subsidized by the Government of China,
and sold in the United States at less
than fair value. Unless the Department
of Commerce extends the time for
initiation pursuant to sections
702(c)(1)(B) or 732(c)(1)(B) of the Act (19
U.S.C. 1671a(c)(1)(B) or 1673a (c)(1)(B)),
the Commission must reach a
preliminary determination in these
investigations in 45 days, or in this case
by May 19, 2008. The Commission's
views are due at Commerce within five
business days thereafter, or by May 27,
2008.

For further information concerning
the conduct of these investigations and
rules of general application, consult the
Commission's Rules of Practice and
Procedure, part 201, subparts A through
E (19 CFR part 201), and part 207,
subparts A and B (19 CFR part 207).
EFFECTIVE DATE: April 3, 2008.

FOR FURTHER INFORMATION CONTACT:
Elizabeth Haines (202-205-3200), Office
of Investigations, U.S. International
Trade Commission, 500 E Street, SW.,
Washington, DC 20436. Hearing-
impaired persons can obtain
information on this matter by contacting
the Commission's TDD terminal on 202-
205-1810. Persons with mobility
impairments who will need special
assistance in gaining access to the
Commission should contact the Office
of the Secretary at 202-205-2000.
General information concerning the
Commission may also be obtained by
accessing its Internet server (<http://www.usitc.gov>). The public record for
these investigations may be viewed on
the Commission's electronic docket
(EDIS) at <http://edis.usitc.gov>.

SUPPLEMENTARY INFORMATION:

Background.—These investigations
are being instituted in response to a
petition filed on April 3, 2008, by

Maverick Tube Corp. (Houston, TX),
Tex-Tube Co. (Houston, TX), U.S. Steel
Corp. (Pittsburgh, PA), and the United
Steel, Paper and Forestry, Rubber,
Manufacturing, Energy, Allied
Industrial and Service Workers
International Union, AFL-CIO-CLC
(Pittsburgh, PA).

**Participation in the investigations and
public service list.**—Persons (other than
petitioners) wishing to participate in the
investigations as parties must file an
entry of appearance with the Secretary
to the Commission, as provided in
sections 201.11 and 207.10 of the
Commission's rules, not later than seven
days after publication of this notice in
the Federal Register. Industrial users
and (if the merchandise under
investigation is sold at the retail level)
representative consumer organizations
have the right to appear as parties in
Commission countervailing duty and
antidumping duty investigations. The
Secretary will prepare a public service
list containing the names and addresses
of all persons, or their representatives,
who are parties to this investigation
upon the expiration of the period for
filing entries of appearance.

**Limited disclosure of business
proprietary information (BPI) under an
administrative protective order (APO)
and BPI service list.**—Pursuant to
section 207.7(a) of the Commission's
rules, the Secretary will make BPI
gathered in these investigations
available to authorized applicants
representing interested parties (as
defined in 19 U.S.C. 1677(9)) who are
parties to the investigations under the
APO issued in the investigation,
provided that the application is made
not later than seven days after the
publication of this notice in the Federal
Register. A separate service list will be
maintained by the Secretary for those
parties authorized to receive BPI under
the APO.

Conference.—The Commission's
Director of Operations has scheduled a
conference in connection with these
investigations for 9:30 a.m. on April 24,
2008, at the U.S. International Trade
Commission Building, 500 E Street SW.,
Washington, DC. Parties wishing to
participate in the conference should
contact Elizabeth Haines (202-205-
3200) not later than April 21, 2008, to
arrange for their appearance. Parties in
support of the imposition of
countervailing and antidumping duties
in these investigations and parties in
opposition to the imposition of such
duties will each be collectively
allocated one hour within which to
make an oral presentation at the
conference. A nonparty who has
testimony that may aid the

¹ Prior to February 2, 2007, the subject
merchandise was provided for in subheadings
7306.10.10 and 7306.10.50.

Figure A-2 (continued). Segregation Notice



Department of Energy
Office of Legacy Management

June 11, 2009

OLM-CWM-2009-065

Ms. Jan Booth
Bureau of Land Management
Wyoming State Office
P.O. Box 1828
Cheyenne, WY 82003-1828

Subject: U.S. Department of Energy Submittal of Withdrawal Application of Bureau of Land Management Lands – Bear Creek, Converse County, Wyoming, Site

Dear Ms. Booth:

Enclosed is the U.S. Department of Energy Office of Legacy Management's (DOE) "Application for the Proposed Withdrawal of Bureau of Land Management Lands to facilitate the Safe Permanent Disposition of Uranium Mill Tailings" for the Bear Creek, Wyoming, Site. Also enclosed for reference is a map that describes the subject lands and adjacent lands that will also come under the ownership of DOE. DOE is requesting a permanent withdrawal of the lands from public land laws, including mining and mineral leasing.

If there are any questions regarding this application, please contact me at (702) 295-1899, or Cheri Bahrke of my contractor staff at (970) 248-6038.

Sincerely,

Charles W. Montaña Jr.

Charles W. Montaña, Jr.
Realty Officer

Enclosures

cc w/enclosures:
Project File BRC 1405.15
Property Management File 1405.15 (B. Gallagher)

cc w/o enclosures:
S. Surovchak, DOE (e)
C. Bahrke, Stoller (e)
M. Widdop, Stoller (e)

2597 B 3/4 Road, Grand Junction, CO 81503	<input type="checkbox"/>	3600 Collins Ferry Road, Morgantown, WV 26505
1000 Independence Ave., S.W., Washington, DC 20585	<input type="checkbox"/>	11025 Dover St., Suite 1000, Westminster, CO 80021
10995 Hamilton-Cleves Highway, Harrison, OH 45030	<input type="checkbox"/>	955 Mound Road, Miamisburg, OH 45342
232 Energy Way, N. Las Vegas, NV 89030	<input type="checkbox"/>	
REPLY TO: Las Vegas Office		

Figure A-3. Withdrawal Application Transmittal Letter

**Application for the Proposed Withdrawal of Bureau of Land Management Lands to
facilitate the Safe Permanent Disposition of Uranium Mill Tailings.**

Items required by 43 CFR 2310.1-2 (c) for an Application:

1. APPLICANT

U. S. Department of Energy
Office of Legacy Management
2597 B ¾ Road
Grand Junction, CO 81503

2. DELEGATION OF AUTHORITY

Title II, Section 202 of the Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978 amends Title VIII, Chapter 83 of the Atomic Energy Act and provides for the licensee with custody of byproduct material and a licensed disposal site to transfer the cell, contaminated groundwater, and associated property to the U.S. Department of Energy (DOE) for the purpose of uranium mill tailings disposition and long-term surveillance and maintenance. Section 106 of UMTRCA provides for the U.S. Department of the Interior to make available lands for the same purpose. The former Bear Creek Uranium Company (aka Union Pacific Resources, Inc., and Anadarko Petroleum, Inc.) uranium mill site in Converse County, Wyoming, is one of the uranium mill sites for which DOE is required to take title, and manage in perpetuity in accordance with the U.S. Nuclear Regulatory Commission (NRC) general license at (Title 10, Code of Federal Regulations, Part 40.28[10 CFR 40.28]), upon the satisfactory completion of site reclamation by Bear Creek Uranium Company.

3. ADMINISTRATION OF LAND

The land in this application is administered by the Bureau of Land Management (BLM).

4. TYPE OF WITHDRAWAL ACTION

This application is for a permanent withdrawal of BLM land from location and entry under the United States mining laws, including the mineral leasing laws.

5. DESCRIPTION OF THE LANDS INVOLVED

Township 38N, Range 73W, 6th Principal Meridian in Converse County,
Wyoming:

Section 9, W1/2SW1/4SW1/4SW1/4; N1/2SW1/4SW1/4; portions described in aliquot parts, containing approximately 25 acres,

6. OVERLAPPING WITHDRAWALS

Segregation of the described land was published in the Federal Register on Monday, April 14, 2008 (WY-164607). There are no overlapping withdrawals.

7. PURPOSE OF WITHDRAWAL

The purpose of the withdrawal is to transfer lands to DOE that are necessary to complete the uranium mill tailings disposal site property area for the safe long-term disposition of the encapsulated radioactive materials. The land withdrawn may or may not be consistent with BLM's current Management Plan.

8. EXTENT AND DURATION OF WITHDRAWAL

Subject to valid existing rights, the above-described land would be withdrawn from location and entry under U. S. mining laws and mineral leasing laws. Perpetual withdrawal is requested.

9. TYPE OF TEMPORARY LAND USE

Rights-of-way, licenses, permits, cooperative agreements, and discretionary land use authorizations of a temporary nature may be allowed with DOE written approval.

10. ANALYSIS OF ALTERNATIVES

A right-of-way, interagency, or cooperative agreement would not adequately provide DOE with sufficient jurisdiction for a disposal site.

11. DURATION OF WITHDRAWAL

The duration of the withdrawal is for perpetuity. Under law, DOE takes title to this type of disposal site for long-term surveillance and maintenance during the 1,000-year performance period of the disposal cell. The NRC license at 10 CFR 40.28 does not expire.

12. ALTERNATIVE SITES

The disposal site has already been established on privately held land and on the land being withdrawn. The lands that are the subject of this withdrawal application have been determined to be necessary to protect public health and safety and the environment by providing sufficient long-term isolation from

public entry to the affected lands, including BLM land underlain by contaminated groundwater. Therefore alternative sites are not an option.

13. NEED FOR WATER

No water rights will be needed to fulfill the purpose of the requested withdrawal.

14. EXAMINATION OF RECORDS

Records relating to this application may be examined by interested persons at the U. S. Department of the Interior, BLM Wyoming State Office, 5353 Yellowstone Road, P.O. Box 1828, Cheyenne, WY 82003-1828.

15. PRELIMINARY IDENTIFICATION OF MINERAL RESOURCES

Mineral resources are known to exist in the area affected by this withdrawal application. However, there are no known valid current claims on this parcel.

16. INADEQUACY OF OTHER STATUTES

Title 36 CFR 228 (Surface Management Regulations) does not provide adequate protection from prospecting, mining operations, or mineral patents. The Surface Management Regulations cannot substitute for a withdrawal from mineral entry in order to protect the area from development that might compromise the integrity of the disposal site.

The Surface Management Regulations are not meant to be a means of withholding consent to conduct mining operations. Rather, they are a means of avoiding unnecessary or undue degradation, minimizing surface resource disturbance, and providing for reclamation. The regulations have no provisions for disapproving locatable mineral related operations or activities.

Therefore, mining operations cannot be controlled by surface mining regulations and although disturbance can be minimized it cannot be eliminated. Thus, the risk of encumbering these areas with mining activities increases if the areas remain open to further mineral exploration and location.

The area proposed for withdrawal if protected, will allow assured long-term isolation of the uranium mill tailings and associated contaminated groundwater and protection of public health and safety and the environment.

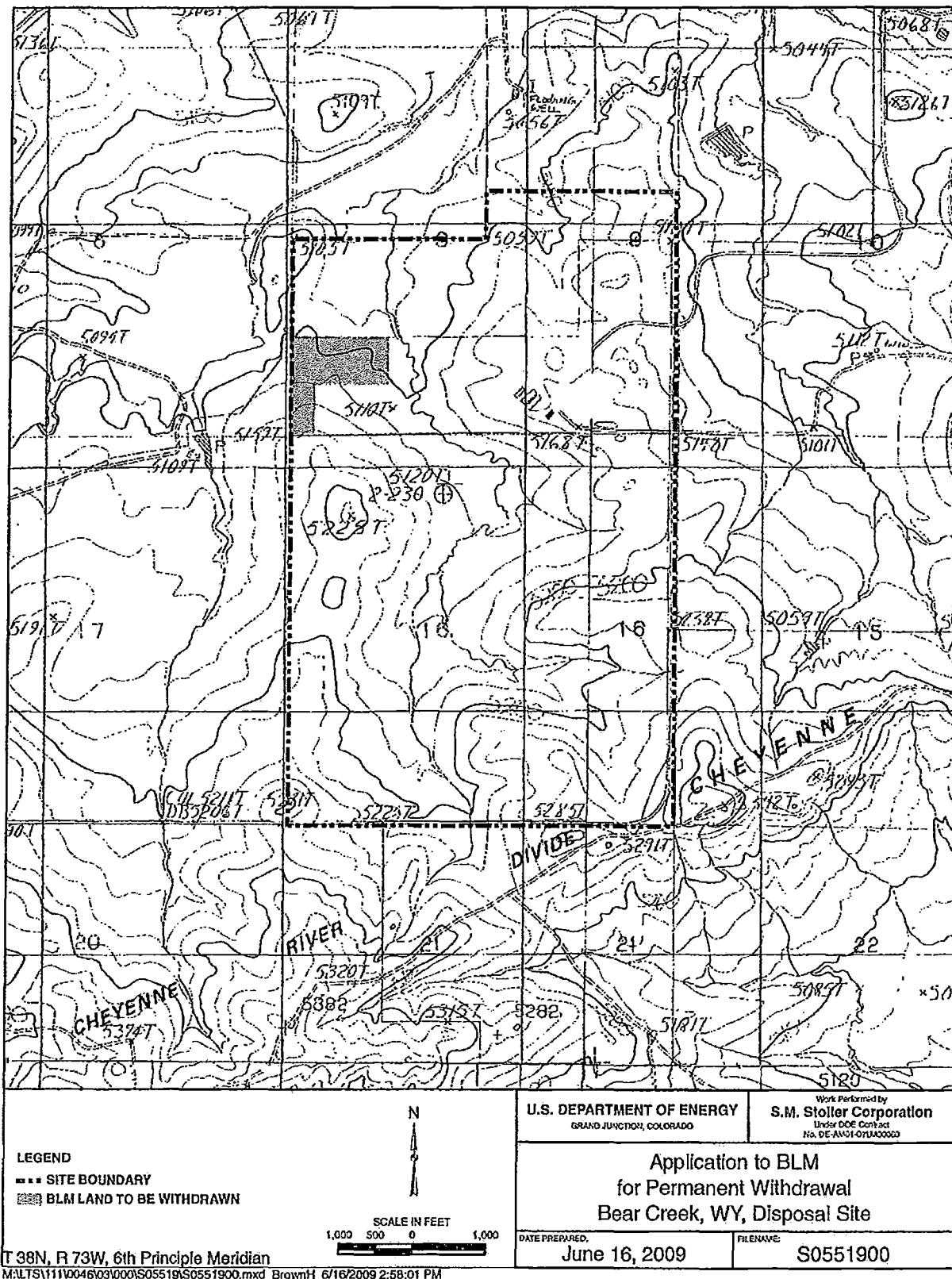


Figure A-5. Withdrawal Application Map

887386 Book -1206 Page -0257
 Recorded 10/21/2002 At 02:30 PM
 Lucile K. Taylor, CONVERSE COUNTY Clerk & Recorder

BOOK 1206 PAGE 257

NON-EXCLUSIVE ROAD EASEMENT

KNOW ALL MEN BY THESE PRESENTS, that for the sum of TEN DOLLARS (\$10.00) and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Hardy Enterprises, a Limited Partnership, hereinafter called Grantor, hereby grants to RME Holding Company and its assigns, as Grantee, a non-exclusive easement to use an existing private two track road, known locally as the "Kerr McGee haul road", located on the following described real property situated in the County of Converse, State of Wyoming, to wit:

Township 38N, Range 73W, 6th Principal Meridian

Section 21: E1/2

TO HAVE AND TO HOLD SAID EASEMENT FOREVER.

The above described road has been designated as the access route to the Bear Creek Uranium tailings site for long-term stewardship activities conducted by the United States Department of Energy or successor agency. This easement is for a one (1) mile (320 rod), more or less, portion of the private road traversing Section 21, T. 38 N., R. 73 W., which runs in a northerly direction from an abandoned uranium mine known as the "Spook Pit" located in the SE/4NE/4 of Section 28, T. 38 N., R. 73 W. The easement is for perpetual access to be used exclusively for monitoring and maintenance purposes at the Bear Creek Uranium site.

Use of the road for which this easement is granted is subject to the following additional provisions:

1. The above described road will be used exclusively by the Grantee for surveillance and maintenance activities at the Bear Creek Uranium Long-Term Stewardship site. This monitoring activity will involve a minimum two visits per year, each of which could involve several days of use by light vehicles. Additional visits also may be made following geologic events such as earthquakes or floods. If major repairs requiring the movement of heavy equipment become necessary at the Long-Term Stewardship site, a separate construction and access easement will be negotiated.
2. The easement described herein is granted in perpetuity for the full use as a road by Grantee, and is subject to the effect of reservations and leases, if any, for oil and gas, or other minerals in and under the land, and to

3-300-WY-649-02

Figure A-6. Recorded Hardy Easement

BOOK 1206 PAGE 258

the effect of all other easements of record, or granted in the future by Grantor.

3. Grantee will provide its own locks and keep both the north and south gates of Section 21 locked after passing through them, and Grantee will give advance notice to Grantor of planned dates of use of the road.
4. Grantee releases Grantor of all liability for Grantees' actions and operations.
5. Grantee will not perform low level aerial surveys or pipeline checks without prior notification and permission of Grantor.
6. Hunting, camping, fires, drugs, firearms, and dogs are prohibited on Grantors property.

Grantor covenants and assures Grantee that it is lawfully seized and possessed of the land aforesaid and has the full right, power and authority to execute this conveyance.

DATED this 22nd day of August, 2002

Grantee:

RME Holding Company

BY: [Signature]
Its: Authorized Agent

Grantor:

Hardy Enterprises, a Limited Partnership

BY: G. Eugene Hardy
Its: General Partner

ACKNOWLEDGMENT

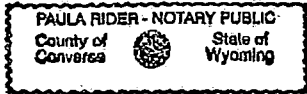
STATE OF WYOMING)
) ss.
COUNTY OF CONVERSE)

The foregoing instrument was acknowledged before me by G. Eugene Hardy as General Partner of Hardy Enterprises, a Limited Partnership this 22nd day of August, 2002.

Figure A-6 (continued). Recorded Hardy Easement

BOOK 1206 PAGE 259

WITNESS my hand and official seal.



Paula Rider
Notary Public

My Commission Expires: My Commission Expires May 3, 2013

STATE OF TEXAS)
) ss.
COUNTY OF HARRIS)

The foregoing instrument was acknowledged before me by
Clay D. Britches as Authorized Agent of RME Holding
Company this 7th day of October, 2002.

WITNESS my hand and official seal.

Marilyn Presgrove
Notary Public

My Commission Expires: 9-10-06

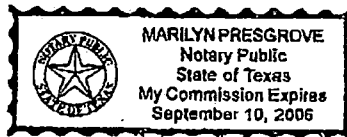


Figure A-6 (continued). Recorded Hardy Easement



CASPER
200 PADDHORN
CASPER, WY 82601
PH. 307-265-2524
FAX. 307-265-6604

CHEYENNE
P.O. Box 281
Cheyenne, WY 82003
PH. 307-772-2100
FAX. 307-772-2150

GILLETTE
P.O. Box 1000
Gillette, WY 82701
PH. 307-687-2524
FAX. 307-687-6365

PINEDALE
P.O. Box 1000
Pinedale, WY 82901
PH. 307-687-2524
FAX. 307-687-6365

April 30, 2010

Anadarko Petroleum Corp.
P.O. Box 1330
Houston, Texas 77251-1330

W.O. No.: 13771

Description: Bear Creek Uranium -- Access Road Basement on Hardy Enterprises

A Parcel and Strip being 100 feet in width located in and through a portion of the B1/2, Section 21, Township 38 North, Range 73 West of the Sixth Principal Meridian, Converse County, Wyoming, and lying 50 feet parallel and perpendicular to each side of the center line being more particularly described as follows:

Beginning at the most northerly end of said centerline of the Parcel and Strip being described and a point in the north line of said B1/2, Section 21 and from which point the Northeast corner of said Section 21 bears S.89°55'51"E., 442.01 feet; thence from said Point of Beginning and along the centerline being described, S.11°27'41"W., 174.50 feet to a point; thence S.9°22'33"W., 201.35 feet to a point; thence S.7°52'04"W., 960.16 feet to a point; thence S.7°33'08"W., 713.89 feet to a point; thence S.7°44'38"W., 821.32 feet to a point; thence S.5°01'08"W., 201.83 feet to a point; thence S.3°36'32"W., 689.84 feet to a point; thence S.3°42'58"W., 1519.71 feet to the Point of Terminus and said point being in the south line of said Section 21 and from which point the southeast corner of said Section 21 bears S.89°33'35"E., 1000.43 feet and containing 12.13 acres, more or less, as set forth by the Plat attached and made a part hereof.



Figure A-6 (continued). Recorded Hardy Easement

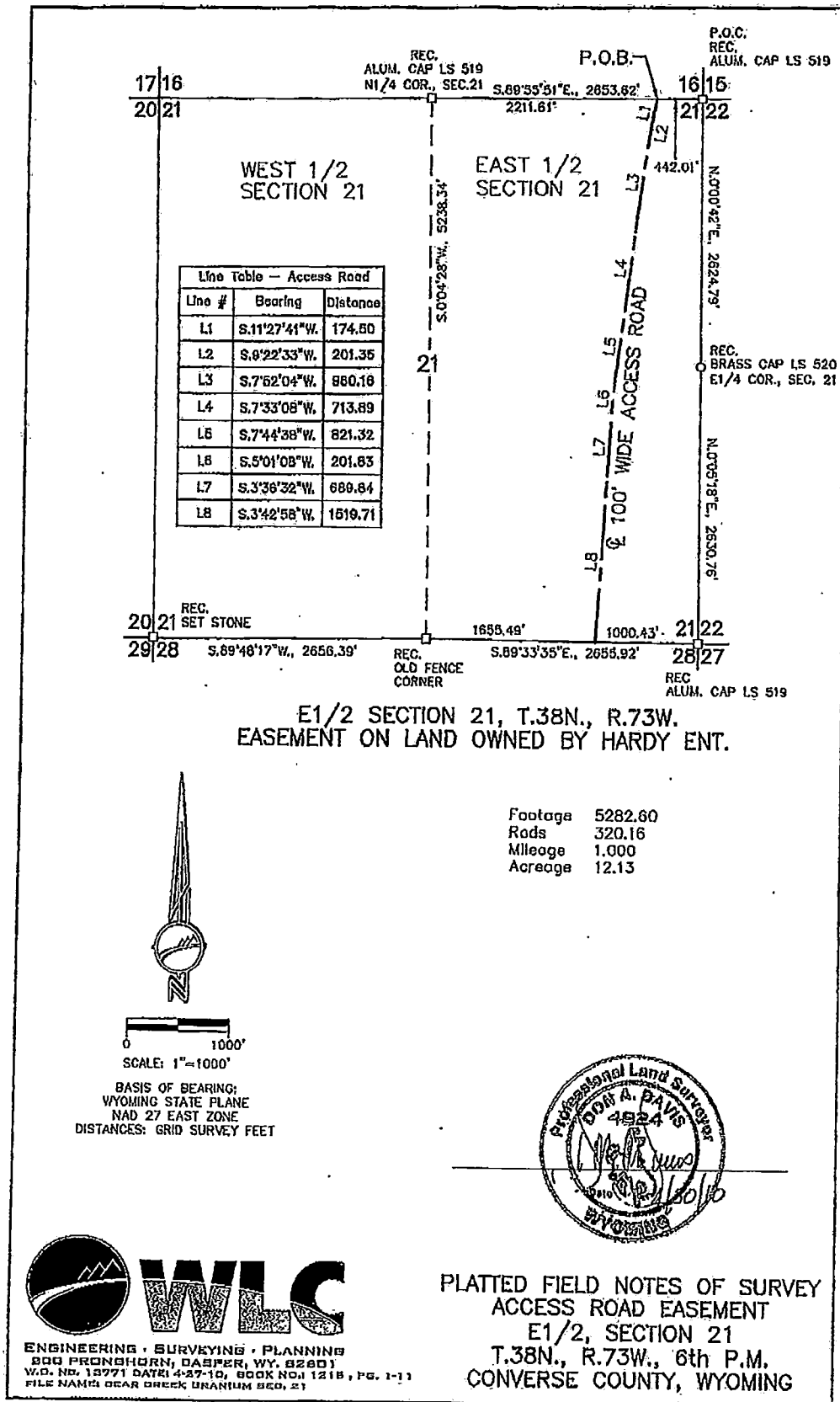


Figure A-6 (continued). Recorded Hardy Easement

CORRECTED
NON-EXCLUSIVE ROAD EASEMENT

BOOK 1393 PAGE 021

KNOW ALL MEN BY THESE PRESENTS, that for the sum of TEN DOLLARS (\$10.00) and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Hornbuckle Ranch Inc., a Wyoming corporation, hereinafter called Grantor, hereby grants to Anadarko Land Corp., its licensees, grantees, successors and assigns, hereinafter called Grantee, a non-exclusive easement to use an existing private two track road, known locally as the "Kerr McGee haul road", located on the following described real property situated in the County of Converse, State of Wyoming, to wit:

Township 38 North, Range 73 West of the Sixth (6th) Principal Meridian

Section 28: NE1/4 of the NE1/4 being more fully described on the attached Exhibit "A".

TO HAVE AND TO HOLD SAID EASEMENT FOREVER.

The above described road has been designated as the access route to the Bear Creek Uranium tailings site for long-term stewardship activities conducted by the United States Department of Energy or successor agency. This easement is for a one quarter mile (80 rods), more or less, portion of the private road traversing Section 28, Township 38 North, Range 73 West, which runs in a northerly direction from an abandoned uranium mine known as the "Spook Pit" located in the SE1/4 of the NE1/4 of Section 28, Township 38 North, Range 73 West. The easement is for perpetual access to be used solely by the United States Department of Energy, its contractors and subcontractors for monitoring and maintenance purposes at the Bear Creek Uranium site and may not be assigned to any private company.

Use of the road for which this easement is granted is subject to the following additional provisions:

1. This routine monitoring activity will involve approximately three visits per year, each in which could involve several days of use by light vehicles. Additional visits also may be made following geologic events such as earthquakes or floods. This route will also be used to mobilize heavy equipment and supplies if major repairs are needed to prevent the spread of contaminated material or repair damage to the disposal site.
2. Grantee shall refrain from using road during wet conditions to avoid rutting of the road.
3. Grantee shall be responsible for any loss or destruction of, or damage to, the Grantor's real and personal property caused by the activities of the Grantee in exercising the rights hereby granted in this agreement; PROVIDED that such responsibility shall be limited to restoration of such real and personal property to a condition reasonably compared to its condition on the effective date of this agreement by techniques of backfilling, seeding, sodding, landscaping, repair or replacement, and other such methods as may be agreed to between parties.
4. Grantee shall cause its contractors and subcontractors who enter this property who enter this property under this agreement to carry reasonable liability insurance covering risk of liability insurance covering risk of liability caused by any of their activities. Upon request, the Grantee's contractors and subcontractors will provide the Grantor certificates evidencing insurance coverage.
5. The easement is subject to the effect of reservations and leases, if any, for oil and gas, or other minerals in and under the land, and to the effect of all other easements of record.

THIS CORRECTIVE EASEMENT replaces that EASEMENT from Hornbuckle Ranch Inc., as Grantor, to Anadarko Land Corp, as Grantee, dated October 26, 2009, recorded December 10, 2009, in Book 1379, Page 687, Reception Number 967421, of the Records of Converse County, Wyoming.



974468 Book - 1393 Page - 21
Recorded 6/25/2010 At 1:00 PM
Lucile K. Taylor, Converse County Clerk & Recorder

Figure A-7. Recorded Hornbuckle Easement

BOOK 1393 PAGE 022

Grantor covenants and assures Grantee that it is lawfully seized and possessed of the land aforesaid and has the full right, power and authority to execute this conveyance.

Dated this 11 day of June, 2010.

GRANTEE:

ANADARKO LAND CORP.

BY: [Signature]
Its: Agent and Attorney-in-Fact

GRANTOR:

HORNBuckle RANCH INC.

BY: [Signature]
Its: President

ACKNOWLEDGMENT

STATE OF WYOMING

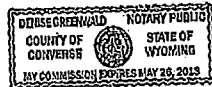
COUNTY OF CONVERSE

} ss:

The foregoing Instrument was acknowledged before me this 11 day of June, 2010, by Kirk Hornbuckle, as President of Hornbuckle Ranch Inc.

WITNESS my hand and official seal.

My commission expires May 26 2013



(SEAL)

[Signature]
Notary Public

STATE OF TEXAS

COUNTY OF MONTGOMERY

} ss:

The foregoing Instrument was acknowledged before me this 9th day of June, 2010, by Jane Ann Ryce, as Agent and Attorney-in-Fact of Anadarko Land Corp.

WITNESS my hand and official seal.

My commission expires 11/6/2012



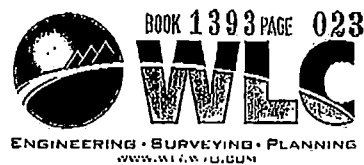
(SEAL)

[Signature]
Notary Public



974468 Book - 1393 Page - 22
Recorded 6/25/2010 At 1:00 PM
Lucile K. Taylor, Converse County Clerk & Recorder

Figure A-7 (continued). Recorded Hornbuckle Easement



CASPER
208 PRINCETON
CASPER, WY 82401
PH. 307-266-2624
FAX. 307-266-2604

CHEYENNE
P.O. Box 20371
CHEYENNE, WY 82003
PH. 307-772-9303
FAX. 307-772-9390

GILLETTE
P.O. Box 1056
GILLETTE, WY 82717
PH. 307-682-6554
FAX. 307-682-0360

PINEDALE
P.O. Box 1517
PINEDALE, WY 82941
PH. 307-367-6048
FAX. 307-367-6548

May10, 2010

Anadarko Petroleum Corp.
P.O. Box 1330
Houston, Texas 77251-1330

W.O. No. :13771

Description: (Bear Creek Uranium -- Access Road Easement on Hornbuckle Ranch Inc.)

A Parcel and Strip being 100 feet in width located in and through a portion of the NE1/4NE14, Section 28, Township 38 North, Range 73 West of the Sixth Principal Meridian, Converse County, Wyoming, and lying 50 feet parallel and perpendicular to each side of the center line being more particularly described as follows:

Beginning at the most northerly end of said centerline of the Parcel and Strip being described and a point in the north line of said NE1/4NE14, Section 28 and from which point the northeast corner of Section 28 bears S.89°33'35"E., 1000.43 feet; thence from said Point of Beginning and along the centerline being described, S.3°42'58"W., 108.54 feet to a point; thence S.3 10°39"W., 357.78 feet to a point; thence S.1°32'52"W., 490.24 feet to a point; thence S.4°03'06"W., 364.08 feet to the Point of Terminus and said point being in the south line of said NE1/4NE14, Section 28 and from which point the E1/4 corner of said Section 28 bears S.38°48'08"E., 1698.94 feet and containing 3.03 acres, more or less, as set forth by the plat attached and made a part hereof.



974468 Book - 1393 Page - 23
Recorded 6/25/2010 At 1:00 PM
Lucile K. Taylor, Converse County Clerk & Recorder

DEDICATED TO CLIENTS. DEFINED BY EXCELLENCE.

Figure A-7 (continued). Recorded Hornbuckle Easement



Appendix B
Correspondence

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Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's
environment for the benefit of current and future generations.



Matthew H. Mead, Governor

Todd Parfitt, Director

October 15, 2014

Anadarko Petroleum Company
Mr. Harry Nagel, Minerals Manager
1201 Lake Robbins Drive,
The Woodlands, TX 77380

RE: Groundwater Classification, Bear Creek Uranium Company, Converse County, WY

Dear Mr. Nagel,

Enclosed, please find the Wyoming Department of Environmental Quality, Water Quality
Division, Groundwater Section review of the groundwater classification of the Upper Wasatch
formation underlying the Bear Creek Uranium facility in Converse County, Wyoming.

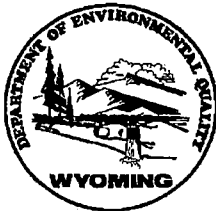
If you have any questions, please contact me directly at (307) 675-5640 or via email at
Don.Fischer@wyo.gov.

Sincerely,

Don Fischer, PG
North District Geologic Supervisor
WDEQ/Groundwater Section

2100 West 5th Street • SHERIDAN, WY 82801
(307) 673-9337 • FAX (307) 672-2213





**GROUNDWATER POLLUTION CONTROL PROGRAM
OFFICIAL GROUNDWATER CLASSIFICATION**

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
2100 West 5th Street
Sheridan, WY 82801
Phone: 307-673-9337

Facility Name: Bear Creek Uranium Company

Applicant: Anadarko Petroleum Company,
1201 Lake Robbins Drive,
The Woodlands, TX 77380
Attn: Mr. Harry Nagel, Minerals Manager
(832) 636.2732

Location: Section 9, 16, Township 38 North, Range 73 West

County: Converse County, WY

Type of Facility: Uranium Mill

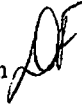
Reason for Classification: Classification needed to determine aquifer restoration standards

Formation Containing Aquifer: Upper Wasatch

Consultant: N/A

Water Quality Division Permit Number: N/A (Land Quality Division Permit)

Report Received: 2/24/2014 (in Lander Office)

Reviewing Official: Don Fischer, PG 2852, North District Geologic Supervisor, Sheridan 

Date of This Review: 10/9/2014

Action: Groundwater Classified by Ambient Quality as **Class IV (Industrial)** (details below)
K-Sand and N-Sand, Upper Wasatch Formation to 160 feet

Information Required/Information Submitted

- (a) **Classification of groundwaters of the State shall be based on the water quality standards of this chapter; excepting a Class I groundwater of the State shall be classified by ambient water quality and the technical practicability and economic reasonableness of treating ambient water quality to meet use suitability standards.**
- (b) **Underground water quality shall be classified for an aquifer which is, or may be, affected by a subsurface discharge or other activity identified in Section 4(a) of these regulations.**

The Bear Creek Uranium Company tailing disposal reservoir (WY SEO permit #P7707) commenced operation in September, 1977. The request for groundwater classification falls within Sections 9 & 16, Township 38 North, Range 73 West, Converse County, Wyoming. Bear Creek Uranium is seeking groundwater classification for the upper Wasatch formation, referred to as the K-sand and N-sand, to a depth of 160 feet.

- (c) **Classification shall be made:**
 - (1) **Whenever there is pollution or threat of pollution to groundwater of the State, or;**
 - (2) **The physical, chemical, radiological or biological properties of any groundwater of the State are, or may be, altered by man's action.**

Uranium mining activities at this impoundment has the potential to impact groundwater in the area beneath and adjacent to the pond. Groundwater is classified for restoration purposes.

- (d) **Classification shall be made for a water in a specified locally defined area by named and described aquifer or receiver. Any aquifer or receiver in its regional setting may have one or more classifications by defined area or areas.**
 - (1) **The name shall be a recognized geologic name whenever possible, and;**
 - (2) **The description shall include a lithologic description.**

Pre-operation studies established that groundwater was present in two zones, the upper and lower Wasatch in Sections 9 and 16, T 38N, R 73W. The upper Wasatch, which contains the "K-sand" and "N-sand", are the zones that may be affected by drainage from the reservoir. The upper Wasatch contains interbedded sands, silts, and clays. The deposition was caused by large braided streams caused by the uplift of the Laramie Mountain range.

The lower Wasatch or "ore zone" should not be impacted. The upper and lower Wasatch formations are separated by a seam of low grade coal or lignite and a 40 to 100 feet thick siltstone/claystone unit. Analyses of groundwater samples taken from the upper and lower Wasatch demonstrates different water chemistries, indicating a lack of mixing between the two aquifers.

- (e) **The lateral and vertical limits of an aquifer or receiver, for purposes of classification, shall be based on existing water use, ambient water quality and geologic and hydrogeologic characteristics of the aquifer or of the receiver.**

There are no existing up-gradient or lateral gradient water supply wells adjacent to the facility and completed in the upper Wasatch. The only permitted wells within one mile of the facility are monitor wells downgradient of the facility. There are no permitted domestic use wells within two miles of the facility.

The groundwater at the Bear Creek is based on ambient quality. Prior to Bear Creek becoming operational, wells were sampled to establish ambient water quality for classification purposes by the Colorado School of Mines Research Institute. Well P9000, completed in the Upper Wasatch in Sec 16, T 38N, R 73W revealed that many of the parameters fall within a Class III groundwater classification. (e.g., TDS= 2638 mg/L, gross alpha concentration = 14 pCi/L, sulfate = 1635 mg/L). However, mercury at 0.0001 mg/L exceeds the class III limit of 0.00005 mg/L, **therefore, the groundwater classification is Class IV** (industrial use).

Well P19942, completed into the Upper Wasatch in Sec 34, T 38N, R 73W had sulfate levels exceeding Class II groundwater standards and mercury exceeding Class III groundwater standards. **Therefore, the groundwater from Well 19942 is classified as a Class IV (industrial use) groundwater.**

- (f) **An underground water may be re-classified if new or additional data warrant re-classification.**

END OF REVIEW

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February 2, 2015

Mr. Tom Pauling, Director
Office of Legacy Management
1000 Independence Avenue, SW
Washington, DC 20585

SUBJECT: REQUEST FROM THE U.S. NUCLEAR REGULATORY COMMISSION
FOR A LONG-TERM SURVEILLANCE PLAN FOR THE ANADARKO
BEAR CREEK URANIUM MILL TAILINGS SITE

Dear Mr. Pauling:

The U.S. Nuclear Regulatory Commission (NRC) is asking the U.S. Department of Energy Legacy Management (DOE LM) to prepare a Long-Term Surveillance Plan (LTSP) for the Anadarko Bear Creek Uranium Mill Tailings Site (Bear Creek). On February 27, 2013, NRC sent a letter to Anadarko Petroleum Corporation approving their application for eliminating License Condition No. 47 that required a ground water compliance monitoring program (See Agencywide Document Access and Management System (ADAMS) Accession Number ML12145A201). This action was necessary prior to the transfer of the site to DOE LM. The Safety Evaluation Report for this licensing action (See ADAMS Accession Number ML12145A471) concluded that no ground water monitoring was necessary since the only viable aquifer was greater than 400 feet below the surface, and there was no connection with the mill tailings. Recently, the Wyoming Department of Environmental Quality classified the ground water at Bear Creek as industrial use only due to an elevated concentration of mercury (See ADAMS Accession Number ML14310A124). NRC concluded that even a limited ground water monitoring period was not needed, and that the remaining wells should be capped and abandoned.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

T. Pauling

2

If you have any questions, please contact the project manager Tom McLaughlin at (301) 415-5869 or by e-mail at Thomas.McLaughlin@nrc.gov.

Sincerely,

/RA/

Andrew Persinko, Deputy Director
Division of Decommissioning, Uranium Recovery,
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket No.: 40-8452
License No.: SUA-1310

T. Pauling

2

If you have any questions, please contact the project manager Tom McLaughlin at (301) 415-5869 or by e-mail at Thomas.McLaughlin@nrc.gov.

Sincerely,

/RA/

Andrew Persinko, Deputy Director
Division of Decommissioning, Uranium Recovery,
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket No.: 40-8452
License No.: SUA-1310

Distribution:
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OFFICE	MDB/PM	MDB/LA	OGC	MDB/BC	DUWP/DD
NAME	TMcLaughlin	CHolston	BJones	MNorato	APersinko
DATE	12/30/14	1/09/15	1/20/15	1/27/15	2/2/15

OFFICIAL RECORD COPY

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Appendix C

Initial Site Inspection Checklist

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Inspection Checklist

Bear Creek, Wyoming, UMTRCA Title II Disposal Site

Status of Site Inspections

Date of This Revision:

Last Annual Inspection:

Inspectors:

Next Annual Inspection (Planned):

Scheduled Inspectors:

No.	Item	Issue	Action
1	Protocols	NRC must be notified at least 30 days before the scheduled inspection.	
1	Access	Access is from the Spook, Wyoming, UMTRCA Title I site. Easement is established across Hardy property. Courtesy call to Gene Hardy or Sean Musselman is appropriate (xxx-xxx-xxxx). Ensure that a courtesy call to Kirk Hornbuckle (xxx-xxx-xxxx) has been made as well (easement to Spook site is across Hornbuckle property).	
2	Specific site surveillance features	See attached table. No issues at this time.	Verify features and note condition.
3	Cover of tailings impoundment	The cover of the tailings impoundment has been revegetated to control wind and water erosion, although vegetation is not integral to the tailings isolation design.	Inspect impoundment cover settling or slumping and note condition of vegetation. Inspect for burrowing.
4	Tailings embankment and diversion channel	The tailings embankment face, the chute section and the check dam (weir) surfaces have been armored with riprap for erosion protection. Inspect all storm water management structures.	Inspect riprap and note evidence of settling, slumping, rock displacement, rock degradation, or erosion of non-armored areas.
5	Site perimeter and balance of site	Check site for trespass, vandalism, erosion, maintenance needs, hazards, and other departures from as-built conditions or indication of loss of institutional control. Note the condition of the seepage dam north of the tailings embankment. Canada thistle has been found and treated at the site.	Note the general condition of the site and any changes in activity within 0.25 mile of the site (the surrounding land currently is grazed). Inspect for Canada thistle or any other noxious weeds. If found, note locations on the inspection map.

Specific Site Surveillance Features—Bear Creek, Wyoming, Disposal Site

Feature	Comment
Access Road	Easement across Hardy property extending from easement across Hornbuckle property for Spook site. Road north of the Dry Fork has been improved for oil and gas operations.
Entrance and Perimeter Signs	Located at the south site boundary at Hardy gate and inside the fence surrounding the cell.
Perimeter Fence	Barbed-wire stock fence.
Site Marker (1)	Located east of the tailings embankment crest.
Boundary Monuments and Section Corner Monuments (10)	Located on the property boundary.
Monitoring wells (4)	Downgradient wells: MW-108 and MW-109 (Lang Draw flow path); MW-110 and MW-111 (Northern flow path).

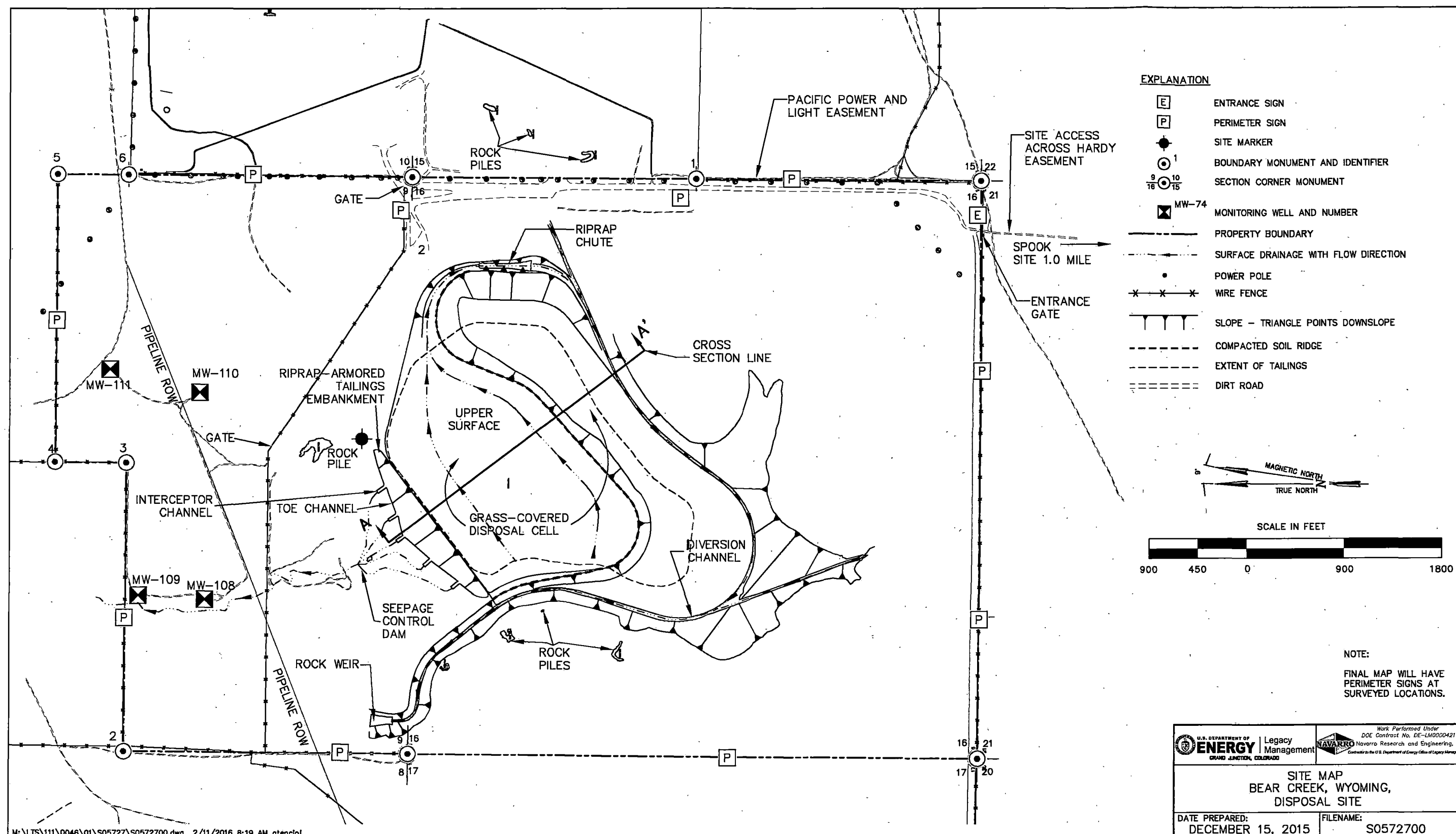


Figure C-1. Initial Site Inspection Map for the Bear Creek, WY, Disposal Site

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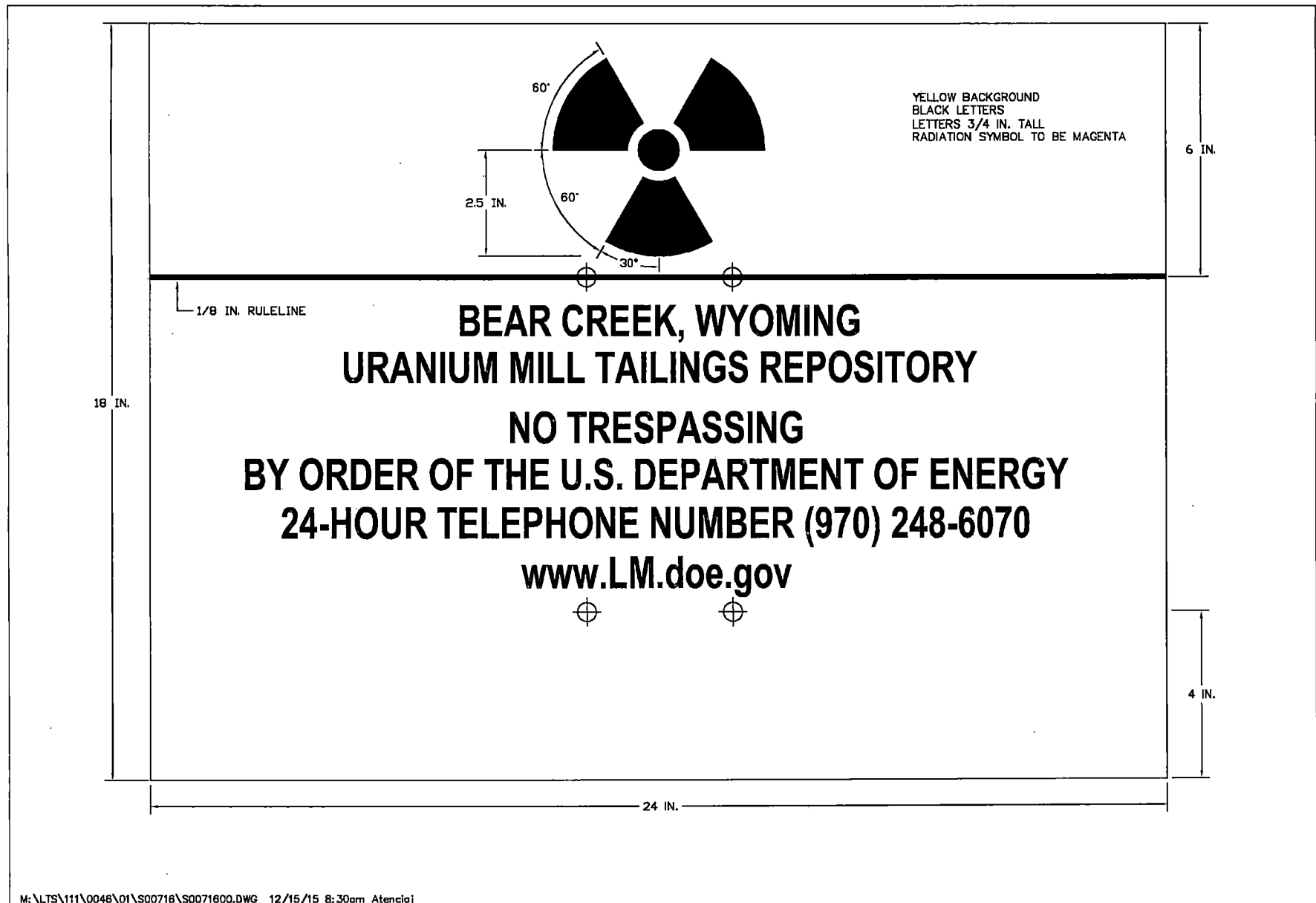


Figure C-2. Site Entrance