

Bear Lodge Project

Black Hills National Forest, Bearlodge Ranger District Detailed Project Description

Below is a detailed summary of the Plan of Operations, as modified in February 2014, submitted by Rare Element Resources to be considered in the Bear Lodge Project Environmental Impact Statement. The Plan of Operations and other information on this project are available online at <http://tinyurl.com/BearlodgeMineProject>

Project Location

The Bear Lodge project is located approximately 12 miles (or 6 air miles) north of Sundance (Figure 1). The mine area is approximately 1,700 acres; consisting of 1,060 acres of NFS lands and 640 acres of private lands.

Proposed Action

The project is located on Forest Service lands on portions or all of the following:

Bull Hill Mine and Facilities

Federal: Forest Service: Portions or all of the following: Sections 8, 9, 10, 15, 17, 18, 19, 20, and 21, Township 52 North, Range 63 West, 6th principal meridian (PM).

Private: Portions or all of the following: Sections 16, Township 52 North, Range 63 West, 6th PM.

Miller Creek Access Route

Federal: Forest Service: Portions of the following: Sections 18 and 19, Township 52 North, Range 63 West, Section 9, Township 51 North, Range 63 West, 6th PM.

State of Wyoming: Portions of Section 36, Township 52 North, Range 64 West, 6th PM.

Private: Portions of the following: Sections 24 and 25, Township 52 North, Range 64 West, Section 1, Township 51 North, Range 64 West, and Sections 6, 7, 8, 9, 16, and 21, Township 51 North, Range 63 West, 6th PM.

Power Line

Federal: Forest Service: Portions of the following: Sections 8, 17, 18, and 19, Township 52 North, Range 63 West, 6th PM.

State of Wyoming: Portions of Section 36, Township 52 North, Range 64 West, 6th PM.

Private: Portions of the following: Sections 24 and 25, Township 52 North, Range 64 West, 6th PM.

Exploration Activities

Federal: Forest Service: Portions or all of the following: Sections 5, 7, 8, 9, 10, 11, 14, 15, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29 and 30, Township 52 North, Range 63 West, 6th PM.

Private: Portions or all of the following: Sections 16, Township 52 North, Range 63 West, 6th PM.



Bull Hill in 2011

Connected Action

Upton Plant Site

The Upton Plant Site includes portions of Sections 28, 29, 32, and 33, Township 48 North, Range 65 West, 6th PM.

Purpose and Need for Action

The purpose of this project is to allow a statutory right, in accordance with the General Mining Law of 1872, as amended, of Rare Element Resources, Inc to develop a mine on federally administered lands in a manner consistent with other federal laws and regulations and the 1997 Revised Land and Resource Management Plan for the Black Hills National Forest, as Amended by the Phase II Amendment (Forest Plan). Forest Service surface management regulations (36 Code of Federal Regulations [CFR] part 228) require that all mining activities “be conducted in a manner that minimizes adverse environmental impacts on National Forest surface resources” (36 CFR part 228.8). The Forest Service is therefore required to ensure that the Proposed Action is evaluated in accordance to the National Environmental Policy Act and 36 CFR part 228.

The proposed mine development is needed to provide a supply of rare earth elements to support today’s evolving technologies. Rare earth elements are the technology metals, used in cell phones, TVs, lasers, and wind turbines. The proposed exploration activities are needed in order to continue evaluating the area for geological resources and possible expansion of the mine in the future.

Current and Historic Uses within the Project Area

The Forest Service manages the National Forest System lands associated with the project under the 1997 Phase II Amendment of the Land and Resource Management Plan (Forest Plan) for a variety of multiple resource uses, including mineral activities.

For the past 40 years, several mining companies have conducted mineral exploration activities, such as drilling and trenching within the Warren Peak area, including around Bull Hill. The recent rare earth exploration activities began in 2004 with a small project. It expanded in 2009 to further define and develop the rare earth deposit.

In addition to mineral resource activities, the area has been primarily managed for timber, range, and recreational activities. Several timber projects; Burner, Togus, and Slez, are included in the analysis area and about 5 miles of winter snowmobile trails overlap the Bear Lodge Project area. Cattle grazing is also a common use for the area.

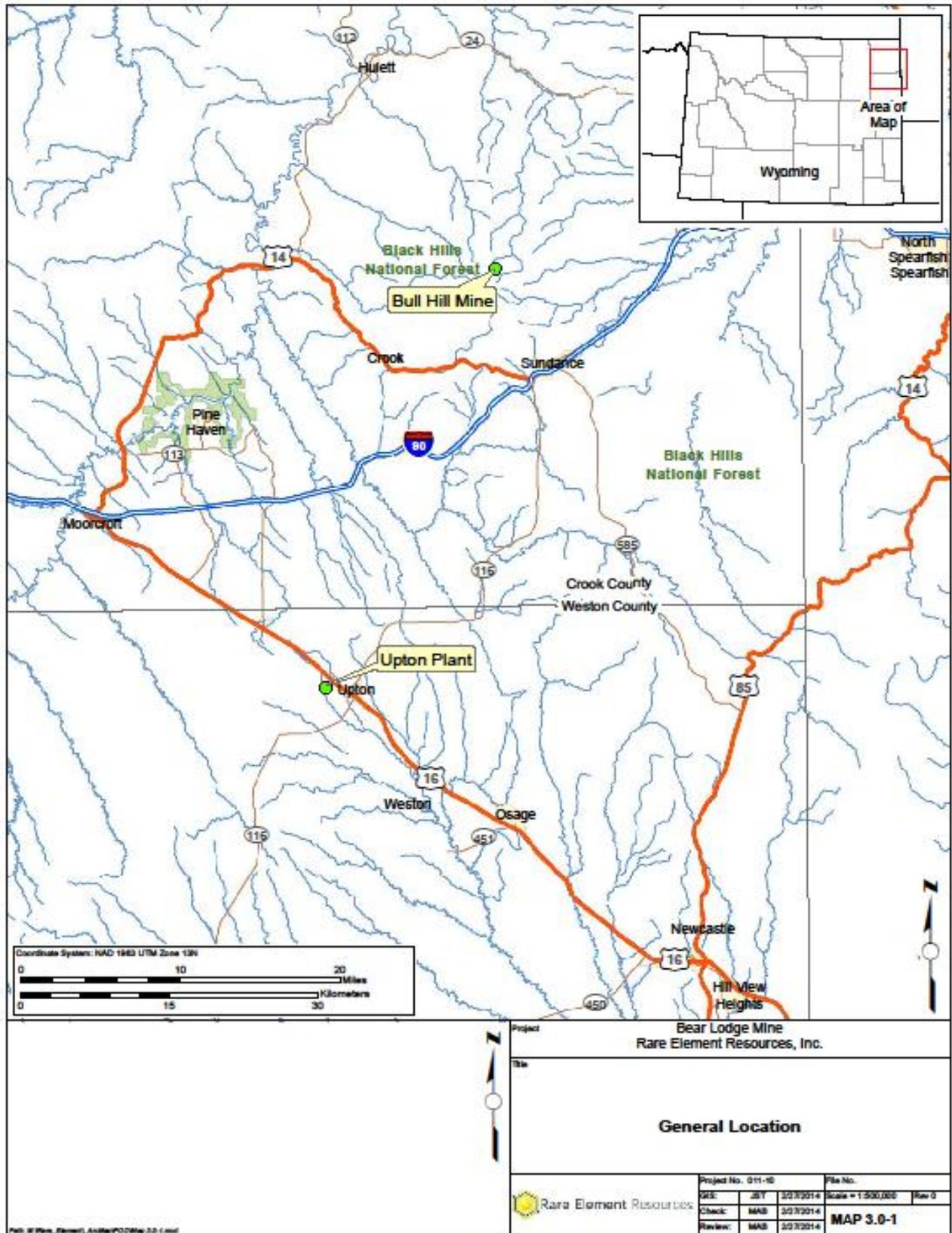
Private lands are used for livestock grazing, cultivation, timber management and recreation.



Drill rig conducting mineral exploration on Bull Hill Mountain.

Photo provided courtesy of Rare Element Resources, Inc.

Figure 1. Project Location



Proposed Action

The Bull Hill Mine portion of the project is in the Bear Lodge Mountains, a narrow northwest-trending range situated in northeastern Wyoming. Physiographically, the mountains are a north-westerly extension of the Black Hills uplift of western South Dakota. The range is characterized by grass and pine-covered mountains reaching an elevation of 6,400 feet. The mountains have moderate slopes covered by western yellow (Ponderosa) pine and aspen forest interspersed with dense thickets of brush. Narrow grassy meadows cover the upper reaches of seasonal drainages.

Proposed Bull Hill Mine and Associated Facilities (Figure 2)

- A Physical Upgrade (PUG) Plant, located within the Mine Area, is designed to maximize concentration of the rare earth minerals and produce a pre-concentrate using a crushing, screening, and gravity separation process depending on the ore type. The PUG process is designed to concentrate the rare earth-bearing fines and reduce the physical mass. The PUG area will also include administration buildings for personnel, guard station, maintenance of vehicles, storage areas for blasting materials, gas and diesel storage tanks for equipment. A 6-foot chain link fence will be constructed around the PUG area.
- The waste rock facility will be located on private property in Section 16 of T52N R63W which is adjacent to the mineable pit and is estimated at 426 acres in size. This area includes a stock pile location for the low grade ore material. An underdrain water collection system will be constructed to control seepage and collect naturally occurring flows from seeps and springs. The collection system will be drained into sediment ponds. A diversion channel will also be constructed for approximately 4,000 feet of Beaver Creek.
- Conventional truck and excavator open pit mining methods will be utilized. The mineral material to be removed lies within the oxide layer of the soil. There are areas of the Mineable Pit that contain variable amounts of weathered oxide ores or oxide-carbonate (OxCa) ores, and that contain variable grades of stockwork mineralization adjacent to the higher grade ores. The pit will have a disturbance footprint of approximately 232 acres. Two haul routes from the pit will be constructed with a 100 foot width between the PUG plant and the waste rock facility. A 5-strand barbed wire fence will be constructed around the mine and waste rock facility.
- To construct the open pit, blasting will be required. Explosives (consisting of ammonium nitrate and fuel oil) and detonators (i.e. blasting caps, electrical detonators, and explosive detonator cords) will be stored separately in accordance with the U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives requirements.
- The production rate of the mine is estimated at 500 tons per day of high grade oxides for the first 9 years. As the operation continues, production rates are estimated to increase to 1,000 tons per day. It is estimated the mineable pit will be depleted by year 25. Processing of low grade and other stock piled ores will continue up through year 43.
- A production well is proposed to provide water for the PUG processing and dust control. The well is located on National Forest System Lands. The well will supply water to a water storage tank via a waterline. It is estimated that up to 74 gallons per minute of water will be required to maintain the operation of the PUG plant and mine, and provide potable water to mine workers.
- Approximately 8.71 miles of NFS roads (Table 1); will be removed from public access as they will be included in the mine area (Figure 2).

Table 1. Existing NFS Roads to be Removed from Public Access			
Road Name	NFS Road	Current Public Status of Road	Miles within Bull Hill Mine
Taylor Divide BR 2A	838.2A	Open for Public	0.40
Whitelaw	851.1	Open for Public	2.21
Whitelaw BR 1A	851.1A	Closed to Public	0.34
Whitelaw BR 1B	851.1B	Open for Public	1.23
Whitelaw BR 1C	851.1C	Closed to Public	0.56
Whitelaw BR 1D	851.1D	Open for Public	0.20
Whitelaw BR 1E	851.1E	Closed to Public	0.21
Cole Springs	879.1	Open for Public	2.60
Cole Springs BR 1A	879.1A	Open for Public	0.86
Cole Springs BR 1C	879.1C	Open for Public	0.14
Total			8.75

Source: Table 4.3-1 in the Plan of Operations

- To manage the surface water runoff in the mine area, diversion channels will be constructed around the pit and waste rock facility and flow into six sediment ponds before being naturally discharged into the neighboring creeks. Sediment ponds have been designed for a 10 year frequency, 24 hour duration event and any discharges will be in accordance with State of Wyoming standards.
- At full staffing, mine employment is estimated at about 70 workers. The mine would operate 5 days a week with two 10-hour shifts a day, while the PUG would be operated 5 days a week for two 8-hour shifts day.

Miller Creek Access Road and Power Line

- A main access road (Miller Creek Road) to the mine area is proposed along County Roads 208, 266 and 8 and Forest Service System Roads 854 and 851. This 13 mile access route would be upgraded to accommodate two-way driving traffic in 12 foot lanes with 4 foot shoulders. The total right-of-way for the access route would be 80 feet. For safety, the route would be designed with grades under 6 percent. The mining traffic is estimated between 13 to 17 round trips of semi-trucks of processed ore material each day during operation. This estimate does not include worker traffic or delivery supply vehicles.
- A 69kV, 5 strand transmission line would be constructed above ground to provide electricity to the mine area. The transmission line requires a right-of-way of 100 feet to manage vegetation. Approximately 1.5 miles of the power line would cross NFS lands, while the remainder would be on private and State of Wyoming lands.

Reclamation

- For areas of ground disturbance (i.e. roads, mineable pit, waste rock facility), topsoil will be stored in designated stockpiles within the waste rock facility and PUG plant area and used for future reclamation.
- Reclamation and closure are expected to take place progressively during mining operations. It is assumed that all closure and reclamation (excluding monitoring) will be completed within 2 years following the completion of mining. Monitoring will continue following closure and reclamation until stabilization of soil, vegetation, and water quality have been reached.

Continued Exploration Plan

- The Plan of Operations, Appendix P includes continuing mineral exploration to evaluate the rare earth resource and other locatable minerals. Exploration would include drilling, trenching, and bulk sampling. Site specific exploration plans, including access requirements will be developed and

presented to the Forest Service for review. Forest Service will evaluate and approve the exploration plans prior to implementation.

- Exploration drilling includes approximately 2000 rotary or core holes to an average depth of 750 feet. Annually, about 48 holes are expected for the exploration program.
- Approximately 20,000 linear feet of trenching is proposed over the life of the mine.

Proposed surface disturbance by landownership shown in Table 2 and on Figure 2.

Facility	NFS Acres	State of Wyoming Acres	Private Acres	Total
Physical Upgrade Plant	176	0	0	176
Mineable Pit	232	0	0	232
Waste Rock Facility/Low Grade Ore Stockpile	0	0	426	426
Sediment Trapping Ponds	4	0	10	14
Topsoil Stockpiles	18	0	0	18
Water Line	1	0	0	1
Secondary Road	6	0	0	6
Haul Road	7	0	3	10
Upgrading Miller Creek Access Route – Secondary Road	32	8	42	82
Power Line	19	13	21	53
Total	495	21	501	1018

Summarized from Table 4.5-1 in the Plan of Operations, Feb 2014.

Connected Action

Hydromet Plant – Upton, Wyoming (Figure)

- While the Hydromet Plant is proposed as a result of the Bull Hill Mine, it is recognized as a connected action to the project. However, since the plant is located entirely on private lands, there is no Forest Service decision or authorization that can be made and therefore, will not be analyzed in detail for environmental effect analysis in the environmental impact statement.
- The Upton hydromet plant, located on private land, will process the pre-concentrate from the PUG plant through acid leaching followed by additional chemical processing to remove impurities and finally precipitation to produce the final total rare-earth oxides product. The tailings produced from the process will be dewatered, neutralized, and stored in a double lined tailings storage facility adjacent to the hydromet plant.
- The hydromet process includes leaching and precipitation to recover the final product for shipment to customers. Process waste from the hydromet plant will be disposed in lined tailings storage facility (TSF) located adjacent to the plant. Both the hydromet plant and TSF are located on private land.
- Water for the Upton Plant will be provided by a connection to the Upton municipal water system.
- It is estimated at full staffing the Upton Hydromet Plant will employ about 50 workers. The Plan of Operations proposes for a 24 hour a day, 7 days a week work schedule for the plant.

Figure 2. Bull Hill Facilities and Access

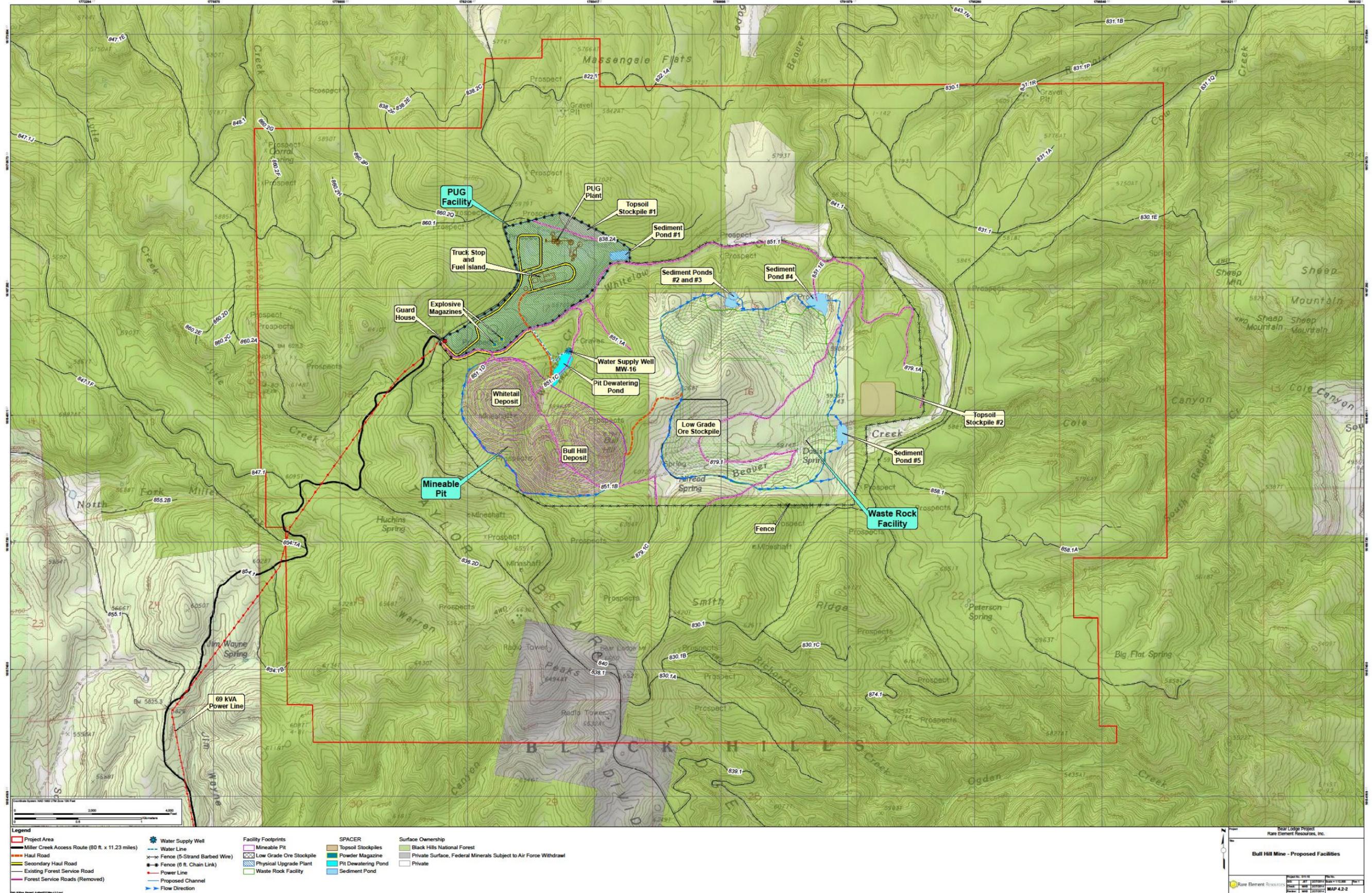
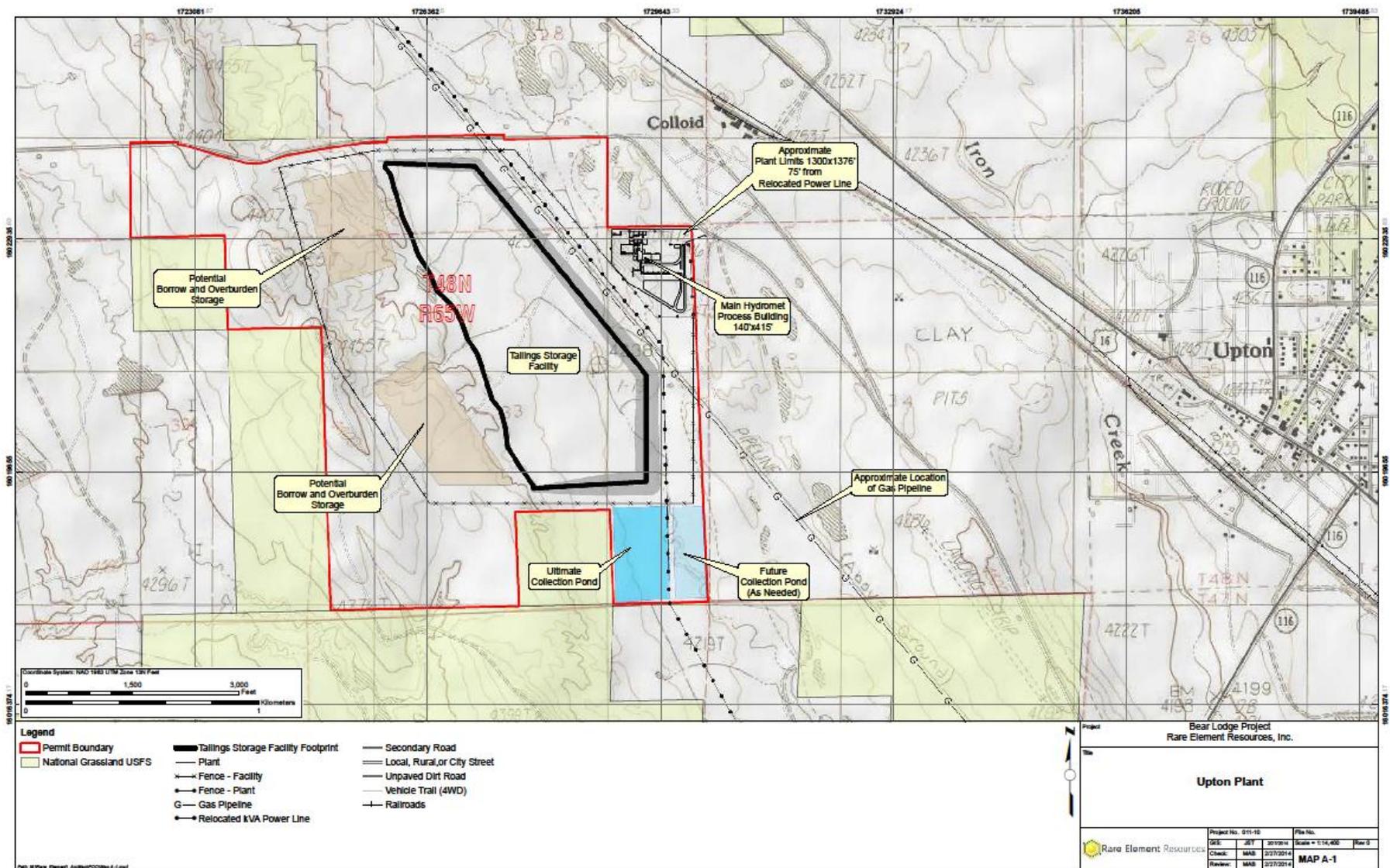


Figure 3. Upton Hydromet Plan Layout



Additional Information

Additional Permits and Authorizations Required

Prior to implementation of the Bear Lodge Project, permits or licenses would be required from local, State, and Federal agencies in accordance with State and Federal regulations and laws. Below; but not limited to, is a list of the permits or licenses expected with this project.

- The Mine Safety and Health Administration (MSHA) would be responsible for enforcing mine safety regulations. MSHA would provide regulatory authority within the Mine Area. Regulations include, but not limited to; electrical, access safety, transportation of materials inside the mine, signage, fencing, storage of materials, human safety, and more.
- Wyoming Department of Environmental Quality: Water Quality Division (WQD), Land Quality Division (LQD), Air Quality Division, State Engineering Office (SEO) and Industrial Siting Council (ISC) Division permits. The LQD would be responsible for the issuance of the Permit-to-Mine. The permit application would include both the Bull Hill Mine and the Upton Plant. The WQD would be responsible for permits to discharge surface water into nearby streams. The SEO would issue a permit for the production well. The ISC permit would include both the Bull Hill Mine and Upton Plant and would regulate the construction or operation of any industrial facility.
- U.S. Army Corps of Engineer would be responsible for issuing a permit for Section 404 of the Clean Water Act. The Corps would be involved in the design and construction of the mine pit, diversion channel, and sediment ponds.
- Nuclear Regulatory Commission would be responsible for permitting the Upton Plant for possessing source materials.
- U.S. Bureau of Alcohol, Tobacco, and Firearms (ATF) would be responsible for issuing a permit for storage of explosives. This permit regulates the handling of explosives materials, including storage facilities and records management.
- The Forest Service would be responsible for issuing special use permits for the power line construction and maintenance to Powder River Energy Corp and a Forest Road and Trail Easement to the County for maintenance of the main access route.
- Crook County would be responsible for issuing permits, agreements, and policy with regards to the construction, reconstruction, maintenance, or use of County roads. The County may also have other permits or agreements in conjunction with State of Wyoming regulations.

Responsible Official

Black Hills National Forest Supervisor Craig Bobzien, 1019 North 5th Street, Custer, South Dakota 57730–7239.

Planning Process

The Black Hills National Forest use information gathered during scoping to conduct an environmental analysis and report the outcome in a draft EIS, which will be made available for public review. Public comments on the draft EIS will be addressed in a final EIS. At that time, a draft Record of Decision will be made available and an objection period initiated. Once any objections are addressed, the Forest Supervisor will issue a final Record of Decision. The anticipated date for the publication of the draft EIS is early 2015. The final EIS is expected in summer 2015.

How to submit comments

Comments should be submitted in writing by April 30, 2014. Comments should be submitted to:

Bear Lodge Project EIS
C/O Jeanette Timm, Project Coordinator
Bearlodge Ranger District
PO Box 680
Sundance, WY 82729-0680

Or written comments may left at one of the public meetings or emailed to comments-rocky-mountain-black-hills-bearlodge@fs.fed.us, or via facsimile to 307-283-3727.

It is important that reviewers provide their comments at such times and in such manner that they are useful to the Agency's preparation of the environmental impact statement. Therefore, comments should be provided prior to the close of the comment period and should clearly articulate the reviewer's concerns and contentions.

Comments received in response to this solicitation, including names and addresses of those who comment, will become part of the public record for this proposed action. Comments submitted anonymously will be accepted and considered; however, anonymous comments will not provide the Agency with the ability to provide the respondent with subsequent environmental documents.

National Historic Preservation Act

The Black Hills National Forest is inviting public comment at this time pursuant to the National Historic Preservation Act (NHPA) regarding potential effects the proposed action may have on historic properties. An historic properties effects analysis will be completed for this project as per the NHPA implementing regulations found at 36 CFR part 800. Any individuals or parties that wish to provide comments or input that would help the federal government make more informed decisions regarding historic properties are invited to do so.