



**United States Department of the Interior  
Bureau of Land Management**

**Ely Field Office**

**June 2006**

---



Placer Dome U.S. Inc. Bald Mountain Mine

Little Bald Mountain Mine

Underground Mining and Haul Road

Environmental Assessment

NV-040-06-035

Case File # N68282

### ***MISSION STATEMENT***

The Bureau of Land Management is responsible for the stewardship of our public lands. It is committed to manage, protect, and improve these lands in a manner to serve the needs of the American people for all times. Management is based upon the principles of multiple use and sustained yield of our nation's resources within a framework of environmental responsibility and scientific technology. These resources include recreation, rangelands, timber, minerals, watershed, fish and wildlife, air and scenic, scientific and cultural values.

## TABLE OF CONTENTS

<b>1</b>	<b>INTRODUCTION .....</b>	<b>1</b>
<b>1.1</b>	<b>BACKGROUND.....</b>	<b>1</b>
<b>1.2</b>	<b>NEED FOR THE PROPOSAL .....</b>	<b>2</b>
<b>1.3</b>	<b>ISSUES .....</b>	<b>3</b>
<b>1.4</b>	<b>RELATIONSHIP TO PLANNING STATEMENT.....</b>	<b>3</b>
<b>2</b>	<b>Proposed Action and Alternatives.....</b>	<b>6</b>
<b>2.1</b>	<b>PROJECT DESCRIPTION .....</b>	<b>6</b>
2.1.1	Proposed Actions.....	6
2.1.2	Underground Mining.....	7
2.1.3	Ancillary Components of the Proposed Action.....	11
2.1.4	Environmental Protection Measures .....	13
2.1.5	BLM Standard Operating Procedures .....	15
2.1.6	Reclamation.....	19
<b>2.2</b>	<b>ALTERNATIVES TO THE PROPOSED ACTION .....</b>	<b>20</b>
2.2.1	No Action Alternative .....	21
<b>3</b>	<b>AFFECTED ENVIRONMENT.....</b>	<b>22</b>
<b>3.1</b>	<b>INTRODUCTION.....</b>	<b>22</b>
<b>3.2</b>	<b>PROPOSED ACTION AND ALTERNATIVES .....</b>	<b>24</b>
3.2.1	Air Resources .....	25
3.2.2	Cultural Resources .....	25
3.2.3	Native American Religious Concerns .....	25
3.2.4	Non-native Invasive Species and Noxious Weeds .....	26
3.2.5	Special Status Species (Including Federally Listed, Proposed, and Candidate Species, State Protected Species, and BLM Sensitive Species).....	26
3.2.6	Wastes (Solid, Hazardous) and Hazardous Materials .....	27
3.2.7	Geology and Minerals .....	28
3.2.8	Soils.....	28
3.2.9	Vegetation .....	29
3.2.10	Wildlife Including Migratory Birds .....	29
3.2.11	Land Use and Access .....	31
3.2.12	Livestock/Grazing .....	31
3.2.13	Wild Horses.....	31
3.2.14	Socioeconomics.....	32
<b>4</b>	<b>Environmental Consequences .....</b>	<b>33</b>
<b>4.1</b>	<b>INTRODUCTION.....</b>	<b>33</b>
4.1.1	Air Resources .....	33
4.1.2	Cultural Resources .....	34
4.1.3	Native American Religious Concerns .....	34
4.1.4	Invasive Non-native Species and Noxious Weeds .....	35
4.1.5	Special Status Species (Including Federally Listed, Proposed, and Candidate Species, State Protected Species, and BLM Sensitive Plant and Animal Species) .....	36
4.1.6	Wastes (Solid, Hazardous) and Hazardous Materials .....	36
4.1.7	Geology and Minerals .....	37

4.1.8	Soils.....	37
4.1.9	Vegetation .....	38
4.1.10	Wildlife Including Migratory Birds .....	39
4.1.11	Land Use and Access .....	40
4.1.12	Livestock/Grazing .....	40
4.1.13	Wild Horses.....	41
4.1.14	Socioeconomics.....	41
<b>4.2</b>	<b>CUMULATIVE IMPACTS.....</b>	<b>42</b>
<b>5</b>	<b>Proposed Mitigation Measures.....</b>	<b>43</b>
<b>6</b>	<b>Monitoring.....</b>	<b>44</b>
<b>7</b>	<b>Consultation and Coordination.....</b>	<b>45</b>
<b>7.1</b>	<b>PERSONS, GROUPS, OR AGENCIES CONSULTED.....</b>	<b>45</b>
<b>7.2</b>	<b>PUBLIC NOTICE AND AVAILABILITY.....</b>	<b>46</b>
<b>7.3</b>	<b>NATIVE AMERICAN CONSULTATION .....</b>	<b>46</b>
<b>8</b>	<b>References .....</b>	<b>47</b>

**FIGURES**

Figure 1: Project Location .....	4
Figure 2: Existing Project Area.....	5
Figure 3: Little Bald Mountain Mine Facilities .....	8

**TABLES**

Table 1: Existing and Proposed Disturbance .....	7
Table 2: Estimated Production Schedule (tons).....	9
Table 3: Reagents.....	12
Table 4: Existing Permits and Authorizations .....	13
Table 5: Standard Operating Procedures by Resource for Proposed Action .....	16
Table 6: Interim Seed Mix .....	19
Table 7: Reclamation Seed Mix.....	20
Table 8: Critical Elements of the Human Environment and Rationale for Detailed Analysis for the Proposed Action.....	22
Table 9: Other Resources and Issues, and Rationale for Detailed Analysis for the Proposed Expansion Project.....	23
Table 10: Potentially Affected Special Status Species .....	27

## **APPENDICES**

- Appendix A    BLM Standard Operating Procedures
- Appendix B    Wildlife Species List
- Appendix C    Preliminary Risk Assessment for Noxious and Invasive Weeds

# 1 INTRODUCTION

Placer Dome U.S. Inc., Bald Mountain Mine. (BMM) is proposing to re-initiate mining at the Little Bald Mountain Mine underground workings. The Proposed Action would involve amending the existing Plan of Operations (PoO) to allow for the following activities at Little Bald Mountain (LBM):

- Mining at the existing underground facility; (no processing on site)
- Improvement and expansion of the present public access road connecting LBM to the Sage Flats road. Public access would be maintained through use of pilot cars or other appropriate traffic control during hauling activities;
- Expansion of the Plan of Operations boundary by approximately 21 acres to include the proposed expansion of the road leading to the Sage Flats road; and
- Re-opening an existing rock disposal area which includes disturbance of 2.2 acres of previously disturbed/reclaimed land within a previously existing footprint.

The area of the Proposed Action, situated within the Little Bald Mountain Mine Plan of Operations boundary, is located in White Pine County, Nevada on unpatented mining claims on public land administered by the U.S. Bureau of Land Management (BLM). See Figure 1. The Plan of Operations boundary presently encompasses approximately 195 acres of public lands as shown in Figure 2. Actual disturbance within the plan boundary and including an existing outside borrow pit is about 40 acres. All disturbances except for the open pit, which is exempt, have been reclaimed.

## 1.1 BACKGROUND

Little Bald Mountain Mine has been in operation intermittently since 1985. New Dynasty was the original claim holder and performed exploration in 1984. In 1985 they submitted a mine plan of operations for heap leach gold mining. Mining and ore processing occurred from 1985 to 1991 with re-leaching continuing until 1992. In 1988, the plan was amended to allow for underground mining. Originally initiated in 1993, reclamation and closure activities at the LBM site have largely been completed, with the exception of disturbance associated with ongoing exploration and associated access. Effective June 25, 2004, the Water Pollution Control Permit NEV 50017 was retired.

With this Proposed Action, BMM now proposes to re-initiate underground mining and construct a haul road along an existing roadway between LBM and the Sage Flats haul road. Upon conclusion of this mining, the portal would be closed and reclaimed and the haul road would be reclaimed to its original configuration.

The Proposed Action involves re-initiating mining in the existing underground mine and re-use of a reclaimed waste dump and road. The original environmental assessment (EA) for the mine and pit was written in 1985, making the document over 20 years old. An EA was written in February, 2006 to address potential issues associated with underground exploration activities including bats hibernating in the underground workings. This EA for renewed underground mining, haul road construction, and associated plan boundary expansion would insure up-to-date compliance with the Council on Environmental Quality guidelines.

This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and in compliance with applicable regulations and laws passed subsequently, including the President's Council on Environmental Quality regulations, U.S. Department of Interior requirements, and guidelines listed in the BLM Manual Handbook H-1790-1.

Little Bald Mountain Mine is located one mile south of the Top Pit at Bald Mountain Mine. In 1995, the Final Environmental Impact Statement (FEIS) was signed for the Bald Mountain Mine Expansion Project. Although LBM was not part of the proposed expansion at that time, much of the analysis of the general project area includes LBM, and therefore is incorporated by reference. A subsequent EA, the *Bald Mountain Mine Exploration Programmatic Environmental Assessment*, was written in 2004 for exploration activities within the entire claim block, but outside of all the Placer Dome Mine Boundaries. In 2005, Placer Dome proposed underground exploration at LBM Mine and a proposal for recontouring the open to pit to provide for public safety without the need to maintain a fence. An EA was prepared for this action. All three of these EAs contains up to date NEPA analysis that is relevant for Little Bald Mountain Mine and are incorporated by reference. The 1995 FEIS for Bald Mountain Mine, the 2004 Bald Mountain Mine Programmatic EA, and the 2005 LBM exploration EA are available for review at the BLM Ely Field Office, 702 North Industrial Way, Ely, Nevada 89301.

## **1.2 NEED FOR THE PROPOSAL**

The purpose for the proposed underground mining project is to resume mining for gold in the existing underground mine at Little Bald Mountain Mine. BMM would be able to mine additional gold resources within the project area using existing manpower and equipment resources. The need for the proposed project arises from the international, national, and regional market demands for gold, continued employment, and economic benefits for the local and state economies.

### **1.3 ISSUES**

No issues were identified during the BLM review on April 17, 2006.

### **1.4 RELATIONSHIP TO PLANNING STATEMENT**

Although the Egan Resource Management Plan (RMP) is silent on minerals actions, the Proposed Action is in conformance with the approved decisions of the RMP. The Proposed Action and the No Action Alternative are also consistent with the White Pine County Public Land Use Plan (1998), which states, “Recognize that the development of Nevada’s mineral resources is desirable and necessary to the nation, the state, and White Pine County. Retain existing mining areas and promote the expansion of mining operations and areas.”

## Figure 1: Project Location

## Figure 2: Existing Project Area

## **2 PROPOSED ACTION AND ALTERNATIVES**

BMM proposes to amend the existing Plan of Operation at Little Bald Mountain Mine to allow for underground mining operations, the improvement and expansion of a haul road to the Sage Flats haul road, expansion of the Plan of Operations boundary, and the re-establishment of an existing waste rock disposal area.

The Project Proponent's address is: P.O. Box 2706 Elko, Nevada 89803. The Project is accessed using the Bourne Canyon Haul Road just south of Bald Mountain Mine. The proposed project is located within sections 26, 27 and 34 of: Township 24 North, Range 57 East.

The following sections describe BMM's Proposed Action, environmental protection measures, and standard operating procedures that would be used.

### **2.1 PROJECT DESCRIPTION**

#### **2.1.1 Proposed Actions**

BMM is proposing the following activities:

- Mining at the existing underground facility (no processing facilities at site);
- Improvement and expansion of the existing public access road connecting LBM to the Sage Flats haul road;
- Expansion of the Plan of Operations boundary by approximately 21 acres to include the proposed expansion of the road leading to the Sage Flats haul road; and;
- Re-establishment of an existing rock disposal area, which includes disturbance of 2.2 acres of previously disturbed/reclaimed land within a previously existing footprint.

The following sections describe the Proposed Action in greater detail. Table 1 presents the existing disturbance and the disturbance associated with the Proposed Action. Figure 3 shows the location of the Proposed Action with respect to the reclaimed features of the mine.

**Table 1: Existing and Proposed Disturbance**

<b>Project Component</b>	<b>Bonded Disturbance Through 2009<sup>1</sup></b>	<b>New Disturbance to be Bonded</b>	<b>New Bonded Disturbance Through 2009</b>
<b>Pits and Related Disturbance</b>			
Pit	0	0	0
Underground <sup>2</sup>	0	0	0
<b>Subtotal</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Ore and Process Facilities</b>			
Heap Leach pad <sup>3</sup>	0	0	0
Process	0	0	0
Process Ponds	0	0	0
<b>Subtotal</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Rock Disposal Areas</b>			
Rock Disposal Area <sup>2</sup>	0.7	2.2	2.9
<b>Subtotal</b>	<b>0.7</b>	<b>2.2</b>	<b>2.9</b>
<b>Support Facilities</b>			
Ancillary Facilities/Roads	0		
Haul Roads	0.3	7.9	8.2
<b>Subtotal</b>	<b>0.3</b>	<b>7.9</b>	<b>8.2</b>
<b>TOTAL MINE AND PROCESS AREA DISTURBANCE</b>			
	<b>1.0</b>	<b>10.1</b>	<b>11.1</b>
<b>Other Areas of the Project</b>			
Exploration	0	-	0
<b>Subtotal</b>	<b>0</b>	<b>-</b>	<b>0</b>
<b>TOTAL PROJECT AREA DISTURBANCE</b>			
	<b>1.0</b>	<b>10.1</b>	<b>11.1</b>

<sup>1</sup> Previously authorized acres are based on the 2006 Exploration Amendment submitted January 2006.

<sup>2</sup> The bond includes funds for portal closure and public safety.

<sup>3</sup> Reclamation has been completed and the bond released.

### 2.1.2 Underground Mining

As shown in Figure 3, proposed underground (UG) operations would be located above the LBM rock disposal area. In general, the proposed underground facilities would consist of a decline, miscellaneous underground drifts for drill platforms and/or ore access, stopes, and ventilation and/or escape raises from underground workings to the surface. Underground workings would be accessed from the existing portal.

### **Figure 3: Little Bald Mountain Mine Facilities**

The proposed operating schedule would be up to seven days per week, twenty-four hours per day. Proposed underground production would be approximately 200 tons of ore per day; the proposed production schedule is summarized in Table 2.

**Table 2: Estimated Production Schedule (tons)**

<b>Year</b>	<b>LBM UG</b>	
	<b>Ore</b>	<b>Waste</b>
<b>2006</b>	18,000	3,000
<b>2007</b>	57,000	7,000
<b>2008</b>	-	-
<b>Total</b>	<b>75,000</b>	<b>10,000</b>

The decline and drift dimensions would be approximately 12 feet wide by 12 feet high; however, decline and drift dimensions may vary to accommodate mining equipment, piping, and ventilation ducting. Ore heading and stope dimensions would be determined by geotechnical and safety constraints.

The decline and drifts would be advanced by drilling blast holes using underground jumbo drills. The holes would be loaded with a mix of ammonium nitrate and fuel oil or other blasting agents as deemed appropriate. After blasting, the shot rock would be excavated using load-haul-dump (LHD) machines and/or underground haul trucks. Once the workings are sufficiently developed, one or more explosives day storage areas would be established underground.

Waste rock generated by underground mining would be stored underground or stockpiled in the staging area, which is the existing rock disposal area located outside the portal. Stockpiled waste would later be used as backfill for the existing open pit or would remain in the rock disposal area. No sulfide-bearing waste rock is anticipated; however, if encountered, sulfide-bearing waste rock would remain underground where possible. Where sulfide-bearing waste rock is brought to surface, the waste rock would be handled and managed in a way that does not pose a threat to waters of the state or create surface acid generation. Potentially acid generating (PAG) material, if encountered, would be managed as described in the BMM *Waste Rock Management Plan*. Ore removed from underground operations would be stockpiled outside the portal prior to being trucked to the existing Mooney Basin heap or BMM process facilities.

BMM does not anticipate encountering groundwater during underground mining activities. Currently, the deepest identified reserves are at 7,000 feet above mean sea level, and the projected water table is estimated at approximately 6,100 feet above mean sea level (Simon-Hydrosearch, 1994).

Ground control during construction of the declines, drifts, drill stations, and test mining areas may consist of rock bolts, chain link fencing, shotcrete, steel sets, timber sets, a combination of these support mechanisms, or other appropriate ground control methods deemed necessary to provide safe workings.

BMM would provide power to the underground facilities with either generators or line power. If line power is used, the power line would be constructed within the existing haul road corridors. Generators, rated for up to 150 HP, would be located in the vicinity of the portal. Backup generators would be provided for either line power or primary generator power to provide safety measures in support of underground operations.

Fresh water would be hauled to underground facilities with water trucks to water tanks. Fresh water would be piped from the water tanks into the underground workings. If practical, underground water storage tanks would be installed with total capacity up to 2,000 gallons.

At the end of underground mining activity, the portal and ventilation shaft would be closed to prevent unauthorized access by people and colonization by bats. Entrances would be plugged by a minimum of 50 feet of rock backfill, and the surface of the backfill would be covered with shotcrete or other durable and secure methods. The portal location would be monumented by a licensed professional land surveyor. Raises would be closed using a slab of steel-reinforced concrete to cover the opening. The open glory hole would be recontoured to a safer condition as described in the 2005 Underground Exploration amendment.

### ***Roads***

Ore would be transported to the Mooney Basin process facilities by way of the proposed new haul road or to the BMM process facilities by way of the existing Bourne Canyon road. The haul road location is along the existing two track road from LBM to Sage Flats. The two-track would be expanded to a width of 35 feet to create the new haul road. The actual disturbance width may be slightly wider, if mandated by topography. Current authorized disturbance for roads within the existing LBM plan of operations is 0.3 acres. The authorized roads within the plan of operations boundary would become part of the proposed rock disposal area disturbance, and an additional 7.9 acres of road disturbance, for a total of 8.2 acres of haul road disturbance, is proposed for the new haul road as shown in Figure 3. Stormwater and erosion control features would be put in place for the proposed haul road

utilizing best management practices from the Bureau of Water Pollution Control *Best Management Practices Handbook*.

### ***Plan of Operations Boundary***

The Plan of Operations boundary would be modified along the eastern boundary to accommodate the expansion of the public access road leading to the Sage Flats haul road. The boundary area would increase by approximately 21 acres. Figure 3 presents the proposed expansion of the Plan of Operations boundary.

### ***Rock Disposal Areas***

Minimal waste rock is anticipated to be generated during underground mining. Waste rock that is generated would either be stored underground or would be used as backfill in the existing adjacent open pits. If utilized, temporary rock staging areas would be located within the waste rock disturbance area and used to store waste rock until weather and equipment is available to facilitate relocation. As shown in Figure 3, the reclaimed rock disposal area covers approximately 2.9 acres and would be redisturbed by this proposed action.

## **2.1.3 Ancillary Components of the Proposed Action**

### ***Growth Media Salvage***

In areas of proposed disturbance, available growth media would be salvaged to meet the identified reclamation growth media needs. If inadequate growth media exists to cover all disturbed areas, additional growth media would be obtained, if needed, from borrow sources located within the LBM Plan Area.

Growth media would consist of soils stripped prior to surface disturbance activities. Growth media would be stored in existing stockpiles for reclamation. Growth media would be immediately seeded with an interim seed mix to stabilize the material by reducing erosion and minimizing establishment of undesirable weeds. Additional seeding with the interim mix may be needed between October 1 and March 15 to insure good vegetative cover of the desired species.

### ***Reagents***

The reagents that would be used for LBM mining activities are shown in Table 3.

**Table 3: Reagents**

DOT <sup>1</sup> CLASS	COMMON NAME	CHEMICAL NAME	CAS <sup>2</sup> NO.	PHYSICAL STATE	STORAGE CAPACITY	TRUCK ROUTE	LOCATION
1270	Used Oil	Mixed Used Oil (Water etc.)	64741-56-5	Liquid	All reagents would be brought in for day use	Reagents to be transported to and from BMM to LBM for daily use	Reagents to be used in the LBM Underground
1142	Antifreeze	Ethylene Glycol (50/50)	107-21-1	Liquid			
1993	Diesel #1 & #2	Hydrocarbon (Aromatic & Paraffin)	80085-20-6, 68476-34-6	Liquid			
1270	Grease	Mixed Petroleum Hydrocarbon		Solid/Liquid			
1270	Petroleum Oil	Mixed Petroleum Hydrocarbon	64741-56-5	Liquid			
1268	Solvent	Mixed Hydrocarbon (100 %)	8085-41-3	Liquid			
2067	Ammonium Nitrate	Ammonium Nitrate	6484-52-2	Solid			
	Emulsion		6484-52-2	Solid/Liquid			
	Class A Explosive						

<sup>1</sup> Department of Transportation

<sup>2</sup> Chemical Abstract Number

Diesel fuel and lubricants would not be stored long-term on site. A service truck would be used to provide diesel fuel and lubricants to the underground equipment on a daily basis.

A temporary HDPE liner would be placed at the fuel/lube transfer location within the staging area and would be replaced as necessary. To help prevent spills or chemical releases, best management practice loadout procedures would be observed. If spills or chemical releases occur, the fuel/lube transfer location would be managed using best management practices as part of appropriate site response plans.

### ***Equipment***

Typical underground equipment would include up to four haul trucks in the 15- to 20-ton class, up to two load-haul-dump units, one jumbo drill, supply and transportation vehicles, and a portable generator with capacity up to 150 HP. The equipment would be stored in the vicinity of the portals. Other surface support equipment includes a dozer (D10 class), a road grader (16G class), a water truck, a fuel/lube truck, a powder truck, maintenance trucks, and light vehicles.

### ***Schedule***

The mining operation would be conducted up to 24 hours per day, seven days per week, 52 weeks per year. The mine schedule would depend on weather conditions and gold production requirements, but is anticipated to extend the mine life until 2008.

### ***Workforce***

BMM would hire approximately ten contract miners for the underground mine. Existing BMM staff would be used for underground mining support activities.

#### **2.1.3.1 Existing Permits**

BMM maintains environmental permits and authorizations as shown in Table 4.

**Table 4: Existing Permits and Authorizations**

<b>Name</b>	<b>Agency</b>	<b>Permit/Authorization No.</b>
Decision Record / Finding no Significant Impact	BLM	N-68282
Water Pollution Control Permit	NDEP – BMRR	NEV50017 Retired
Air Permit	NDEP – BAPC	AP1041-1362
Hazardous Materials	Nevada State Fire Marshall	2238-4466
Reclamation Permit	NDEP	036

#### **2.1.4 Environmental Protection Measures**

##### *Chemical Reagent Requirements and Hazardous Materials Management*

Waste oil, antifreeze, diesel fuel (#1 & #2), grease, petroleum oil, solvents, ammonium nitrate, emulsion, and Class A Explosives, would be used as part of BMM's proposed activities. Approved staging facilities, safety measures, transportation, and handling requirements would be utilized for the proposed project.

### *Invasive, Nonnative Species*

BMM would work with BLM and the Tri-County Weed District to minimize the spread of invasive, nonnative species in the project area. The ongoing weed control program would be continued in the area of proposed activity. Employees and contractors would be educated to identify weeds that could occur in the project area. Should invasive weeds be identified, BMM would take appropriate measures to prevent their spread. Construction equipment would follow BLM Standard Operating Procedures to insure that all equipment is properly washed down prior to construction so as not to transfer noxious weed seed.

### *Control of Air Emissions*

Air emissions, including point and fugitive sources, would be controlled in accordance with NDEP-BAPC regulations and permit conditions.

### *Erosion and Sediment Control*

Current management practices would continue to be used to limit erosion and sediment transport from proposed facilities and disturbed areas during construction and operation. Management practices may include, but are not limited to, diversion and routing of stormwater using accepted engineering practices, such as diversion ditches, sediment traps, and rock and gravel covers.

Following construction activities, areas such as growth media stockpiles would be seeded as soon as practical and safe. Concurrent reclamation would be conducted to accelerate stabilization of disturbed areas.

### *Cultural Resources*

Avoidance is the BMM preferred treatment for preventing effects to historic properties [a historic property is any prehistoric or historic site eligible to the National Register of Historic Places (NRHP)] or unevaluated cultural resources. If avoidance is not possible or is not adequate to prevent adverse effects, BMM will undertake data recovery at the affected historic properties in accordance with the Programmatic Agreement between BMM, BLM, Nevada State Historic Preservation Office (SHPO), and the advisory Council on Historic Preservation. Development of a treatment plan, data recovery, archeological documentation, and report preparation will be based on the "Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation," 48 CFR 44716 (September 29, 1983), as amended or replaced. If an unevaluated site cannot be avoided, additional information will be gathered and the site will be evaluated. If the site does not meet eligibility criteria as defined by the Nevada SHPO, no further cultural work will be performed. If the site meets eligibility criteria, a data recovery plan or appropriate

mitigation will be completed under the Programmatic Agreement. Once data recovery has been completed at a historic property, the BLM will issue a Notice to Proceed for work at that location.

#### *Forestry*

Mahogany and piñon/juniper trees would be removed along the proposed haul road route. A nesting bird survey would be undertaken as described in the following section

#### *Migratory Birds*

Land clearing and surface disturbance would be timed to prevent destruction of active bird nests or young of birds during the avian breeding season (May 1 to July 15, annually in accordance with the EFO policies) to comply with the Migratory Bird Treaty Act (MBTA). If surface disturbing activities are unavoidable, BMM would have a qualified biologist survey areas proposed for disturbance for the presence of active nests immediately prior to the disturbance.

If active nests were located, or if other evidence of nesting were observed (mating pairs, territorial defense, carrying nesting material, transporting of food), the area would be avoided to prevent destruction or disturbance of nests until the birds were no longer present. Avian surveys would be proposed only during the avian breeding season and immediately prior to BMM conducting activities that would result in disturbance. After such surveys were performed, and disturbance created (i.e., road construction and drill pad development), BMM would not conduct any additional disturbance during the avian breeding season without first conducting another avian survey. After July 15, activities would continue; in compliance with MBTA, no further avian surveys would be conducted until the next year.

#### *Fire Management*

BMM would comply with all applicable federal and state fire laws and regulations, and would take all reasonable measures to prevent and suppress fires in the area of operations. BMM personnel and contractors would be required to carry fire extinguishers, hand tools, and/or backpack-type water pumps in their vehicles to suppress small fires.

### **2.1.5 BLM Standard Operating Procedures**

The Standard Operating Procedures that would be used by BMM over the project life incorporate Best Management Practices (BMPs) and are presented in Appendix A. Table 5 presents the proposed operating procedures by resource for individual exploration plans.

**Table 5: Standard Operating Procedures by Resource for Proposed Action**

Critical Element/Resource	Potential Issues to Consider	Actions to Minimize Impacts	SOP Number
Air:	<ul style="list-style-type: none"> <li>Fugitive dust from roads and loading/dumping</li> <li>Exhaust emissions</li> </ul>	<ul style="list-style-type: none"> <li>Use water trucks as necessary to control dust</li> <li>Seed with interim seed mix if growth media berms would remain over the growing season</li> <li>Operate in compliance with air permits</li> </ul>	
Water quality	<ul style="list-style-type: none"> <li>Potential impacts to groundwater</li> </ul>	<ul style="list-style-type: none"> <li>No groundwater anticipated.</li> <li>Surface drill holes would be closed per NRS 534</li> </ul>	13, 44
Cultural resources	<ul style="list-style-type: none"> <li>Disturbance of cultural resources</li> </ul>	<ul style="list-style-type: none"> <li>BLM would determine level of inventory needed. (Class I, II, or III, reconnaissance or none)</li> <li>Inventory would be conducted by approved archeologist</li> <li>Historic properties and all cultural resources would be avoided if possible</li> <li>If avoidance is not possible, develop treatment plan for the historic properties affected by the drill program</li> <li>Submit all cultural reports to the BLM.</li> </ul>	2, 8, 17, 18, 19, 20, 21, 22, 23
Native American religious concerns	<ul style="list-style-type: none"> <li>Consult with potentially affected Native American tribes</li> </ul>	<ul style="list-style-type: none"> <li>Conduct consultation with local tribes during NEPA review</li> </ul>	
Non-native invasive species	<ul style="list-style-type: none"> <li>Increasing weed infestation from existing local sources</li> <li>Introduction of new weed infestations by importing new seed sources from equipment</li> </ul>	<ul style="list-style-type: none"> <li>Determine status of noxious weed infestations along access routes and in proximity to operations</li> <li>Noxious weed survey in areas of proposed disturbance</li> <li>Rig washing before entering site</li> <li>Avoid driving through established weed areas</li> <li>Educate equipment operators to recognize and avoid weed areas</li> </ul>	3, 30, 31, 32, 33, 34, 35, 36, 43, 47, 48
Threatened, endangered	<ul style="list-style-type: none"> <li>Impacts to sage grouse, pygmy rabbit, ferruginous</li> </ul>	<ul style="list-style-type: none"> <li>Determine location of active leks and avoid during strutting season</li> </ul>	28, 29, 30

Critical Element/Resource	Potential Issues to Consider	Actions to Minimize Impacts	SOP Number
species and special status species	<ul style="list-style-type: none"> <li>hawk</li> <li>Potential impacts to bats</li> </ul>	<ul style="list-style-type: none"> <li>Identify potential pygmy rabbit habitat</li> <li>Avoid ferruginous hawk nests</li> <li>Consult with U.S. Fish and Wildlife Service if appropriate</li> <li>Bat survey and appropriate mitigation</li> </ul>	
Wastes, solids and hazardous and hazardous materials	<ul style="list-style-type: none"> <li>Accidental spills of hydrocarbons that could contaminate water, soil, and vegetation</li> </ul>	<ul style="list-style-type: none"> <li>Follow BMM and contractor SOPs for handling hazardous and solid waste</li> <li>Operate landfill in accordance with permit requirements</li> <li>Clean up spills in accordance with NDEP guidelines</li> </ul>	10, 11, 12
Migratory Birds	<ul style="list-style-type: none"> <li>Migratory birds nesting</li> </ul>	<ul style="list-style-type: none"> <li>Conduct nesting surveys if disturbance needs to occur between May 15 and July 31</li> </ul>	27
Geology	<ul style="list-style-type: none"> <li>Removal of mineral resources</li> </ul>	<ul style="list-style-type: none"> <li>Waste rock stockpiles would be reclaimed</li> </ul>	13, 44
Soils	<ul style="list-style-type: none"> <li>Wind and water erosion</li> </ul>	<ul style="list-style-type: none"> <li>Use overland travel as much as possible</li> <li>Store growth media in stockpiles</li> <li>Seed with interim seed mix if stockpiles would remain over the growing season</li> </ul>	4, 9, 16, 37, 38, 39, 40
Vegetation including woodlands	<ul style="list-style-type: none"> <li>Loss of native vegetation</li> </ul>	<ul style="list-style-type: none"> <li>Reclaim with interim and final seed mixes</li> </ul>	7, 41, 42, 45, 46
Wildlife	<ul style="list-style-type: none"> <li>Mule deer migration</li> <li>Bats</li> </ul>	<ul style="list-style-type: none"> <li>Reclaim as soon as activities are complete</li> <li>Do not touch bats while they are hibernating</li> </ul>	24, 26, 29 49
Lands use and access	<ul style="list-style-type: none"> <li>The access roads would be reclaimed, to the current existing configuration</li> <li>Public access</li> </ul>	<ul style="list-style-type: none"> <li>BMM would establish post-mining access in conjunction with BLM</li> <li>Traffic control measures would be used during operations</li> </ul>	5
Livestock/grazing	<ul style="list-style-type: none"> <li>Loss of forage</li> </ul>	<ul style="list-style-type: none"> <li>Reclaim as soon as activities are complete</li> </ul>	6, 13, 24, 26
Wild horses	<ul style="list-style-type: none"> <li>Loss of forage</li> </ul>	<ul style="list-style-type: none"> <li>Reclaim as soon as activities are complete</li> </ul>	13, 24, 26
Visual resources	<ul style="list-style-type: none"> <li>Impacts to viewshed</li> </ul>	<ul style="list-style-type: none"> <li>Reclaim as soon as activities are completed</li> </ul>	23

<b>Critical Element/Resource</b>	<b>Potential Issues to Consider</b>	<b>Actions to Minimize Impacts</b>	<b>SOP Number</b>
Recreation	<ul style="list-style-type: none"><li>Localized use</li></ul>	<ul style="list-style-type: none"><li>Reclaim as soon as activities are complete</li><li>Restrict public access locally during blasting activities</li></ul>	

## 2.1.6 Reclamation

The post-mining land use for the area disturbed by the Proposed Action would be expected to be similar to the pre-mining land uses. The uses include mineral exploration, mining, livestock grazing, wildlife habitat, wild horse habitat, and recreation. Reclamation would be in conformance with the BLM and Nevada state reclamation regulations. Experience from past reclamation efforts would be considered for designing reclamation of the proposed disturbance.

### 2.1.6.1 Revegetation

Available growth media would be removed and stockpiled from newly disturbed areas. These stockpiles would be seeded with an interim mix and used for reclamation at the end of the project. The interim mix would be used to seed the stockpiles immediately after construction to avoid establishment of undesirable and noxious weeds. A second seeding may be needed during the recommended seeding time between October 1 and March 15 to insure adequate establishment of desired species. Barley or rye may be added to the interim seed mixture for further weed control if needed. Table 6 shows the application rates and species for the interim seed mix.

**Table 6: Interim Seed Mix**

Species	Scientific Name	Seed rate (lbs/ac)	Seeds/sq ft
Thickspike Wheatgrass	<i>Elymus lanceolatus</i> <i>ssp. lanceolatus</i>	5.0	17
Slender Wheatgrass	<i>Elymus trachycaulus</i> <i>ssp. trachycaulus</i>	4.0	14
Western Wheatgrass	<i>Pascoprrum smithii</i>	5.0	13
Remont Sainfoin	<i>Onobrychis viciaefolia</i>	3.0	2
Total		17.0	46

Reseeding using the final mix would occur during the period of October 1 through March 15.. The seed mix could vary depending on the area and the availability of a particular species. The seed mixture would be applied at the appropriate rate. No fencing of the seeded reclaimed areas would occur. The plant species proposed for the final revegetation mixture are shown in Table 7. The mix may be changed based on further evaluation and BLM approval.

**Table 7: Reclamation Seed Mix**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Lbs Pure Live Seed/acre</b>	<b>Seeds/sq ft</b>
<b>Grasses</b>			
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata ssp. spicata</i>	2.0	6.4
Thickspike Wheatgrass	<i>Elymus lanceolatus ssp. lanceolatus</i>	1.0	3.5
Slender Wheatgrass	<i>Elymus trachycaulus ssp. trachycaulus</i>	1.0	3.6
Canby Bluegrass	<i>Poa canbyi</i>	0.1	2.1
Great Basin Wildrye	<i>Leymus cinereus</i>	1.0	3.0
Indian Ricegrass	<i>Achnatherum hymenoides ssp. hymenoides</i>	0.5	1.6
Squirrel Tail	<i>Elymus elymoides</i>	0.5	2.2
<b>Forbs</b>			
Appar Blue Flax	<i>Linum lewisii</i>	0.1	0.7
Arrowleaf Balsamroot	<i>Balsamorhiza sagittata</i>	0.5	0.6
Palmer Penstemon	<i>Penstemon palmerii</i>	0.1	1.4
<b>Shrubs</b>			
Mountain Big Sagebrush	<i>Artemisia tridentate vaseyana</i>	0.1	2.9
Antelope Bitterbrush	<i>Purshia tridentata</i>	0.5	0.2
<b>Total</b>		<b>28.2</b>	

Note: The above is a preferred list of BLM-approved reclamation species; the actual seed mix would vary from one area to another. The BLM, NDOW and BMM would decide upon the actual seed mix before seeding of a particular area.

BMM would monitor revegetation success and the presence of noxious weeds on an annual basis until project release. Weed control would be performed during the appropriate season to eradicate infestations.

## **2.2 ALTERNATIVES TO THE PROPOSED ACTION**

No alternatives other than the “No Action” alternative were identified for this EA. No other alternatives are necessary to be analyzed to address unresolved conflicts regarding alternative uses of available resources.

### **2.2.1 No Action Alternative**

Under the No Action Alternative, the Proposed Action would not be approved by the BLM. BMM would continue with previously authorized underground exploration activities.

### 3 AFFECTED ENVIRONMENT

#### 3.1 INTRODUCTION

The area disturbed by the Proposed Action is located in the southern Ruby Mountain Range, with Ruby Valley located north-northeast of the Proposed Action. The topography in the area is typical of that found in the Basin and Range Physiographic Province of the western United States.

The Critical Elements of the Human Environment, as identified by BLM Manual 1790-1 are listed in Table 8. Elements that may be affected are further described in this EA. Rationales for those elements that would not be adversely affected are also listed in Table 8. These critical elements would not be considered further in this document.

**Table 8: Critical Elements of the Human Environment and Rationale for Detailed Analysis for the Proposed Action**

Critical Element	No Effect	May Affect	Not Present	Rationale
Air Quality		X		Underground mining and closure operations would continue for an additional two to three years.
Areas of Critical Environmental Concern (ACEC)			X	Resource is not present.
Cultural Resources		X		BMM plans to avoid known eligible cultural sites or treat them.
Environmental Justice	X			No minority or low-income groups would be affected by disproportionately high and adverse health or environmental effects.
Farm Lands (prime or unique)			X	Resource is not present.
Flood Plains			X	Resource is not present.
Migratory Birds		X		Avoid disturbance between May through July 15
Native American Religious Concerns		X		There are no known issues of concern to local tribes. BLM would consult with local Native American tribes.
Non-native, Invasive Species		X		Surface disturbance may increase the risk of non-native, invasive species establishment.
Threatened, Endangered, and Special Status Species		X		Populations of species afforded protection under the Endangered Species Act (ESA) and under BLM policy may occur in the Area disturbed by the Proposed Action.
Wastes (hazardous or solid)		X		Mining, processing, and closure operations utilizing regulated chemicals would continue for an additional three years.
Water Quality	X			Drinking water sources would not be encountered.

Critical Element	No Effect	May Affect	Not Present	Rationale
(drinking)				
Water Quality (ground)	X			Groundwater is not expected to be encountered
Wetlands/ Riparian			X	Resource is not present.
Wild Horses and Burros		X		Approximately 11 acres of habitat would temporarily be removed from grazing. Horses may be displaced due to renewed activity at the mine site.
Wild and Scenic Rivers			X	Resource is not present.
Wilderness			X	The Proposed Action does not occur within any Wilderness Area, Wilderness Study Area, or Wilderness Inventory Area.

In addition to the Critical Elements of the Human Environment, the BLM considers other resources that occur on public lands, or issues that may result from the implementation of the Proposed Action. The potential resources, uses, and issues that may be affected are listed in Table 9. A brief rationale for either considering or not considering the issue or resource further is provided. The resources, uses, and issues that are considered in the EA are described in the Affected Environment section of this EA and are analyzed in the Environmental Consequences section.

**Table 9: Other Resources and Issues, and Rationale for Detailed Analysis for the Proposed Expansion Project**

Resource or Issue	No Effect	Potentially Affected	Not Present	Rationale
Geology/Minerals		X		Underground mining of additional gold reserves would occur.
Soils		X		Additional soils would be temporarily disturbed.
Vegetation		X		Approximately 3 acres of vegetation would be re-disturbed and 8 acres disturbed as part of the Proposed Action.
Wildlife		X		Approximately 11 acres of habitat would temporarily be removed. Bats may be displaced or lost during operations.
Lands/Access		X		Some existing access roads may be restricted during operation and/or reclaimed. Most land uses would not be affected.
Paleontological Resources	X			Paleontological resources identified in the vicinity of the Area disturbed by the Proposed Action do not have critical scientific or educational value (FEIS, 1995).
Livestock		X		Approximately 11 acres of habitat would temporarily

Resource or Issue	No Effect	Potentially Affected	Not Present	Rationale
Grazing/Range				be removed.
Hazardous Materials		X		BMM would manage hazardous materials in accordance with state and federal regulations.
Socioeconomics		X		Continuation of operations lengthens employment opportunities in Elko, Eureka and White Pine counties as well as duration of tax payments to the counties and State of Nevada .

Based on the review of existing baseline data or surveys conducted in preparation of this EA, BLM specialists have identified the following as potentially affected. The potential for impacts would vary by site and component, as identified in Chapter 4:

- Air Quality
- Cultural Resources
- Native American religious concerns
- Non-native invasive species and noxious weeds
- Threatened, Endangered, and Special Status Species
- Wastes, hazardous or solid
- Migratory birds
- Geology and minerals
- Soils
- Vegetation
- Wildlife
- Lands/Access
- Livestock Grazing/Range
- Wild horses and Burros
- Socioeconomics

### 3.2 PROPOSED ACTION AND ALTERNATIVES

The description of the affected environment for the No Action Alternative would be the same as that for the Proposed Action due to the nature of the existing mine.

### **3.2.1 Air Resources**

Information detailing air resources in the areas of the Proposed Action is provided in the *Bald Mountain Mine Expansion Project Final Environmental Impact Statement* (FEIS 1995; pages 3-38 to 3-44).

The area disturbed by the Proposed Action lies in Air Basin 154, Newark Valley. The existing air quality is typical of the largely undeveloped regions of the western United States. For the purposes of statewide regulatory planning, this area has been designated as unclassified for all pollutants that have an ambient air quality standard.

### **3.2.2 Cultural Resources**

The proposed project is located in an area that has evidence of a long history of human occupation. The earliest commonly accepted date for human presence is approximately 10,000 to 11,000 years before present. Long Valley and Ruby Valley had relatively dense prehistoric populations largely due to the availability of water, food, and fuel resources (BLM 1995). Information detailing the cultural resources in the areas of the Proposed Action is provided in the *Bald Mountain Mine Expansion Project Final Environmental Impact Statement* (FEIS, 1995, pages 3-35 to 3-37).

The Little Bald Mountain Mine process area and the Bourne Canyon access road were previously surveyed for cultural resources. A Class III cultural resource was conducted along the road corridor in May 2006 by Kautz Environmental Consultants, Inc. to determine the presence or absence of cultural resources sites. Two archeological sites were encountered. The first site appears to represent a single dumping episode based on the proximity to a two-track road and the nature of the site, a simple pile of cans. Site 2 exhibits prehistoric lithic scatter, a modern rock ring, and about 100 modern tin cans dating to the early 1980s. Erosion has also impacted this site (Kautz, 2006).

### **3.2.3 Native American Religious Concerns**

Before making decisions or approving actions affecting public lands, the BLM must determine whether Native American religious concerns would be affected, observe pertinent information gathering and consultation requirements, and document how this was done. Information detailing the Native American religious concerns in the vicinity of the Proposed Action is provided in the *Bald Mountain Mine Expansion Project Final Environmental Impact Statement* (FEIS, 1995; pages 3-37 to 3-38).

Native American consultation is the process of: identifying and seeking input from appropriate Native American governing bodies, community groups, and individuals and

considering their interests as a necessary and integral part of the BLM's decision making process (BLM 1994).

### **3.2.4 Non-native Invasive Species and Noxious Weeds**

Invasive, non-native species are plants and animals that are not indigenous to Nevada that tend to displace or increase in cover relative to surrounding native vegetation. Noxious weeds are any species of plant, which is, or is liable to be detrimental or destructive and difficult to control or eradicate and are included on the Nevada noxious weed list. Information detailing Non-native Invasive Species and Noxious Weeds in the areas of the Proposed Action is provided in the *Bald Mountain Mine Exploration Program Programmatic Environmental Assessment* NV040-04-023, (Programmatic EA 2004, page 22).

Surveys conducted in the vicinity of the Proposed Action identified infestations of musk thistle (*Carduus nutans*), white top (*Cardaria draba*), and Canada thistle (*Cirsium arvense*). No noxious weeds were located in the actual area of the Proposed Action.

### **3.2.5 Special Status Species (Including Federally Listed, Proposed, and Candidate Species, State Protected Species, and BLM Sensitive Species)**

The U.S. Fish and Wildlife Service (USFWS) database, Nevada Natural Heritage Program database (NNHP), and the NDOW were queried in May 2006 for the presence of special status species for the region. Information detailing Special Status Species in the region of the Proposed Action is provided in the *Bald Mountain Mine Final Environmental Impact Statement* (BLM 1995; pages 3-26 to 3-33). Appendix B presents the special status species that may either reside or forage in, or move through the areas of the Proposed Action.

Under current BLM policy, the agency must ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species as threatened or endangered. Table 10 presents the special status species that have the potential to occur in the areas to be disturbed by the Proposed Action. On February 14, 2006, JBR Environmental conducted a survey for hibernating bats. No threatened or endangered species were found during this survey. The full report is on file at the Ely Field Office-Bureau of Land Management.

Based on the baseline surveys and previous surveys for pygmy rabbits at the Bald Mountain Mine complex, they are not likely to be found above 7,000 feet in elevation. Most of the vegetation above this elevation is piñon/juniper, which is not habitat for pygmy rabbits, or low and black sage, which have soils that are not suited to pygmy rabbit burrows. Although some of the mountain big sagebrush and basin big sagebrush areas at these elevations may be considered potential habitat for pygmy rabbits, these patches of habitat are isolated from the lower elevation habitats and are not likely to support pygmy rabbits.

**Table 10: Potentially Affected Special Status Species**

Common Name	Scientific Name	Status
Pygmy rabbit	<i>Brachylagus idahoensis</i>	BLM-state sensitive
Western Sage Grouse	<i>Centrocercus urophasianus</i>	BLM-state sensitive
Pallid bat	<i>Antrozous pallidus</i>	BLM-state sensitive
California myotis	<i>Myotis californicus</i>	BLM-state sensitive
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	BLM-state sensitive
Big brown bat	<i>Eptesicus fuscus</i>	BLM-state sensitive
Spotted bat	<i>Euderma maculatum</i>	BLM-state sensitive
Silver-haired bat	<i>Lasionycteris noctivagans</i>	BLM-state sensitive
Small-footed myotis	<i>Myotis ciliolabrum</i>	BLM-state sensitive
Long-eared myotis	<i>Myotis evotis</i>	BLM-state sensitive
Little brown myotis	<i>Myotis lucifugus</i>	BLM-state sensitive
Long-legged myotis	<i>Myotis volans</i>	BLM-state sensitive
Yuma myotis	<i>Myotis yumanensis</i>	BLM-state sensitive
Big free-tailed bat	<i>Nyctinomops macrotis</i> ,	BLM-state sensitive
Western pipistrelle bat	<i>Pipistrellus hesperus</i>	BLM-state sensitive
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>	BLM-state sensitive

**3.2.6 Wastes (Solid, Hazardous) and Hazardous Materials**

Information detailing hazardous wastes and materials use associated with the Proposed Action is provided in the *Bald Mountain Mine Final Environmental Impact Statement* (FEIS, 1995; pages 3-55 to 3-56).

Hazardous materials shipments of diesel oil, class A explosives, and petroleum products would be used within the Plan of Operations boundary. Past spills of hazardous materials within the Plan of Operations boundary area have been remediated in compliance with federal, state and local regulations.

### **3.2.7 Geology and Minerals**

The Little Bald Mountain Mine Plan of Operations area is located within the Basin and Range physiographic province and is characterized by north-northeast trending mountain ranges separated by broad valleys. The valleys have been formed by downward movement of large blocks of the earth's crust along range-front faults (BLM 1995). A detailed summary of the geologic history of the southern Ruby Mountains is presented in Appendix B of the FEIS. Information detailing geology and minerals in the areas of the Proposed Action is provided in the *Bald Mountain Mine Expansion Project Final Environmental Impact Statement* (BLM 1995; pages 3-5 to 3-15).

During the Paleozoic, the Little Bald Mountain Mine Plan of Operations area was covered by a shallow sea in which carbonate and siliclastic sediments were deposited. After deposition, the sediments were folded and faulted during the Antler and Sonoma Mountain building events, and then intruded by igneous rocks with associated volcanic deposits. Low angle normal faulting accompanied volcanism and was followed by high-angle normal faulting prior to Basin and Range faulting. Basin and Range faulting and erosion are the most recent activities at the site and continue to the present.

The Paleozoic rock types within the Little Bald Mountain Mine Plan of Operations area consist of a variety of sedimentary rocks including: limestone, dolomite, claystone, shale, siltstone, sandstone, and quartzite. These sedimentary units were deposited 320 to 570 million years before the present.

Gold deposits are commonly hosted by two lithologies within the Little Bald Mountain Mine Plan of Operations area: the Devils Gate Limestone and the Pilot Shale. Mineralization is commonly located along the contact between the Devils Gate Limestone and the overlying Pilot Shale, with most ore deposits located in the lower 300 feet of the Pilot Shale. Mineralization is also hosted in a Jurassic felsic intrusive. Two geologic features have controlled mineralization and aided in the formation of the gold deposits. First are the numerous high-angle faults trending northwest and northeast. In many cases, ore deposits are localized along the northeast-trending faults, along northwest-trending faults, or at the intersection of these two major fault sets. Timing of the mineralization has been placed between the Oligocene and the Miocene (24 to 58 million years before present), subsequent to high-angle normal faulting, but prior to Basin and Range activity (BLM, 1995).

### **3.2.8 Soils**

The soils in the Little Bald Mountain Mine Plan of Operations area are general soil map units designated from the Natural Resources Conservation Service soil surveys of *Western White Pine County, Nevada* (NRCS 1998). The general soil map units in the area of the Proposed

Action are the Wardbay-Hardol-Adobe association which is found in the mountains of north central Nevada. The Wardbay is associated with a shallow loam range site, the Hardol with a calcareous loam range site, and the Adobe with a shallow calcareous loam range site. This association is generally 14 to 60 inches deep, moderately alkaline, and with moderate permeability and water holding capacity. Average annual precipitation can be as high as 18 to 20 inches.

### **3.2.9 Vegetation**

The dominant vegetation types present within the region of the Proposed Action include mountain big sagebrush, rabbit brush, mountain mahogany, and piñon/juniper. Dominant grasses include bluebunch wheatgrass and needlegrass. A climax community generally has 65 to 75 percent grasses, five to ten percent shrubs, and 20 to 40 percent shrubs. The pit perimeter, reclaimed waste dumps, and reclaimed roads are currently dominated by rabbit brush.

### **3.2.10 Wildlife Including Migratory Birds**

Wildlife habitat within the areas proposed for disturbance varies. The reclaimed waste dump is mostly dominated by rabbit brush. The road corridor contains mountain mahogany, and piñon/juniper. These are not prime grazing locations for mule deer or elk as compared to other locations in the vicinity. Appendix B contains a list of wildlife species that may occur in the vicinity of the Proposed Action.

The area of the Proposed Action is located in sage grouse summer and nesting habitat, but no active leks have been found closer than a half mile from the site. (NDOW 2005 GIS data). The Proposed Action is also not likely to support pygmy rabbits due to the upper woodland type habitat and heavy invasion of rabbit brush. (BLM 2006).

Many non-game mammals and reptiles utilize the vegetative communities in the vicinity of the Proposed Action such as rabbits, squirrels, gophers, coyotes, foxes, raccoons, lizards, and snakes.

Mule deer (*Odocoileus hemionus*) are the principal big game species in the region. Seasonal movements occur between summer and winter ranges and are typically defined by available forage and water. The Proposed Action is located within a portion of crucial mule deer winter range designated by the NDOW. This winter range supports the largest deer herd in Nevada, which presently numbers about 30,000 deer throughout the Ruby Mountains. About 400 deer reside in the Buck and Bald area on a year-long basis. However, during winter months when snow accumulates in the Ruby Mountains to the north, the deer are forced to migrate to the south. As many as 20,000 to 24,000 deer may move through the vicinity of the Proposed

Action continuing south as far as Little Antelope Summit. The number of mule deer that move along these routes during the migration period typically depends on the severity of the weather and associated snow depth (FEIS 1995).

Mountain lion range occurs throughout the Ruby Mountains and coincides with mule deer range.

Both elk (*Cervus elaphus*) and pronghorn antelope (*Antilocapra Americana*) can be found in the vicinity of the Proposed Action. A pioneering herd of elk is known to move through the area around Little Bald Mountain Mine.

Bats are common in the areas of the Proposed Action; a list of bat species is presented in Appendix B. The crest of the Ruby Mountains also acts as a migration corridor for numerous bat species during the fall and spring migrations. The areas of the Proposed Action are part of the southern extension of this migration corridor (NDOW 2004).

A survey for hibernating bats was conducted by JBR on February 14, 2006. The full report is on file at the Ely Field Office, Bureau of Land Management. Ten bats were identified within the underground workings. Nine were identified as the small footed myotis (*Myotis ciliolabrum*) and one was identified as the long eared myotis (*Myotis evotis*).

A variety of birds occur within the habitats found in the vicinity of the Proposed Action. Information detailing migratory birds associated with the Proposed Action is provided in the *Bald Mountain Mine Expansion Project Final Environmental Impact Statement* (FEIS, 1995; pages 3-20 to 3-21).

Common resident species include the following: Chukar (*Alectoris graeca*), Hungarian partridge (*Perdix perdix*), mourning dove (*Zenaida macroura*), red-tailed hawk (*Buteo jamaicensis*), prairie falcon (*Falco mexicanus*), ferruginous hawks (*Buteo regalis*), merlin (*Falco columbarius*), American kestrel (*Falco sparverius*), northern harrier (*Circus cyaneus*), golden eagle (*Aquila chrysaetos*), turkey vulture (*Cathartes aura*), great-horned owl (*Bubo virginianus*), short-eared owl (*Asio flammeus*), Cooper's hawks (*Accipiter cooperii*), burrowing owl (*Athene cunicularia*).

Migratory birds are numerous and include species such as the mountain chickadee (*Poecile gambeli*), plain titmouse (*Parus inornatus*), northern flicker (*Colaptes auratus*), white-breasted nuthatch (*Sitta carolinensis*), mountain bluebird (*Sialia currucoides*), sage thrasher (*Oreoscoptes montanus*), sage sparrow (*Amphispiza bilineata*), western meadowlark (*Sturnella neglecta*), and brewer's sparrow (*Spizella breweri*).

The Ruby Lake National Wildlife Refuge is northeast of the Proposed Action. This refuge is an important waterfowl and shorebird nesting and migration area. Bird migration through the areas of the Proposed Action is extensive during the fall and spring of each year.

No fisheries occur in the areas of the Proposed Action.

### **3.2.11 Land Use and Access**

The Little Bald Mountain Mine Plan of Operations area is located in White Pine County and consists of about 203 acres of public lands administered by the BLM Ely Field Office. Information detailing land use and access in the vicinity of the Proposed Action is provided in the *Bald Mountain Mine Final Environmental Impact Statement* (FEIS, 1995; page 3-59).

Access to the general area from the east is via U.S. Highway 50 and the Ruby Marsh Road. Access from the west is via State Highway 892/228. Access to Little Bald Mountain Mine is from the Bourne Canyon Road.

The Bourne Canyon Road continues past the Project Area and connects with the Sage Flats road. This road segment, a two-track suitable for four-wheel drive vehicles, continues to the north and east of the existing Project Area.

### **3.2.12 Livestock/Grazing**

Information detailing livestock and grazing in the general area is provided in the *Bald Mountain Mine Final Environmental Impact Statement* (FEIS, 1995; page 3-59).

The proposed activities are located within the Warm Springs Allotment, which has one permittee. The allotment contains approximately 300,000 acres of public land and 7,000 acres of other lands. The Warm Springs Allotment is classified as an “I” category allotment or “improve” (BLM 1995).

### **3.2.13 Wild Horses**

The proposed project would be located entirely in the Buck and Bald Herd Management Area, which is about 838,700 acres. Information detailing the wild horses in the vicinity of the Proposed Action is provided in the *Bald Mountain Mine Final Environmental Impact Statement* (FEIS, 1995; pages 3-33 to 3-34).

The BLM established the Appropriate Management Level for wild horses at 423. A gather was conducted in July and August 2005, so the present estimated population is about 300 wild horses (BLM 2006).

### 3.2.14 Socioeconomics

White Pine County's economic base consist of primarily government services, mining, and tourism industries. Information detailing socioeconomics in the areas of the Proposed Action is provided in:

- the *Bald Mountain Mine Expansion Project Final Environmental Impact Statement* (BLM 1995; pages 3-44 to 3-48), and
- the *Bald Mountain Mine Exploration Program Programmatic Environmental Assessment* NV040-04-023, (Programmatic EA 2004, page 33).

The 2000 population of White Pine County was 9,181 with a median age of 37.7 years with a workforce of 3,321. About 3.8 percent of the workers over the age of 16 are unemployed. The median wage in White Pine County is \$36,688 per year. The annual payroll paid in White Pine County was \$45,479,000 of which \$10,142,000 came from the mining industry ([www.fedstats.gov](http://www.fedstats.gov)). Elko County had a total population of 45,291 in 2000 with a median age of 31.1 years and a median income of \$44,581 per year. Elko County has an annual payroll in 2000 of \$459,338,000 of which \$142,000,000 was related to mining activity (U.S. Census Bureau, 2001). Eureka County has a total population of 1,651 in 2000 with a median age of 38.3 years and a median income of \$41,417 per year. Eureka County had an annual payroll in 2000 of 126,248,000 of which 121,274,000 was related to mining activity (U.S. Census Bureau, 2001).

## 4 ENVIRONMENTAL CONSEQUENCES

### 4.1 INTRODUCTION

BMM has incorporated environmental protection measures into the PoO to reduce potential impacts to the environment. Proposed environmental protection and reclamation measures are presented in Section 2.1.2, Environmental Protection Measures. The following describes the impacts (direct, indirect, and residual) associated with the Proposed Action. Cumulative impacts are discussed at the end of the section.

#### 4.1.1 Air Resources

##### Proposed Action

Impacts to air quality associated with the Proposed Action would be the same types as those described in the *Bald Mountain Mine Final Environmental Impact Statement* (BLM 1995; pages 4-22 to 4-25).

Impacts would result from fugitive dust as well as gaseous pollutants such as nitrous oxides, carbon monoxide, and sulfur dioxide. Sources of fugitive dust would include clearing, earth moving, drilling and blasting, hauling, dumping, and wind erosion from stockpiles. Sources of gaseous pollutants would include equipment exhaust emissions including mobile equipment, generators, and light vehicles. BMM utilizes operating controls such as watering main roads and the use of surfactants to control fugitive dust, and preventive equipment maintenance to control vehicle emissions.

No impacts to air quality from underground activities are anticipated.

In general some impacts to air quality from road construction would occur, but the impacts would be transitory, limited in duration, and would end at the completion of exploration and reclamation activities. BMM would continue to use best management practices to control and minimize fugitive dust on the proposed haul road. Impacts from fugitive dust generated by traffic on the proposed haul road are expected to be minimal.

##### No Action Alternative

No additional impacts to air quality would occur under the No Action Alternative.

#### **4.1.2 Cultural Resources**

##### Proposed Action

Previous mining disturbances within the Little Bald Mountain Pit have modified the surface so intensively that the possibility of finding intact cultural resources is negligible. For reference, two inventories conducted on and immediately adjacent to the project area did not locate cultural resources. See reports 8111 (NV-040) 2003-1500N (*36 Proposed Drill Hole Pads and Associated Access Roads for Little Bald Mountain Expansion Project*) and 8111 (NV-040) 2003-1513N (*Eight Proposed Drill Hole Pads and Associated Access Roads for the Little Bald Mountain Expansion Project*). The proposed haul road has been surveyed using Class III protocol. Two archeological sites were encountered. The first site, a simple pile of cans, appears to represent a single dumping episode based on the proximity to a two-track road and the nature of the site. The second site exhibits prehistoric lithic scatter, a modern rock ring, and about 100 modern tin cans dating to the early 1980s. Erosion has also impacted this site (Kautz, 2006). The standard operating procedures presented in Appendix A and the guidelines set forth in the Programmatic Agreement, such as avoidance, are expected to prevent impacts to archaeological resources. If avoidance of historic properties is not possible, the BLM, BMM, and the Nevada State Historic Preservation Office shall follow the guidelines set forth in the Programmatic Agreement.

##### No Action Alternative

The No Action Alternative would also have 'no effect' on historic properties.

#### **4.1.3 Native American Religious Concerns**

##### Proposed Action

Impacts to Native American Religious Concerns associated with the Proposed Action would be the same types as those described in the *Bald Mountain Mine Final Environmental Impact Statement* (BLM 1995; page 4-22).

No additional impacts to Native American religious concerns are expected to occur for the underground mining because the Proposed Action would occur in a pre-existing open pit and would involve re-disturbing about 2.2 acres of reclaimed waste dump and 7.9 acres around a previously existing road. The Proposed Action was discussed during the tribal coordination meeting on May 18, 2006 to determine potential impacts to Native American religious concerns. No concerns were expressed during this meeting.

### No Action Alternative

There would be no additional impacts to Native American Religious Concerns as a result of the No Action Alternative.

#### **4.1.4 Invasive Non-native Species and Noxious Weeds**

##### Proposed Action

The proposed disturbance has the potential to create conditions favorable for the establishment of invasive, non-native weeds and other undesirable plants on the 2.2 acres of re-disturbed waste rock dump and 7.9 acres of improved, expanded road. The use of suitable interim and final seed mixes with only certified noxious weed-free seed, combined with implementation of prompt and appropriate revegetation techniques, would reduce the potential for invasive, non-native weed invasion. BMM would actively treat noxious weeds upon discovery, which would also prevent these weed species from spreading and dominating the site.

Due to increased ground disturbance, the likelihood of invasive weed encroachment would increase. BMM would follow best management practices as described in the proposed action and reproduced here in order to prevent the spread of invasive weeds in the areas of the Proposed Action. Best management practices are as follows:

- following the BLM standard operating procedures included as Appendix A;
- surveying the area prior to road construction;
- flagging areas of concern to prevent employees from driving through a stand of listed noxious weeds;
- training employees and contractors to identify noxious weeds;
- segregating growth media that may contain noxious weed seeds away from growth media not containing noxious weed seeds;
- seeding growth media stockpiles remaining over a growing season with an interim seed mix;
- using certified weed-free hay and straw;
- using a BLM-recommended seed mix to reduce invasive species over time by maintaining the current plant communities; and
- washing down construction equipment in accordance with BLM standard operating procedures to prevent the transfer of noxious and undesirable weed seed from other areas.

The reclamation bond would not be released until noxious weeds species are eradicated from the disturbed area.

The *Preliminary Risk Assessment for Noxious and Invasive Weeds* (Appendix C) indicated a low level of risk that noxious and invasive weeds would spread to the areas of Proposed Action.

#### No Action Alternative

There would be less potential for noxious and invasive weed impacts from the No Action Alternative.

### **4.1.5 Special Status Species (Including Federally Listed, Proposed, and Candidate Species, State Protected Species, and BLM Sensitive Plant and Animal Species)**

#### Proposed Action

Impacts to special status species associated with the vicinity of the Proposed Action would be of the same types as those described in the *Bald Mountain Mine Final Environmental Impact Statement* (BLM 1995; pages 4-18 to 4-19).

The small area of the Proposed Action is not suitable pygmy rabbit habitat. Mobile bats and birds may occasionally pass through the area of the Proposed Action. Habitat for these species is available outside of the areas of the Proposed Action.

Underground activities would be located within the existing mine disturbance. No threatened or endangered bat species were identified during the February 14, 2006 survey. Ongoing mapping and survey activities may have caused any bats to re-locate to a less active site. The portal would be closed immediately after operations cease. Underground workings from the open pit would be collapsed or blocked. The reclaimed pit would be just like other open pits in the area. Little or no bat habitat would remain.

#### No Action Alternative

There would be no potential for impacts to special status species.

### **4.1.6 Wastes (Solid, Hazardous) and Hazardous Materials**

#### Proposed Action

Impacts from the transport, storage, and use of hazardous materials associated with the Proposed Action would be the same types as those described in the *Bald Mountain Mine Final Environmental Impact Statement* (BLM 1995; pages 4-38 to 4-42).

BMM would handle solid and hazardous wastes and hazardous materials according to state and federal regulations. Spills of petroleum products, whether surface or underground, would be cleaned and reported according to state regulations. Solid waste would be disposed at the permitted landfill at Bald Mountain Mine.

#### No Action Alternative

No new impacts from wastes or hazardous materials would occur under the No Action Alternative.

### **4.1.7 Geology and Minerals**

#### Proposed Action

Underground mining at LBM would remove remaining economic gold reserves.

#### No Action Alternative

Potential gold reserves would not be mined under the No Action Alternative.

### **4.1.8 Soils**

#### Proposed Action

About 2.2 acres of previously disturbed waste rock dump and 7.9 acres of haul road would be disturbed. The waste rock dump was originally reclaimed in the early 1990s without the benefit of topsoil. Consequently, vegetative re-growth has been minimal over the years. Over time the top layer of waste rock material had weathered sufficiently to provide some characteristics of growth media as evidenced by a few hardy rabbit brush plants growing on the disturbance. This weathered rock would assist in the second round of reclamation. Rather than starting with a completely barren waste dump, the current surface would have partial characteristics of growth media, which would complement the additional growth media added.

Activities in the area of the Proposed Action would include vegetation clearing, grading, and salvage of any growth media. Available growth media on the proposed haul road would be salvaged and used for reclamation of the road at the end of the project.

Soil disturbances would impede maturation of soil development, degrade soil structure, and hinder soil biological activity. Additionally, exposed soils are susceptible to wind and water erosion. Although, disturbed soils may be slower to revegetate, BMM has a history of successful revegetation. Little Bald Mountain Mine is in a precipitation zone of 16 plus inches annually which greatly enhances vegetation success. BMM would use BMPs to control sedimentation; soil stockpiles would be revegetated to reduce wind and water erosion.

Underground activities would be located within the existing Little Bald Mountain Mine footprint, so no surface soil resources would be affected during mining.

Impacts to soil resources associated with general mining in the vicinity of the Proposed Action are described in the *Bald Mountain Mine Final Environmental Impact Statement* (BLM 1995; pages 4-1 to 4-4).

#### No Action Alternative

No other impacts to soils would occur under the No Action Alternative.

### **4.1.9 Vegetation**

#### Proposed Action

About 2.2 acres of reclaimed vegetation and 7.9 acres of previously undisturbed vegetation would be disturbed as a result of the Proposed Action. Reclaimed areas generally have different plant composition than the existing plant communities for a period of time. At Little Bald Mountain Mine, the current reclaimed plant community consists mainly of rabbit brush, while the natural climax community is dominated by mountain big sage. With improved and modern revegetation techniques, it is expected that the second reclamation of this area would show increased success as compared to the first reclamation. Over a very long period of time, (ten to 20 years or more) the vegetation may return to the pre-existing climax community dominated by mountain big sage with an understory of bluebunch wheatgrass and needle grass. Piñon, juniper, mixed shrubs, forbs and some other grasses are also likely to be a part of the final vegetation in the area. For the first few growing seasons, a temporary increase in annual weedy species would likely occur. However, these invasive species may eventually be replaced by more desired perennial communities.

Impacts to vegetation associated with general mining in the vicinity of the Proposed Action would be the same types as those described in the *Bald Mountain Mine Final Environmental Impact Statement* (BLM 1995; pages 4-4 to 4-7).

#### No Action Alternative

For the No Action Alternative, no new impacts to vegetation would occur. An improved vegetative condition of the waste rock area may occur more slowly under the no action alternative. The existing reclaimed waste dump would not receive additional growth media or seeding and would slowly colonize with vegetation over time; first with rabbit brush and then with the surrounding dominant vegetation including mountain big sage, piñon, juniper, mixed forbs, shrubs and grasses. This process could take decades to return to more native vegetation.

#### **4.1.10 Wildlife Including Migratory Birds**

##### Proposed Action

About 2.2 acres of reclaimed land and 7.9 acres of previously undisturbed ground would be temporarily removed as habitat and browse for wildlife at the underground mine area and haul road. In addition, the activity in and around the Project Area could displace wildlife during operations. The Bourne Canyon Spring is located far enough away that the Proposed Action should have no impact on wildlife use of this spring. The temporary loss of vegetation during operations is minimal and is likely not utilized much by deer or elk as compared to the reclaimed heap leach pad. This pad and the surrounding areas have much more desirable browse and habitat and are closer to a water source. At the end of operations, BMM would reclaim the waste rock dump and haul road with more modern techniques and to Bald Mountain Mine reclamation standards which would likely to be an improvement (within a few years) to the condition of these areas as compared to the No Action Alternative. If the Proposed Action succeeded in accelerating native vegetation establishment, the reclaimed areas could become desired habitat for sage grouse.

Underground activities would be located within the existing mine disturbance. Bats that may be present before or during the already authorized mapping and surveying activities would likely be foraging and could find more preferred areas for roosting by the time underground equipment is brought in. The portal would be closed immediately after operations cease. Underground workings from the open pit would be collapsed or blocked. Little or no bat habitat would remain. There would be some loss of bat habitat with the closing of the underground mine workings.

Habitat within areas of the Proposed Action has the potential to provide nesting habitat for migratory birds. To avoid potential impacts, BMM would not conduct land clearing during the avian breeding season (May 1 through July 15, annually), except under the direction of a qualified biologist. If active nests were located, or if other evidence of nesting was observed, a protective buffer around these nests would be delineated, and the area would be avoided to prevent destruction or disturbance of nests until the birds were no longer present. Implementation of such conditions would reduce potential impacts to species protected under the MBTA.

Indirect impacts would include possible wildlife avoidance of the areas of the Proposed Action due to increased human activities and noise.

##### No Action Alternative

No new impacts to wildlife would occur under the No Action Alternative. Under the no action alternative the underground workings would still be closed under the existing exploration

authorization. The loss of bat habitat would be the same for the no action alternative as it is for the proposed action. Types of impacts to wildlife associated with established mining features are described in the *Bald Mountain Mine Final Environmental Impact Statement* (BLM 1995).

#### **4.1.11 Land Use and Access**

##### Proposed Action

BMM employees who would work at Little Bald Mountain Mine would use Bald Mountain Mine as their base of operations and initial reporting location. Little Bald Mountain Mine would not support any administrative facilities. Access to Bald Mountain Mine would be on SR 892 (Strawberry Road) or SR 228 (Jiggs Road). Since BMM is using mass transit (buses) to transport their employees on regular shifts between Elko and/or Ely, no additional traffic would be expected on these roads as a result of the Proposed Action. Bourne Canyon Road was constructed and upgraded in 1985 and remains as a reasonable access road. This road would see increased use as a result of the Proposed Action, but no work other than minor maintenance would be planned for the road. During underground operations, blasting operations, and during reclamation, access up Bourne Canyon road may be limited in order to provide for public safety.

Impacts to land use and access associated with the general mining in the vicinity are further discussed in the *Bald Mountain Mine Final Environmental Impact Statement* (BLM 1995; pages 4-42 to 4-46).

##### No Action Alternative

Under the No Action Alternative, no change in road use or access to Little Bald Mountain Mine would occur.

#### **4.1.12 Livestock/Grazing**

##### Proposed Action

About 2.2 acres of reclaimed land and 7.9 acres of previously undisturbed land would be temporarily removed from potential grazing. At the end of operations, BMM would reclaim the waste rock dump and haul road with more modern techniques and BMM reclamation standards which would likely to be an improvement (within a few years) to the condition of these areas as compared to the No Action Alternative. Further general analysis of impacts to grazing due to mining in the general vicinity can be found in the *Bald Mountain Mine Final Environmental Impact Statement* (BLM 1995; pages 4-43 to 4-45).

### No Action Alternative

In the No Action Alternative, the waste rock dump would not be treated again for reclamation and would likely not support as much density or diversity of vegetation as would occur with the Proposed Action after reclamation and within a few years. Long term, such as 20 to 30 years out, it is expected that vegetation growth in these areas would likely be about the same regardless of whether the Proposed Action occurred.

### **4.1.13 Wild Horses**

#### Proposed Action

About 2.2 acres of reclaimed land and 7.9 acres of previously undisturbed land would be temporarily removed as habitat and browse. In addition, the activity in and around the pit could displace horses a short distance away. The Bourne Canyon Spring is located far enough away that the Proposed Action would have no impact on horse use. The temporary loss of vegetation during operations would be minimal and was not utilized much or at all by horses in the recent past. The reclaimed heap leach pad and surrounding areas have much more desirable browse and habitat and is closer to a water source. At the end of operations, BMM would reclaim the waste dump and access roads with more modern techniques and to BMM reclamation standards which would likely to be an improvement to the condition of these areas (within a few years) as compared to the No Action Alternative. Further general analysis of impacts to wild horses due to mining in the general vicinity can be found in the *Bald Mountain Mine Final Environmental Impact Statement* (BLM 1995; pages 4-19 to 4-20).

#### No Action Alternative

There would be no change in vegetation habitat under the no action alternative. The waste dump areas dominated by rabbit brush and bare ground would not be improved. In the long term, such as 20 to 30 years out, it is expected that vegetation growth would likely be about the same regardless of whether the Proposed Action occurred.

### **4.1.14 Socioeconomics**

#### Proposed Action

The Proposed Action would provide employment for up to an additional 10 contract miners for about two years. These contract employees would most likely live in Eureka, Elko or Ely, Nevada. The White Pine/Elko County payroll could increase. Transportation from Ely or Elko to Bald Mountain Mine would be provided by scheduled Placer Dome buses. No additional traffic is expected on SR 892 (Strawberry Road) or SR 228 (Jiggs Road) as a result of the

Proposed Action. Taxes paid by the BMM workforce would supplement both the county and state tax base for up to six years.

#### No Action Alternative

If the Proposed Action was not authorized, the 10 contract mine positions would not be realized. No other change in Socioeconomics would occur.

## **4.2 CUMULATIVE IMPACTS**

Cumulative impacts are analyzed in Appendix B, pages B-1 through B-129 of the *Bald Mountain Mine Expansion Environmental Impact Statement* (FEIS, 1995). An area of approximately 366,000 acres was analyzed. The FEIS cumulative impact assessment already considered the disturbance of the Proposed Action which was in place at the time of analysis. Updated cumulative impacts for the area of analysis are adequately addressed in the 2004 *Bald Mountain Mine Programmatic Environmental Assessment*. The 2.2 acres of re-disturbance and 7.9 acres of improved, expanded road would not change the analysis of cumulative impacts. Therefore, no further cumulative analysis is needed.

## **5 PROPOSED MITIGATION MEASURES**

No additional mitigation is proposed as a result of the impact analysis.

## **6 MONITORING**

Appropriate monitoring has been included in the Environmental Protection Measures individual permit compliance requirements. No additional monitoring is proposed as a result of the impact analysis.

## 7 CONSULTATION AND COORDINATION

The scope of this EA was developed through consultation with BLM resource specialists (meetings and subsequent conversations); consultation with other local, state, and federal agency resource personnel; review of company and agency files; field reconnaissance; and review of supporting documentation. Letters were sent to interested public on May 16, 2006.

### List of Preparers:

#### U.S. Bureau of Land Management - Ely Field Office

Lynn Bjorklund	Project Lead, Plan Review, Reclamation, Minerals
Nate Thomas	Cultural Resources
Elvis Wall	Native American Religious Concerns
Gary Medlyn	Soil, Water,
Jake Rajala	NEPA Coordination
Chris Meyer	Livestock Grazing, Vegetation, Invasive, Non-native Species
Jared Bybee	Wild Horses
Paul Podborny	Wildlife, Riparian/Wetlands, Migratory Birds, Special Status Species
Craig Hoover	Weeds, noxious and invasive
Bruce Winslow	Recreation

#### SRK Consulting

Val Sawyer	Principal Consultant
Gary Back	Principal Ecologist

### 7.1 PERSONS, GROUPS, OR AGENCIES CONSULTED

#### *Other Reviewers*

The following persons, groups, and agencies were contacted during the preparation of this document.

#### **Bald Mountain Mine**

Kirk Nicholes, Environmental Coordinator  
Matt Zietlow, Environmental Manager

#### **Barrick Gold of North America**

Steve Schoen, Manager of Permitting - Nevada

**Nevada Department of Wildlife**

Rory Lamp, Biologist III

Jason A. Williams – Non-Game Wildlife Biologist

**7.2 PUBLIC NOTICE AND AVAILABILITY**

Public information letters were sent to interested persons and organizations on the Ely Field Office mailing list on May 16, 2006.

**7.3 NATIVE AMERICAN CONSULTATION**

BLM conducted a coordination meeting with Native American representatives of the Ely Shoshone Tribe on May 18, 2006. No concerns were identified at this meeting. Public notification was provided to other tribes such as the Battle Mountain, Goshute, and Duckwater tribes with the May 16, 2006 public notice letter. No comments, concerns, or requests to review the EA have since been received from these tribes.

## 8 REFERENCES

- Bureau of Land Management (BLM). 1990. Instruction Memorandum No. NV-90-435, *Cumulative Impact Analysis*. U.S. Department of the Interior, Bureau of Land Management, Nevada State Office. September 27, 1990.
- \_\_\_\_\_. 1994. *General Procedural Guidance For Native American Consultation BLM Manual Handbook H-8160-1*. U.S. Department of the Interior, Bureau of Land Management. November 3, 1994.
- \_\_\_\_\_. 1995. *Bald Mountain Mine Expansion Project Final Environmental Impact Statement* U.S. Department of the Interior, Bureau of Land Management. September 1995.
- \_\_\_\_\_. 2003. Ely District Wild Horse Herd Management Areas. Memorandum regarding wild horse populations in the Ely Field Office. U.S. Department of the Interior, Bureau of Land Management. July 1, 2003.
- \_\_\_\_\_. 2006. *Little Bald Mountain Mine Underground Exploration and Pit Reclamation*, U.S. Department of the Interior, Bureau of Land Management. January 2006.
- JBR Environmental Consultants, Inc. "Placer Dome Bald Mountain Mine Bat Survey, White Pine County, Nevada", February 22, 2006.
- Kautz Environmental Consultants, Inc. 2004a. *An Historic Context of the Bald Mountain Mining District*, White Pine County, Nevada. July, 2004
- \_\_\_\_\_. 2006. Letter from Robert Kautz to Nate Thomas regarding Class III archeological survey preliminary report. May 19, 2006.
- USDA-NRCS. *Western White Pine County Soils*. U.S. Department of Agriculture, Natural Resources Conservation Service, 1998.
- U.S. Census Bureau. 2003. *Nevada 2001 County Business Patterns*, U.S. Department of Commerce, U.S. Census Bureau, April 2001.

## **Appendix A**

---

# **BLM Standard Operating Procedures**

**STANDARD OPERATING PROCEDURES (SOPs)**  
**FOR LITTLE BALD MOUNTAIN MINE UNDERGROUND MINING PLAN**

1. Any change or amendment to your minerals operation must be brought to the attention of the Ely Field Office Manager or an authorized officer prior to implementation of the change on the ground.
2. Cultural resource inventories would be conducted on all proposed areas of potential surface disturbing impacts, including appropriate buffer zones, prior to authorization of the mineral operations. Inventories would be completed by BLM or BLM-approved cultural resource permit holders.
3. A noxious weed survey would be completed prior to any earth disturbing activity including cross-country travel. Noxious or invasive weeds that may be located on the site would be managed according to methods to be approved by the Authorized Officer. Should chemical methods be approved, the lessee must submit a Pesticide Use Proposal to the Authorized Officer 60 days prior to the planned application date. A Pesticide Application Report must be submitted to the Authorized Officer by the end of each fiscal year following chemical application.
4. Existing access must be used whenever possible. Off-road vehicular travel shall be held to an absolute minimum necessary to complete operations. Additional roads, if needed, would be kept to an absolute minimum and the location of routes must be approved by the Authorized Officer prior to construction.
5. All survey monuments, claim markers, witness corners, reference monuments, bearing trees, etc., must be protected against destruction, obliteration or damage. When operations are concluded, the operator would remove all survey markers, stakes, flagging, etc., for which the operator has no further need.
6. Removal or alteration of existing improvements (fences, cattle guards, etc.) is not allowed without prior approval of the Authorized Officer. Existing improvements would be maintained in a serviceable and safe condition. Upon completion of operations, any authorized facility alterations would be restored to the specifications of the authorized officer.
7. All vegetative clearing would be held to the minimum necessary to accommodate the planned operation.
8. No blasting would be permitted if it would be detrimental to the significant characteristics of archeological or historical values, recreation areas, known caves, water wells, or springs.

9. During periods of adverse conditions affecting soil moisture caused by climatic factors such as thawing, heavy rains, snow, flooding, or drought, all activities off existing maintained roads that create excessive surface rutting may be suspended. When adverse conditions exist, the operator would contact the Authorized Officer for an evaluation and decision based on soil types, soil moisture, slope, vegetation, and cover.
10. All trash, garbage, debris, and foreign matter must be removed and properly disposed. Site must be maintained and left in a clean and safe condition. Burning would not be allowed at the site.
11. No oil or lubricants would be drained onto the ground surface. Any spills under 25 gallons would be immediately cleaned up; spills over 25 gallons would be reported to the Authorized Officer and NDEP.
12. All construction, operation, and maintenance activities would comply with all applicable Federal, State, and local laws and regulations regarding the use of hazardous substances and the protection of air and water quality.
13. The operator would work with the Authorized Officer on the containment of drilling fluids and drill hole cuttings. Mud, separation pits, and other containments used for the storage of any hazardous materials would be adequately fenced, posted, and/or covered.
14. Powder magazines would be located at least 0.25-mile from traveled roads. Loaded shot holes and charges would be attended at all times. Use of explosives would be according to applicable Federal and State regulations.
15. The operator would make every effort to prevent, control, or suppress any fire in the operating area. The operator may be required to have fire-fighting equipment available on-site while operations are in progress, depending on hazards inherent in the type of operation and fire hazard levels. Reports of uncontrolled fires would be relayed immediately to the Ely Field Office Manager or Authorized Officer. The BLM Fire Dispatch telephone number is (775) 289-1925 or 1-800-633-6092. After working hours call 911 or the White Pine County Sheriff's office at (775) 289-8801, the Lincoln County Sheriff's Office at (775) 962-5151, or the Nye county Sheriff's Office at (775) 482-8101.
16. Lands containing unstable/highly erodible soils may require additional protective measures such as restrictions on surface entry during periods of excessive runoff, avoidance of selected areas, and special reclamation techniques.
17. All decisions issued by the Ely Field Office would have a Needs Assessment completed in accordance with the Nevada BLM and SHPO Protocol.

18. Documentation (photos, drawings, etc.) would be collected on all sites eligible for the National Register of Historic Places. This would allow tracking of human and natural caused deterioration.
19. If cultural resources (historic or archaeological materials) are discovered during construction, the operator is to immediately stop work, protect such materials, and contact the Authorized Officer. Within five working days, the Authorized Officer would inform the operator as to:
  - The appropriate treatment measures the operator would likely have to undertake before the site can be used (assuming in situ preservation is not feasible);
  - A timeframe for the Authorized Officer to complete an expedited review and necessary consultation;
  - The operator's responsibility for treatment costs; and
  - Technical and procedural guidelines for the conduct of the treatment. Upon verification from the Authorized Officer that the required treatment has been completed, the operator would then be allowed to resume construction.
20. All identified cultural resources would be avoided by project-related activities per the Nevada BLM standards for cultural resources. If avoidance is not feasible, mineral activities must cease until mitigating measures or treatments are developed and implemented and Section 106 consultation is completed. Archaeological monitors may be required in special cases.
21. The operator is responsible for informing all persons associated with the project that knowingly disturbing cultural resources (historic or archaeological) or collecting artifacts is illegal.
22. During winter operations, requirements for cultural resource inventories may be waived by the Authorized Officer if the unsurveyed areas are located on bare and frozen ground or are completely covered (100%) by snow and the snow is sufficiently deep (approximately 4 to 6 inches) to prevent ground disturbing ruts. Should conditions change while operations are in progress, additional considerations may be necessary. The operator must contact the authorized officer to determine if an archaeological monitor or an inventory may be required prior to continuance of mineral activities.
23. Any activity planned within the viewshed of the Pony Express National Historic Trail or other National Landscape Conservation System (NLCS) properties, listed National Register Districts, or properties eligible under criterion A, must undergo a visual assessment. Appropriate mitigation of visual impacts would be implemented as necessary to keep the setting of the management corridor in as natural a condition as possible. Special reclamation measures may be required to restore the setting to its natural condition.
24. Under no circumstances would wild horses, burros, wildlife, or livestock be willfully harassed. When traveling roads, all livestock gates would be closed after use.

25. To protect wildlife and wild horses, perimeter fences would be flagged every 16 feet with white flagging. The flagging should be at least one inch wide and with at least twelve inches hanging free from the top wire of the fence. Fences would also avoid obvious horse migration routes (deep trails, stud piles) if at all possible.
26. If the project involves heavy or sustained traffic, road signs for safety and protection of wild horses and wildlife would be required.
27. Any new disturbance commencing between May 15 and July 31 must first be surveyed for nesting migratory birds. If nests are found, the project may be moved or delayed until July 31.
28. Any identified bald eagle roost sites, peregrine falcon hawk sites, and occupied raptor aeries (nests) would be avoided during mineral operations. A 0.5-mile buffer zone would be imposed on all activities around occupied nests.
29. Actions which would adversely impact a special status species (including federally listed, proposed, and candidate species, state protected species, and BLM sensitive species or its habitat, would be modified in order to prevent possible future listing of these species as threatened or endangered. The following restrictions apply to the following species:
  - Sage Grouse. No surface disturbance would be allowed within an active sage grouse lek. No surface use would be allowed within ½ mile of an active sage grouse lek from midnight until 10 a.m. during the period March 15 through May 31.
  - Ferruginous Hawk. Ferruginous Hawk nest sites would not be disturbed. No surface use would be allowed within ½ mile of an occupied Ferruginous Hawk nest during the period March 1 through June 30 or until the birds have fledged (left) the nest.
  - Mule Deer Habitat SOP within the Ely District, there are identified mule deer key habitats. (Key Habitats include habitats such as crucial habitats. These habitats are essential to populations of big game. If elements of these habitats are compromised, the results could be detrimental to the population.) Therefore, prior to entry onto the land, the operator would discuss the proposed activity with the appropriate Bureau of Land Management's authorized officer. Additional measures may be required for the protection of the deer and their habitat which may include:
    - Limitation on surface use during the period of crucial deer use.
    - Minimizing disturbance to habitat and forage.
    - Pygmy Rabbit SOP - within the Ely District, there are favorable habitats selected by pygmy rabbits as burrowing areas. Therefore, prior to entry into these areas the operator would discuss the Proposed Action with the Bureau of Land Managements authorized officer who may require additional measures for the protection of pygmy rabbits and their habitats. Such measures may include:
      - a. Avoidance of selected areas
      - b. Restriction of activities near burrows during the months of April through June.
30. To eliminate the transport of vehicle-borne weed seeds, roots, or rhizomes, all vehicles and heavy equipment used for the completion, maintenance, inspection, or monitoring of ground disturbing activities; for emergency fire suppression; or for authorized off-road driving would

be free of soil and debris capable of transporting weed propagules. All such vehicles and equipment would be cleaned with power or high pressure equipment prior to entering or leaving the work site or project area. Vehicles used for emergency fire suppression would be cleaned as a part of check-in and demobilization procedures. Cleaning efforts would concentrate on tracks, feet or tires, and on the undercarriage. Special emphasis would be applied to axles, frames, cross members, motor mounts, on and underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs would be swept out and refuse would be disposed of in waste receptacles. Cleaning sites would be recorded using GPS or other mutually acceptable equipment and provided to the BLM Weed Coordinator or designated contact person.

31. Prior to the entry of vehicles and equipment to a project area, areas of concern would be identified and flagged in the field by a weed scientist or qualified biologist. The flagging would alert personnel or participants to avoid areas of concern.
32. Prior to entering public lands, the Contractor, Operator, or permit holder would provide information and training regarding noxious weed management and identification to all personnel who would be affiliated with the implementation and maintenance phases of the project. The importance of preventing the spread of weeds to uninfested areas and the importance of controlling existing populations of weeds would be explained.
33. To eliminate the transport of soil-borne noxious weed seeds, roots, or rhizomes, infested soils or materials would not be moved and redistributed on weed-free or relatively weed-free areas. In areas where infestations are identified or noted and infested soils, rock, or overburden must be moved, these materials would be salvaged and stockpiled adjacent to the area from which they were stripped. Appropriate measures would be taken to minimize wind and water erosion of these stockpiles. During reclamation, the materials would be returned to the area from which they were stripped.
34. Prior to project approval, a site-specific weed survey would occur and a Weed Risk Assessment would be completed. Monitoring would be conducted for a period no shorter than the life of the permit or until bond release and monitoring reports would be provided to the BLM. If the spread of noxious weeds is noted, appropriate weed control procedures would be determined in consultation with BLM personnel and would be in compliance with the appropriate BLM Handbook sections and applicable laws and regulations. All weed control efforts on BLM lands would be in compliance with BLM Handbook H-9011, H-9011-1 Chemical Pest Control, H-9014 Use of Biological Control Agents of Pests on Public Lands, and H-9015 Integrated Pest Management. Submission of Pesticide Use Proposals (PUPs) and Pesticide Application Records (PARs) would be required.
35. All vehicles and heavy equipment used for the completion, maintenance, inspection, or monitoring of ground disturbing activities; for emergency fire suppression; or for authorized off-road driving that are used to drive through, mow, harvest, scrape, or otherwise contact plant species listed on the Nevada Noxious Weed list or specifically identified by the Ely Field Office would be cleaned prior to continued use in weed free areas. Cleaning requirements are described in SOP# 1.2.5.4.

36. For mineral activity, retain bonds for weed control until the site is returned to desired vegetative conditions.
37. To provide for effective rehabilitation of the disturbed area, all available growth medium, as practical, would be removed and stockpiled. Any trees removed would be separated from soils and stockpiled separately.
38. Topsoil stockpiles and road berms, if scheduled to be left in place over the growing season, would be seeded with an approved site-specific interim seed mix to reduce erosion, preserve the biological flora and fauna, and prevent the establishment of noxious weeds and other undesirable plant species.
39. The operator shall reclaim the disturbed area concurrently or at the earliest feasible time by recontouring to conform with pre-existing topography (including filling of trenches), to the extent possible, followed by redistribution of stockpiled topsoil over the reclaimed area. Compacted areas would be ripped to a depth of 12 inches unless in solid rock. Ripped areas may need further work to break up large clods and produce a fine-grained seed bed.
40. Site preparation for reclamation may include contour furrowing, terracing, reduction of steep cut and fill slopes, and the installation of water bars, etc.
41. Reseeding may be required, in which case a site-specific seed mixture would be recommended by the operator and approved by the Authorized Officer. Seeding is recommended only between October 1 and March 15 for the northern part of the District, and November 1 through March 1 for the southern part of the District.
42. Reclamation would normally be accomplished with native seeds only. These would be representative of the indigenous species present in the adjacent habitat. Rationale for potential seeding with selected non-natives must be documented. Possible exceptions could include use of non-natives for a temporary cover crop to out-complete weeds. Where large acreages are burned by the fires and seeding is required for erosion control, all native species can be cost prohibitive and/or unavailable. In all cases, seed mixes would be approved by the Authorized Officer prior to planting.
43. All interim and final seed mixes, hay, straw, and hay/straw products must be tested for noxious weeds and certified free of plant species listed on the Nevada Noxious Weed list.
44. All drill holes must be plugged per Nevada State statute (Division of Water Resources "Regulations for Water Well and Related Drilling") as warranted. If artesian flow is encountered, the drill hole must be plugged immediately. The location, depth, and relative flow rate of any water intercepted shall be reported to the Ely Field Office Manager or the

Authorized Officer. Drill cuttings would be returned to the hole if possible or at a minimum, raked and spread out so as not to impede regrowth of vegetation or to create erosion problems.

45. The Ely Field Office Manager or the Authorized Officer would be notified within 5 days of completion of reclamation work so that timely compliance inspections can be completed.
46. The area is considered to be satisfactorily reclaimed when all disturbed areas have been recontoured to blend with the natural topography, erosion has been stabilized, and an acceptable vegetative cover has been established. The Nevada Guidelines for Successful Revegetation for the Nevada Division of Environmental Protection, the Bureau of Land Management, and the U.S.D.A Forest Service (or most current revision or replacement of this document) would be used to determine if revegetation is successful.
47. In areas of known noxious weed infestations, monitoring of noxious weeds would be conducted on an annual basis. Monitoring would be conducted until project release. If the spread of noxious weeds is noted, the infested areas would be further evaluated to determine the appropriate remedial action and appropriate treatment. Appropriate weed control procedures, including target species, timing of control, and method of control, would be determined in consultation with BLM personnel.
48. No noxious weeds would be allowed on the site for reclamation release. Any noxious weeds that become established would be controlled.
49. Hibernating bats would not be touched during the period of their hibernation.

## **Appendix B**

---

### **Wildlife Species List**

**Nevada Division of Wildlife (Eastern Region)**  
**Wildlife Species List - South Ruby Allotment (Unit 104)**

**Birds**

**Order: Podicipediformes**

**Family: Podicipedidae (Grebes)**

Pied-billed Grebe *Podilymbus podiceps*

**Order: Ciconiiformes**

**Family: Ardeidae (Bitterns, Herons, Egrets)**

Great Blue Heron *Ardea herodias*

**Family: Threskiornithidae (Ibises)**

White-faced Ibis *Plegadis Chihi*

**Family: Cathartidae (New World Vultures)**

Turkey Vulture *Cathartes aura*

**Order: Anseriformes**

**Family: Anatidae (Ducks, Geese, Swans)**

Greater White-fronted Goose *Anser albifrons*  
 Snow Goose *Chen Caerulescens*  
 Canada Goose *Branta Canadensis*  
 Trumpeter Swan *Cygnus buccinator*  
 Tundra Swan *Cygnus columbianus*  
 Gadwall *Anus strepera*  
 American Widgeon *Anus americana*  
 Mallard *Anus platyrhynchos*  
 Cinnamon Teal *Anus cyanoptera*  
 Blue-winged Teal *Anus discors*  
 Northern Shoveler *Anus clypeata*  
 Northern Pintail *Anus acuta*  
 Green-winged Teal *Anbus crecca*  
 Canvasback *Aythya valisinarica*  
 Redhead *Aythya americana*  
 Ring-necked Duck *Aythya collaris*  
 Lesser Scaup *Aythya affinis*  
 Bufflehead *Bucephala albeola*  
 Common Goldeneye *Bucephala clangula*  
 Barrow's Goldeneye *Bucephala islandica*  
 Hooded Merganser *Lophodytes cucullatus*  
 Common Merganser *Mergus merganser*  
 Red-breasted Merganser *Mergus serrator*  
 Ruddy Duck *Oxyura jamaicensis*

**Order: Falconiformes**

**Family: Accipitridae (Hawks, Eagles, Osprey)**

Bald Eagle *Haliaetus leucocephalus*  
 Northern Harrier *Circus cyaneus*

Swainson's Hawk *Buteo swainsoni*  
 Red-tailed Hawk *Buteo jamaicensis*  
 Ferruginous Hawk *Buteo regalis*  
 Rough-legged Hawk *Buteo lagopus*  
 Golden Eagle *Aquila chrysaetos*

**Family: Falconidae (Falcons)**

American Kestrel *Falco sparverius*  
 Merlin *Falco columbarius*  
 American Peregrine Falcon *Falco peregrinus*  
 Prairie Falcon *Falco mexicanus*

**Order: Galliformes**

**Family: Phasianidae (Grouse, Partridge)**

Chukar *Alectoris chukar*  
 Gray Partridge *Perdix perdix*  
 Sage Grouse *Centrocercus urophasianus*

**Order: Gruiformes**

**Family: Rallidae (Rails, Coots)**

Sora *Porzana carolina*  
 American Coot *Fulica americana*

**Family: Gruidae3 (Cranes)**

Greater Sandhill Crane *Grus canadensis tabida*

**Order: Charadriiformes**

**Family: Charadriidae (Plovers)**

Snowy Plover *Charadrius alexandrinus*  
 Killdeer *Charadrius vociferus*

**Family: Recurvirostridae (Avocets)**

Black-necked Stilt *Himantopus mexicanus*  
 American Avocet *Recurvirostra americana*

**Family: Scolopecidae (Sandpipers, Phalaropes)**

Greater Yellowlegs *Tringa melanoleuca*  
 Lesser yellowlegs *Tringa flavipes*

Willet	<i>Catoptrophorus semipalmatus</i>
Long-billed Curlew	<i>Numenius americanus</i>
Western Sandpiper	<i>Calidris mauri</i>
Least Sandpiper	<i>Calidris minutilla</i>
Common Snipe	<i>Gallinago gallinago</i>

**Family: Emberizidae  
(Sparrows, Towhees, Juncos)**

Green-tailed Towhee	<i>Pipilo chlorurus</i>
Spotted Towhee	<i>Pipilo maculatus</i>
American Tree Sparrow	<i>Spizella arborea</i>
Chipping Sparrow	<i>Spizella passerina</i>
Brewer's Sparrow	<i>Spizella breweri</i>
Vesper Sparrow	<i>Pooecetes gramineus</i>
Lark Sparrow	<i>Chondestes grammacus</i>
Black-throated Sparrow	<i>Amphispiza bilineata</i>
Sage Sparrow	<i>Amphispiza belli</i>
Savannah Sparrow	<i>Passerculus sandwichensis</i>
Fox Sparrow	<i>Passerella iliaca schistacea</i>
Song Sparrow	<i>Melospiza melodia</i>
Lincoln's Sparrow	<i>Melospiza lincolni</i>
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>
Dark-eyed Junco (Oregon)	<i>Junco hyemalis therburi</i>
Dark-eyed Junco (Gray-headed)	<i>Junco hyemalis caniceps</i>

**Family: Cardinalidae (Grosbeaks, Buntings)**

Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>
Lazuli Bunting	<i>Passeria amoena</i>

**Family: Icteridae (Blackbirds, Orioles)**

Red-winged Blackbird	<i>Agelaius phoeniceus</i>
Western Meadowlark	<i>Sturnella neglecta</i>
	<i>Xanthocephalus</i>
Yellow-headed Blackbird	<i>xanthocephalus</i>
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>
Great-tailed Grackle	<i>Quiscalus mexicanus</i>
Brown-headed Cowbird	<i>Molothrus ater</i>
Bullock's Oriole	<i>Icterus bullockii</i>
Scott's Oriole	<i>Icterus parisorum</i>

**Family: Fringillidae (Finches, Grosbeaks)**

Gray-crowned Rosy Finch	<i>Leucosticte tephrocotis</i>
Black Rosy Finch	<i>Leucosticte atrata</i>
Cassin's Finch	<i>Carpodacus cassinii</i>
House Finch	<i>Carpodacus mexicanus</i>

**Family: Passeridae (Old World Sparrows)**

House Sparrows	<i>Passer domesticus</i>
----------------	--------------------------

**Mammals**

**Order: Insectivora (Insect-Eaters)**

**Family: Soricidae (Shrews)**

Merriam's Shrew	<i>Sorex meriammi</i>
Dusky Shrew	<i>Sorex monticolus</i>
Vagrant Shrew	<i>Sorex vagrans</i>
Water Shrew	<i>Sorex palustris</i>
Preble's Shrew	<i>Sorex preblei</i>

**Order: Chiroptera (Bats)**

**Family: Vespertilionidae (Plainnose Bats)**

California Myotis	<i>Myotis californicus</i>
Small-footed Myotis	<i>Myotis ciliolabrum</i>
Long-eared Myotis	<i>Myotis evotis</i>
Little Brown Bat	<i>Myotis lucifugus</i>
Long-leeged Myotis	<i>Myotis volans</i>
Hoary Bat	<i>Lasiurus cinereus</i>
Silver-haired Bat	<i>Lasionycteris noctivagans</i>
Western Pipistrelle	<i>Pipistrellus hesperus</i>
Big Brown Bat	<i>Eptesicus fuscus</i>
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>
Spotted Bat	<i>Euderma maculata</i>
Pallid Bat	<i>Antrozous pallidus</i>

**Family: Molossidae (Freetail Bats)**

Brazilian Free-tailed Bat	<i>Tadarida brasiliensis</i>
---------------------------	------------------------------

**Order: Lagomorpha (Hares, Pikas, Rabbits)**

**Family: Leporidae (Hares and Rabbits)**

Pygmy Rabbit	<i>Brachylagus idahoensis</i>
Mountain Cottontail	<i>Sylvilagus nuttallii</i>
Black-tailed Jackrabbit	<i>Lepus californicus</i>

**Order: Rodentia (Rodents)**

**Family: Sciuridae (Squirrels)**

Least Chipmunk	<i>Tamias minimus</i>
Cliff Chipmunk	<i>Tamias dorsalis</i>
Whitetail Antelope Squirrel	<i>Ammospermophilus leucurus</i>
Townsend Ground Squirrel	<i>Spermophilus townsendii</i>
Belding Ground Squirrel	<i>Spermophilus beldingi</i>

**Family: Geomyidae (Gophers)**

Botta's Pocket Gopher	<i>Thomomys Bottae</i>
Northern Pocket Gopher	<i>Thomomys talpoides</i>
Southern Pocket Gopher	

**Family: Heteromyidae (Kangaroo Rodents)**

Little Pocket Mouse	<i>Perognathus longimembris</i>
Great Basin Pocket Mouse	<i>Perognathus parvus</i>
Dark Kangaroo Mouse	<i>Microdipodops megacephalus</i>
Ord Kangaroo Rat	<i>Dipodomys ordii</i>
Chisel-toothed Kangaroo Rat	<i>Dipodomys microps</i>

**Family: Cricetidae (Mice, Rats, Voles)**

Western Harvest Mouse	<i>Reithrodontomys megalotis</i>
Canyon Mouse	<i>Peromyscus crinitus</i>
Deer Mouse	<i>Peromyscus maniculatus</i>
Pinion Mouse	<i>Peromyscus truei</i>
Northern Grasshopper Mouse	<i>Onychomys leucogaster</i>
Desert Woodrat	<i>Neotoma lepida</i>
Mountain Vole	<i>Microtus montanus</i>
Long-tailed Vole	<i>Microtus longicaudus</i>
Sagebrush Vole	<i>Lemmiscus curtatus</i>
Muskrat	<i>Ondatra zibethica</i>

**Family: Zapodidae (Jumping Mice)**

Western Jumping Mouse	<i>Zapus princeps</i>
-----------------------	-----------------------

**Family: Erethizontidae (New World Porcupines)**

Porcupine	<i>Erethizon dorsatum</i>
-----------	---------------------------

**Order: Carnivora (Flesh-Eaters)****Family: Canidae (Dogs, Wolves, Foxes)**

Coyote	<i>Canis lupus (locally extirpated)</i>
Gray Wolf	<i>Crotalus viridis lutosus</i>
Red Fox	<i>Vulpes vulva</i>
Kit Fox	<i>Vulpes macrotis</i>

**Family: Procyonidae (Raccoons and Their Kin)**

Raccoon	<i>Procyon lotor</i>
---------	----------------------

**Reptiles****Order Squamata (Lizards, Snakes)****Family: Iguanidae (Iguanas and Their Kin)**

Long-nosed Leopard Lizard	<i>Gambelia wislizenii</i>
Desert Spiny Lizard	<i>Sceloporus magister</i>
Western Fence Lizard	<i>Sceloporus occidentalis</i>
Sagebrush Lizard	<i>Sceloporus graciosus</i>
Side-blotched Lizard	<i>Uta stansburiana</i>
Desert Horned Lizard	<i>Phrynosoma platyrhinos</i>

**Family: Scincidae (Skinks)**

Western Skink	<i>Eumeces skiltonianus</i>
---------------	-----------------------------

**Family: Teiidae (Whiptails)**

Western Whiptail	<i>Cnemidophorus tigris</i>
------------------	-----------------------------

**Family: Colubridae (Colubrid Snakes)**

Ringneck Snake	<i>Diadophis punctatus</i>
Racer	<i>Coluber constrictor</i>
Striped Whipsnake	<i>Masticophis taeniatus</i>
Gopher Snake	<i>Pituophis melanoleucus</i>
Long-nosed Snake	<i>Rhinocheilus lecontei</i>
Western Terrestrial Garter	<i>Thamnophis elegans</i>
Ground Snake	<i>Sonora semiannulata</i>
Night Snake	<i>Hypsiglena torquata</i>

**Family: Viperidae (Vipers)**

Great Basin Rattlesnake	<i>Canis latrans</i>
-------------------------	----------------------

**Amphibians**

**Family: Mustelidae (Weasels and Their Kin)**

Short-tailed Weasel	<i>Mustela erminea</i>
Long-tailed Weasel	<i>Mustela frenata</i>
Badger	<i>Taxidea taxus</i>
Striped Skunk	<i>Mephitis mephitis</i>
Spotted Skunk	<i>Spilogale putorius</i>

**Family: Felidae (Cats)**

Mountain Lion	<i>Felix concolor</i>
Bobcat	<i>Lynx rufus</i>

**Order: Artiodactyla (Hoofed Mammals)**

**Family: Cervidae (Deer)**

Rocky Mountain Elk	<i>Cervus canadensis</i>
Mule Deer	<i>Odocoileus hemionus</i>

**Family: Antilocapridae (Pronghorn)**

Pronghorn	<i>Antilocapra americana</i>
-----------	------------------------------

**Family: Laridae (Gulls, Terns)**

Franklin's Gull	<i>Larus pipixcan</i>
Ring-billed Gull	<i>Larus delawarensis</i>
California gull	<i>Larus californicus</i>
Caspian Tern	<i>Sterna Caspia</i>
Forster's Tern	<i>Sterna forsteri</i>

**Order: Columbiformes**

**Family: columbidae (Doves)**

Rock Dove	<i>Columba livia</i>
Mourning Dove	<i>Zenaida macroura</i>

**Order: Strigiformes**

**Family: Tytonidae (Barn Owls)**

Barn Owl	<i>Tyto alba</i>
----------	------------------

**Family: Strigidae (Owls)**

Western Screech-Owl	<i>Otus kennicottii</i>
Great Horned Owl	<i>Bubo virginianus</i>
Burrowing Owl	<i>Athene cunicularia</i>
Short-eared Owl	<i>Asio flammeus</i>

**Family: Pelobatidae (Spadefoots)**

Great Basin Spadefoot Toad	<i>Scaphiopus intermontanus</i>
----------------------------	---------------------------------

**Family: Ranidae (True Frogs)**

Spotted Frog
Bullfrog

Updated: 1/2002- Peter V. Bradley - Nevada Division of Wildlife - Elko

Note: This list is a combination of wildlife sight record data and our best effort to predict what wildlife would exist in this area in all seasons and in optimum habitat conditions.

**Family: Corvidae (Jays)**

Western Scrub-Jay	<i>Aphelocoma californica</i>
	<i>Gymnorhinus cyanocephalus</i>
Pinyon Jay	
Black-billed Magpie	<i>Pica pica</i>
American Crow	<i>Corvus brachyrhynchos</i>
Common Raven	<i>Corvus corax</i>

**Family Aluididae (Larks)**

Horned Lark	<i>Eremophila alpestris</i>
-------------	-----------------------------

**Family: Hirundinidae (Swallows)**

Tree Swallow	<i>Tachycineta bicolor</i>
Violet-green Swallow	<i>Tachycineta thalassina</i>
N. Rough Winged Swallow	
Barn Swallow	<i>Hirundo rustica</i>

**Family: Paridae (Chickadees, Titmice)**

Mountain Chickadee	<i>Poecile gambeli</i>
Juniper Titmouse	<i>Baeolophus griseus</i>

**Family: Aegithalidae (Bushtit)**

Northern Saw-whet Owl      *Aegolius acadicus*

Bushtit

**Order: Caprimulgiformes**

**Family: Caprimulgidae (Goatsuckers)**

Common Nighthawk      *Chordeiles minor*  
Common Poorwil      *Phalaenoptilus nuttallii*

**Family: Troglodytidae (Wrens)**

Rock Wren      *Salpinctes obsoletus*  
Canyon Wren  
Marsh Wren      *Cistothorus palustris*

**Order: Apodiformes**

**Family: Trochilidae (Hummingbirds)**

Black-chinned  
Hummingbird      *Archilochus alexandri*  
Calliope Hummingbird      *Stellula calliope*  
Broad-tailed Hummingbird      *Selasphorus platycercus*  
Rufous Hummingbird      *Selasphorus rufus*

**Family: Regulidae (Kinglets)**

Golden-crowned Kinglet  
  
Ruby-crowned Kinglet

**Family: Sylviidae (Gnatcatchers)**

Blue-gray Gnatcatcher

**Order: Piciforms**

**Family: Picidae (Woodpeckers)**

Red-naped Sapsucker      *Sphyrapicus nuchalis*  
Downy Woodpecker      *Picoides pubescens*  
Hairy Woodpecker      *Picoides villosus*  
Northern Flicker      *Colaptes auratus*

**Family: Tunidae (Thrushes)**

Mountain Bluebird      *Sialia currucoides*  
Townsend's Solitaire  
American Robin      *Turdus migratorius*

**Family: Mimidae (Thrashers, Mockingbirds)**

Northern Mockingbird  
Sage Thrasher      *Oreoscoptes montanus*

**Order: Passeriformes**

**Family: Tyrannidae (Flycatchers)**

Western Wood-Pewee      *Contopus sordidulus*  
Willow Flycatcher      *Epidonax traillii*  
Gray Flycatcher      *Epidonax wrightii*  
Say's Phoebe      *Sayornis saya*  
Ash-throated Flycatcher      *Myiarchus cinerascens*  
Western Kingbird      *Tyranus verticalis*

**Family: Sturnidae (Starlings)**

European Starling      *Sturnus vulgaris*

**Family: Motacillidae (Pipits)**

American Pipit

**Family: Laniidae (Shrikes)**

Loggerhead Shrike      *Lanius ludovicianus*  
Northern Shrike      *Lanius excubitor*

**Family: Parulidae (Warblers)**

Yellow Warbler      *Dendroica petechia*  
Yellow-rumped Warbler  
Black-throated Gray Warbler  
Common Yellowthroat      *Geothlypis trichas*

**Appendix C**  
**Preliminary Noxious Weed Risk**  
**Assessment**

# **RISK ASSESSMENT FOR NOXIOUS WEEDS**

## **Little Bald Mountain Mine Underground Mining and Haul Road Plan**

This proposed action would occur on a poorly reclaimed surface and a previously undisturbed area. A weed inventory was conducted in September of 2005. At that time, no noxious weeds were located. Where vegetation is growing, it mostly consists of rabbit brush. The better reclaimed areas in the valley bottom do have infestations of musk thistle and bull thistle. These have been in a weed spraying program for the last 5 years and will continue to be sprayed yearly. There is a decline in the number of thistles. With the new activity and second round of reclamation, there is the potential that these thistles could get established in the new disturbance. Placer Dome is committed to including this area in their weed control area and as part of the ongoing tri-county weed program.

Factor 1 assesses the likelihood of noxious/invasive weed species spreading to the project area.

For this project, the factor rates as **Low (2)**. This means that weed species are located adjacent to, but not within the project area. The project should not result in an increase of weeds if control measures are judiciously used.

- |                  |  |
|------------------|--|
| <b>NONE: (0)</b> | Noxious weed species not located within or adjacent to the project area. Project activity is not likely to result in the establishment of noxious weed species in the project area.            |
| <b>LOW:(1-3)</b> | Noxious weed species present in areas adjacent to but not <b>within</b> the project area. Project activities can be implemented and prevent the spread of noxious weeds into the project area. |

**MODERATE:(4-7)** Noxious weed species located immediately adjacent to or within the project area. Project activities are likely to result in some areas becoming infested with noxious weed species even when preventative management actions are followed. Control measures are essential to prevent the spread of noxious weeds within the project area.

**HIGH:  
(7-10)** Heavy infestations of noxious weeds are located within or immediately adjacent to the project area. Project activities, even with preventative management actions, are likely to result in the establishment and spread of noxious weeds on disturbed sites throughout much of the project area.

Factor 2 assesses the consequences of noxious weed establishment in the project area.

For this project, the factor rates as **Moderate (4)**. This means that, as a result of the proposed action, some cumulative effects could occur. Preventive measures for noxious weeds would be taken as stipulated by SOPs for the proposed action.

**Low to Nonexistent:** None. No cumulative effects expected.  
**(1-3)**

**MODERATE:  
(4-7)** Possible adverse effects on site and possible expansion of infestation within the project area. Cumulative effects on native plant communities are likely, but limited.

**HIGH:** Obvious adverse effects within the project area and probable

**(7-10)** expansion of noxious weed infestations to areas outside the project area. Adverse cumulative effects on native plant communities are probable.

The Risk Rating is obtained by multiplying Factor 1 by Factor 2.

For this project, the Risk Rating is **Low (8)**. The project can proceed as planned with weed prevention measures in place.

**NONE:** Proceed as planned.

**(0)**

**LOW:** Proceed as planned. Initiate control treatment on noxious weed populations that get established in the area.  
**(1-10)**

**MODERATE:** Develop preventative management measures for the proposed project to reduce the risk of introduction or spread of noxious weeds into the area. Preventative management measures should include modifying the project to include seeding the area to occupy disturbed sites with desirable species. Monitor area for at least 3 consecutive years and provide for control of newly established populations of noxious weeds and follow-up treatment for previously treated infestations.  
**(11-49)**

**HIGH:** Project must be modified to reduce risk level through

