

# Final Environmental Impact Statement for the Bald Mountain Mine North Operations Area Project

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August 2009



U.S. Department of the Interior  
Bureau of Land Management  
Ely District Office  
Nevada

Cooperating Agency: Nevada Department of Wildlife



## BLM Mission Statement

It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.



## United States Department of the Interior



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In Reply Refer To:  
380910 NVL0100  
N82888

Dear Interested Public:

Please find enclosed one copy of the Bald Mountain Mine, North Operations Area Project Final Environmental Impact Statement (FEIS), dated August 2009. This EIS evaluates the environmental impacts that would result from expanding and combining the existing Bald Mountain and Mooney Basin mines operated by Barrick Gold U.S. Inc. The project is located on public lands managed by the Egan Field Office, Ely District Bureau of Land Management (BLM) in northeast Nevada, approximately 65 miles northwest of Ely, White Pine County, Nevada. This document provides an evaluation of this proposed project in accordance with the National Environmental Policy Act of 1969 and associated regulations. The purpose of this document is to help the BLM Ely District Office and the cooperating agencies in their decision-making process.

The Proposed Action would result in combining the Bald Mountain Mine and Mooney Basin Plan of Operations boundaries to become the North Operations Area Project. The Proposed Action would result in an increase of disturbances from 4,160 acres to 8,085 acres. Existing facilities, including pits, rock disposal areas, heap leach pads, processing facilities, and interpit areas are proposed for expansion. New facilities under the Proposed Action would include one new pit, four new rock disposal areas, associated haul roads, topsoil stockpiles, and a remote truck shop facility.

Alternatives that were analyzed in this FEIS include the Proposed Action, No Action Alternative, Partial Backfill Alternative, and the Mooney Basin Heap Leach Pad Alternative. The Ely District's preferred alternative is the Partial Backfill Alternative because it meets the purpose and need while reducing environmental impacts.

The BLM compiled a Draft EIS that was issued to the public on December 19, 2008 with publication of the Notice of Availability (NOA) in the *Federal Register*. The NOA initiated a public comment period that ended on February 2, 2009. Public meetings were held on the Draft EIS in January 6-8, 2009 in Ely, Elko, and Eureka, Nevada. Individuals, public agencies, and non-profit organizations submitted 17 letters containing comments on the DEIS. The comments received and responses to these comments are contained in Appendix C of the FEIS. Some comments resulted in modifications to the EIS.

The publication of the NOA for the Final EIS in the Federal Register initiates a 30-day availability period. Following the 30-day availability period, the BLM may issue one or more Records of Decision based on the Final EIS. Persons wishing to provide BLM with comments

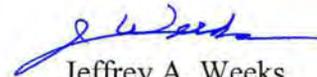
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Comments, including name and street addresses of respondents, will be available for public review at the Ely District Office during the regular business hours of 7:30 a.m. through 4:30 p.m., Monday through Friday, except holidays. You may request confidentiality if you are commenting as an individual, but you must state this prominently at the beginning of your written comments. Such requests will be honored to the extent allowed by law. Anonymous or illegible comments will not be considered. All submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be available for public inspection in their entirety.

If you have additional questions you can call Lynn Bjorklund at 775 289-1893.

Sincerely,



Jeffrey A. Weeks  
Field Manager  
Egan Field Office

**FINAL ENVIRONMENTAL IMPACT STATEMENT  
BALD MOUNTAIN MINE  
NORTH OPERATIONS AREA PROJECT**

**LEAD AGENCY:** U.S. Department of the Interior, Bureau of Land Management

**COOPERATING AGENCIES:** Nevada Department of Wildlife

**JURISDICTION:** White Pine County, Nevada

**CONTACT INFORMATION:** Correspondence on this Final Environmental Impact Statement should be directed to:

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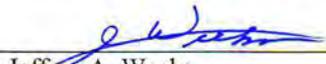
**ABSTRACT**

This Final Environmental Impact Statement (EIS) evaluates the impacts on the environment that would result from the expansion of current mining operations at the Bald Mountain Mine. The proposed project would be located on public land located in White Pine County, Nevada, approximately 65 miles northwest of Ely, Nevada. The Proposed Action would include expansion of open pits, rock disposal facilities, heap leach facilities, and haul roads. The Proposed Action would also include development of one new pit and associated rock disposal facility, a truck shop, and top soil stockpiles. In addition, the Proposed Action would combine the existing Bald Mountain Mine Plan of Operations boundary and the Mooney Basin Operations Area boundary into one Plan of Operations, called the Bald Mountain Mine North Operations Area Project. This combined boundary would encompass 16,465 acres (approximately 16,392 acres are public land and approximately 73 acres are private land). The Proposed Action would result in an additional 3,920 acres of disturbance for a total of 8,085 acres of disturbance within the new Plan of Operations boundary.

Three alternatives were carried through in the analysis and include the No Action Alternative, Partial Backfill Alternative, and Mooney Basin Heap Leach Pad Alternative. The Ely District's preferred alternative is the Partial Backfill Alternative because it meets the purpose and need while reducing environmental impacts.

The BLM is responsible for administering mineral rights access on certain federal lands as authorized by the General Mining Law of 1872. The BLM Egan Field Office has the responsibility and authority to manage the surface and subsurface resources on public lands located within this division of the Ely District. The BLM must review the Plan of Operations to ensure use of public land in the Egan Resource Area is in conformance with BLM's Surface Management Regulations (43 Code of Federal Regulations 3809) and other applicable statutes, including the Mining and Mineral Policy Act of 1970 (as amended) and Federal Land Policy and Management Act of 1976 (as amended). This Final EIS satisfied the National Environmental Policy Act, which mandates that federal agencies analyze the environmental consequences of major undertakings.

Official Responsible for the Environmental Impact Statement:

  
\_\_\_\_\_  
Jeffrey A. Weeks  
Field Manager, Egan Field Office

July 15, 2009  
\_\_\_\_\_  
Date

# **BALD MOUNTAIN MINE NORTH OPERATIONS AREA PROJECT FINAL ENVIRONMENTAL IMPACT STATEMENT**

## **SUMMARY**

Barrick Gold U.S., Inc. (Barrick) proposes to expand current mining operations at several existing pits, rock disposal areas, heap leach pads, processing facilities, and interpit areas. The expansion would combine the existing Bald Mountain Mine (BMM) Plan of Operations boundary and the Mooney Basin Operations Area boundary into one Plan of Operations, called the BMM North Operations Area Project. In addition, new facilities under the Proposed Action would include a pit, rock disposal areas, haul roads, topsoil stockpiles, and a truck shop. The BMM North Operations Area Project is located in northeast Nevada, approximately 65 miles northwest of Ely, White Pine County, Nevada.

Barrick proposes to mine additional ore by expanding the existing pits, rock disposal areas, and associated facilities. New features include one additional pit, a remote truck shop, and an additional power line. All waste rock would be placed in expanded or new rock disposal areas. All ore would be trucked to one of two existing heap leach facilities for processing. Both heap leach facilities would be expanded under the Proposed Action.

The combined North Operations Area Project boundary would encompass 16,465 acres (approximately 16,392 acres are public land and approximately 73 acres are private land). Combining the two Plan of Operations boundaries would increase the existing plan boundaries by 3,738 acres. The current authorized disturbances for the BMM and Mooney Basin Operation Area projects are 3,418 acres and 742 acres, respectively. The Proposed Action would result in an additional 3,920 acres of disturbance for a total of 8,085 acres of disturbance within the new Plan of Operations boundary. All of the non-private land disturbed by the current project and proposed under the BMM North Operations Area Project is administered by the Bureau of Land Management (BLM).

Nine alternatives to the Proposed Action were identified and considered during the scoping process. Three of the nine identified alternatives were carried through the analysis. The six alternatives not carried through the analysis were eliminated because they did not meet the Purpose and Need, were not feasible, and/or did not provide an environmental benefit. The three alternatives carried through in the analysis included the Partial Backfill Alternative, the Mooney Basin Heap Leach Pad Alternative, and the No Action Alternative.

The Partial Backfill Alternative (Alternative A, BLM Preferred Alternative) would include partial backfill of up to six open pits. This would result in smaller rock disposal areas by reducing the quantity of material they would contain. All other operations would remain the same as identified in the proposed Plan of Operations Action. The Mooney Basin Heap Leach Pad Alternative (Alternative B) would include a redesign of the Mooney Basin leach pad to reduce the disturbance footprint. To accommodate the smaller footprint, the BMM pad would be modified to facilitate additional ore. All other operations under the proposed Plan of Operations Action would be the same. The No Action Alternative would result in operations continuing under the existing approved Plans of Operations. Under the current approved Plan of Operations, it is anticipated that activities would be completed in 2009 for both the BMM and Mooney Basin Operations Area.

The resources addressed in this Final Environmental Impact Statement (FEIS) are identified in the following sections, which include a summary of the important issues and impact conclusions for each resource. Additional details are provided in Chapters 3.0 and 4.0.

## **Water Resources**

### Surface Water

Surface water is limited in the Proposed Action area due to the lack of seeps and springs, low precipitation, and high evaporation rates. There are no perennial drainages within the Proposed Action boundary. All the drainages are ephemeral. In general, established background water quality levels are good with the exception of arsenic, which exceeds the 0.05 mg/l Nevada water quality standard.

#### Issues:

- Increases in wind and water erosion from disturbed areas leading to increased sedimentation of drainages;
- Potential drainage from rock disposal areas;
- Spring recharge reduction; and
- Contamination of surface water from chemical spills.

#### Conclusion:

Implementation of appropriate Best Management Practices such as interim seeding of stockpiles, diversion channels, straw bales, silt fences, and sediment ponds would eliminate or minimize the potential impacts associated with increasing sedimentation to the ephemeral drainages in the Proposed Action area.

The Proposed Action would include expansion of existing pits, with one new pit planned. Since the Proposed Action is primarily an expansion of existing pits, waste rock is expected to be similar in nature to waste rock that has previously been encountered. Ongoing monitoring under the existing Water Pollution Control Permit would continue to be used to characterize the waste rock from the open pits. Based on current testing, no impacts from water with low pH and/or high metals content seeping from the rock disposal areas are anticipated.

A decrease in recharge to one spring located within the Plan of Operations boundary may occur due to the placement of waste rock. A portion of the recharge area for Cherry Spring would be covered with waste rock. This may result in a reduction in the amount of recharge to Cherry Spring due to water entrained within the rock. This may lower the water level of the local aquifer feeding the spring. It is noted that recently no water has emanated from Cherry Spring and recent monitoring from a development pipe indicates water is well below the surface.

Current chemical handling practices used by Barrick would continue to be followed to assure proper handling of solvents, fuels, and other chemicals. In the event of a spill, the Spill Prevention Control and Countermeasures Plan would be followed to address emergency response, notifications, and cleanup of spilled material.

### Groundwater

Two groundwater systems have been identified by Mine Mappers (2007): a local groundwater system including deep bedrock zones and an alluvial fill groundwater system located in the valleys. The groundwater quality is generally good with arsenic levels generally at or near applicable Nevada standards.

Issues:

- Increased withdrawal of groundwater for processing;
- Intersection of local groundwater by open pits; and
- Degradation of groundwater quality.

Conclusion:

The Proposed Action would result in an increase in the current groundwater production rates to meet the demand for processing water. The anticipated increase is approximately 250 acre-feet per year, for a total of approximately 550 acre-feet per year. The estimated radii of the cones of depression for the BMM and Mooney Basin wells are 202 feet and 138 feet, respectively. There are no other water users, seeps and springs, or other water features within the cones of depression for the water production wells; thus no impacts to other groundwater users would result from the proposed increase in water production. No impacts to groundwater associated with the Ruby Lake National Wildlife Refuge would occur as a result of the Proposed Action.

Interception of the deeper groundwater aquifer is not anticipated since the bottom of the open pits would lie above the identified potentiometric surface. The pits may encounter isolated occurrences of saturated material, but the amount of water is anticipated to be small. Characterization of pit wall rock has indicated that degradation of water contacting this wall rock would not occur. If water is encountered in saturated zones, the water would be pumped out of the pit and handled in a manner consistent with the Water Pollution Control Permit.

No impacts to water quality from the heap leach pads are anticipated as they are double lined with leak detection systems. Operations of the leach pads would be similar to current operations although the leach pads would be expanded.

### **Geology and Minerals**

Mining has occurred in the Bald Mountain Area since the late 1800s. Minerals recovered include copper, antimony, silver, and gold. Most of the early mining occurred next to a small granitic intrusion south of Big Bald Mountain. Large-scale commercial gold mining began in the area in 1976 at the Alligator Ridge Mine. Previous and current mining operations have occurred in five areas resulting in 26 open pits, 30 rock disposal areas, 10 heap leach pads, and seven process ponds. Sedimentary rock in the Proposed Action area consists of Paleozoic limestone, dolomite, shale, quartzite, siltstone, and sandstone. These have been intruded by Mesozoic age granitic porphyry, which is directly associated with the districts wide alteration.

Issues:

- Removal of ore and waste rock; and
- Future availability of mineral resource.

Conclusion:

Approximately 200 million tons of ore and 830 million tons of waste rock would be removed during the expansion of the existing pits and creation of one new pit and the known gold reserve would be depleted. Waste rock would be permanently placed in one of the existing (expanded) or proposed new rock disposal areas or used to backfill portions of one or more of the open pits. The ore material would be permanently removed and placed on one of the two existing but expanded heap leach pads. The rock disposal areas and heap leach pads would be reclaimed following cessation of mining and processing operations.

### **Paleontology**

No fossils have been identified in the BMM or Mooney Basin areas that have been classified as rare or important. The presence of fossils is uncommon in the vicinity of the Proposed Action

area, most likely due to the regional metamorphic activity. Fossils that have been discovered primarily include algae and invertebrates from the Cambrian period. Fossils in other period rocks include waterfleas, echinoderms, bryozoans, foraminiferans, and algae.

Issues:

- Loss of paleontological resources by removing rock containing fossils.

Conclusion:

No impacts to significant or critical fossil resources that require protection are anticipated with implementation of the Proposed Action, as none are known to exist in the area of the Proposed Action.

### **Soils**

There are 16 soil associations present within the Proposed Action area, based on the Natural Resource Conservation Service Soil Survey of Western White Pine County (NRCS, 1998). The physical and chemical properties of the soils were evaluated to identify factors that may limit successful reclamation. It is estimated that 7.3 to 11.7 million cubic yards of growth medium would be available for salvage in the 3,920 acres to be disturbed under the Proposed Action.

Issues:

- Loss of productive topsoil in disturbed areas;
- Increased erosion from wind and water; and
- Contamination of soil from chemical spills.

Conclusion:

Approximately 3,920 acres of disturbance to soils would occur with approval of the Proposed Action. This disturbance would include removal of the salvageable growth medium, resulting in impedance of soil development and reduction or elimination of biological activity during stockpiling of the material. After placement of the salvaged soil during reclamation, soil biological activity would slowly increase to pre-disturbance levels. The original soil structure would be permanently altered; however, new soil profiles would develop over time.

Removal of soil and stockpiling the soil for use during reclamation would result in an increased risk of wind and water erosion. Use of appropriate Best Management Practices such as revegetation of stockpiles, silt fences, straw bales, and sediment basins would minimize soil losses from water and wind erosion. In addition, use of water or binding agents on disturbed areas (roads, rock disposal areas, etc.) would be used to minimize dust generation and off-site deposition.

Current chemical handling practices used by Barrick would continue to be followed to assure proper handling of solvents, fuels, and other chemicals. In the event of a spill, the Spill Contingency Plans and Emergency Response Plans would be followed to address emergency response, notifications, and cleanup of spilled material.

### **Vegetation Resources**

Four vegetation community types were identified within the BMM North Operations Area Project boundary: pinyon-juniper woodland, big sagebrush, low sagebrush, and mountain brush. The most abundant communities within the plan of operations boundary are the pinyon-juniper (7,482 acres) and big sagebrush (7,940 acres). Approximately 2,131 acres of the plan of operations boundary has burned within the last eight years. No individuals or habitat for threatened, endangered, or sensitive plant species were identified in the Proposed Action area.

Issues:

- Removal of vegetation;
- Increase of vegetation diversity following reclamation;
- Increased potential for establishment of non-native invasive species;
- Short-term loss of forage for wildlife and livestock; and
- Increased potential for soil erosion.

Conclusion:

Direct impacts to vegetation would include the removal of approximately 3,920 acres of vegetation including 1,712 acres of pinyon-juniper woodland, 1,917 acres of big sagebrush, 72 acres of low sagebrush, and 219 acres of mountain brush. A majority of the disturbance area, with the exception of the pit disturbance (540 acres), would be reclaimed including seeding with the approved seed mix. With successful revegetation, the habitat diversity would increase since much of the reclaimed areas would be dominated by grasses and shrubs.

Indirect impacts associated with vegetation removal include the potential establishment of noxious and, non-native invasive species, short-term loss of forage for wildlife and livestock, and a potential increase in soil erosion.

### **Non-Native Invasive Species**

Both noxious weeds and non-native invasive species are present within the Proposed Action area. Eight noxious weed species are currently present in and around the Proposed Action area. One species, spotted knapweed (*Centaurea stoebe*), is classified as a Class A species, for which the State of Nevada emphasizes complete control. Three species - musk thistle (*Carduus nutans*), Russian knapweed (*Acroptilon repens*), and Scotch thistle (*Onopordum acanthium*) - have a Class B rating, and the State of Nevada emphasizes control of population spread and decreased population size. Four species - black henbane (*Hyoscyamus niger*), salt cedar (*Tamarix* spp.), hoary cress (*Lepidium draba*), and Canada thistle (*Cirsium arvense*) - are Class C species, for which the State of Nevada emphasizes management to control population size. Non-native invasive species identified within the Proposed Action area include cheatgrass (*Bromus tectorum*), bull thistle (*Cirsium vulgare*), and Russian thistle (*Salsola kali*).

Issues:

- Increased potential for establishment of noxious weeds and non-native invasive species.

Conclusion:

The Proposed Action would increase the potential for noxious and non-native invasive weeds to become established in disturbed areas and eventually spread into undisturbed areas within the Proposed Action area. Impacts are anticipated to be negligible with continued implementation of applicant-committed environmental protection measures identified in Chapter 2.

### **Wildlife Resources**

Wildlife present in the Proposed Action area is typical of species in the northern part of the Basin and Range physiographic province. Big game species are represented by mule deer, elk, and antelope, with mule deer the most abundant of the three. Game birds are represented by sage grouse, chukar, gray partridge, and mourning doves. There are numerous other species present in the area including a variety of birds, mammals, and reptiles. Although some amphibians may be present, habitat for amphibians is limited due to limited water resources.

Numerous migratory birds utilize habitat within the Proposed Action area. The avian composition and density varies with season and habitat type, with the highest density and diversity occurring in the spring and early summer.

No federally listed species are known to occur in the Proposed Action area. There are a number of state-protected and BLM sensitive species that have the potential to occur in the Proposed Action area. These include a variety of raptors and bats, pygmy rabbits, sage grouse, two reptile species, and a variety of other birds.

Issues:

- Loss of habitat;
- Injury or mortality from land-clearing activities and increased traffic;
- Displacement from habitat due to human activity;
- Hindrance to deer migration;
- Bird nests and or young being destroyed; and
- Creation of habitat (steep cliffs as a result of open pits) that is currently limited and conversion of habitat.

Conclusion:

Direct impacts to wildlife resources would include loss of habitat as a result of disturbance to an additional 3,920 acres. The majority of this disturbance would occur in the pinyon-juniper woodland and big sagebrush community types. Approximately 219 acres of mountain brush habitat, which is good deer-foraging and cover habitat, would be impacted by the project. Land-clearing activities could result in the mortality of smaller and less mobile animals. Indirect effects would include some species being forced to adjacent areas due to human presence and disturbance, thus increasing competition for resources in these areas.

The Nevada Department of Wildlife (NDOW) has expressed concern that the Proposed Action may restrict deer movement in the Ruby Mountains by constricting the migration corridor. This constriction would have the greatest potential to occur during winters with heavy snow accumulation, when deer move to wintering grounds in the Little Antelope Summit area. To date, no obvious barriers to deer movement have been observed during the current operations.

Conversion of pinyon-juniper habitat to grass-shrub habitat after reclamation would provide better forage habitat for some species of wildlife.

The Proposed Action would result in the loss of 3,920 acres of vegetation that would be unavailable to nesting birds during operation. Reclamation of disturbed areas would return the area to productive nesting habitat. To avoid direct impacts to migratory birds, Barrick would conduct land-clearing activities outside of the avian breeding season or conduct nesting bird surveys immediately prior to land-clearing activities. If occupied nests are identified, disturbance would be avoided or a buffer zone around the nest would be established until the young have fledged.

Because no threatened or endangered animal species, or habitat for these species, have been identified in the Proposed Action area, no impacts are anticipated. There are a number of Nevada state-protected animal species and BLM sensitive animal species that have potential to occur within the Proposed Action area. The majority of these species are bats and birds, including all raptors (eagles, hawks, and owls). Other sensitive species include the pygmy rabbit (*Brachylagus idahoensis*) and sage-grouse (*Centrocercus urophasianus*).

The Proposed Action could result in the loss of foraging habitat and roosting habitat for tree-roosting bats, some of which are listed by the State as protected or by the BLM as sensitive. Underground workings, as well as cliffs, are limited in the Proposed Action area, but several bats such as the pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhinus townsendii*), which are strong fliers, may lose a limited amount of foraging habitat. No raptor

nests were identified in the Proposed Action area; thus impacts to diurnal raptors, owls, and turkey vultures would be limited to the loss of foraging grounds due to land-clearing activities and the presence of humans. Following cessation of mining activities, pit highwalls would provide nesting habitat for some raptors and roosting habitat for bats.

Potential habitat for pygmy rabbits, a BLM-sensitive species, exists primarily in the western part of the Proposed Action area, which has been previously disturbed by the BMM Heap Leach Pad and processing facilities. Additional disturbance would occur in pygmy rabbit habitat near the existing 2/3 Heap Leach Pad. Areas with pygmy rabbit habitat would be surveyed prior to disturbance. The BLM sensitive species ferruginous hawk (*Buteo regalis*) and burrowing owl (*Speotyto (Athene) cunicularia*) are known to nest in the vicinity but not within the Proposed Action area. Vegetation removal would reduce the foraging habitat for these species. The removal of pinyon-juniper trees would also reduce the nesting habitat for the pinyon jay (*Gymnorhinus cyanocephalus*), juniper titmouse (*Baeolophus ridgwayi*), and other woodland-dependent and cavity-nesting species.

Steep hillsides and cliffs are limited in the area, thus limiting nesting and roosting habitat for a number of bird species and bats. The creation of pits during mining would increase the availability of steep slopes and cliffs in the Proposed Action area.

#### **Wetlands, Riparian Zones, and Waters of the U.S.**

There are few small isolated wetland areas that are associated with seeps and springs within and near the Proposed Action area. No riparian zones or jurisdictional waters of the U.S. (including jurisdictional wetlands) were identified within the Proposed Action area. Therefore, no impacts would occur to riparian zones and waters of the U.S.

#### Issues:

- Potential destruction of isolated wetlands;
- Increase sedimentation from erosion; and
- Alteration of recharge areas to wetland areas.

#### Conclusion:

Disturbance to all seeps and springs identified in the Proposed Action area would be avoided by design; thus no direct disturbance to wetlands would occur with implementation of the Proposed Action. Land-disturbing activities upgradient of wetland areas would use proper Best Management Practices such as sediment traps, straw bales, or silt fences to minimize sedimentation to downgradient areas.

Alteration of recharge areas is discussed in the water resources section. Since wetlands do not exist at the Cherry Spring site, no impacts would occur to wetland areas as a result of alterations to this recharge area.

#### **Range Resources**

The Proposed Action area lies wholly within the existing Warm Springs livestock grazing allotment. The existing Warm Springs allotment is 330,966 acres in size. The allotment is currently categorized as "I," which indicates "improve the current unsatisfactory condition." The Warm Springs Allotment is managed for an active grazing preference of 7,709 animal unit months. Successful reclamation would result in improved forage areas as much of the area would be reclaimed to grass and shrub vegetation.

#### Issues:

- Loss of forage;

- Restricted access; and
- Improved forage following reclamation.

**Conclusion:**

Disturbance of 3,920 acres of the allotment would result in a temporary loss of 98 animal unit months. This represents less than two percent of the active grazing preference of the Warm Springs Allotment. With reclamation, a permanent loss of 28 animal unit months would result from the expansion of the pits and pit berms.

**Wild Horses**

The Proposed Action area lies within the Triple B Herd Management Area. Wild horses generally use the Buck and Bald mountains as summer range while moving into Newark, Long, and Huntington valleys during the winter months.

**Issues:**

- Loss of forage;
- Displacement as a result of human activity;
- Mortalities due to collision with vehicles; and
- Improved forage following reclamation.

**Conclusion:**

Impacts to wild horses in the Buck and Bald Herd Management Area are expected to be minimal. Approximately 3,920 acres would be disturbed with implementation of the Proposed Action. This loss of forage would occur during the life of the project. Successful reclamation would result in improved forage areas as much of the area would be reclaimed to grass and shrub vegetation. Short-term displacement of horses would occur in the vicinity of Proposed Action as a result of human activity. It is likely that wild horses would become accustomed to the activity prior to cessation of operations. Mortalities due to collisions with vehicles may also occur. Vehicular impacts with wild horses should be minimal with enforced speed limits and minimized traffic through the use of buses to transport mine employees.

**Land Use and Access**

Land uses in and around the Proposed Action area consist primarily of ranching (livestock grazing), wildlife habitat, mineral exploration, mining, and recreation (hunting, etc.). There are several rights-of-way for power lines, roads, and pipelines in the area. The White Pine County Land Use Plan, the purpose of which is to coordinate planning on public lands with federal land management agencies, specifically encourages mineral exploration and development on public lands.

**Issues:**

- Conflicts with existing land use authorizations;
- Restricted access; and
- Increased traffic on roads.

**Conclusion:**

The Proposed Action would result in combining and expanding the existing BMM and Mooney Basin Operations Plans of Operations boundaries by 3,738 acres, thus potentially removing the land from public use during active mining and reclamation. There are existing land use authorizations including rights-of-way, roads, communications sites, oil and gas leases, and water facilities (troughs, pipelines, storage tanks) within the Proposed Action area. Conflicts with existing land use authorizations would be resolved through consultation with the holders of those land use authorizations.

Public access would be restricted in areas of active mining and processing for the life of the mine. Access to all areas, except the 540 acres associated with the open pits, would be restored following completion of reclamation. Effects associated with increased traffic are expected to be minimal as Barrick buses most employees to the mine site. Barrick anticipates that only one additional bus would be needed to accommodate the additional workers under the Proposed Action. It is anticipated that additional deliveries would be needed to supply the expanded activities. With the increase in deliveries, an estimated 1,500 trips per year would occur, which is a 10 to 15 percent increase from current deliveries.

It is anticipated that this slight increase in traffic on the access roads would have only a minimal impact on the condition of the state and county roads. Barrick proposes to continue its program of maintenance of unpaved access roads for the life of the mine.

### **Recreation**

For the fiscal year ending September 30, 2007, there was an estimated 297,895 visitor days to public land in the BLM Ely District. Most recreational activities consist of dispersed uses such as off-highway vehicle use, hunting, fishing, camping, cross country skiing, horseback riding, caving, rock climbing, and mountain biking. Recreational usage of public lands in the BLM Ely District has been increasing, partly because of population growth in both the BLM district and in Las Vegas.

#### Issues:

- Restricted access.

#### Conclusion:

The existing Plans of Operations area would expand from 12,727 acres to 16,465 acres. This would result in restricted access for hunting and other recreation activities from active mining acres for the life of the mine. This restriction is expected to have negligible adverse impact to recreation activities because current levels of recreation in the area are low and there is an abundant amount of open public land in the BLM Ely District. No impacts would occur to access to facilities around the Proposed Action area such as Ruby Lake National Wildlife Refuge.

### **Air Quality**

The direct impact analysis area for air quality includes a zone around the current and proposed mining activity defined by a 12-mile radius and a 200-yard-wide corridor along the primary access routes to the Proposed Action area. The entire analysis area is currently in attainment or unclassified for all criteria air pollutants. The closest sensitive receptor to the Proposed Action area is the Ruby Lake National Wildlife Refuge, which is approximately 25 miles north of the Proposed Action area. Current operations and emissions qualify the facility as a Nevada Class II source. The nearest Class I airshed is the Jarbidge Wilderness area, which is 130 miles to the north near the Idaho border. The existing BMM is operated as a Class II source with emissions below the Prevention of Significant Deterioration major source threshold.

#### Issues:

- Impacts to air quality.

#### Conclusion:

With implementation of the Proposed Action, emissions from the operations would remain a Class II source with emissions below the Prevention of Significant Deterioration major source threshold. Based on the potential to emit values from the stationary sources, the Proposed Action would qualify as a Nevada Class II source. Dispersion modeling was conducted for the four criteria air pollutants (PM<sub>10</sub>, carbon monoxide, nitrogen oxide, and sulfur dioxide) to

determine the dispersion of these pollutants and potential impacts beyond the Proposed Action area. The dispersion model indicated that all predicted maximum impacts would occur within the Proposed Action area, miles short of the nearest residence or area of regular human activity. In addition, the furthest extent of significant contributions from the Proposed Action ended well short of the Jarbidge Wilderness and all other Class I areas.

Mercury emissions would result from fugitive dust generated during mining and processing activities and through thermal sources, primarily from the two refining processes. Mercury emissions would continue to be controlled as required by the Nevada Mercury Control Program. The mine's estimated mercury emissions from the existing thermal sources are 57.7 pounds per year. Annual mercury emission from fugitive dust is estimated at 0.27 pound per year.

Impacts to air quality from operational activities are expected to be similar to those of the existing operations. There would be a slight change in the location of activity and emissions across the mine property. Ambient air quality standards would be met everywhere at and beyond the project ambient air boundary. Additional supply vehicles could result in slight increases in tailpipe emissions of organic volatile compounds, carbon monoxide, and nitrogen oxide.

### **Visual Resources**

The Proposed Action area is bound by Newark Valley and Huntington Valley on the west and by Long Valley on the east. Vegetation consists primarily of gray-green sagebrush in the low elevations and dark green (pinyon-juniper woodland) vegetation in the higher elevations. Past mining activity in the area has created areas of contrast to the surrounding landscape with disturbance visible from valleys to the east and west of the existing operation.

Four Key Observation Points were identified to determine the visual impact from the Proposed Action: (1) the intersection of the Pony Express Trail with State Route 892 (west of the Proposed Action), (2) near the Pony Express Trail north of the slopes of Big Bald Mountain approximately three miles from the Proposed Action, (3) Ruby Marsh Road approximately 2.2 miles east of the Proposed Action, and (4) Ruby Marsh Road inside the eastern boundary of the Proposed Action near the existing Mooney Basin Heap Leach Pad.

Issues:

- Changes in line, form, color, and texture from mine-related disturbance.

Conclusion:

During active mining, views from all Key Observation Points would not meet management objectives because of moderate contrast with the existing landscape. Following successful reclamation, contrast would be reduced, disturbed areas would not attract the attention of viewers, and management goals would be met.

### **Noise and Vibration**

The primary natural noise source in the area of the Proposed Action is wind. This noise, with the addition of the man-made noise associated with the current mining operation, constitutes the baseline condition. There are few receptors within audible range of the existing mine. Intermittent blasting is typically the only noise that can be faintly heard by the closest human receptors at residences.

Issues:

- Increased noise and vibration from earth moving, blasting, drilling, and increased traffic.

Conclusion:

Noise from construction and operational activities is not expected to differ significantly from existing operations. The Proposed Action would result in a minimally different noise profile from current on-site activities. The noise profile would be expected to be unnoticeable or minor at the closest residence as a result of the distance from the mine.

**Socioeconomics**

The three primary areas identified for the socioeconomic analyses are White Pine, Elko, and Eureka counties, all of which are predominantly rural and without large urban centers. The economies of these counties tend to follow the cycle of the precious metal mining industry. Elko is the largest with regard to land and population of the three counties. Employees at the existing operation live primarily in the towns of Elko, Ely, and Eureka.

Issues:

- Changes in employment;
- Changes in income; and
- Increased demand for housing and services.

Conclusion:

The staffing level of the Proposed Action is expected to increase to a maximum of about 325 employees, which represents a 50 percent increase over current employment. White Pine County would be the recipient of the mine's ad valorem tax payments and would receive a share of the net proceeds tax. This additional source of income would assist White Pine County in stabilizing its finances. All three counties (White Pine, Eureka, and Elko) would benefit from local spending by residents employed by the mine. Modeling indicates that with 110 additional employees, an additional 33 indirect and 50 induced jobs would be created in the three-county area. The model indicates that the value of the direct, indirect, and induced annual labor income would be \$9.9 million in 2006 dollars.

New employees are assumed to be distributed among the three closest cities (Ely, Eureka, and Elko) depending mainly on the availability of housing. If all 110 new employees came from outside the three counties, which is unlikely, the population could increase by approximately 330 persons. Because few new employees are likely to find housing in Eureka, the majority of the new employees would reside in either Ely or Elko. It is anticipated that the majority of employees from outside the area would likely reside in Elko. With this scenario, the effect on housing and county infrastructure demand would be manageable.

**Environmental Justice**

Analysis of the minority population and low-income population indicate that there is no meaningful difference between these populations in the three counties (White Pine, Eureka, and Elko) and the State of Nevada.

Issues:

- Disproportionate effect on minorities and low income populations; and
- Undue burden on children.

Conclusion:

Initial analysis of the potential effects of the Proposed Action would not be expected to have a disproportionate effect on any particular population nor place any undue burden on children. In addition, no traditional cultural properties or sites meeting the criteria of Executive Order 13007 (Indian Sacred Sites) were identified in the Proposed Action area.

### **Cultural Resources (Prehistoric and Historic)**

A Programmatic Agreement was developed to assist BMM, the BLM, and the Nevada State Historic Preservation Office with identifying, evaluating, and treating cultural resources when necessary. Of the proposed 3,920 acres of new disturbance, the location for 100 acres of exploration disturbance has not been identified, leaving a total of 3,820 acres of identified disturbance. Of these 3,820 acres, only 503 acres remain unevaluated, while 2,198 acres were surveyed within the last ten years and 1,119 acres were surveyed more than ten years ago.

Previous surveys have identified 270 prehistoric sites within the Proposed Action area with 95 of those sites within the proposed disturbance area of the Proposed Action. Previous surveys also identified 109 historic sites within the Proposed Action area with 30 of those sites within the proposed disturbance area of the Proposed Action.

#### Issues:

- Disturbance to both prehistoric and historic sites leading to loss of cultural resources.

#### Conclusion:

All eligible sites that would be impacted by the Proposed Action would be treated in accordance with the Programmatic Agreement between the BMM, BLM Egan Field Office, and Nevada State Historic Preservation Office.

### **Native American Religious Concerns**

No traditional cultural properties or sites meeting the definition identified in Executive Order 13007 (Executive Order on the Indian Sacred Sites) have been identified within the Proposed Action area. Therefore, no impacts affecting Native American Religious concerns are anticipated from implementation of the Proposed Action.

### **Hazardous and Solid Waste/Hazardous Materials**

A number of fuels and reagents are transported to the site, stored on site, and used on-site for mining and processing ore. These include diesel fuel, ethylene glycol, methanol, propane, sodium cyanide, ammonium nitrate, fuel oil, sodium hydroxide, calcium oxide, and hydrochloric acid. Transport, storage, and use of these chemicals are regulated by federal, state, and local laws and statutes. As part of the current operations, BMM has existing Spill Contingency Plans and Emergency Response Plans that address response to hazardous material spills, notification procedures, and spill cleanup procedures. Previous spills at the BMM and Mooney Basin Operations Area have been reported to the appropriate regulatory agencies and properly cleaned up as per the Emergency Response Plans, Spill Contingency Plans, and other requirements from the regulatory agencies.

Non-hazardous, solid waste is currently managed on-site in a Class III–waivered landfill. This facility was constructed and is managed in accordance with all applicable state regulatory requirements. A new Class III–waivered landfill would be constructed on a portion of the Saga rock disposal area.

#### Issues:

- Accidental release during on-site storage, use, or transportation to or from the site.

Potential resources that could be affected by an accidental spill of hazardous materials or solid and hazardous waste include air, water, soil, and biological resources. The chemicals currently being used at the existing operation are the same as those identified to be used with the Proposed Action. Deliveries of the chemical materials and waste would primarily be via State

Route 278 from Carlin to Eureka, to U.S. Highway 50 to State Route 892, or U.S. Highway 50 to Ruby Marsh Road.

The existing Class III–waivered landfill would continue to be used with a second Class III landfill proposed in the Mooney Basin area. Class III–waivered landfills can accept only non-hazardous waste generated by the mine. All other waste would be recycled off-site or disposed of at a licensed facility.

**Conclusion:**

The probability of an accident involving hazardous materials or hazardous waste was calculated using the national accident statistics for truck shipments of hazardous materials, haul distances, and the number of deliveries per year. The probability of an accident is as follows: sodium cyanide – 44.5 in 1,000; diesel fuel – 162.6 in 1,000; hydrochloric acid – 0.4 in 1,000. These numbers represent the number of spills estimated per 1,000 deliveries. These results indicate a low probability of an accidental release during transport of these materials during the life of the Proposed Action. There is a limited distance along the transportation route (approximately one mile) of sensitive receptors (wetlands, streams, etc.); thus a release into these areas is not likely. The environmental effects of a release would depend on the substance, quantity, timing, and location. The range of effects would be minor for a spill at the project site (equipment immediately available to limit spill) to a large spill during transport that could immediately impact water quality and aquatic life, if spilled into a flowing stream. Considering the transport routes and their limited extent within range of sensitive receptors, the likelihood of a major spill into a flowing stream is considered low.

**BLM Preferred Alternative**

The BLM's preferred alternative, based on the information from the scoping process and information contained within this FEIS, is the Partial Backfill Alternative (Alternative A) as described in Section 2.5.2. The selection of this alternative is the one that the BLM believes best fulfills the agency's statutory requirements and responsibilities. The selection of this alternative takes into consideration environmental, economic, and technical factors.