17.24.312 FISH AND WILDLIFE PLAN

Effects of the Proposed Project on the Wildlife Resource

This section evaluates the potential adverse effects and disturbances on fish and wildlife in the wildlife study area. Factors considered during this evaluation include development and operation plans for the proposed project, characteristics of the wildlife resource within the study area (reference Section 17.24.304(10) for detailed description), and current land uses.

Characterization of the Wildlife Resource

The wildlife resource in the Bull Mountains Mine No. 1 study area is typical of a foothills environment. The overall character of the resource is upland. The topographic diversity, variety of vegetation types, and relatively rural quality of the region all contribute to the existing wildlife composition. Results of the baseline studies conducted during 1989 (reference Section 17.24.304(10)) indicate:

1. The environmental setting for the study area consists of 12 habitat types. Eleven of these were upland types. Within the permit area, mine plan area, and study area, the primary types were burned ponderosa pine, grassland, shrubland, and ponderosa pine;

2. The habitat types within the permit area supported a variety of terrestrial wildlife. Included were mule deer, elk, pronghorn, raptors, coyotes, and various small mammals and passerine birds. The primary species using the proposed surface disturbance area were small mammals, passerine birds, and small- to medium-sized predators, such as the coyote, that are adapted to open habitats and are tolerant of human activity;

3. Within the surface disturbance area, the only high value habitat identified during the wildlife baseline study was three raptor nests. The first year of annual monitoring (1991) suggested that the number of raptor nests within the proposed surface disturbance area may have declined to one or two. Within the permit area, high value habitats identified during the baseline study included raptor nests and wetlands/open water areas. During the first year of annual monitoring (1991), a sharp-tailed grouse lek was discovered within the permit area but it was not within the proposed surface disturbance area. The first year's monitoring concluded that elk winter range extended into the eastern 1/3 of the mine permit area (but not into the proposed surface disturbance area), even though there were no actual sightings of elk from this area. Within the remainder of the study area, the baseline study considered riparian areas, wetlands/open water areas, cliffs supporting raptors, areas offering special shelter or protection, and wintering areas as habitats of high value. The first year's monitoring suggested that the west flank of Dunn Mountain was used by elk during the calving period.

4. The proposed surface disturbance area is considered relatively unattractive wildlife habitat. This conclusion is based on three considerations. First, the area was characterized by a high degree of human disturbance due to the existing P.M. Coal Mine and woodcutting activity. Species sensitive to human activity are unlikely to use the area significantly. Second, the 1984 fire burned most of the area and removed much of the security and thermal cover for species larger in size than small mammals and passerine birds. Third, except for the stock tank at the northern edge of the WDA, open water is not available in the area; and

5. The study area does not contain suitable habitat for federal threatened or endangered species. Although the bald eagle was observed on occasion, it probably does not use the study area to any substantial extent. The species is primarily a migrant in this area.

Impact Analysis

Based on these project and wildlife resource traits, the primary impacts of the proposed Bull Mountains Mine No. 1 on wildlife would be:

- loss of about 650 acres of habitat;
- displacement of relatively minor numbers of passerine birds and mobile small- to medium-sized mammals that are able to avoid earth-moving equipment;
- loss of relatively minor numbers of small mammals and herptiles that are not able to avoid earth-moving equipment;
- limited displacement of mule deer, elk, and pronghorn to more secure, isolated habitats (some animals will habituate to the on-going activities);
- potential for collision or electrocution of raptors by the proposed new electrical distribution line;
- additional disturbance within the immediate vicinity of three raptor nesting sites; and
- potential loss of wetlands/open water areas within the permit area from subsidence. The Operator's comprehensive mitigation plan for any potentially affected springs provides contemporary supplemental or replacement water supplies of similar quantity or quality to pre-mine conditions (reference Appendix 313-2, Spring Mitigation Plan). Therefore there should be no significant loss or-displacement of wildlife at these sites or in surrounding habitats as a result of disruption of wetlands/open waters.
- potential disturbance to the sharp-tailed grouse lek in Section 14, T6M R26E. While the lek is not within the proposed surface disturbance area, it is adjacent to the P.M. Coal Mine entrance road. This road will not be the main entrance to the Bull Mountains Mine No. 1, but it may be used by some traffic to access the railroad loop. Whether this traffic will disturb sharp-tailed grouse at the lek will depend on the timing of traffic use; for example, traffic during normal business hours (after 7 a.m.) will probably have little effect on displaying grouse. It should also be noted that this lek site was plowed by agricultural operators in autumn 1991 yet was still used in spring 1992, suggesting that grouse can tolerate a certain amount of disturbance.

Acreages of pre-mine habitat types and post-mine revegetation types have not been calculated for the surface disturbance area. It is the Operator’s understanding that this was done as part of the EIS preparation. A comparison of the Postmining Vegetation map (Map 313-4) with the Wildlife Habitat map (Map 304(10)-2) or the Vegetation map (Map 304(9)-9) shows that postmining vegetation closely approximates premining vegetation in most instances. Revegetation mixtures were designed based on species composition of premine vegetation communities. Care has been taken to blend revegetation types with existing types in the rail loop, facilities areas, excess spoil piles, topsoil stockpile sties, sedimentation ponds, and road corridors. In these instances, acreage and topography will be restored to minimize impacts to wildlife.

Other sources of impacts were considered but were determined to be inconsequential. For example, effects of increased habitat fragmentation and subsidence on the wildlife resource were considered. Habitat fragmentation refers to dividing blocks of relatively undisturbed habitat into smaller units interspersed with the disturbances. Subdivision construction, such as is present in the old Divide Highway area and in the northeastern portion of the study area, is a classic example.

The Bull Mountains Mine No. 1 is not anticipated to substantially add to the trend towards subdivision in the Bull Mountains. Most of the employees would be hired from the existing labor force in Billings and Roundup (BLM 1989). Of the projected in-migrants, about three (and their families) are expected to live in Musselshell County outside of Roundup (BLM 1989). These three families could be readily accommodated by existing developments within the study area. Consequently, no notable increases in habitat fragmentation are expected due to the proposed mine.

Subsidence is expected to occur over the longwall mining panels. Surface expression of this subsidence would be in the form of broad troughs over the panels. Overall, surface elevations of the mine area would be lowered approximately six to nine feet, which is not expected to significantly disrupt landscape characteristics (BLM 1989). Similar amounts of subsidence was experienced at an operation in Utah without apparent adverse affects on wildlife (BLM 1989). Consequently, changes in habitat quality or wildlife use are not anticipated.

No threatened or endangered plant or animal populations were identified in the study area. Although bald eagles occasionally occur in the area, no suitable habitat exists to support any occurrence other than as a migrant. Consequently, no impacts are anticipated to any federal threatened or endangered species of plant or animal.

Minimization of Wildlife Impacts

Impacts on wildlife from construction and operation of the Bull Mountains Mine No. 1 will be minimal. General habitat loss; small mammal and herptile losses; and deer, elk, and pronghorn displacements will be minimized by compliance with the operations plan and offset by reoccupation of the disturbance area after reclamation. In addition, some animals will habituate to the on-going operational activities.

Reclamation will replace existing wildlife habitats with similar habitats in form and function. Species in the revegetation seed mixtures were selected for their palatability, nutritional, and cover values for wildlife species identified in the area during baseline studies. The MDFWP and U.S. Fish and Wildlife Service are reviewing the reclamation plan and will be consulted about changes to the plan. No habitats of unusually high value, such as wetlands, riparian habitat, and streams, will be disturbed directly by construction of mine facilities. Finally, special attention will be given to inanimate elements, such as rock outcrops, boulders, and rubble, to ensure wildlife habitat needs are met.

No bald or golden eagle nests, nor any federally-listed threatened or endangered species or critical habitats, nor any plants or animals listed as threatened or endangered by the state of Montana, were identified in the permit area or in the study area. Construction and operation of the project will therefore not result in the disturbance of any of these species. In the future, if any of these species are found to consistently occupy the permit area, BMP Investments will promptly report the presence of these species to the department and to the U.S. Fish and Wildlife Service.

The 69 kV power line has been designed and constructed to minimize collisions and electrocutions or raptors, waterfowl, and other wildlife species. All design and construction has been conducted in accordance with the criteria described in Suggested Practices for Raptor Protection on Power Lines, the State of the Art in 1981 (Raptor Research No. 4, Raptor Research Foundation, Inc.).

No power lines are proposed in the new permit area.

Proposed locations and operation of haul roads will have minimal impacts to important fish and wildlife species. Fish species will not be affected because no fisheries occur in the permit area.

The proposed new roads in the permit area will not create any new barriers to known wildlife migrations. Consequently, no underpasses or fencing of roadways to guide wildlife to underpasses are necessary or proposed.

No hazardous concentrations of toxic-forming materials are expected to be encountered during normal mining procedures at the Bull Mountains Mine No. 1. Consequently, exclusion of wildlife from ponds by fencing, covering, or other methods is not proposed.

The Operator intends to avoid disturbance to wetland, riparian, and aquatic habitats. However, some disruptions of the hydrologic balance in the permit area may occur during mining. While only temporary impacts to some of these habitats are anticipated, long-term or permanent impacts may result. Specific mitigation plans regarding water and habitat replacement have been developed, and are contained in 17.24.314-Section 5.0 Mitigation Plan. Affected wetland, riparian, and aquatic habitat will be restored to pre-mining condition according to the hydrologic mitigation plans.

The Operator will control noxious weeds on all lands within the proposed permit area during mining and reclamation. This control will be carried out using weed-killing chemicals and application rates approved by the Musselshell County Weed Control Board. Also, the use of pesticides during mining and reclamation will not be without DEQ approval. Details of the noxious weed control program are presented in the operations Plan (Section 17.24.308).

To the extent possible, The Operator proposes to prevent, control, and suppress range, forest, and coal fires which are not approved by the DEQ as part of a management plan. Proposed fire control measures are described in the Operations Plan (Section 17.24.308).

Wildlife Monitoring Plan

Purpose and Objectives

The purpose of wildlife monitoring at the Bull Mountains Mine No. 1 is to detect changes in wildlife habitats, and/or wildlife use of those habitats, as a result of mining and related disturbances. To meet these goals, in accordance with DEQ's August 1994 Fish and Wildlife Guidelines, wildlife monitoring at the Bull Mountains Mine No. 1 has several objectives. For the purposes of this Plan, these objectives have been organized as primary or secondary.

Primary Objectives are:

1. Act as a surveillance system to detect impacts (negative and positive) from mining and reclamation activities;

2. Evaluate the magnitude and duration of impacts (negative and positive);

3. Continue to document the presence/absence status of state and federally protected species; and

4. Demonstrate whether monitoring should be increased, decreased, remain the same, or be eliminated.

Secondary Objectives are:

5. Supplement the initial data base. Wildlife information has been compiled in the vicinity of the Bull Mountains Mine No. 1 since the mid-1970s and provides a good baseline against which to observe changes. Therefore supplementing the initial data base is a secondary objective of wildlife monitoring;

6. Evaluate the effectiveness of mitigation and reclamation procedures. Comparatively few mitigation and reclamation measures have been employed. Therefore, evaluation of this limited resource is currently a secondary objective of wildlife monitoring (status of this objective may be adjusted as mining proceeds into the future);

7. Determine the relationships between wildlife populations and reclaimed habitats. There is a comparatively little reclaimed habitat, due to the current mine size and type of mining. Therefore evaluation of wildlife/reclaimed habitat relationships is a secondary objective of wildlife monitoring; and

8. Provide an annual indicator of how the existing wildlife community relates to bond release objectives. Because the Bull Mountains Mine No. 1 has been in operation sporadically during the last decade, it has not been possible to establish bond release objectives for wildlife. Therefore this evaluation is currently a secondary objective of wildlife monitoring, which will probably need to be adjusted in the future.

Methods

The following methods, sampling dates, etc. will be followed as proposed in this monitoring plan. If as method or schedule cannot be followed (for example, if an aerial survey cannot be flown within the proposed time frame), The Operator will consult with DEQ to determine an appropriate alternative course of action.

Seasonal Definitions

For the purposes of this Plan, annual wildlife monitoring information will be collected on the basis of the following seasonal delineations:

- Spring (March 16 – June 30)

Spring field work will be comprised of two five-day periods, tentatively scheduled for late April – early May and late May – June. Field tasks will include but not be limited to: vehicle routes, pedestrian routes, upland game bird surveys, raptor nest surveys, spring/seep/pond monitoring (including landbird and bat surveys), TES (threatened, endangered, sensitive) species monitoring, and reclamation/mitigation monitoring.

- Summer (July 1 – September 15)

No field work is proposed for summer. The Operator will confer with DEQ if conditions are discovered (e.g., presence of a federal or state-listed threatened or endangered species) that might require monitoring during summer.

- Autumn (September 16 – December 15)

No field work is proposed for autumn. The Operator will confer with DEQ if conditions are discovered that might require monitoring during autumn.

- Winter (December 16 – March 15)

Winter field work will be comprised of two aerial surveys (discussed below), vehicle routes, pedestrian routes and owl surveys. Depending on the spacing of aerial surveys, field work will comprise 4-6 days.

Species Lists

The annual wildlife monitoring report will include a list of all species recorded during the year, by habitat, and a comprehensive list of all species recorded since wildlife studies specific to the Bull Mountains Mine No. 1 began in 1989.

Counts of grouse at active leks will be made on three mornings. Total numbers of grouse will be counted. If possible, dominant males will be distinguished from subdominant males and females. Results will be reported by count date.

Aerial Surveys

Two aerial surveys will be flown in winter, to determine distribution and habitat use of big game (primarily elk, mule deer and pronghorn) in the mine plan area and vicinity. Aerial surveys will also be used to note the number, distribution and habitat use of other species such as coyotes, wild turkeys, certain raptors, etc. that are observable from the air. Although the aerial surveys may be flown anytime during the winter season, target dates will be February 10-28. The target dates: a) generally coincide with the time frame of past aerial surveys during winter; b) usually fall during the most severe portion of the winter, when big game distribution may be restricted and effects of anthropogenic activities may be discernable; and 3) can provide consistency of date collection from year to year.

If possible, aerial surveys will be flown on successive days, and will be used to count the minimum number of big game animals in the aerial survey area. All flights will be made in a Piper Super Cub or other suitable aircraft. In particularly cold weather, it may be more productive to fly aerial surveys in late afternoon. In general, however, aerial surveys will be flown at or near sunrise, under as optimal conditions (clear to scattered cloud cover, minimal wind, etc.) as possible.

Vehicle Routes

Systematic (should follow the same routes to the extent possible) vehicle routes will be run along roads and trails in the mine permit and mine plan areas. For the most part, vehicle routes will be

run near sunrise and sunset in winter and spring. Sightings of big game, raptors, upland game and other species will be recorded by date, time, habitat, location, number, age class and gender, and activity.

Pedestrian Routes

Systematic (should follow the same routes to the extent possible) pedestrian routes will be run through portions of the mine permit area at or near proposed or existing mining activity. Pedestrian routes will be also be used for raptor nest searches and compiling species lists. Observations will be recorded similar to vehicle routes.

Miscellaneous Observations

Throughout the monitoring year, Mine personnel will note and record miscellaneous observations of wildlife use that are relevant to the Primary Objectives, particularly wildlife observations of major species groups (big game, raptors, etc.) in and near areas of mine disturbance.

Upland Game

Only two species of upland game (sharp-tailed grouse and wild turkey) are expected to nest in or near the mine permit or mine plan areas. Searches for sharp-tailed grouse leks will be conducted on at least three mornings during the first spring field period by stopping at appropriate points along roads and trails and listening for several minutes for displaying grouse. Lek searches will begin no more than one hour before sunrise and will be concluded no more than two hours after sunrise. To the extent possible, searches will be conducted on morning with no precipitation, little cloud cover, little or no wind and moderate temperatures. All historical leks will be examined for evidence of activity (droppings, feathers, dust bowls, tracks/paths, etc.). These examinations may occur during lek searches or at any time of day congruent to other wildlife monitoring tasks.

No specific survey methods are proposed for wild turkeys. Turkeys will be recorded and mapped by the habitat in which they are observed.

Raptors

Raptors (eagles, hawks, falcons and owls) will be recorded and mapped whenever they are observed during spring and winter field periods.

Owls will be surveyed during the winter field period by driving accessible roads and trails at night. The observer will periodically stop the vehicle at appropriate listening points (usually no more than one mile apart) and will listen for displaying owls for several minutes. All owls that are heard will be recorded and an approximate location of the individual will be mapped. Further searches for owl nests will be conducted in the spring field periods, as appropriate, if incidental sightings suggest a possible nest site.

Searches for other nesting raptors will be conducted in the mine permit area and an adjacent buffer during the spring field periods. The primary search method will be walking appropriate habitats and observing birds that display nesting or territorial behavior. More specific conditions (e.g., eliciting call responses) may be employed depending on the species and specific conditions.

Any active nest will be mapped and described in detailed field notes. Active nests will not be disturbed. If it is possible to see into the nest from a nearby vantage point, an effort will be made to determine nest success (i.e., presence of chicks). Fledgling rate (number of chicks fledged) will not be monitored.

Spring/Pond/Seep Monitoring

Surface water sources may be the wildlife habitats that are most susceptible to potential impact from mining at the Bull Mountains Mine No. 1. In the Bull Mountains Mine No. 1 vicinity, these habitats may be particularly important for wildlife because of their relative scarcity. Therefore these habitats will be specifically monitored during the spring field periods.

Wildlife use of springs, seeps and ponds within the mine permit area, and selected sites in the mine plan area or an adjacent buffer, will be monitored by a combination of methods. Big game and other mammal use will be monitored by direct observation, observation or evidence (tracks, scats, fur, etc.), and reports from landowners, Mine employees and other consultants monitoring other resources at these sites.

Upland game, raptors, and waterfowl and shorebird use will be monitored by observing each site; and effort will be made to determine if waterfowl or shorebirds are nesting at or near the site. Landbird (avian species other than upland game, raptors, waterfowl and shorebirds) will be monitored through the use of circular plots during the second spring field period, using the protocol in DEQ's August 1994 Fish and Wildlife Guidelines. One change will be made to the method: instead of dividing the plot into two areas (0-50 m and 50+ m), plots will be arbitrarily halted at 100 m radius. It is reasonable to assume that the habitat influence of springs, seeps, and ponds will not extend more than 100 m from the site in the comparatively xeric habitats of the Bull Mountains Mine No. 1 vicinity. Plot radius will be measured with a tape and pin flags. Notes will be taken on canopy height, cover and composition, and a representative photograph will be taken. Plots will be surveyed from about ½ - hour before sunrise until mid-morning. Plots will be run on three mornings at staggered times. Each plot will be run for 10 minutes. Birds will be recorded by distance from the observer, and by time (0-5 minutes, 5-6 minute, 6-7 minute, 7-8 minute, 8-9 minute and 9-10 minute).

Reptiles and amphibians will be monitored at springs, seeps and ponds by observing each site, and by listening for displaying amphibians. Depending on site conditions, eggs or tadpoles may be collected with a dip net or seine. Depending on site conditions, pitfalls may be placed along shore edges to capture amphibians or small mammals (such as shrews) that might be characteristic of these habitats.

Bats will be monitored at one or more sites during the second spring field period by one or more of the following methods: 1) hand-held electronic detectors; 2) recording electronic detectors; and/or 3) mist netting. Mist nests will not be set up until dark, to avoid accidental captures of birds. The number and placement of nets at each location will depend on site-specific conditions. Nets will be monitored for a minimum of two hours, and may be monitored longer depending on site-specific circumstances. Hand-held detectors will be used periodically throughout the sampling period.

Reclaimed Habitat Monitoring

There is comparatively little reclaimed habitat available at the Bull Mountains Mine No. 1. Wildlife use of reclaimed habitats will be monitored by incidental observations, pedestrian routes and one or more landbird plots (discussed above).

Threatened, Endangered or Species of Concern

The Bull Mountains Mine No. 1 vicinity is not known to support endemic populations of wildlife species that are federal or state-listed (listed, proposed or candidate) as threatened or endangered. Use of the area by these species appears to be incidental, usually during migration. Incidental observations of bald and golden eagles will be reported in the Annual Wildlife Monitoring Report. Should any occurrence of a threatened or endangered species (including bald and golden eagle roost/concentration areas and breeding territories) be observed, both the Department and the U.S. Fish and Wildlife Services will be notified as soon as possible. Additionally, the U.S. Fish and Wildlife Services' threatened and endangered species specific protective measures, contained in the Department's Fish and Wildlife Guidelines, will be implemented.

Some wildlife species of concern, as identified by the Montana Natural Heritage Program, may be present in the area as least seasonally. These species, and their status in the Bull Mountains Mine No. 1 wildlife monitoring area, will be noted in the annual report.

Report Preparation and Due Date

Following completion of field work, a report will be prepared which will describe the methods used to monitor wildlife, summarize the results and to the extent possible, compare them with those from previous years. If necessary, recommendations will be made for changes to the following year's monitoring program. The Annual Wildlife Monitoring Report will be submitted to the Department by March 31 of the following year.

Enhancement of Fish and Wildlife Resources

Successful revegetation of the disturbance area using the seed mixtures proposed in the reclamation plan will enhance wildlife use of the permit area relative to present conditions. With closure of the mine and completion of revegetation, the largest human disturbance in the area will be gone (the P.M. Mine has been in existence for more than 50 years). Also, the proposed seed mixtures will enhance the area's attractiveness to many species by returning the reclaimed portion of the area to an early seral stage. By the time this area is reclaimed, at least 35-45 years will have passed and the burned areas will have developed to a mid-seral stage. Early seral stage areas will be relatively limited. Thus, the reclaimed area will be especially attractive to species, such as elk, that can utilize early seral stage areas.

During reclamation of the WDA, the Operator will increase the topographic and vegetative diversity of the WDA. A mosaic of grassland, shrub and ponderosa pine communities will be reestablished. Postmine vegetation has been developed in consultation with DEQ and is shown on Map 313-4.

Large boulders and rocks salvaged during mining of the quarry will be selectively placed in reclaimed areas. Potential sites for these rock piles are shown on Map 313-4. Rock piles will be placed on crests of hills and on the upper 1/3 to 1/2 of more gentle reclaimed slopes. Rock piles

will provide perches for raptors and passerine birds, cover for small animals and cottontails, and possible den sites for coyotes or red foxes.

Distribution of rock piles will be a function of reclaimed topography, land use and material availability. Rock pile density varies within reclaimed habitat, and may be considerably greater along reclaimed ridges and steeper slopes, but may be considerably less in other areas to accommodate reclaimed agricultural lands. Rock pile size and shape will vary considerably, depending on availability of materials, distance of transport, reclaimed topography, etc.

An attempt will be made to create a diversity of rock piles. A few rock piles may consist of one large boulder, 3-5 feet in diameter, placed at prominent points or open areas to serve as raptor perches. For the most part, the minimum rock pile size will be 3-5 boulders, 3-5 feet in diameter, piled together at one location. Other rock piles may be considerably larger but constructed of smaller rocks, with the final size, shape and height to be determined by material availability, rock integrity, and configuration of the placement site. Some rock piles may be "jumbles" where virtually all rocks are above ground, with a high point usable by raptors. Others may be more linear, and may be dressed with topsoil on the uphill side to blend more aesthetically with the slope and create more burrow locations; topsoil may be thinner just downslope of the rock pile, to provide an exposed rock face, burrow openings, etc.

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