

# CHAPTER 6

## MITIGATION AND MONITORING

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### 6.1 PROPOSED ACTION

#### 6.1.1 Recommended Mitigation Measures

In addition to the environmental protection measures discussed in **Chapter 2, Section 2.2.10**, the mitigation measures below are proposed by the BLM.

##### ***Greater Sage-Grouse***

An objective of the Record of Decision (ROD) and Approved Resource Management Plan Amendments for the Great Basin Region, Including the Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, Utah, September 2015 (RMP Amendment and ROD) is to apply the concept of “avoid, minimize, and compensatory mitigation” in greater sage-grouse habitat. This is to avoid adverse impacts on greater sage-grouse and its habitat. The first priority would be to avoid new disturbance; where this is not feasible, the second priority would be to minimize new disturbance. Remaining disturbance that could not be avoided or minimized would be mitigated through compensatory mitigation, which would provide a net conservation gain to the species.

Under the Proposed Action, impacts were avoided to the extent possible. Implementation of environmental protection measures (**Section 2.2.10**) and RDFs (outlined below) would minimize impacts. The remaining impacts on greater sage-grouse habitat are proposed to be mitigated by implementing the compensatory mitigation projects described below. This strategy is consistent with the RMP Amendment and ROD, including Appendix F, Regional Mitigation Strategy.

There is no PHMA or NDOW Category 1 or 2 habitat in the project area; however, approximately 20 acres of Category 3 habitat, or GHMA, could be disturbed by the proposed project. By completing the proposed mitigation

projects described below, the Proposed Action would have a net conservation gain for greater sage-grouse.

Mitigating the loss of GHMA is proposed and would be addressed in compliance with the 2013 MOU between the BLM, Humboldt-Toiyabe National Forest, Nevada Department of Conservation and Natural Resources, and Barrick Gold of North America, Newmont Mining Corporation, and other companies (BLM 2013c). As outlined in the MOU, the replacement ratio for GHMA-quality habitat (corresponding to PGH-quality habitat in the MOU) would be 2:1. Therefore, the restoration projects would need to equate to at least 40 acres of GHMA restored. Sites would need to be durable, and restoration would need to be in addition to what would have otherwise occurred. Restoration projects identified below could provide adequate mitigation acreage, either individually or together.

The BLM has identified potential sage-steppe habitat restoration projects that could serve as off-site mitigation for impacts on greater sage-grouse habitat under the Proposed Action. Restoration projects would be monitored over five years or until they are successful, as determined by the BLM. Expected performance criteria would include a minimum density and percent cover threshold for planted or seeded species, as well as maximum percent cover thresholds for invasive plant species, such as annual invasive grasses and pinyon-juniper. If success criteria are not met within five years, additional reseeded or rehabilitation may be necessary. If so, then monitoring would continue during reseedings or rehabilitation until such time as the rehabilitation is successful.

The criteria for restoration success would be consistent with the performance criteria and restoration and revegetation plans in Appendices E and U of the Environmental Compliance Monitoring Plan for the Ruby Pipeline Plan of Development (Ruby Pipeline LLC 2010). The BLM would initiate and fund any required NEPA compliance for potential greater sage-grouse habitat restoration projects.

The currently identified potential off-site mitigation and restoration projects are summarized below. CRI could participate in one or more of these projects to provide adequate mitigation for the Proposed Action and consistent with the ROD for the RMP Amendment. Mitigation would occur within ten years of the ROD for this EIS.

- **Rock Spring Restoration Project**—This project would involve fencing a spring and associated five to ten acres of sagebrush and riparian habitat that is currently heavily degraded by wild horse use. The project could also involve plumbing the existing spring box to route water approximately half a mile to an existing trough and seeding outside of the enclosure. The project would be in the Soldier Meadows Allotment, in PHMA.

- **Rock Spring Creek Restoration Project**—This project involves fencing a spring and associated five to ten acres of sagebrush and riparian habitat, including installing a spring box or water catchment system to route water to a new trough outside of the fenced spring area. Seeding may occur outside the enclosure. Several other springs in the vicinity would benefit from similar improvements, and the project could include improving some or all of them. The project would be in the Pine Forest Allotment, in PHMA.
- **Pine Forest Road Restoration and Re-route Project**—This project involves several components, including two meadow restorations (totaling over 100 acres), approximately five miles of road abandonment, closed road restoration, and improved road barriers. Details of this project are in development. The project would be in the Pine Forest Allotment in PHMA.

Mitigation projects were selected to enable greater sage-grouse PHMA to be restored. Projects in PHMA would enable mitigation to have the greatest benefit to the species by restoring the highest-quality habitat. Projects are in areas identified by the BLM as needing restoration due to degradation by livestock grazing, wild horses, or recreation. Mitigation would be durable, because restoration projects are in the Black Rock Desert–High Rock Canyon Emigrant Trails NCA and Pine Forest Wilderness.

The federal land in the NCA and designated wilderness, subject to valid existing rights, was withdrawn from location, entry, and patent under the 1872 General Mining Law. In addition to benefiting greater sage-grouse, the identified potential restoration projects would benefit other sage-steppe-obligate and small mammal species, including Preble’s shrew.

CRI would contribute funds in the way of a performance bond, which the BLM would administer, similar to the financial guarantee for reclamation. A financial guarantee would be held until habitat restoration objectives are achieved in each of the mitigation projects; for example, enclosures are installed and revegetation is sufficient in each of the rehabilitated areas. Under 43 CFR, Part 3809, this mitigation would be a provision in the approval of CRI’s POA 10. Under 43 CFR, Subpart 3809.601, not complying with any provisions of the ROD for this EIS may result in a noncompliance order or other enforcement action.

The greater sage-grouse RMP Amendment and ROD necessitates the use of RDFs. The applicable RDFs from Appendix C of the RMP Amendment and ROD are discussed under *General RDFs*, below.

Several RDFs from Appendix C were not carried forward for one of the following reasons:

- A specific RDF would not be applicable to the site-specific conditions of the project or activity, for reasons such as site limitations or engineering considerations. Economic considerations, such as increased costs, do not necessarily require that an RDF be varied if rendered inapplicable.
- An alternative RDF is determined to provide equal or better protection for greater sage-grouse or its habitat.
- A specific RDF would provide no additional protection to greater sage-grouse or its habitat (with rationale).

A review of Appendix C (Required Design Features) of the RMP Amendment and ROD reveals that the facilities and activities being proposed in the Coeur Rochester POA 10 meet the applicable RDFs for greater sage-grouse. Most of the measures that meet the criteria in these RDFs are outlined in the environmental protection measures in **Section 2.2.10** of this EIS.

#### General RDFs

The following RDFs would apply to development in all programs in PHMAs, GHMAs, and OHMAs, consistent with applicable law:

RDF Gen 1—Locate new roads outside of greater sage-grouse habitat to the extent practical.

- The locations of relocated roads were carefully chosen with not only greater sage-grouse habitat in mind but for other wildlife and special status species, cultural sites, safety, amount of disturbance, and functionality. Roads would be constructed outside of greater sage-grouse habitat, if possible or practical.

RDF GEN 2—Avoid constructing roads within riparian areas and ephemeral drainages. Construct low-water crossings at right angles to ephemeral drainages and stream crossings (note that such construction may require permitting under Sections 401 and 404 of the Clean Water Act).

- Constructed roads would avoid riparian areas and ephemeral drainages, when possible. No water crossing is anticipated in any of the proposed locations of haul or access roads.

RDF GEN 3—Limit construction of new roads where roads are already in existence and could be used or upgraded to meet the needs of the project or operation. Design roads to an appropriate standard, no higher than necessary, to accommodate intended purpose and level of use.

- Rerouting existing project roads is necessitated by the expansion of mine facilities. A portion of the main access road is being constructed on a previously constructed exploration road. Similarly,

roads would be constructed on existing disturbance, if possible. No unnecessary construction of roads is proposed. Roads would be designed to the required height and width for the intended use, in accordance with the MSHA regulations in the Mine Act and 30 CFR. These guidelines are outlined in the MSHA Handbook Number PH99-I-4.

RDF GEN 4—Coordinate road construction and use with ROW holders to minimize disturbance to the extent possible.

- The Proposed Action would relocate existing roads, where necessary, and would be coordinated with the ROW holder (Pershing County), when applicable.

RDF GEN 5—During project construction and operation, establish and post speed limits in greater sage-grouse habitat to reduce vehicle/wildlife collisions, or design roads to be driven at slower speeds.

- CRI has posted speed limits for all project roads. Speed limits in relation to special status species are discussed in **Section 2.2.10, Environmental Protection Measures, under Wildlife, Including Special Status Species and Migratory Birds.**

RDF GEN 6—Newly constructed project roads that access valid existing rights would not be managed as public access roads. Proponents will restrict access by employing traffic control devices such as signage, gates, and fencing.

- Access to the mine is restricted, and traffic controls are used on project roads. Public access on American Canyon Road is routed around the mine.

RDF GEN 7—Require dust abatement practices when authorizing use on roads.

- As discussed in **Section 2.2.10, Environmental Protection Measures, dust abatement would continue on all project roads.**

RDF Gen 8—There is no RDF Gen 8 in Appendix C of the RMP Amendment and ROD.

RDF GEN 9—Upon project completion, reclaim roads developed for project access on public lands, unless, based on site-specific analysis, the route provides specific benefits for public access and does not contribute to resource conflicts.

- As discussed in **Section 2.1.12, project roads no longer needed would be reclaimed. Final reclamation of project roads is also discussed in the FPCP.**

RDF GEN 10—Design or site permanent structures that create movement (e.g., pump jack/windmill) to minimize impacts on greater sage-grouse habitat.

- No Additional structures that create movement are being proposed under the Proposed Action.

RDF GEN 11—Equip temporary and permanent aboveground facilities with structures or devices that discourage nesting and perching of raptors, corvids, and other predators.

- All new facilities would be constructed with structures and devices that discourage nesting and perching.

RDF GEN 12—Control the spread and effects of nonnative, invasive plant species, by such means as washing vehicles and equipment and minimizing unnecessary surface disturbance (Evangelista et al. 2011). All projects would be required to have a noxious weed management plan in place prior to construction and operations.

- POA 10 includes a weed management plan; also, nonnative invasive plant control is discussed in **Section 2.2.10**, Environmental Protection Measures.

RDF GEN 13—Implement project site-cleaning practices to preclude the accumulation of debris, solid wastes, putrescible wastes, and other potential anthropogenic subsidies for predators of greater sage-grouse.

- Solid and hazardous waste is discussed in **Sections 2.2.9** and **2.2.10**. The Proposed Action would generate no new types of solid or hazardous wastes, and all solid wastes would be properly disposed of in an approved landfill. Appendix L of POA 10 is the solid and hazardous waste management plan for the mine.

RDF GEN 14—Locate project-related temporary housing sites outside of greater sage-grouse habitat.

- There is no temporary housing associated with the Proposed Action.

RDF GEN 15—When interim reclamation is required, irrigate site, if it requires it, to establish seedlings more quickly if the site requires it.

- CRI would use concurrent reclamation as part of the Proposed Action; this is outlined in **Section 2.2.12**. Reclamation would be done in a manner that promotes stabilization of the soil and revegetation would be completed as soon as is practical or possible.

RDF GEN 16: Utilize mulching techniques to expedite reclamation and to protect soils if the site requires it.

- CRI uses concurrent reclamation as part of the Proposed Action; this is outlined in **Section 2.2.12**. Reclamation would be done in a manner that promotes stabilization of the soil, and mulching would be used if necessary.

RDF GEN 17—Restore disturbed areas at final reclamation to the pre-disturbance landforms and desired plant community.

- Both the POA 10 and the FPCP require that final reclamation would return the area to pre-mining uses. Recontouring areas to conform with the surrounding topography and reseeding with desired plant communities are outlined in both of these plans. The FPCP details the final reclamation plan for the site and discusses reclamation in relation to returning the site to pre-mining uses.

RDF GEN 18—When authorizing ground-disturbing activities, require the use of vegetation and soil reclamation standards suitable for the site type, prior to construction.

- Both the POA 10 and the FPCP detail the reclamation of various types of disturbance, such as HLPs, waste rock piles, and roads; this information is summarized in **Chapter 2**. The BLM and NDEP approve reclamation, which includes reseeding and using vegetation and soil reclamation standards suitable for the site. The environmental protection measure for greater sage-grouse (**Section 2.2.10**) discusses working with the BLM and other agencies to make long-term habitat improvements for greater sage-grouse.

RDF GEN 19—Instruct all construction employees to avoid harassment and disturbance of wildlife, especially during the greater sage-grouse breeding (e.g., courtship and nesting) season. In addition, pets shall not be permitted on-site during construction.

- Contractors must undergo a mandatory site-specific briefing, which includes safety, wildlife, cultural, and other topics, before entering the mine site. Contractors would be briefed not to harass or disturb wildlife. (It is CRI's policy to not allow pets on the mine site.)

RDF GEN 20—To reduce predator perching in greater sage-grouse habitat, limit the construction of vertical facilities and fences to the minimum number and amount needed and install anti-perch devices where applicable.

- Any relocated power lines or fences would be limited to the number needed and would have anti-perch devices installed where applicable.

RDF GEN 21—Outfit all reservoirs, pits, tanks, troughs or similar features with appropriate type and number of wildlife escape ramps (Taylor and Tuttle 2007).

- CRI would outfit all reservoirs, pits, tanks, troughs, or similar features with the appropriate type and number of wildlife escape ramps.

RDF GEN 22—Load and unload all equipment on existing roads to minimize disturbance to vegetation and soil.

- CRI would load and offload equipment in disturbed areas, such as existing roads, laydown yards, and parking lots.

#### Locatable Minerals RDFs

In addition to the General RDFs, locatable minerals include the following program-specific RDFs applicable to PHMA, GHMA, and OHMA, consistent with applicable law:

RDF LOC 1—Install noise shields to comply with noise restrictions (see Action SSS 7 in the greater sage-grouse ROD and RMP Amendment) when drilling during the breeding, nesting, brood-rearing, and/or wintering season. Apply greater sage-grouse seasonal timing restrictions when noise restrictions cannot be met (see Action SSS 6 in the greater sage-grouse ROD and RMP Amendment).

- There were no greater sage-grouse found during surveys conducted in the project area, and activity would mostly occur in the active mine site. Additionally, the nearest lek is approximately 4.3 miles from the project and is shielded by topography. No additional noise is anticipated, outside of what is already being created by the approved operation of the mine.

RDF LOC 2—Cluster disturbances associated with operations and facilities as close as possible, unless site-specific conditions indicate that disturbances to greater sage-grouse habitat would be reduced if operations and facilities locations would best fit a unique special arrangement.

- The project is in the POA10 boundary and is next to existing operations and disturbance.

RDF LOC 3—Restrict pit and impoundment construction to reduce or eliminate augmenting threats from West Nile virus (Doherty 2007).

- No impoundments are being constructed, only process-related ponds. CRI would obtain pond permits from NDOW before construction.

RDF LOC 4—Remove or re-inject produced water to reduce habitat for mosquitoes that vector West Nile virus. If surface disposal of produced water continues to be disposed of on the surface, use the following steps for reservoir design to limit favorable mosquito habitat (Doherty 2007):

- Overbuild size of ponds for muddy and unvegetated shorelines
- Build steep shorelines to decrease vegetation and increase wave actions
- Avoid flooding terrestrial vegetation in flat terrain or low-lying areas
- Construct dams or impoundments that restrict downslope seepage or overflow
- Line the channel with crushed rock where discharge water flows into the pond
- Construct the spillway with steep sides and line it with crushed rock
- Treat waters with larvicides to reduce mosquito production on surface water
- Ponds constructed in association with the Proposed Action would be permitted through NDOW; construction designs of ponds, channels, and other water diversion features are approved by the BLM and NDEP. Stormwater and water produced but not reused for operations would continue to be discharged and monitored in accordance with existing permits.

RDF LOC 5—Address post-reclamation management in reclamation plans such that goals and objectives are to protect and improve greater sage-grouse habitat needs.

- The POA 10 and FPCP detail the reclamation and post-closure monitoring of the site, which is also summarized in **Chapter 2**. The BLM and NEDP approve reclamation, which includes reseeding and using vegetation types that would be suitable for greater sage-grouse habitat. The greater sage-grouse environmental protection measure (**Section 2.2.10**) discusses working with the BLM and other agencies to make long-term habitat improvements for greater sage-grouse.

RDF LOC 6—Maximize the area of interim reclamation on long-term access roads and well pads, including reshaping, topsoiling, and revegetating cut and fill slopes.

- Concurrent reclamation is used as part of the plan and is outlined in Section 2.2.12. Reclamation is done in a manner that promotes soil stabilization, and revegetation is completed as soon as is practical or possible.

RDF LOC 7—Cover (e.g., with fine mesh netting, for example, or use other effective techniques for) all pits and tanks, regardless of size, to reduce greater sage-grouse mortality.

- Proposed process ponds would be covered, either by netting or by bird balls, and would be fenced to prevent wildlife access.

### **Cultural Resources**

A treatment plan has been prepared. It includes mitigation measures that address anticipated direct impacts on the prehistoric component of NRHP-eligible site CrNV-22-3545 and anticipated indirect impacts on NRHP-eligible site CrNV-02-401 (the Panama Townsite). On November 25, 2015, the BLM received the SHPO's concurrence to proceed with the treatment plan under the existing programmatic agreement for the project (BLM et al. 1992). The treatment plan includes the following:

- CRI should develop and submit to the BLM for approval a mine worker education program on the consequences of unauthorized collection of artifacts.
- A detailed description of the treatments proposed for historic properties eligible for the NRHP, with an explanation or rationale provided for the choice of the proposed treatments. Data recovery will be phased, and Phase I would consist of
  - Geomorphologic assessment and data recovery through mapping, surface artifact collection, and limited excavation for the three extant prehistoric loci of site CrNV-22-3545 (Locus C, Locus C-100, and Locus C-361). Note that Phase 2 might entail excavating 5-meter by 5-meter or 10-meter by 10-meter grids if it is warranted, based on the results of Phase I and only after consultation with the BLM and with SHPO concurrence,
  - Archival and documentary research and the development of historic narratives for the Panama Townsite, and
  - Development of a display (interpretive panel) at the Marzen House Museum in Lovelock, Nevada, that focuses on the

High Line Road, the Panama Townsite, and the possible role of Chinese laborers in mining on the site.

### 6.1.2 Applicant Committed Monitoring

CRI would monitor the proposed activity to identify or prevent impacts according to the operating permits and plans in **Table 6-1**.

**Table 6-1  
Monitoring Plan**

<b>Monitoring Component</b>	<b>Permit or Plan and Agency</b>
Air quality	Throughput, emissions, fuel use, and stack testing NDEP Bureau of Air Pollution Control
Solid and hazardous waste	90-Day storage area inspections Satellite storage area weekly inspections NDEP Bureau of Waste Management
Explosives	Weekly magazine inspection BATFE
Water	Process water, surface water, and groundwater quality and quantity NDEP Bureau of Mining Regulation and Reclamation Inspection of stormwater BMPs NDEP Bureau of Water Pollution Control Water use NDWR
Noxious weeds	Periodic noxious weed surveys and updated weed management plan on an as-needed basis BLM (under the plan of operations)
Reclamation	Reclamation revegetation success BLM and NDEP Bureau of Mining Regulation and Reclamation
Slope stability	Inspections BLM and NDEP Bureau of Mining Regulation and Reclamation
Waste and ore rock chemistry	Waste rock and ore analysis NDEP Bureau of Mining Regulation and Reclamation
Wildlife	Wildlife mortality NDOW

### 6.1.3 No Action Alternative

There are no mitigation measures or monitoring recommended as part of the No Action Alternative, other than those activities already associated with the mining operations.

### 6.1.4 Alternative I—Permanent Management of PAG Material Outside of the Rochester Pit

The mitigation measures and monitoring recommended for the Proposed Action would apply to Alternative I as well. There are no additional mitigation or monitoring measures for Alternative I.

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