



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

March 1, 2021

Jean Black
Attn. Relief Canyon Mine Expansion
Bureau of Land Management, Humboldt River Field Office
5100 East Winnemucca Boulevard
Winnemucca, Nevada 89445

Subject: Draft Environmental Impact Statement for the Relief Canyon Mine Project, Pershing County, Nevada (EIS No. 20210004)

Dear Ms. Black:

The U.S. Environmental Protection Agency has reviewed the above-referenced document pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

In accordance with the *Memorandum of Understanding Between EPA and Nevada BLM for Mining Environmental Impact Statements*, the EPA is a cooperating agency on the subject EIS. We provided scoping comments on September 2, 2020 and recommendations on an administrative Draft EIS on November 23, 2020. We appreciate the changes in the Draft EIS which address our recommendations to clarify the areal and temporal extent of impacts to groundwater levels and add figures depicting impacts to habitat.

The Draft EIS analyzes the potential environmental impacts under the proposed action, Alternative A; no other action alternatives are considered in detail in the Draft EIS. Under Alternative A, the BLM would authorize an expansion of mining at the existing Relief Canyon Mine, extending the mine life by three years and increasing surface disturbance by 564 acres to a total of 1,243 acres. The expansion would include the construction of two new heap leach cells (8 & 9) and a process pond, the open pit would be expanded and result in a post-mining pit lake, waste rock storage would increase by about 130 million tons to a total of approximately 158.2 million tons. Approximately 15 acres would be disturbed for a new water pipeline and four new rapid infiltrations basins to discharge up to 900 gallons per minute of excess pit dewatering water.

In our enclosed detailed comments, we describe our concerns about the potential impacts to water quality that could result from the rapid infiltration basins, heap leach facilities and the expanded waste rock storage facilities, and we have recommendations to improve the impact analyses, mitigation, and explanations in the Final EIS. We also have recommendations to provide additional information on the permitting and mitigation for impacts to Golden eagles and Greater sage-grouse.

The EPA appreciates the opportunity to review this Draft EIS. When the Final EIS is released for public review, please notify me and make an electronic copy available. If you have any questions, please

contact me at (415) 947-4167, or contact Hugo Hoffman, the lead reviewer for this project, at 415-972-3929 or hoffman.hugo@epa.gov.

Sincerely,

Jean Prijatel
Manager, Environmental Review Branch

Enclosures

cc: Daniel Erbes, Bureau of Land Management
Holley Kline, Bureau of Land Management
Robin Michel, Bureau of Land Management
Steve Fetting, United States Fish and Wildlife Service
Shawn Gooch, Nevada Division of Environmental Protection, Bureau of Mining Regulation and Reclamation
Christine Olson, Nevada Division of Environmental Protection, Bureau of Mining Regulation and Reclamation
Kelly McGowan, Nevada Department of Conservation of Natural Resources
Diana Eck, Stantec

Water Resources

Groundwater Quality Impacts from Rapid Infiltration

According to the Draft EIS, excess pit dewatering water that would be discharged via rapid infiltration basins (RIBs) is expected to be within the relevant Nevada Division of Environmental Protection Profile I reference values (NRVs), but “[c]olumn testing of composite soil samples from the RIBs suggest some water quality constituents are available for mobilization” (Draft EIS pg. 5-11). Based upon a review of the cited *Technical Memorandum regarding the Relief Canyon Rapid Infiltration Basins* (McGinley 2018),¹ arsenic is likely to be mobilized in concentrations exceeding background and the applicable NRV. The Draft EIS further explains that “the limited duration of discharge and natural attenuation would limit the impacts to the alluvial aquifer underlying the RIBs.” Natural attenuation is assumed to be a mechanism by which groundwater quality is protected, but there does not appear to be an analysis of the degree to which it would be effective. Column testing of the RIB area soils shows that effluent concentrations do not decrease to below the background arsenic concentrations of 0.032 mg/L until pore volume # 9, and do not decrease to below the NRV until pore volume #11 (McGinley 2018 pg. 6). Without further analysis it appears that the RIBs may mobilize a slug of low-quality water that could degrade groundwater quality.

Recommendation: In the Final EIS, revise the analysis for effects to groundwater quality to:

- Include a groundwater fate and transport analysis based on a quantitative estimate of natural attenuation derived through column testing using aliquots that represent RIBs water with elevated arsenic concentrations, or
- Include additional information on RIBs area soils to identify soil horizons contributing to elevated arsenic concentrations in column tests, identify measures to avoid these layers and prevent mobilization of arsenic, and change the RIB design to avoid increases in arsenic concentration in infiltrated water.

Monitoring and Mitigation of Impacts to Seeps and Springs from Groundwater Drawdown

The Draft EIS concludes that impacts to seeps and springs are not expected from the proposed action because groundwater drawdown of less than 10 feet at several springs within the analysis area at north Packard Flat would be “less likely to be measurable or distinguishable from natural seasonal or annual variations in groundwater levels” (Draft EIS pg. 5-4). However, many of these seeps and springs appear to be within the “cumulative 10-ft groundwater drawdown” on Figure 5-1 and therefore may be impacted by both the proposed Relief Canyon Mine dewatering and in combination with pumping under the Coeur Rochester and Packard Mines Plan of Operations Amendment 11.

Even if drawdown from Relief Canyon’s activities alone are not responsible for these surface water resources being within the 10-foot drawdown area, sufficient monitoring of an aquifer regularly identifies groundwater table drawdown as little as one to two feet and severe impacts to groundwater-dependent ecosystems can occur with far less than 10 feet of groundwater drawdown. Although EPA understands that analysis of a groundwater table drawdown contour less than 10 feet may present a modeling challenge, such uncertainty alone should not preclude the consideration of potentially significant environmental impacts.

¹ McGinley & Associates. 2018. *Technical Memorandum regarding the Relief Canyon Rapid Infiltration Basins*. June 1, 2018; revised December 14, 2018.

Recommendation: In the Final EIS, include a monitoring and mitigation plan for seeps and springs that could be affected by drawdown less than 10 feet as well as by cumulative drawdown due to the proposed action and Coeur Rochester and Packard mines.

Heap Leach Facility Reclamation and Closure

There are potential significant impacts to groundwater quality and soils if the heap leach facilities' drawdown are not successfully managed over the time needed. The Draft EIS does not appear to discuss the expected period of drawdown, active and passive management phases, and final reclamation of drawdown ponds. Moreover, the latest Plan of Operations available to the EPA² does not appear to include heap leach drawdown estimates for the proposed cells 8 and 9. A complete explanation of how drawdown fluids would be managed is important to include in the Final EIS in order to understand whether drawdown ponds can successfully manage drawdown fluids for as long as needed.

Recommendation: In the Final EIS, include a summary of heap leach drawdown estimates for the proposed cells 8 and 9 along with an overall explanation of the duration and management requirements for the heap leach facilities over the lifetime of the facility. Discuss drawdown management requirements through closure and, if applicable, post-closure. Explain the financial assurance mechanisms that would be used by the BLM and NDEP to ensure that these management requirements can be implemented in the event that the operator is unavailable.

Impacts to Water Quality from Waste Rock Seepage

The Draft EIS includes only a brief explanation of the potential impacts to water quality from waste rock seepage and possible measures to prevent them; and the explanations are internally inconsistent. On page 5-11 of the Draft EIS explains that,

“There is limited potential for impacts from potential drainage associated with the WRSF that would be developed under the Plan Modification because the geochemical characteristics of the waste rock are not anticipated to change from the previous authorization and the Waste Rock Adaptive Management Plan would continue to be implemented.”

However, page 4-37 explains that:

“Results of the meteoric water mobility procedure testing indicate that the following constituents could occur in drainage associated with the rocks: arsenic, antimony, aluminum, total dissolved solids, sulfate, chloride, manganese, and selenium. Whether or not an impact to waters of the State would occur would depend on the details of the drainage hydrology and distribution of potential metal leaching rock in the WRSF or pit wall.”

Since the proposed action would increase the authorized surface storage of waste rock of approximately 18.7 million tons by another 145.2 million tons, further explanation of whether and how waste rock management would be accomplished is needed in the Final EIS.

Recommendation: In the Final EIS, explain how the applicable Waste Rock Management Plan would ensure that waste rock seepage does not adversely impact surface water and groundwater quality. If the previously authorized WRMP is not sufficient for the proposed action, include additional preventative measures.

² revised March 27, 2020

Mitigation for Impacts to Special Status Species

Golden Eagle “Take” and Permits

The Draft EIS makes clear that there would be an incidental disturbance “take” of Golden eagles because several nests are present within the 1- and 2-mile avoidance buffers recommended by the U.S. Fish and Wildlife Service; however, the regulatory permitting and compensatory mitigation requirements for take of eagles are not proposed or discussed. Given the potential for disturbance take, it appears that an incidental take permit and Eagle Conservation Plan would be needed to comply with the Bald and Golden Eagle Protection Act and to demonstrate a “net benefit” to the species.

Recommendation: We recommend that the BLM coordinate with the USFWS on permits that would be needed under the Bald and Golden Eagle Act, if disturbance cannot be avoided. In the Final EIS, explain the permitting requirements and include a draft incidental take permit and Eagle Conservation Plan.

Greater Sage-Grouse

According to the Draft EIS, impacts to Greater sage-grouse habitat were calculated to require 33 credits using the State of Nevada’s Habitat Conservation Tool and would be offset using the State’s Conservation Credit System (CCS) in close cooperation with the Sagebrush Ecosystem Technical Team (pg. 5-15). In the EPA’s experience, credits for impacts from mining authorized by the BLM have not been available through the CCS, resulting in delays for implementing mitigation due to the need to develop individual mitigation projects in subsequent planning.

Recommendation: In the Final EIS, discuss the availability of credits in the Nevada State’s CCS for mitigating impacts to Greater sage-grouse habitat. If sufficient credits are not available, include detailed plans for how the applicant would mitigate impacts to Greater Sage Grouse habitat to meet the State’s conservation goals for the species, as well as potential impacts that could result from mitigation projects.

Additional Comments

- The “issues-based” approach to the structure of the document makes it difficult to understand the total impacts to each resource over the course of the proposed action because the impacts to each resource is not analyzed in one section of the document. For future NEPA documents, consider whether a typical resource-based approach would better communicate the impacts for the decisionmaker and the public.
- There appear to be major formatting errors with citations to a Chapter 3 which is not present in the digital document. While it appears that this is a formatting error and not missing the content, we recommend correcting these errors in the Final EIS to improve understanding and readability.