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

May 2, 2014

Whitney Wirthlin
Bureau of Land Management
1340 Financial Boulevard
Reno, Nevada 89520

Subject: Long Canyon Mine Draft Environmental Impact Statement (EIS), Elko County, Nevada [CEQ #20140082]

Dear Ms. Wirthlin,

The U.S. Environmental Protection Agency (EPA) has reviewed the above referenced document. Our review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality's (CEQ) NEPA Implementation Regulations at 40 CFR 1500-1508, and our NEPA review authority under Section 309 of the Clean Air Act.

We commend the Bureau of Land Management and Newmont Mining Corporation for developing an alternative to the originally proposed Long Canyon Mine project. It appears that the North Facilities Alternative, identified in the Draft EIS as the preferred alternative, would pose fewer and/or less adverse impacts to most environmental resources than would the Proposed Alternative. Nevertheless, we have some outstanding concerns regarding potential impacts to, and mitigation of, wetland/riparian resources, water quality, and air quality. For this reason, we have rated this Draft EIS as EC-2 – Environmental Concerns-Insufficient Information (see enclosed "Summary of Rating Definitions and Follow-Up Action"). We recommend that the Final EIS include a detailed wetland/riparian resources mitigation plan; provide additional information on the project's potential impacts to surface water, groundwater, and air quality; identify cover specifications for reclaiming mine facilities; and include additional information on monitoring.

We appreciate the opportunity to review this Draft EIS. Per our Memorandum of Understanding with Nevada BLM for mining EISs, we respectfully request a copy of the preliminary Final EIS prior to its publication. If you have questions, please call me at (415) 972-3521, or contact Jeanne Geselbracht at 415-972-3853 or geselbracht.jeanne@epa.gov.

Sincerely,

/S/

Kathleen Martyn Goforth
Manager
Environmental Review Section

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Enclosures: EPA's Summary of Rating Definitions and Follow-Up Action
EPA's Detailed Comments

cc: Bryan Fuell, BLM Elko
Bruce Holmgren, Nevada Division of Environmental Protection
Steve Foree, Nevada Division of Wildlife

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U.S. EPA Detailed Comments on the Draft Environmental Impact Statement for the Long Canyon Mine Project, Elko County, Nevada; May, 2014

Wetland/Riparian Resources

The Draft EIS (p. 4-31) indicates that the North Facilities Alternative would increase drawdown in the alluvial and carbonate aquifers and reduce flows in Hardy Creek and the Johnson Springs system, resulting in flow reductions of 300-500 gallons per minute at Big Springs. Flow rates at Big Springs have been as high as 2,053 gpm in November 2006 and as low as 400 gpm, under current drought conditions, in December 2013. The Draft EIS states that, because flows at Big Springs can naturally vary by as much as 1,000 gpm seasonally, the predicted 300-500 gpm reduction in flow under the proposed project could be indistinguishable from natural flow variation. EPA is concerned, however, that a flow reduction of 300-500 gpm in addition to reduced flows due to natural variation could, nonetheless, result in significant impacts to aquatic species, migratory birds, and reptiles and amphibians in these wetland/riparian areas, particularly in drought years. While the Draft EIS (p. 4-35) states that the potential reduction in wetlands does not meet BLM's policy of no net loss of wetland/riparian habitat or Elko County's Public Land Policy Plan, the Draft EIS also states that mitigation measures for wetland and riparian resources are not required. Please note that the NEPA regulations at 40 CFR 1502.14(f) and 1502.16(h) require the disclosure, in an EIS, of measures to mitigate the adverse impacts of a proposed action.

The Draft EIS (p. 2-78) indicates that Mitigation Measure W-4, which would provide greater sage-grouse brood rearing habitat enhancement and restoration within the Hardy Creek corridor at a compensation ratio of 2:1, may also provide incidental mitigation for impacts to surface water resources at Hardy Creek. It is unclear, however, what functions and values this measure might provide that would serve this purpose.

> **Recommendation:** The Final EIS should discuss how the project's potential impacts to wetland/riparian resources, including values and functions, could be mitigated under both the proposed action and North Facilities Alternative. We strongly urge Newmont to commit to mitigating these impacts. We recommend that Newmont, BLM and the Nevada Division of Wildlife work together to develop a detailed plan that specifies monitoring requirements, action levels, and commitments to specific mitigation measures for impacts to wetland/riparian resources and each potentially affected species. We also recommend that specific commitments be made regarding Newmont's water use at various flow thresholds or resource conditions. In light of the uncertainty of groundwater pumping impacts to surface waters and wetlands, an adaptive management plan may provide an appropriate approach to mitigating impacts. The mitigation plan should be included in the Final EIS.

Water Quality Protection

In a discussion about cover/growth medium for the waste rock storage facility (WRSF), heap leach facility, and tailings storage facility (TSF), the Draft EIS (p. 4-20) states that Newmont's proposal calls for "approximately one foot of growth medium on top of and as part of the cover." The discussion includes some findings from two infiltration/drainage studies, including a finding in *Long Canyon Waste Rock Storage and Heap Leach Facilities: Assessment of Cover*

Performance (SRK, 2013b) that the cover was estimated to reduce the average infiltration from 22 percent to one percent of mean annual precipitation (MAP). That finding was based on a three-foot cover thickness, however, rather than a one-foot cover thickness. Furthermore, in *Geochemical Characterization and Predictive Modeling for the Long Canyon Project, Nevada* (2013a), SRK also reported:

> "The results show that for the average infiltration rates for the 2-foot and 3-foot cover scenarios (i.e., 1% and 2% of MAP), none of the parameters are predicted to be elevated above NDEP [Nevada Division of Environmental Protection] reference values in the groundwater underlying the WRSF. This demonstrates that limiting infiltration to less than 1% to 2% of MAP should be sufficient to prevent degradation of groundwater under the facility. For higher infiltration scenarios, mercury concentrations are predicted to increase and are predicted to be slightly elevated above NDEP reference values under the maximum infiltration rates for the 2-foot and 3-foot cover scenarios (i.e., 6% and 11% of MAP)."

The Draft EIS states, on page 4-23, that the geochemical modeling, which assumes attenuation of contaminants of concern in the top 30 feet of alluvium beneath the WRSF, is based on infiltration of three percent of MAP. The discussion on pages 4-19 and 4-20 of the Draft EIS, however, makes no connections between the studies' findings and a conclusion that Newmont's proposed one foot of cover material would provide sufficient reduction of meteoric water infiltration to prevent degradation of groundwater under the facilities after closure. In fact, a one-foot cover appears to conflict with the findings in the SRK reports. Additional information is needed in the Final EIS to support the above conclusion, and this information will be needed to assess the availability and cost of the specified cover material for reclamation purposes.

Recommendations: The Final EIS should:

- Discuss the closure objectives of the WRSF, heap leach facility, and TSF in terms of concentration limits for contaminants of concern seeping into groundwater, draining to the TSF, or being used for agricultural applications;
- Identify, for each facility, the maximum allowable infiltration rates, thickness, composition, and other cover specifications needed to meet the closure objectives;
- Discuss consistency of these specifications with the findings from the cover evaluations conducted for this mine; and
- Include commitments to contingency measures to be implemented in the event that the modeling proves to be incorrect.

The residual draindown from the TSF and heap leach facility (totaling approximately 42 gpm) after closure would be managed through evaporation, infiltration and/or agricultural applications. The Draft EIS (pp. 4-21, 22) indicates that spent ore may leach arsenic, antimony, thallium, and mercury. It is unclear whether and how long it may take for concentrations of parameters in TSF and heap leach draindown solutions to be reduced to below levels of concern, or how this volume of solution could be treated or otherwise managed over a period longer than the projected "active" draindown/recirculation period of six years and one year, respectively. It is understood that modeling will be refined as additional information is gathered throughout mine

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life, and that closure plans, mitigation measures, long-term costs, etc., may need to be revised accordingly based on better understanding of water management needs later in project life, and as the closure plan is developed in more detail. This does not, however, obviate the need for information in the EIS regarding the potential foreseeable closure/post-closure facilities such as evaporation ponds, evapotranspiration (ET) cells, infiltration basins, and wildlife protection measures, as well as monitoring of these facilities and solutions. This information will also be needed to calculate reclamation, closure, and potentially post-closure costs.

> **Recommendation:** The Final EIS should describe the draindown solution management facilities that are being considered, including sizes and potential locations of ponds, ET cells, and infiltration basins; monitoring needs; and discuss any post-closure financial assurance needs to cover the cost of solution management over the long term.

Table 3.2-3 highlights that waste rock subjected to the Meteoric Water Mobility Procedure only exceeded NDEP Profile 1 values for arsenic, antimony, and mercury, but samples also exceeded the Nevada aquatic life standards for copper, lead, and selenium, which are more stringent than Profile 1 values.

> **Recommendation:** The Final EIS should include a detailed discussion of the potential for arsenic, antimony, mercury, copper, lead, and selenium to contaminate surface water and groundwater that daylights, as well as water exposed to pit surfaces, especially in light of the proximity of the pit and other mine facilities to the range front fault system, Big Springs complex, and shallow groundwater. The discussion should specifically address attenuation capacity for these contaminants, should they reach surface waters, in the context of the aquatic life standards.

Monitoring

The Draft EIS (p. 2-71) states that surface water and groundwater wells would be monitored quarterly during operations, and wells would be monitored for three to five years after reclamation for the TSF and heap leach facility is complete, or as required by NDEP. It does not appear that surface waters would continue to be monitored after reclamation is complete, but they should be. We are concerned that three to five years of surface water and groundwater monitoring may not be sufficient to ensure that closure and reclamation measures are effectively protecting water quality, and that TSF and heap leach facility draindown solution management activities are working as designed over the long-term.

> **Recommendation:** We recommend that water quality in both wells and surface water monitoring locations be monitored for significantly longer than five years after mine closure, as it may take decades to ensure that closure and reclamation of all mine facilities are effectively protecting water quality, and that TSF and heap leach facility draindown solution management is working as designed over the long-term. The TSF, leach pad, and WRSF should be regularly inspected throughout mine life and after closure for seeps, particularly after storms; and solution ponds, ET cells, and any seepage and/or mine drainage should be sampled so this information can be used to inform development of appropriate mitigation measures, if needed. The Final EIS should discuss

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the financial assurance needed to cover the costs of monitoring during, and potentially after, mine closure.

Air Quality

The DEIS does not include the projected emissions from commute and delivery traffic to and from the mine. Because these emissions will result from the existence of operations at Long Canyon, they are part of the emissions budget for the mine. Furthermore, it does not appear that the dispersion modeling accounted for emissions from the support and delivery vehicles on the project site, from ore and carbon column hauling to and from the Carlin processing facilities, or from commute and delivery traffic to and from the mine.

> **Recommendation:** Dispersion modeling should account for emissions from support and delivery vehicles on the project site, ore and carbon column hauling to and from the Carlin processing facilities, and commute and delivery traffic to and from the mine. The Final EIS should discuss how the new model-predicted maximum impacts could affect Prevention of Significant Deterioration increments.

We commend Newmont for providing buses and vanpools for employee commuting at its operations, which helps to reduce off-site vehicle emissions and traffic. In addition to the on-site fugitive emissions reduction measures (e.g., water and/or chemical dust suppressants) identified in the Draft EIS, additional measures can be used to control diesel particulate matter (DPM) and other criteria pollutants from fugitive sources at the mine.

Recommendation: We recommend the following additional emissions reduction measures:

- Use particle traps and other appropriate controls to reduce emissions of DPM and other air pollutants. Traps control approximately 80 percent of DPM, and specialized catalytic converters (oxidation catalysts) control approximately 20 percent of DPM, 40 percent of carbon monoxide emissions, and 50 percent of hydrocarbon emissions;
- Lease or buy newer, cleaner equipment (1996 or newer model);
- Employ periodic, unscheduled inspections to ensure that construction equipment is properly maintained at all times and does not unnecessarily idle, is tuned to manufacturer's specifications, and is not modified to increase horsepower except in accordance with established specifications.

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