

EXECUTIVE SUMMARY

Purpose of this Document

Eureka Moly, LLC plans to develop the Mount Hope Project in central Nevada approximately 23 miles northwest of Eureka, Nevada. The Mount Hope Project is located on public land administered by the Bureau of Land Management and on private land controlled by Eureka Moly, LLC. The specifics of the Mount Hope Project are outlined in the Mount Hope Project Plan of Operations, submitted in June 2006, and most recently revised in July 2012.

This **Final** Environmental Impact Statement has been prepared by the Bureau of Land Management, the Lead Agency with respect to compliance with the National Environmental Policy Act and its implementing regulations, and with the following Cooperating Agencies: Nevada Department of Wildlife, Eureka County, and the National Park Service. The purpose of this document is to analyze the environmental effects of the Proposed Action, associated with the proposal by Eureka Moly, LLC to develop the Mount Hope open pit mine, as well as alternatives to the Proposed Action.

The purpose of the **Final** Environmental Impact Statement is to inform decision makers in all federal agencies required to approve authorizing actions, as well as state and local governments and the public, of the anticipated significant environmental effects of the Proposed Action, the possible ways to mitigate any significant effects associated with the Proposed Action, and reasonable alternatives, which could feasibly reduce the significant environmental impacts of the Proposed Action. The information in an Environmental Impact Statement does not control an agency's discretion on a project.

The **Final** Environmental Impact Statement has been prepared in **three** volumes with appendices. All technical documents used to support this **Final** Environmental Impact Statement are available for review during normal business hours (Monday through Friday, excluding holidays, from 7:30 a.m. to 4:30 p.m.) at the Bureau of Land Management's Mount Lewis Field Office in Battle Mountain, Nevada.

Proposed Action

The Proposed Action consists of three connected actions. The first action consists of the activities proposed in the Plan of Operations. The remaining actions are associated with the two rights-of-way applications and associated Plans of Development.

The 80-year Mount Hope Project would have an 18- to 24-month construction phase, 44 years of mining and ore processing, 30 years of reclamation, and five years of post-closure monitoring. There would be no concurrent reclamation during the first 15 years of the Mount Hope Project. The years of operation presented in this Environmental Impact Statement are anticipated; however, there is a potential that the timing of the implementation or duration of components of the Mount Hope Project could vary. The Mount Hope ore body contains approximately 966 million tons of molybdenite (molybdenum disulfide) ore that would produce approximately 1.1 billion pounds of recoverable molybdenum during the ore processing time frame. Approximately 1.7 billion tons of waste rock would be produced by the end of the 32-year mine life and approximately 1.0 billion tons of tailings would be produced by the end of the 44 years of ore processing. Optimal development of the molybdenum deposit to meet the market

conditions and maximize molybdenum production would utilize an open pit mining method and would process the mined ore using a flotation and roasting process. The location of the waste rock disposal facilities, the tailings disposal facilities, and the mill and roasting facilities adjacent to the open pit would be the most efficient location to meet Eureka Moly LLC's needs for the Mount Hope Project.

The Mount Hope Project would consist of the following: a) an open pit with a life of approximately 32 years and associated pit dewatering; b) waste rock disposal facilities where waste rock would be segregated according to its potential to generate acid rock drainage; c) milling facilities including a crusher, conveyors, semi-autogenous grinding and ball mills, flotation circuits, concentrate dewatering, ferric chloride concentrate leach circuit, and filtration and drying circuits that would operate for approximately 44 years; d) a molybdenite concentrate roaster and packaging plant to package the technical grade molybdenum oxide in bags, cans, or drums; e) a ferromolybdenum plant for production of ferromolybdenum alloy using a metallothermic process and separate packaging plant for drums and bags; f) two tailings storage facilities and associated tails delivery and water reclaim systems; g) an ongoing exploration program utilizing drilling equipment, roads, pads, and sumps; h) Low-Grade Ore Stockpile that would feed the mill after mining ceases; i) water supply development with associated wells, water delivery pipelines, access roads, and power in the Kobeh Valley Well Field Area; j) a 24-mile, 230-kilovolt electric power supply line from the existing Machacek substation, with a substation and distribution system located in the Project Area. The powerline would join the existing Falcon-Gondor 345-kilovolt line right-of-way near the Town of Eureka and follow the existing utility corridor to the Project Area; k) a realigned section of the existing Falcon-Gondor powerline, which would require the filing of a separate right-of-way amendment at the time it is needed (near Year 36); l) ancillary facilities including haul, secondary, and exploration roads, a ready line, warehouse and maintenance facilities, storm water diversions, sediment control basins, pipeline corridors, reagent and diesel storage, storage and laydown yards, ammonium nitrate silos, explosives magazines, fresh/fire suppression water storage and a process water storage pond, monitoring wells, an administration building, a security/first aid building, a helipad, a laboratory, growth media/cover stockpiles, borrow areas, mine power loop, communications equipment, hazardous waste management facilities, a Class III waived landfill, and an area to store and treat petroleum contaminated soils; m) turn lane(s) on State Route 278; n) the option for the receipt of off-site concentrates for toll roasting; and o) the closure of the tailings storage facility and the potentially acid generating waste rock disposal facility with the use of evapotranspiration cells to manage the long-term discharge from these facilities, as well as the physical reclamation of Project components. The surface disturbance associated with these proposed activities totals 8,355 acres.

No Action Alternative

In accordance with Bureau of Land Management's National Environmental Policy Act Handbook H-1790-1, Section 6.6.2 (BLM 2008a), an Environmental Impact Statement evaluates the No Action Alternative. The objective of the No Action Alternative is to describe the environmental consequences that would result if the Proposed Action were not implemented. The No Action Alternative forms the baseline from which impacts of all other alternatives can be measured.

Under the No Action Alternative, Eureka Moly, LLC would not be authorized to develop the Mount Hope Project and mine the Mount Hope ore body as currently defined under the Proposed Action. The No Action Alternative would result from the Bureau of Land Management disallowing the activities proposed under the Plan of Operation. However, Eureka Moly, LLC would be able to continue permitted exploration activities as outlined in previously submitted notices. The area would remain available for future mineral development or for other purposes as approved by the Bureau of Land Management.

Partial Backfill Alternative

Under this alternative, the Proposed Action would be developed as outlined and have the same surface disturbance footprint. However, at the end of the mining in the open pit, the open pit would be partially backfilled to eliminate the potential for a pit lake. The pre-mining ground water elevation in the vicinity of the open pit varies from northwest to southeast across the open pit from approximately 7,200 to 6,750 feet above mean sea level. Therefore, the open pit would be backfilled to an elevation that varies from northwest to southeast across the open pit from approximately 7,300 to 6,850 feet above mean sea level. The Partial Backfill Alternative addresses potential impacts associated with a pit lake that would develop under the Proposed Action.

The backfilling would commence in Year 32 and be completed in approximately 13 years (95 million tons per year). The partial backfilling would be accomplished by the same fleet and personnel that completed the mining, and as a result, employment would be approximately 370 employees through the end of ore processing (Year 44) and then there would be a reduction in staffing from Year 44 through the completion of the partial backfilling (Year 45). The partial backfilling would be completed using approximately 1.3 billion tons of waste rock, which would comprise all the waste rock from the Non-Potentially Acid Generating Waste Rock Disposal Facility resulting in an elimination of the Non-Potentially Acid Generating Waste Rock Disposal Facility. This material would be removed from the completed waste rock disposal facilities and transported back to the open pit. The partial backfilling would need to be completed to an elevation that ranges across the open pit from 7,300 to 6,850 feet above mean sea level. As a result of this alternative, the mining fleet and the associated employees would continue beyond the end of the mining sequence to complete the backfilling activities. Tax revenues would be similar to the Proposed Action over the 44-year life of this alternative. Under this alternative, the floor of the open pit would be reclaimed with an application of growth media and then seeded with a BLM approved seed mix.

Off-Site Transfer of Ore Concentrate for Processing Alternative

Under this alternative, the open pit, waste rock disposal facilities, and tailings disposal facilities would be developed as outlined under the Proposed Action; however, the ore processing facilities would include only the milling operations to produce molybdenum sulfide concentrate. The technical grade molybdenum oxide and the ferromolybdenum portions of the processing facility would not be constructed, and as a result, the surface disturbance footprint would be approximately 20 acres less than under the Proposed Action. In addition, the leaching of the concentrate would likely not be done on site. The production of molybdenum sulfide concentrate would occur at an average rate of approximately 45.8 million pounds per year. This material would be stored at the Project Area in a concentrate storage structure adjacent to the mill. The

molybdenum sulfide concentrate would be loaded from this storage facility into street legal haul trucks with covered containers and transported on the public transportation system to either an existing or new facility. Employment, relative to the Proposed Action, would be reduced by approximately 30 individuals. Tax revenues would be similar to the Proposed Action over the 44-year life of this alternative.

The Slower, Longer Project Alternative

Under this alternative the Project would operate at approximately one-half the production rate as described in the Proposed Action, which would result in a project that would last approximately twice as long as the Proposed Action.

Under this alternative, the currently planned 96 million short tons per year mining rate would be reduced to 48 million short tons per year and the mill throughput would be reduced from 60,500 tons per day of ore to 30,313 tons per day. Although salable molybdenum production on an annual basis would drop in half, the ultimate mine and associated waste and low-grade stockpiles, process plant, and tailing impoundments would still cover the same area, creating the same amount of disturbance; however, **some aspects of environmental disturbance (i.e., wildlife) would be greater due to the extended duration and impacts to additional springs.**

Under this alternative, smaller equipment than outlined under the Proposed Action would need to be purchased. Thus, the manufacture lead times for this new equipment may result in construction time frames that are longer than outlined in the Proposed Action, because the equipment is not yet available. This would also delay the commencement of operations of the Project. The Project production time frame under this alternative would extend to at least 88 years.

It is likely that initial capital costs for this alternative would be reduced; however, this difference cannot be quantified without completing a re-design of the facilities. It is expected that sustaining capital costs would actually increase due to the much-extended operating life and operating cost (expressed as total cost per pound of production) would rise due to increased proportion of fixed costs and the higher per unit of ore variable costs of a smaller scale operation. More serious diseconomies of scale would affect the plant during the final two decades of production when treating the low-grade ore (grading 0.042 percent molybdenum), which would be set aside for milling following the end of the open pit mining phase.

An alternative with half the annual production of the Proposed Action has not been designed **since this alternative was not determined to be economically feasible by EML**; however, for the sake of comparison, there are several facets of a half-production rate project that could be anticipated. Mining and processing equipment would be smaller, as would ancillary facilities (powerline supply and well field **infrastructure** for example). However, ultimate disturbance from the tailings impoundments, open pit, and waste rock disposal facilities would eventually grow to the same size as in the proposed Project, albeit at half the rate. Water consumption rates would be approximately half, although economies of scale (lower per unit operational costs when there are greater throughputs) would be lost, and water consumption on a per-unit basis would be higher than in the Proposed Action (i.e., more evaporation on a per unit basis than under the Proposed Action) **because the open water in the tailings pond would exist for twice as long**

during the processing of the same amount of ore. Therefore, this alternative would likely result in twice as much evaporation. The smaller plant size would likely result in a slight decrease in the number of construction employees. Operations employees would be less than that required for the Proposed Action (regardless of the size of mine or mill equipment, it generally takes the same number of employees to operate and maintain it). It is estimated that the decrease in operations employment for this alternative would be about 30 percent. The employment timeframe would be twice as long as under the Proposed Action. Reagent consumption would be the same on a per-unit (of production) basis, but the smaller consumption rate would decrease storage requirements and material shipments. Profitability would be reduced relative to the Proposed Action, as would tax revenues, because of the higher costs for every pound of molybdenum produced while receiving the same price as the Proposed Action for each pound of molybdenum. Tax revenues would be reduced by approximately 40 percent, relative to the Proposed Action, in the first 44 years of this alternative.

While the Slower, Longer Project Alternative may not meet the purpose and need as stated in the Environmental Impact Statement, the Bureau of Land Management elected to analyze this alternative in detail at the request of a cooperating agency (Eureka County). The Bureau of Land Management's decision is consistent with its responsibility as the lead agency according to "A Desk Guide to Cooperating Agency Relationships and Coordination with Intergovernmental Partners" and 40 Code of Federal Regulations 1501.6.

Alternatives Considered and Eliminated From Detailed Consideration

As outlined in the Environmental Impact Statement, several alternatives were identified for consideration in this **Final** Environmental Impact Statement. The following is a discussion of those alternatives identified through the scoping process, including alternatives identified by the public that have been eliminated from detailed consideration in this **Final** Environmental Impact Statement. The alternatives were considered relative to their means of addressing the identified purpose and need, their technological feasibility, and their potential to address environmental issues and reduce potential impacts to a level less than significant when compared to the Proposed Action.

The analysis of alternatives in this Environmental Impact Statement is based on the following criteria: a) public or agency concern; b) technical feasibility; c) potential to reduce an environmental impact of the Proposed Action; d) ability to meet the purpose of and need for the Proposed Action; and e) compliance with regulatory and legal guidance (i.e., **Mining and Mineral Policy Act of 1970**).

Complete Backfill Alternative

This alternative is eliminated from detailed consideration because it would involve the complete backfilling of the proposed Mount Hope open pit with Mount Hope overburden and waste rock material in the two waste rock disposal facilities. A Complete Backfill Alternative would primarily address potential visual impacts **and evaporation impacts** associated with the Proposed Action. The intent of this alternative is not to address issues associated with the development of a pit lake, since that issue is addressed under the Partial Backfill Alternative. The

Partial Backfill Alternative is discussed above, and the associated impacts are outlined in Table ES-1.

Based on the mine plan and pit configuration, backfilling could not begin until the end of the mining sequence. Under this alternative, the same amount of surface disturbance would occur as under the Proposed Action because the backfill material would be hauled to the waste rock disposal facilities so that the Mount Hope open pit could be mined. Once the ore was removed from the open pit, the waste rock and overburden would then be hauled back from the waste rock disposal facilities to the open pit. The backfill would likely commence in Year 32 and be complete in approximately Year 64, resulting in a project that is 20 years longer than the Proposed Action. The rim of the open pit has varying elevations. At the southeastern corner of the open pit, the pit rim elevation is approximately 6,900 feet above mean sea level. The northwestern corner of the open pit is part of the highwall cut into Mount Hope, which has an elevation of 8,200 feet above mean sea level. The ore to waste ratio is 1:1.6 and the swell factor for the volume difference for the mined and handled waste rock as compared to unmined rock is conservatively assumed to be 20 percent. Therefore, the waste rock volume would be insufficient to completely fill the open pit. As a result, the northwestern portion of the open pit would remain with a highwall on the southeastern flank of Mount Hope, and the waste rock disposal facilities would be eliminated. The complete backfilling of the open pit would be accomplished by the same fleet and personnel that completed the mining, and as a result, employment would be approximately 370 through the end of ore processing (Year 44) with a reduction in staffing from Year 44 through the completion of the complete backfilling (Year 64).

Backfilling the open pit would result in covering additional mineral resources that would not be currently considered ore, such as the lower grade molybdenum mineralization in the open pit wall and the other metal mineralization that is known to occur in the surrounding host rock adjacent to the open pit walls. Though not a reason to eliminate this alternative from detailed consideration, this scenario would be inconsistent with the Mining and Mineral Policy Act of 1970 (30 United States Code 21a) and the Materials and Mineral Policy, Research, and Development Act of 1980 (30 United States Code 1601) because it would reduce the opportunity for future mineral development associated with the mineralizing system in the Mount Hope area.

This alternative would decrease visual impacts from the Proposed Action to the Pony Express Historic Trail but not below the level of significance. Although visual impacts would be reduced, the area is classified as visual resource management Classes III and IV, and implementation of the Proposed Action would be consistent with the restrictions on visual resource management Class III and IV areas. The open pit would remain visible due to insufficient backfill material. This alternative would increase air quality impacts resulting from increased transport of waste rock material and would decrease the opportunity for future extraction of potential mineral resources. The mining work force for the project would be employed for a longer time period to accomplish the backfilling operations. In addition, this alternative would have similar potential impacts as the Partial Backfill Alternative. **Under this alternative, the ground water quality within the pit backfill would be anticipated to be impacted by waste materials (Non-PAG) deposited in the open pit and from infiltrating the runoff from pit walls. This poor-quality water could flow from the confines of the former pit shell into the surrounding ground water, degrading waters of the state.** For these reasons, the Complete Backfill Alternative does not meet the selection criteria and has been eliminated from detailed consideration.

Different Waste Rock Disposal Facility Heights Alternative

Under this alternative, the waste rock disposal facilities configurations would be changed so that the waste rock disposal facility heights would vary. Lower heights on the southern portion of the waste rock disposal facility would be established in an effort to reduce the impacts to the Historic Trail setting. As a result, the footprint of the waste rock disposal facilities would be increased to accommodate the change in storage volume. This would increase the time necessary to construct the waste rock disposal facilities, assuming the same equipment fleet as under the Proposed Action, and therefore increase the length of time necessary to complete the mining of the open pit. Therefore, activities under this alternative would occur over a longer time period when compared to the Proposed Action. This alternative would increase the amount of surface disturbance and, therefore, the impacts to vegetation, wildlife, and soils, as well as increase air emissions, due to an increase in the time frames for mining and longer haul distances, during the life of the Mount Hope Project. This alternative would decrease, but not substantially reduce, the impacts to the Pony Express Historic Trail setting when compared to the Proposed Action. For these reasons, the Different Waste Rock Disposal Facility Heights Alternative does not meet the selection criteria and has been eliminated from detailed consideration.

Different Facility Locations Outside the Project Area Alternative

This alternative considers different locations outside of the Project Area for major mine components (i.e., open pit, waste rock disposal, tailings facility), which would create the principle environmental impacts from the Proposed Action.

As part of the development of the Proposed Action by Eureka Moly, LLC, three basic tailings storage facility configurations were evaluated by Eureka Moly, LLC as follows: a) a tailings storage facility to the west of State Route 278 and east of the open pit; b) a tailings storage facility south of the Historic Trail; and c) a tailings storage facility to the east of State Route 278. The first configuration had three variations; the second and third configurations each had two variations. As a result, seven tailings storage facility configurations were considered by Eureka Moly, LLC during the development of their proposed Mount Hope Project. The configuration that was selected by Eureka Moly, LLC minimizes the potential impacts to State Route 278, Diamond Valley, deer migration routes, and the Pony Express Historic Trail.

The location of the proposed open pit is strictly dictated by the location of the identified ore deposit; therefore, no location alternatives for the open pit would be possible. The proposed location of the Mount Hope Project waste rock disposal facilities was selected by Eureka Moly, LLC after consideration of several operational, cost, and environmental factors that included the following: a) minimizing truck haul distance; b) minimizing the gradient from the open pit to the waste rock disposal facilities; c) adequate waste rock storage capacity; d) avoidance of sensitive environmental receptors; e) consolidation of mine facilities; and f) absence of suitable mining reserves underneath the waste rock disposal facilities.

Relocating either the waste rock disposal facilities or the tailings storage facilities as described in the Proposed Action to locations outside of the Project Area would not avoid any of the environmental effects, nor lessen below significance any of the significant environmental effects of the Proposed Action. This alternative would result in increased surface disturbance and air emissions associated with longer haul distances. The visual impacts under this alternative would

not be lessened, but would be redistributed based on the location of the facilities. For these reasons, the Different Facility Locations Outside the Project Area Alternative does not meet the selection criteria and has been eliminated from detailed consideration.

Increased Ore Processing to Match the Mining Schedule Alternative

Under this alternative, the ore processing facility would process the ore at the same rate that it would be mined under the Proposed Action, thereby requiring construction of an ore processing facility with greater throughput capacity. As a result, the Mount Hope Project would be in operation for 32 years rather than 44 years under the Proposed Action. Under this alternative, there would be an approximately one to two percent increase in the number of employees above that expected under the Proposed Action. However, the length of employment for almost all the positions would only be 32 years.

This alternative would increase yearly air emissions during the life of the Mount Hope Project by approximately 50 percent and decrease employment opportunities due to the reduced life of the Mount Hope Project in comparison to the Proposed Action. Socioeconomic impacts, both positive and negative, would be reduced as compared to the Proposed Action because tax receipts and wages would occur over a shorter time period and not necessarily at a proportionally greater amount than under the Proposed Action. The demands on the local infrastructure made by employees and other Mount Hope Project-related individuals would be of shorter duration than the Proposed Action. Implementation of this alternative would not reduce any of the other environmental consequences of the Proposed Action and therefore, does not offer any environmental advantage in comparison with the Proposed Action. For these reasons, the Increased Ore Processing to Match the Mining Schedule Alternative does not meet the selection criteria and has been eliminated from detailed consideration.

Decreased Mining to Match the Ore Processing Schedule Alternative

Under this alternative, the mining rate would be decreased to match the ore processing rate under the Proposed Action. This alternative would decrease air emissions during the first 32 years of the Mount Hope Project due to the slower mining rates and increase air emissions during the last 12 years of the Mount Hope Project because mining would occur during these last 12 years of the ore processing in comparison with the Proposed Action. The alternative would extend and increase the ground water impacts due to the need to dewater the open pit for an additional 12 years, decrease employment opportunities due to the smaller mining operation, and change the socioeconomic impacts because of the smaller work force in comparison with the Proposed Action. The complete reclamation of the waste rock disposal facilities would be postponed. Implementation of this alternative would not result in any compelling environmental advantage relative to the Proposed Action. For these reasons, the Decreased Mining to Match the Ore Processing Schedule Alternative does not meet the selection criteria and has been eliminated from detailed consideration.

Reduced Project Alternative

A reduced Mount Hope Project would result in the construction of a smaller open pit and smaller associated facilities. As a result of the smaller scale operation under this alternative, there would be a reduction in the impacts to soils, vegetation, air quality, and ground water in comparison

with the Proposed Action because there would be decreases in surface disturbance, air emissions, and water supply production. However, this alternative would increase the potential impacts to known mineral resources by not developing the defined mineral resource that would be mined under the Proposed Action, which would not be consistent with the national mineral policy outlined in the Mining and Mineral Policy Act of 1970 and the Materials and Mineral Policy, Research, and Development Act of 1980. This alternative does not meet the Purpose and Need of the Proposed Action as defined in Section 1.4 because the known mineral deposit would not be fully mined. For these reasons, the Reduced Project Alternative does not meet the criteria outlined above and has been eliminated from detailed consideration.

Different Facility Locations within the Project Area Alternative

This alternative considers different locations within the Project Area for the major mine facilities (i.e., open pit, tailings storage facilities, waste rock disposal facilities, and processing plant), which would create the principal impacts under the Proposed Action. As discussed above, an evaluation of different facility locations was conducted by Eureka Moly, LLC in their feasibility evaluation of the Mount Hope Project.

Analysis of different locations under this alternative is similar to that for the Different Facility Locations Outside the Project Area Alternative. This alternative does not meet the selection criteria and has been eliminated from detailed consideration because of the substantial logistical and transportation disadvantages, and because it would result in increased surface disturbance.

Different Powerline Alternative

Under this alternative, the Proposed Action would be developed; however, the connection to the regional power grid would be in a different location, as would the powerline route to the Mount Hope Project facilities.

A new substation for the Mount Hope Project would be located immediately south of the South Tailings Storage Facility where the NV Energy 345-kilovolt Falcon-Gondor powerline intersects the Project Area. The new substation would tie directly into the existing NV Energy 345-kilovolt Falcon-Gondor powerline. The substation would be designed to provide the power necessary for Mount Hope Project operation. From the new substation, the Mount Hope Project powerline would follow the same route through the Project Area as the powerline under the Proposed Action. This alternative would eliminate the need to construct a new powerline, adjacent to the Falcon-Gondor powerline from the existing Machacek Substation to the Project Area, through the western portion of Kobeh Valley.

Power for the Project was investigated by NV Energy in early 2007. NV Energy determined that two feasible power supply options existed for the Project. The 230-kV option with a tap at the Machacek Substation was selected over the 345-kV option. Design, cost, and reliability issues were considered. In addition, the 345-kV line serves as the “backbone” for electrical distribution in the area, which would make a tie-in problematic with respect to schedule and the duration of service interruption. As a result, the use of 345-kV line was determined to be technically infeasible. EML entered into a transmission agreement with NV Energy in late 2008 for 75 MW, substantiating that the 230-kV system at Machacek can provide sufficient power for the Project. The Project is located within the **NV Energy and Mt. Wheeler Power** service territory.

The viability of this alternative is uncertain because there may not be enough available power in the NV Energy powerline. This alternative does not meet the selection criteria and has been eliminated from detailed consideration because of the inability to define a viable power supply under this alternative.

Different Potentially Acid Generating Waste Rock Management Alternative

Under this alternative, the Proposed Action would be developed, except a different management technique would be used with the potentially acid generating waste rock. A single waste rock disposal facility would be constructed, and the potentially acid generating material would either be managed in isolation cells within the waste rock disposal facility or would be mixed with the other waste material throughout the life of the mining operation.

It is highly uncertain whether either of these management techniques would be successful in the management of the potentially acid generating material and thus minimize or eliminate the potential for the development of uncontrolled acid rock drainage or impacts to waters of the state. Segregation of potentially acid generating material has proven to provide better control of the reactive materials by reducing the size of the potential source area. The timing of the mining of the potentially acid generating versus other material would not allow for the mixing of the two types to minimize the potential for the migration of the leached constituents. This alternative does not meet the criteria outlined above and has been eliminated from detailed consideration because of the high degree of uncertainty and the likelihood for the development of uncontrolled acid rock drainage and potential impacts to waters of the state.

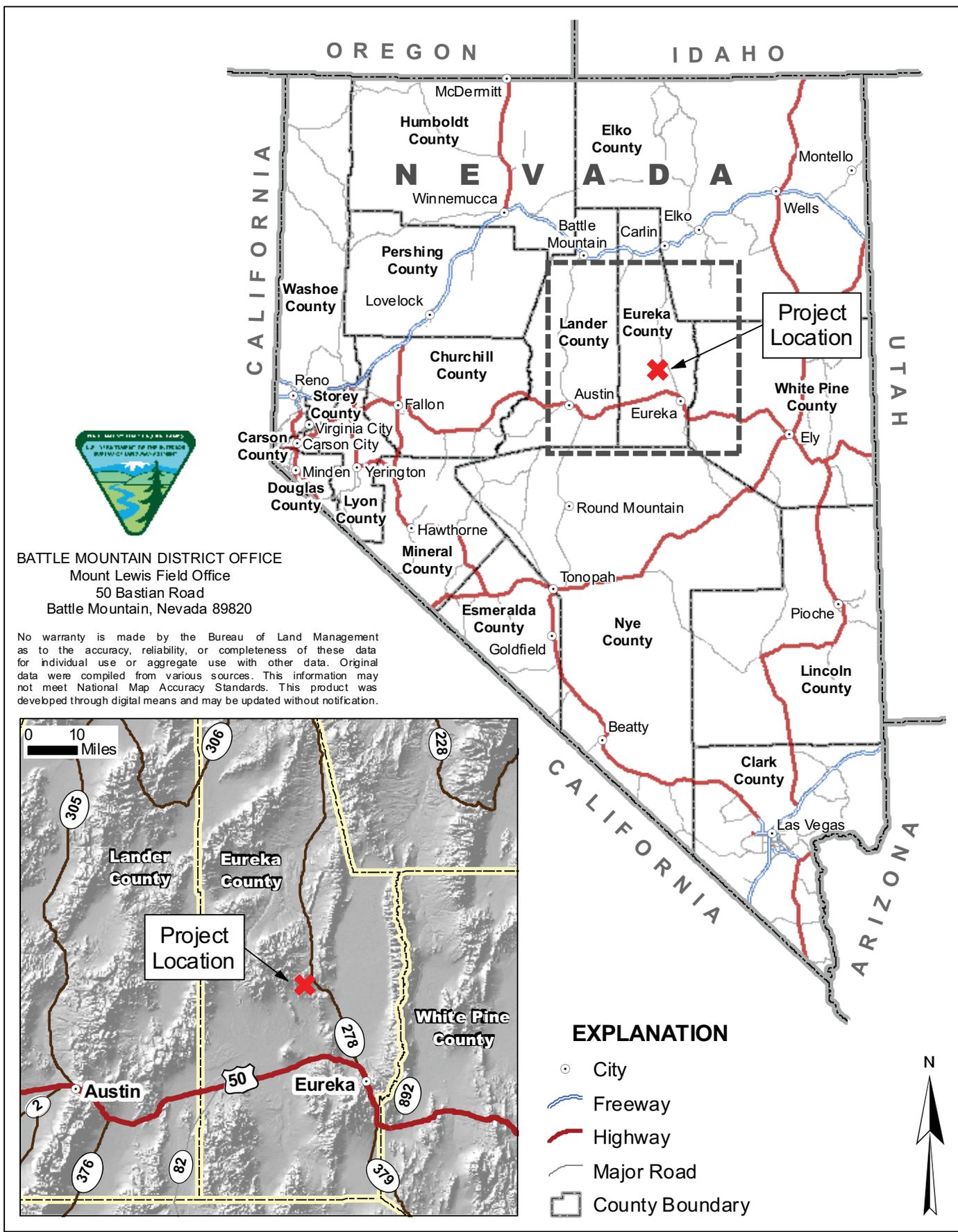
Important Issues and Impact Conclusions

The environmental consequences of, mitigation measures for, and level of significance of the environmental consequences before and after mitigation for the Proposed Action and the reasonable alternatives are summarized in Table ES-1.

Bureau of Land Management Preferred Alternative

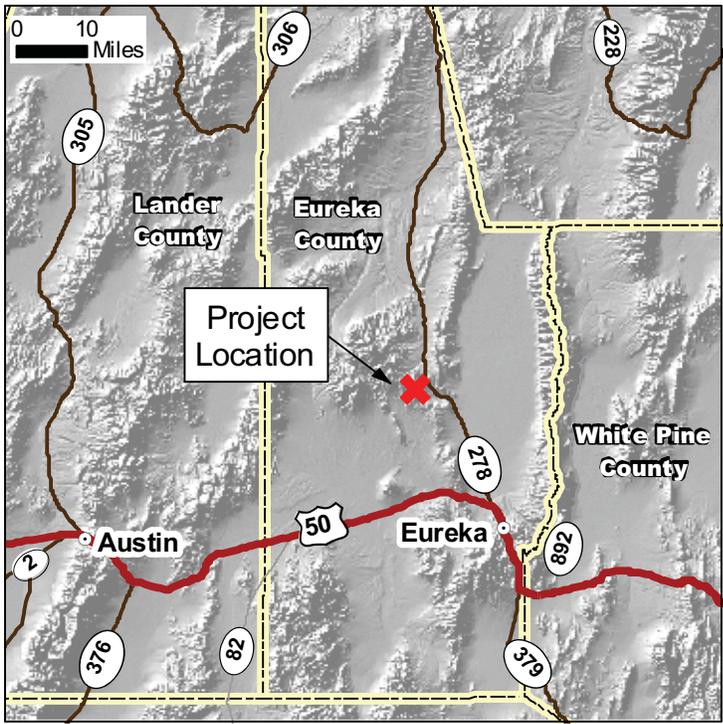
Chapter 9, Section 9.2.7.3 of the Bureau of Land Management National Environmental Policy Act Handbook directs that an Environmental Impact Statement "...identify the agency's preferred alternative... For external proposals or applications, the proposed action may not turn out to be the BLM's preferred alternative, because the BLM will often present an alternative that would incorporate specific terms and conditions on the applicant."

Thus, the Bureau of Land Management has selected a Preferred Alternative based on the analysis in this **Final** Environmental Impact Statement; this Preferred Alternative is the alternative that best fulfills the agency's statutory mission and responsibilities, giving consideration to economic, environmental, technical and other factors. The Bureau of Land Management has determined that the Preferred Alternative is the Proposed Action as outlined in Chapter 2 of the **Final** Environmental Impact Statement, with the inclusion of the identified mitigation measures to the Proposed Action as specified in Chapter 3 of the **Final** Environmental Impact Statement.

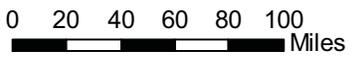


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 Mount Lewis Field Office
 50 Bastian Road
 Battle Mountain, Nevada 89820

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- EXPLANATION**
- City
 - Freeway
 - Highway
 - Major Road
 - County Boundary

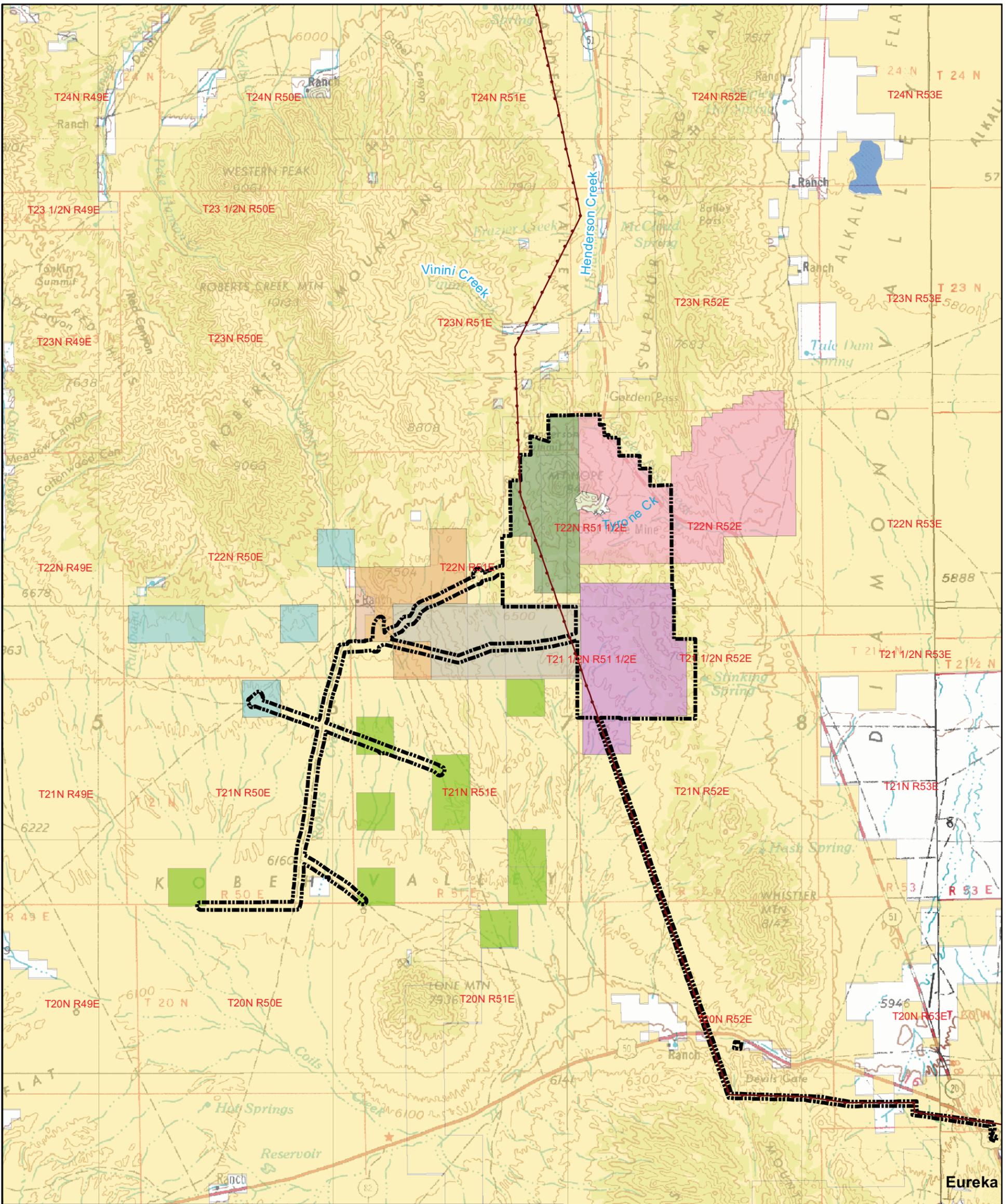


BUREAU OF LAND MANAGEMENT
MOUNT HOPE PROJECT

General Location Map

Figure ES.1

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| DESIGN: EMLLC | DRAWN: BVB/GSL | REVIEWED: VS/RFD |
| SCALE: | DATE: 8/11/2011 | |
| FILE NAME: p1635_Fig 1-1-1_GeneralLocationMap.mxd | | |



EXPLANATION

- Falcon-Gondor Power Line
- Project Boundary
- Notice Boundaries**
- NVN 080914
- NVN 081485
- NVN 087312
- NVN 083245
- NVN 083246
- NVN 081811
- NVN 090831
- Land Status**
- Public Land
- Private Land
- Water



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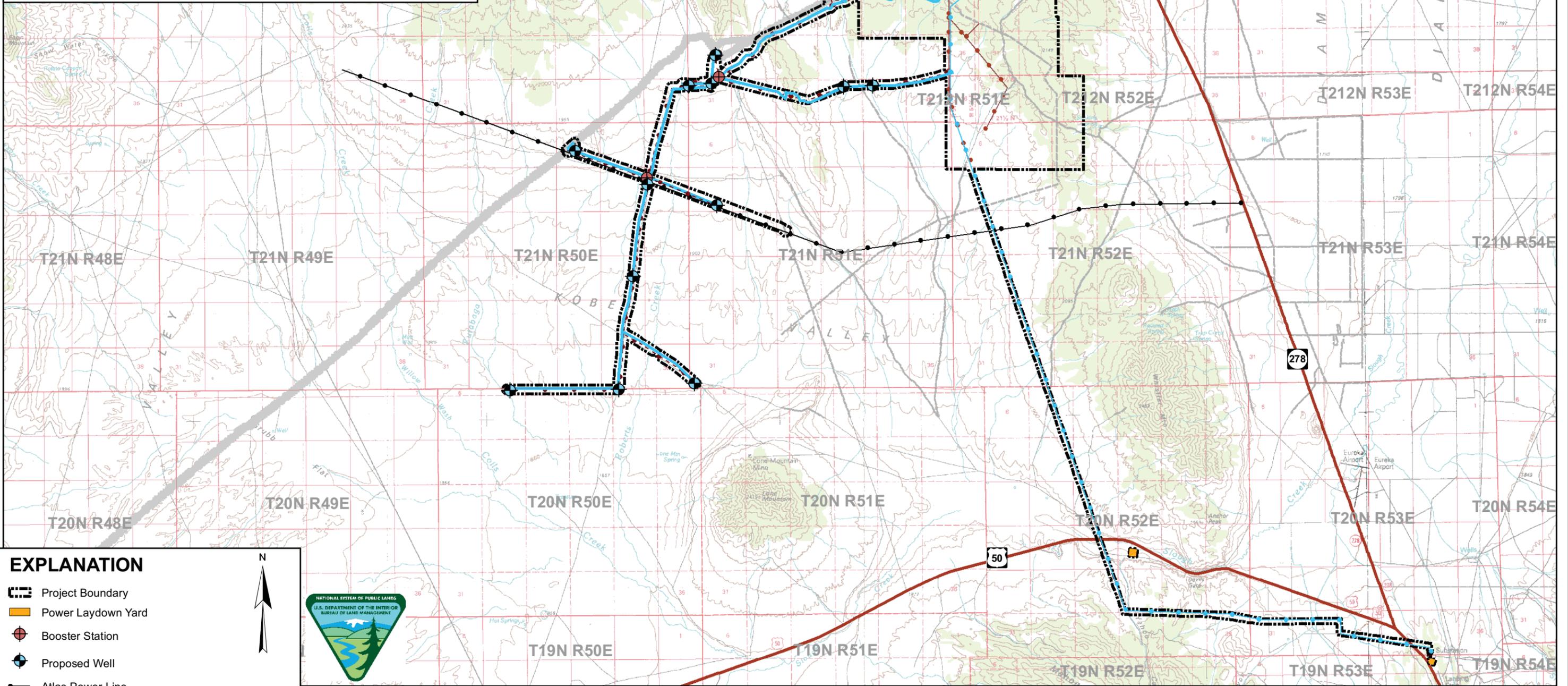
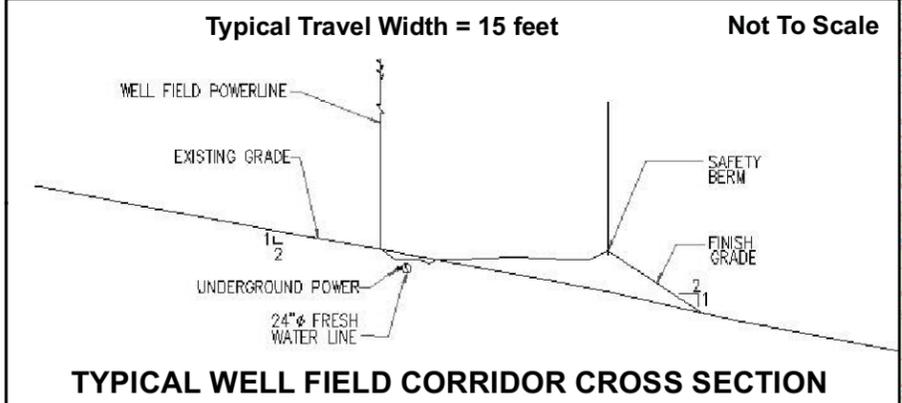
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| CHECKED: - | APPROVED: RFD | DATE: 08/15/2012 |
| FILE NAME: p1635_Fig1-1-2_ProjectArea&LandOwnership_v3.mxd | | |

BUREAU OF LAND MANAGEMENT
MOUNT HOPE PROJECT

DRAWING TITLE:

Project Area and Land Ownership

Figure ES.2



EXPLANATION

- Project Boundary
- Power Laydown Yard
- Booster Station
- Proposed Well
- Atlas Power Line
- TSF/Mine Power Line
- 230-kV Power Line
- Power Line, Well Field Power Line
- Well Field Water Line
- Pony Express Trail



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IF THE ABOVE BAR DOES NOT SCALE 1 INCH, THE DRAWING SCALE IS ALTERED

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| DESIGN: EMLLC | DRAWN: CVD/GSL | REVIEWED: RFD |
| CHECKED: _____ | APPROVED: RFD | DATE: 08/23/2012 |
| FILE NAME: p1635_Fig2-1-7_PowerlineROW&Wellfield_v2.mxd | | |

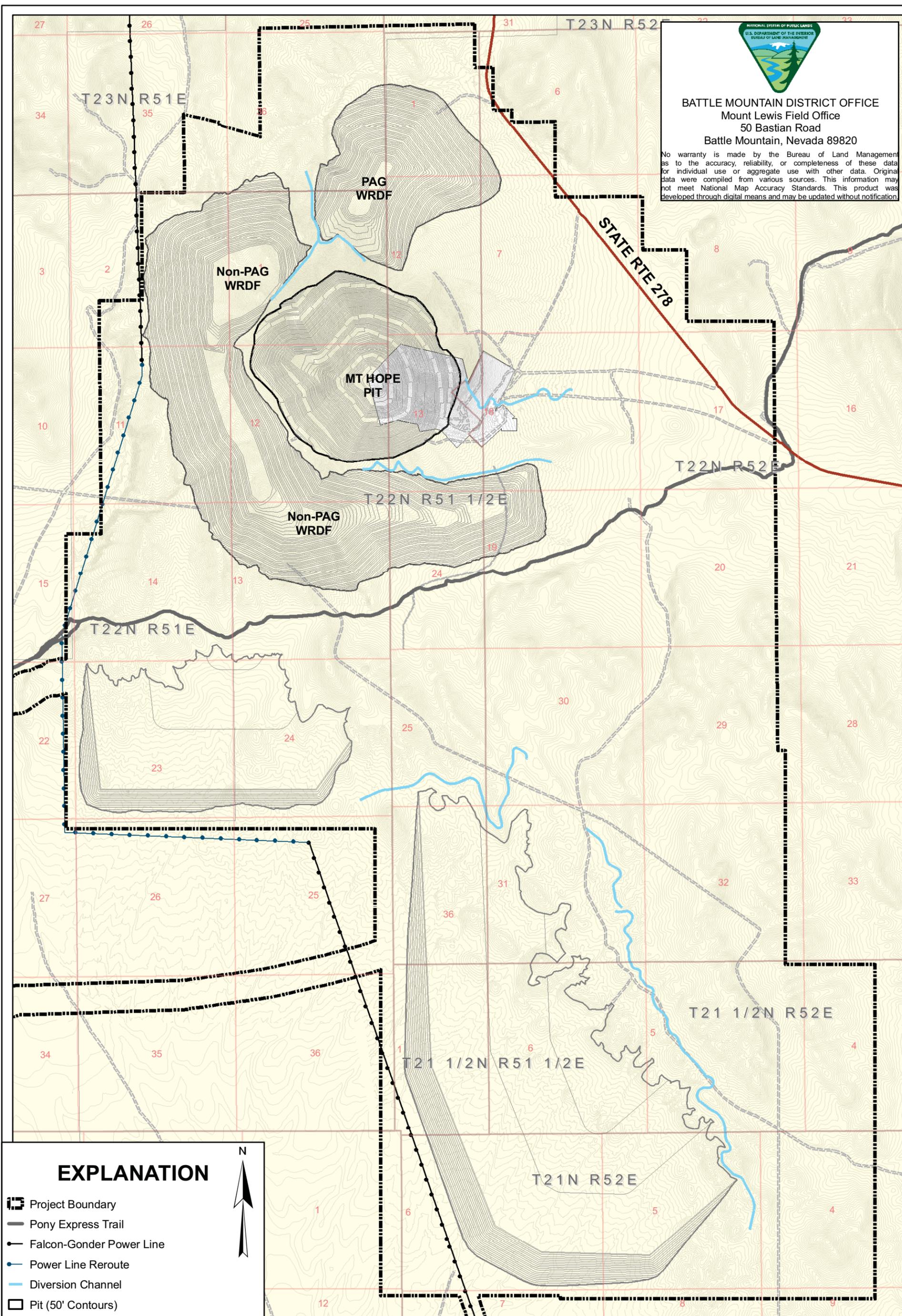
BUREAU OF LAND MANAGEMENT
MOUNT HOPE PROJECT

DRAWING TITLE:
Well Field and Powerline Routes
 Figure ES.3



BATTLE MOUNTAIN DISTRICT OFFICE
 Mount Lewis Field Office
 50 Bastian Road
 Battle Mountain, Nevada 89820

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.



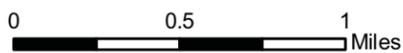
EXPLANATION



- Project Boundary
- Pony Express Trail
- Falcon-Gonder Power Line
- Power Line Reroute
- Diversion Channel
- Pit (50' Contours)
- Waste Rock Disposal Facilities (20' Contours)
- Tailing Storage Facilities (20' Contours)

Land Status

- Bureau of Land Management
- Private



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| DESIGN: EMLLC | DRAWN: CVD/GSL | REVIEWED: RFD |
| CHECKED: - | APPROVED: RFD | DATE: 07/06/2012 |
| FILE NAME: p1635_Fig2-1-18_PostMiningTopography.mxd | | |

BUREAU OF LAND MANAGEMENT
MOUNT HOPE PROJECT

DRAWING TITLE:

**Post Mining Topography
 (Year 80 and Beyond)**

Figure ES.4

Table ES-1: Summary of Potential Environmental Effects, Mitigation Measures, Residual Impacts, and Effectiveness of Mitigation

| | PROPOSED ACTION | NO ACTION ALTERNATIVE | PARTIAL BACKFILL ALTERNATIVE | OFF-SITE TRANSFER OF ORE CONCENTRATE FOR PROCESSING ALTERNATIVE | SLOWER, LONGER PROJECT ALTERNATIVE |
|---|---|--|--|--|---|
| Impact: | Impact 3.2.3.3-1: Grading, earth moving, diversion of drainages, and placement of fill could accelerate erosion and sedimentation, and alter surface water flood runoff patterns during mining and post-closure. | Impact 3.2.3.4-1: Grading, earth moving, diversion of drainages, and placement of fill could accelerate erosion and sedimentation, and alter surface-water flood runoff patterns in the future. | Impact 3.2.3.5-1: Grading, earth moving, diversion of drainages, and placement of fill could accelerate erosion and sedimentation and alter surface-water flood runoff patterns during mining and post-closure. | Impact 3.2.3.6-1: Grading, earth moving, diversion of drainages, and placement of fill could accelerate erosion and sedimentation and alter surface water flood runoff patterns during mining and post-closure. | Impact 3.2.3.7-1: Grading, earth moving, diversion of drainages, and placement of fill could accelerate erosion and sedimentation and alter surface-water flood runoff patterns during mining and post-closure. |
| Significance of the Impact: | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.2.3.3-2: The ground water drawdown under the Proposed Action is predicted to be more than ten feet for two perennial stream segments (Roberts Creek and South Fork of Henderson Creek) and at 22 perennial or potentially perennial spring sites (Table 3.2-8) for varying periods of time up to at least 400 years after the end of the mining and milling operations. Other individual streams and springs outside of the model predictions could also be impacted. | Impact 3.2.3.4-2: The future ground water drawdown (relative to existing conditions in 2009) is predicted to be more than ten feet at one spring site and portions of five intermittent and ephemeral drainages in the Bobcat Ranch area, and at numerous spring sites and stream drainages in the southern part of Diamond Valley by the end of Year 2055. Other individual streams and springs outside of the model predictions could also be impacted. | Impact 3.2.3.5-2: The ground water drawdown is predicted to be more than ten feet for two perennial stream segments (Roberts Creek and South Fork of Henderson Creek) and at 20 perennial or potentially perennial spring sites (Table 3.2-8) for varying periods of time up to at least 400 years after the end of mining and milling operations. Other individual streams and springs outside of the model predictions could also be impacted. | Impact 3.2.3.6-2: The ground water drawdown is predicted to be more than ten feet for two perennial stream segments (Roberts Creek and South Fork of Henderson Creek) and at 22 perennial or potentially perennial spring sites (Table 3.2-8) for varying periods of time up to at least 400 years after the end of mining and milling operations. Other individual streams and springs outside of the model predictions could also be impacted. | Impact 3.2.3.7-2: The ground water drawdown is predicted to be more than ten feet for two perennial stream segments (Roberts Creek and South Fork of Henderson Creek) and at 29 perennial or potentially perennial spring sites (Tables 3.2-8 and 3.2-17) for varying periods of time up to at least 400 years after the end of mining and milling operations. Other individual streams and springs outside of the model predictions could also be impacted. |
| Significance of the Impact: | Significance of the Impact: The impacts are potentially significant at the two stream segments and 22 springs discussed above. Although significant impacts are not predicted to occur in the other individual streams or springs in the HSA due to the Proposed Action, the uncertainty of predicting impacts to streams and springs indicates a need for operational monitoring and mitigation measures to be implemented. If monitoring, which has been incorporated into the mitigation measure, indicates that there are reduced flows in perennial stream segments or springs that the BLM determines can be attributed to the mining operation, then specific mitigation would be implemented, as described below. Potential adverse effects to surface water rights would be mitigated under NDWR jurisdiction. | Significance of the Impact: Impacts associated with the No Action Alternative are considered significant; however, these impacts are not under BLM jurisdiction and no mitigation is proposed (see Section 3.26 of this EIS). | Significance of the Impact: The impacts are potentially significant at the two stream segments and 20 springs mentioned above. Although significant impacts are not predicted to occur in the other individual streams or springs in the HSA, the uncertainty of predicting impacts to streams and springs indicates a need for operational monitoring and mitigation measures to be implemented. If there are reduced flows in perennial stream segments or springs, based on monitoring, which is incorporated into the mitigation measure (that the BLM determines can be attributed to the mining operation), then specific mitigation would be implemented as described below. Potential adverse effects to surface water rights would be mitigated under NDWR jurisdiction. | Significance of the Impact: The impacts are potentially significant at the two stream segments and 22 springs mentioned above. Although significant impacts are not predicted to occur in the other individual streams or springs in the HSA, the uncertainty of predicting impacts to streams and springs indicates a need for operational monitoring and mitigation measures to be implemented. If reduced flows in perennial stream segments or springs, based on monitoring, which is incorporated into the mitigation measure (that the BLM determines can be attributed to the mining operation), then specific mitigation would be implemented, as described below. In addition, potential adverse effects to surface water rights would be mitigated under NDWR jurisdiction. | Significance of the Impact: The impacts are potentially significant at the two stream segments and 29 springs mentioned above. Although significant impacts are not predicted to occur in the other individual streams or springs in the HSA, the uncertainty of predicting impacts to streams and springs indicates a need for operational monitoring and mitigation measures to be implemented. If reduced flows in perennial stream segments or springs, based on monitoring, which is incorporated into the mitigation measure (that the BLM determines can be attributed to the mining operation), then specific mitigation would be implemented, as described below. Potential adverse effects to surface water rights would be mitigated under NDWR jurisdiction. |
| Mitigation Measure: | Mitigation Measure 3.2.3.3-2a: Specific mitigation for the two perennial stream segments and 22 perennial or potentially perennial spring sites are outlined in Table 3.2-9. Figure 3.2.21 shows the anticipated location for the components of the facilities necessary to implement the mitigation measures outlined in Table 3.2-9. Implementation of any of the specific mitigation outlined in Table 3.2-9 for springs located on private land would be subject to the authorization of the private land owner. The site-specific evaluation of the effectiveness of this specific mitigation for each identified surface water resource within the mine-related ground water drawdown area is presented in Table 3.2-9. The site-specific measures include one or more methods identified in Mitigation Measure 3.2.3.3-2b. Similar methods (as identified in Table 3.2-9) would also be applied to streams and springs not identified in this analysis, if monitoring indicates that there are impacts that the BLM determines can be attributed to the mining operation. Implementation of the mitigation outlined in Table 3.2-9 would result in up to approximately 37.2 acres of additional surface disturbance associated with road and pipeline construction and maintenance, as well as the need for approximately 302 acre-feet of water that would at least initially come from EML's existing water rights if additional water rights have not yet been secured. This specific mitigation would be implemented, as determined by the BLM, based on the results of the monitoring that is also outlined in this mitigation measure. EML would implement the water monitoring provisions outlined in Section 2.1.15 and Appendix C to track the drawdown associated with the open pit dewatering and ground water production activities. In addition, EML would | N/A | Mitigation Measure 3.2.3.5-2a: Specific mitigation for the two perennial stream segments and 20 perennial or potentially perennial spring sites are outlined in Table 3.2-9. Figure 3.2.21 shows the anticipated location for the components of the facilities necessary to implement the mitigation measures outlined in Table 3.2-9. Implementation of any of the specific mitigation outlined in Table 3.2-9 for springs located on private land would be subject to the authorization of the private land owner. The site-specific evaluation of the effectiveness of this specific mitigation for each identified surface water resource within the mine-related ground water drawdown area is presented in Table 3.2-9. The site-specific measures include one or more methods identified in Mitigation Measure (3.2.3.5-2b). Similar methods (as identified in Table 3.2-9) would also be applied to streams and springs not identified in this analysis, if monitoring indicates that there are impacts that the BLM determines can be attributed to the mining operation. Implementation of the mitigation outlined in Table 3.2-9 would result in up to approximately 29.8 acres of additional surface disturbance associated with the pipeline construction and maintenance, as well as the need for approximately 302 acre-feet of water that would at least initially come from EML's existing water rights if additional water rights have not yet been secured. This specific mitigation would be implemented, as determined by the BLM, based on the results of the monitoring outlined in this mitigation measure. EML would implement the water monitoring provisions outlined in Section 2.1.15 and Appendix C to track the drawdown associated with | Mitigation Measure 3.2.3.6-2a: Specific mitigation for the two perennial stream segments and 22 perennial or potentially perennial spring sites are outlined in Table 3.2-9. Figure 3.2.21 shows the anticipated location for the components of the facilities necessary to implement the mitigation measures outlined in Table 3.2-9. Implementation of any of the specific mitigation outlined in Table 3.2-9 for springs located on private land would be subject to the authorization of the private land owner. The site-specific evaluation of the effectiveness of this specific mitigation for each identified surface water resource within the mine-related ground water drawdown area is presented in Table 3.2-9. The site-specific measures include one or more methods identified in Mitigation Measure (3.2.3.6-2b). Similar methods (as identified in Table 3.2-9) would also be applied to streams and springs not identified in this analysis, if monitoring indicates that there are impacts that the BLM determines can be attributed to the mining operation. Implementation of the mitigation outlined in Table 3.2-9 would result in up to 37.2 acres of additional surface disturbance associated with the road and pipeline construction and maintenance, as well as the need for approximately 302 acre-feet of water that would at least initially come from EML's existing water rights if additional water rights have not yet been secured. The specific mitigation would be implemented, as determined by the BLM, based on the results of the monitoring that is also outlined in this mitigation measure. EML would implement the water monitoring provisions outlined in Section 2.1.15 and Appendix C to track the | Mitigation Measure 3.2.3.7-2a: Specific mitigation for the two perennial stream segments and 29 perennial or potentially perennial spring sites are outlined in Tables 3.2-9 and 3.2-18. Figure 3.2.32 shows the anticipated location for the components of the facilities necessary to implement the mitigation measures outlined in Table 3.2-9. Implementation of any of the specific mitigation outlined in Table 3.2-9 for springs located on private land would be subject to the authorization of the private land owner. The site-specific evaluation of the effectiveness of this specific mitigation for each identified surface water resource within the mine-related ground water drawdown area is presented in Table 3.2-9. The site-specific measures include one or more methods identified in Mitigation Measure (3.2.3.7-2b). Similar methods (as identified in Table 3.2-9) would also be applied to streams and springs not identified in this analysis, if monitoring indicates that there are impacts that the BLM determines can be attributed to the mining operation. Implementation of the mitigation outlined in these tables would result in a total of up to approximately 57.3 acres of surface disturbance associated with the pipeline construction and maintenance (i.e., up to approximately 37.2 acres of surface disturbance associated with the mitigation for the 22 springs outlined in Section 3.2.3.3 and up to approximately 20.1 acres associated with the mitigation for the seven additional springs potentially impacted by this alternative), as well as the need for approximately 313 acre-feet of water that would at least initially come from EML's existing water rights if additional water rights have not yet been |

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| | <p>periodically update the ground water flow model as determined by the BLM. EML would be responsible for monitoring and annual reporting of changes in ground water levels and surface water flows prior to and during operation, and for a period of up to 30 years in the post mining and milling phase. The reports would be in a format and with a content that is acceptable to the BLM. The monitoring outlined in Appendix C and required in this mitigation measure would be used to document the effectiveness of the implemented specific mitigation activities. In addition, the BLM has the ability to require the implementation of additional mitigation measures if the initial implementation is unsuccessful.</p> <p>Mitigation Measure 3.2.3.3-2b: If monitoring (Mitigation Measure 3.2.3.3-2a) indicates that flow reductions of perennial surface waters are occurring and that these reductions are likely the result of mine-induced drawdown, the following measures would be implemented:</p> <ol style="list-style-type: none"> 1. The BLM would evaluate the available information and determine whether mitigation is required. 2. If mitigation would be required by the BLM, then EML would be responsible for preparing a detailed, site-specific plan to enhance or replace the impacted perennial water resource(s). Potential adverse effects to water rights from the Project would be mitigated under NDWR jurisdiction, as well as potential need for additional BLM permit acquisition activities and NEPA analysis. The mitigation plan would be submitted to the BLM identifying the excess amount of drawdown or drawdown impacts to surface water resources. Mitigation would depend on the actual impacts, site-specific conditions, and historical use and could include a variety of measures (e.g., flow augmentation, on-site or off-site improvements). Methods to enhance or replace the impacted perennial water resources include, but are not limited to, the following: <ul style="list-style-type: none"> • Modification, including cessation, of pumping distribution in the water supply well field; • Injection to confine the drawdown cone; • Installation of a water-supply pump in an existing well (e.g., monitoring well); • Installation of a new water production well; • Piping from a new or existing source; • Installation of a guzzler; • Enhanced development of an existing seep or spring to promote additional flow; • Water hauling; • Removal of piñon-juniper in impacted watersheds; or • Fencing or other protective measures for an existing seep to maintain flow. 3. An approved site-specific mitigation plan would be implemented followed by monitoring and reporting to measure the effectiveness of the implemented measures. <p>Mitigation Measure 3.2.3.3-2c: The numerical ground water flow modeling indicates that some impacts to springs may occur after the end of mining and milling operations, when some of the operational measures described above may not be available. For the post-Project delayed impacts of drawdown, the ground water flow model would be updated during the closure process consistent with regulations and policies using the accumulated field data for pumping rates, consumptive use, and observed drawdown within the HSA to re-evaluate projected drawdown that would occur after the end of mining and milling operations. If the BLM determines that the Project impacts perennial stream segments or springs in this post-operational phase, mitigation consisting of one or both of the following measures would be required:</p> | | <p>the open pit dewatering and ground water production activities. In addition, EML would periodically update the ground water flow as determined by the BLM. EML would be responsible for monitoring and annual reporting of changes in ground water levels and surface water flows prior to and during operation, and for a period of up to 30 years in the post-mining and milling phase. The reports would be in a format and with a content that is acceptable to the BLM. The monitoring outlined in Appendix C and required in this mitigation measure would be used to document the effectiveness of the implemented specific mitigation activities. In addition, the BLM has the ability to require the implementation of additional mitigation measures if the initial implementation is unsuccessful.</p> <p>Mitigation Measure 3.2.3.5-2b: If monitoring (Mitigation Measure 3.2.3.5-2a) indicates that flow reductions of perennial surface waters are occurring and that these reductions are likely the result of mine-induced drawdown, the following measures would be implemented:</p> <ol style="list-style-type: none"> 1. The BLM would evaluate the available information and determine whether mitigation is required. 2. If mitigation would be required by the BLM for BLM-administered resources, then EML would be responsible for preparing a detailed, site-specific plan to enhance or replace the impacted perennial water resource(s). Potential adverse effects to surface water rights would be mitigated under NDWR jurisdiction, as well as potential need for additional BLM permit acquisition activities and NEPA analysis. <p>The mitigation plan would be submitted to the BLM identifying the excess amount of drawdown or drawdown impacts to surface water resources. Mitigation would depend on the actual impacts, site-specific conditions, and historical use and could include a variety of measures (e.g., flow augmentation, on-site, or off-site improvements). Methods to enhance or replace the impacted perennial water resources include, but are not limited to, the following:</p> <ul style="list-style-type: none"> • Modification, including cessation, of pumping distribution in the water supply well field; • Injection to confine the drawdown cone; • Installation of a water-supply pump in an existing well (e.g., monitoring well); • Installation of a new water production well; • Piping from a new or existing source; • Installation of a guzzler; • Enhanced development of an existing seep or spring to promote additional flow; • Water hauling; • Removal of piñon-juniper in impacted watersheds; or • Fencing or other protective measures for an existing seep to maintain flow. <ol style="list-style-type: none"> 3. An approved site-specific mitigation plan would be implemented followed by monitoring and reporting to measure the effectiveness of the implemented measures. <p>Mitigation Measure 3.2.3.5-2c: The numerical ground water flow modeling indicates that some impacts to springs may occur after the end of mining and milling operations, when some of the operational measures described above may not be available. For the post-Project delayed impacts of drawdown, the ground water flow model would be updated during the closure process consistent with regulations and policy using the accumulated field data for pumping rates, consumptive use, and observed drawdown within the HSA to re-evaluate projected drawdown that would occur after the end of mining and milling operations. If the BLM determines that the Project would</p> | <p>drawdown associated with the open pit dewatering and water production activities. In addition, EML would periodically update the ground water flow model as determined by the BLM. EML would be responsible for monitoring and annual reporting of changes in ground water levels and surface water flows prior to and during operation, and for a period of up to 30 years in the post mining and milling phase. The reports would be in a format and with a content that is acceptable to the BLM. The monitoring outlined in Appendix C and required in this mitigation measure would be used to document the effectiveness of the implemented specific mitigation activities. In addition, the BLM has the ability to require the implementation of additional mitigation measures if the initial implementation is unsuccessful.</p> <p>Mitigation Measure 3.2.3.6-2b: If monitoring (Mitigation Measure 3.2.3.6-2a) indicates that flow reductions of perennial surface waters are occurring and that these reductions are likely the result of mine-induced drawdown, the following measures would be implemented:</p> <ol style="list-style-type: none"> 1. The BLM would evaluate the available information and determine whether mitigation is required. 2. If mitigation would be required by the BLM, then EML would be responsible for preparing a detailed, site-specific plan to enhance or replace the impacted perennial water resource(s). Potential adverse effects to water rights would be mitigated under NDWR jurisdiction, as well as potential need for additional BLM permit acquisition activities and NEPA analysis. The mitigation plan would be submitted to the BLM identifying the excess amount of drawdown or drawdown impacts to surface water resources. Mitigation would depend on the actual impacts, site-specific conditions, and historical use and could include a variety of measures (e.g., flow augmentation, on-site or off-site improvements). Methods to enhance or replace the impacted perennial water resources include, but are not limited to the following: <ul style="list-style-type: none"> • Modification, including cessation, of pumping distribution in the water supply well field; • Injection to confine the drawdown cone; • Installation of a water-supply pump in an existing well (e.g., monitoring well); • Installation of a new water production well; • Piping from a new or existing source; • Installation of a guzzler; • Enhanced development of an existing seep or spring to promote additional flow; • Water hauling; • Removal of piñon-juniper in impacted watersheds; or • Fencing or other protective measures for an existing seep to maintain flow. 3. An approved site-specific mitigation plan would be implemented followed by monitoring and reporting to measure the effectiveness of the implemented measures. <p>Mitigation Measure 3.2.3.6-2c: The numerical ground water flow modeling indicates that some impacts to springs may occur after the end of mining and milling operations, when some of the operational measures described above may not be available. For the post-Project delayed impacts of drawdown, the ground water flow model would be updated during the closure process consistent with regulations and policies using the accumulated field data for pumping rates, consumptive use, and observed drawdown within the HSA to re-evaluate projected drawdown that would occur after the end of mining and milling operations. If the BLM determines that the Project would impact perennial stream segments or spring sites in this</p> | <p>secured. This specific mitigation would be implemented, as determined by the BLM, based on the results of the monitoring that is also outlined in this mitigation measure. EML would implement the water monitoring provisions outlined in Section 2.1.15 and Appendix C to track the drawdown associated with the open pit dewatering and water production activities. In addition, EML would update the ground water flow model, as determined by the BLM. EML would be responsible for monitoring and annual reporting of changes in ground water levels and surface water flows prior to and during operation, and for a period of up to 30 years in the post mining and milling phase. The reports would be in a format and with a content that is acceptable to the BLM. The monitoring outlined in Appendix C and required in this mitigation measure would be used to document the effectiveness of the implemented specific mitigation activities. In addition, the BLM has the ability to require the implementation of additional mitigation measures if the initial implementation is unsuccessful.</p> <p>Mitigation Measure 3.2.3.7-2b: If monitoring (Mitigation Measure 3.2.3.7-2a) indicates that flow reductions of perennial surface waters are occurring and that these reductions are likely the result of mine-induced drawdown, the following measures would be implemented:</p> <ol style="list-style-type: none"> 1. The BLM would evaluate the available information and determine whether mitigation is required. 2. If mitigation would be required by the BLM, then EML would be responsible for preparing a detailed, site-specific plan to enhance or replace the impacted perennial water resource(s). Potential adverse effects to water rights would be mitigated under NDWR jurisdiction, as well as potential need for additional BLM permit acquisition activities and NEPA analysis. The mitigation plan would be submitted to the BLM identifying the excess in drawdown or drawdown impacts to surface water resources. Mitigation would depend on the actual impacts, site-specific conditions, and historical use and could include a variety of measures (e.g., flow augmentation, on-site or off-site improvements). Methods to enhance or replace the impacted perennial water resources include, but are not limited to, the following: <ul style="list-style-type: none"> • Modification, including cessation, of pumping distribution in the water supply well field; • Injection to confine the drawdown cone; • Installation of a water-supply pump in an existing well (e.g., monitoring well); • Installation of a new water production well; • Piping from a new or existing source; • Installation of a guzzler; • Enhanced development of an existing seep or spring to promote additional flow; • Water hauling; • Removal of Piñon-Juniper in impacted watersheds; or • Fencing or other protective measures for an existing seep to maintain flow. 3. An approved site-specific mitigation plan would be implemented followed by monitoring and reporting to measure the effectiveness of the implemented measures. <p>Mitigation Measure 3.2.3.7-2c: The numerical ground water flow modeling indicates that some impacts to springs may occur after the end of mining and milling operations, when some of the operational measures described above may not be available. For the post-Project delayed impacts of drawdown, the ground water flow model would be updated during the closure process consistent with regulations and policies using the accumulated field data for pumping rates, consumptive use,</p> |

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| | <p>1. Installation of a well and pump at affected stream or spring locations to restore the historic yield of the affected surface water resource.</p> <p>2. Posting of an additional financial guarantee to provide for potentially affected water supplies in the future.</p> | | <p>impact perennial stream segments or spring sites in this post-operational phase, mitigation consisting of one or both of the following measures would be required:</p> <p>1. Installation of a well and pump at affected stream or spring locations to restore the historic yield of the affected surface water resource.</p> <p>2. Posting of an additional financial guarantee to provide for potentially affected water supplies in the future.</p> | <p>post-operational phase, mitigation consisting of one or both of the following measures would be required:</p> <p>1. Installation of a well and pump at affected stream or spring locations to restore the historic yield of the affected surface water resource.</p> <p>2. Posting of an additional financial guarantee to provide for potentially affected water supplies in the future.</p> | <p>and observed drawdown within the HSA to re-evaluate projected drawdown that would occur after the end of mining and milling operations. If the BLM determines that the Project would impact perennial stream segments or spring sites in this post-operational phase, mitigation consisting of one or both of the following measures would be required:</p> <p>1. Installation of a well and pump at affected stream or spring locations to restore the historic yield of the affected surface water resource.</p> <p>2. Posting of an additional financial guarantee to provide for potentially affected water supplies in the future.</p> |
| Effectiveness of Mitigation and Residual Effects: | <p>Effectiveness of Mitigation and Residual Effects: Mitigation would be designed to address the specific spring or surface water that is affected, which enhances the effectiveness of the mitigation. In addition, a variety of approaches to mitigation can be used within these measures to achieve the objective. These mitigation measures are expected to be effective because the mitigation measures are specifically intended to directly address the impact by restoring or enhancing surface flows, and because the measures would be reviewed and addressed by the BLM. The effectiveness of Mitigation Measure 3.2.3.3-2c, if implemented, is less certain since it would be many decades in the future. If initial implementation was not successful, the BLM may require implementation of additional measures. The feasibility and success of mitigation would depend on site-specific conditions and details of the mitigation plan. However, this type of mitigation has been proven to be effective and if measures used in Mitigation Measure 3.2.3.3-2b are implemented, then the measure should be effective at mitigating the impacts from reduced surface water flows. Over a long period of time (tens to hundreds of years) the effects to most surface water flows would diminish; however, for the springs nearest to the open pit, flows would be reduced or eliminated in perpetuity.</p> | N/A | <p>Effectiveness of Mitigation and Residual Effects: Mitigation would be designed to address the specific spring or surface water that is affected, which enhances the effectiveness of the mitigation. In addition, a variety of approaches to mitigation can be used within these measures to achieve the objective. These mitigation measures are expected to be effective because the mitigation measures are specifically intended to directly address the impact by restoring or enhancing surface flows, and because the measures would be reviewed and addressed by the BLM. The effectiveness of Mitigation Measure 3.2.3.5-2c, if implemented, is less certain since the mitigation would be many decades in the future. If initial implementation was not successful, the BLM may require implementation of additional measures. The feasibility and success of mitigation would depend on site-specific conditions and details of the mitigation plan. However, this type of mitigation has been proven to be effective and if measures used in Mitigation Measure 3.2.3.5-2b are implemented, then the measure should be effective at mitigating the impacts from reduced surface water flows. Over a long period of time (tens to hundreds of years) the effects to most surface water flows would diminish; however, for the springs nearest to the open pit, flows would be reduced or eliminated in perpetuity.</p> | <p>Effectiveness of Mitigation and Residual Effects: Mitigation would be designed to address the specific spring or surface water that is affected, which enhances the effectiveness of the mitigation. In addition, a variety of approaches to mitigation can be used within these measures to achieve the objective. These mitigation measures are expected to be effective because the mitigation measures are specifically intended to directly address the impact by restoring or enhancing surface flows, and because the measures would be reviewed and addressed by the BLM. The effectiveness of Mitigation Measure 3.2.3.6-2c, if implemented, is less certain since it would be many decades in the future. If initial implementation was not successful, the BLM may require implementation of additional measures. The feasibility and success of mitigation would depend on site-specific conditions and details of the mitigation plan. However, this type of mitigation has been proven to be effective and if measures used in Mitigation Measure 3.2.3.6-2b are implemented, then the measure should be effective at mitigating the impacts from reduced surface water flows. Over a long period of time (tens to hundreds of years) the effects to most surface water flows would diminish; however, for the springs nearest to the open pit, flows would be reduced or eliminated in perpetuity.</p> | <p>Effectiveness of Mitigation and Residual Effects: Mitigation would be designed to address the specific spring or surface water that is affected, which enhances the effectiveness of the mitigation. In addition, a variety of approaches to mitigation can be used within these measures to achieve the objective. These mitigation measures are expected to be effective because the mitigation measures are specifically intended to directly address the impact by restoring or enhancing surface flows, and because the measures would be reviewed and addressed by the BLM. The effectiveness of Mitigation Measure 3.2.3.7-2c, if implemented, is less certain since it would occur many decades in the future. If initial implementation was not successful, the BLM may require implementation of additional measures. The feasibility and success of mitigation would depend on site-specific conditions and details of the mitigation plan. However, this type of mitigation has been proven to be effective and if measures used in Mitigation Measure 3.2.3.7-2b are implemented, then the measure should be effective at mitigating the impacts from reduced surface water flows. Over a long period of time (tens to hundreds of years) the effects to most surface water flows would diminish; however, for the springs nearest to the open pit, flows would be reduced or eliminated in perpetuity.</p> |
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| Impact: | <p>Impact 3.2.3.3-3: The ground water drawdown is predicted to exceed ten feet at the locations of seven wells with associated active ground water use with water rights.</p> | <p>Impact 3.2.3.4-3: The ground water drawdown is predicted to exceed ten feet at the locations of numerous active ground water rights controlled by third parties in the Bobcat Ranch area of Kobeh Valley and in the southern part of Diamond Valley by the end of Year 2055. None of these locations are predicted to be impacted by the Proposed Action, the Partial Backfill Alternative, or the Off-Site Transfer of Ore Concentrate for Processing Alternative.</p> | <p>Impact 3.2.3.5-3: The ground water drawdown is predicted to exceed ten feet at the locations of seven wells with associated active ground water use with water rights.</p> | <p>Impact 3.2.3.6-3: The ground water drawdown is predicted to exceed ten feet at the locations of seven wells with associated with active ground water use with water rights.</p> | <p>Impact 3.2.3.7-3: The ground water drawdown is predicted to exceed ten feet at the locations of seven wells with associated active ground water use with water rights, which is similar to those under the Proposed Action.</p> |
| Significance of the Impact: | <p>Significance of the Impact: Impacts to the seven wells with associated ground water use with water rights listed in Table 3.2-10 are potentially significant until such time as the ground water level recovers to less than ten feet of drawdown, which is predicted to be less than 100 years post-Project in all cases. The impacts would become less than significant after implementation of the mitigation measures described below. Potential adverse effects to ground water rights would be mitigated under NDWR. Therefore, no mitigation measures are proposed by the BLM for ground water rights. Section 3.26 includes suggested mitigation outside the BLM’s jurisdiction for water rights.</p> | <p>Significance of the Impact: Impacts associated with the No Action Alternative are considered significant; however, these impacts are not under BLM jurisdiction and no mitigation is proposed (see Section 3.26 of this EIS).</p> | <p>Significance of the Impact: Impacts to the seven wells with associated active ground water use with water rights listed in Table 3.2-10 are potentially significant until such time as the ground water level recovers to less than ten feet of drawdown, which is predicted to be less than 100 years post-Project in all cases. The impacts would become less than significant after implementation of the mitigation measures described below. Potential adverse effects to ground water rights would be mitigated under NDWR jurisdiction. Therefore no mitigation measures are proposed by the BLM for ground water rights. Section 3.26 includes suggested mitigation outside the BLM’s jurisdiction for water rights.</p> | <p>Significance of the Impact: Impacts to the seven wells with associated active ground water use with water rights listed in Table 3.2-10 are potentially significant until such time as the ground water level recovers to less than ten feet of drawdown, which is predicted to be less than 100 years post-Project in all cases. The impacts would become less than significant after implementation of the mitigation measures described below. Potential adverse effects to ground water rights would be mitigated under NDWR jurisdiction. Therefore, no mitigation measures are proposed by the BLM for ground water rights. Section 3.26 includes suggested mitigation outside the BLM’s jurisdiction for water rights.</p> | <p>Significance of the Impact: Impacts to the seven wells with associated active ground water use with water rights listed in Table 3.2-10 are potentially significant until such time as the ground water level recovers to less than ten feet of drawdown, which is predicted to be less than 100 years post-Project in all cases. The impacts would become less than significant after implementation of the mitigation measures described below. Potential adverse effects to ground water rights would be mitigated under NDWR jurisdiction. Therefore, no mitigation measures are proposed by the BLM for ground water rights. Section 3.26 includes suggested mitigation outside the BLM’s jurisdiction for water rights.</p> |
| Mitigation Measure: | <p>Mitigation Measure 3.2.3.3-3a: For the seven wells with associated active ground water use with water rights EML would assess the distance of the screened interval and the pumping below the ground water table. If that difference is greater than maximum predicted drawdown, then EML would pay the water right holder for the increase in pumping costs based on historical usage. If the difference is greater than ten feet, then EML would pay for either the lowering of the pump to a depth greater than the maximum drawdown in the well, or the completion of a new well with the screened depth greater than the maximum predicted drawdown and pay the water right holder for the increase in pumping costs based</p> | N/A | <p>Mitigation Measure 3.2.3.5-3a: For the seven wells with associated active ground water use with water rights EML would assess the distance of the screened interval and the pumping below the ground water table. If that difference is greater than maximum predicted drawdown, then EML would pay the water right holder for the increase in pumping costs based on historical usage. If the difference is greater than ten feet, then EML would pay for either the lowering of the pump to a depth greater than the maximum drawdown in the well, or the completion of a new well with the screened depth greater than the maximum predicted drawdown and pay the water right</p> | <p>Mitigation Measure 3.2.3.6-3a: For the seven wells with associated active ground water use with water rights EML would assess the distance of the screened interval and the pumping below the ground water table. If that difference is greater than maximum predicted drawdown, then EML would pay the water right holder for the increase in pumping costs based on historical usage. If the difference is greater than ten feet, then EML would pay for either the lowering of the pump to a depth greater than the maximum drawdown in the well, or the completion of a new well with the a screened depth greater than the maximum predicted drawdown and pay the water right</p> | <p>Mitigation Measure 3.2.3.7-3a: For the seven wells with associated active ground water use with water rights EML would assess the distance of the screened interval and the pumping below the ground water table. If that difference is greater than maximum predicted drawdown, then EML would pay the water right holder for the increase in pumping costs based on historical usage. If the difference is greater than ten feet, then EML would pay for either the lowering of the pump to a depth greater than the maximum drawdown in the well, or the completion of a new well with the a screened depth greater than the maximum predicted drawdown and pay the water right</p> |

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| | <p>on historic usage. In addition, EML would implement the water monitoring provisions outlined in Section 2.1.15 and in Appendix C. If, through implementation of the water monitoring, it is determined that there are impacts to wells with associated active ground water use with water rights attributable to the Project, whether predicted or not, then the following mitigation measures would be implemented.</p> <p>Mitigation Measure 3.2.3.3-3b: If monitoring (Mitigation Measure 3.2.3.3-3a) indicates that mine-induced drawdown impacts a well with associated active water use with rights, the following measures would be implemented:</p> <ol style="list-style-type: none"> The BLM would evaluate the available information and determine whether mitigation is required. If mitigation is required by the BLM, then EML would be responsible for preparing a detailed, site-specific plan to enhance or replace the impacted ground water. The mitigation plan would be submitted to the BLM identifying drawdown impacts to ground water resources. Mitigation would depend on the actual impacts and site-specific conditions and could include the following: <ul style="list-style-type: none"> Lowering the pump in an existing well; Deepening an existing well; Drilling a new well for replacement of water supply; Providing a replacement water supply of equivalent yield and general water quality; Pay for any incremental increase in pumping costs. Modifying the KVCWF pumping regime (well locations or rates) during operations to reduce drawdown in the area of the impacted ground water resources; Infiltrating or injecting water during operations at strategic locations to limit drawdown propagation in certain areas. An approved site-specific mitigation plan would be implemented followed by monitoring and reporting to measure the effectiveness of the implemented measures. <p>Mitigation Measure 3.2.3.3-3c: For any significant impacts to wells with associated active ground water use with water rights that do not occur until after the end of mining and milling operations, the operational measures described above may not be available. For the post-Project delayed impacts of drawdown, the ground water flow model would be updated during the closure process consistent with regulations and policies using the accumulated field data for pumping rates, consumptive use, and observed drawdown within the HSA to re-evaluate projected drawdown that would occur after the end of mining and milling operations. Wells with associated active ground water use with water rights not owned or controlled by EML that are indicated to be significantly impacted would then be mitigated by EML using one or more of the following measures, as directed by the BLM:</p> <ol style="list-style-type: none"> Installation of a deeper well and pump at affected locations to restore the historical yield of the well (including incremental increase in pumping costs). Posting of a funding mechanism to provide for potential future impacts to potentially affected water sources. | | <p>holder for the increase in pumping costs based on historic usage. In addition, EML would implement the water monitoring provisions outlined in Section 2.1.15 and in Appendix C. If, through implementation of the water monitoring, it is determined that there are impacts to wells with associated active ground water use with water rights attributable to the Project, whether predicted or not, then the following mitigation measures would be implemented. The combined surface water and ground water monitoring results would be used to trigger the implementation of Mitigation Measure 3.2.3.5-3b.</p> <p>Mitigation Measure 3.2.3.5-3b: If monitoring (Mitigation Measure 3.2.3.5-3a) indicates that mine-induced drawdown impacts a well with associated active ground water use with water rights, the following measures would be implemented:</p> <ol style="list-style-type: none"> The BLM would evaluate the available information and determine whether mitigation is required. If mitigation is required by the BLM, then EML would be responsible for preparing a detailed, site-specific plan to enhance or replace the impacted ground water. The mitigation plan would be submitted to the BLM identifying drawdown impacts to ground water resources. Mitigation would depend on the actual impacts and site-specific conditions and could include the following: <ul style="list-style-type: none"> Lowering the pump in an existing well; Deepening an existing well; Drilling a new well for replacement of water supply; Providing a replacement water supply of equivalent yield and general water quality; Pay for any incremental increase in pumping costs; Modifying the KVCWF pumping regime (well locations and/or rates) during operations to reduce draw down in the area of the impacted ground water resources; Infiltrating or injecting water during operations at strategic locations to limit drawdown propagation in certain areas. An approved site-specific mitigation plan would be implemented followed by monitoring and reporting to measure the effectiveness of the implemented measures. <p>Mitigation Measure 3.2.3.5-3c: For any significant impacts to wells with associated active ground water use with water rights that do not occur until after the end of mining and milling operations, the operational measures described above may not be available. For the post-Project delayed impacts of drawdown, the ground water flow model would be updated during the closure process consistent with regulations and policies using the accumulated field data for pumping rates, consumptive use, and observed drawdown within the HSA to re-evaluate projected drawdown that would occur after the end of mining and milling operations. Wells with associated active ground water use with water rights not owned or controlled by EML that are indicated to be significantly impacted would then be mitigated by EML using one or more of the following measures, as directed by the BLM or the appropriate regulatory agency:</p> <ol style="list-style-type: none"> Installation of a deeper well and pump at affected locations to restore the historical yield of the well (including incremental increase in pumping costs). Posting of a funding mechanism to provide for potential future impacts to potentially affected water sources. | <p>holder for the increase in pumping costs based on historic usage. In addition, EML would implement the water monitoring provisions outlined in Section 2.1.15 and Appendix C. If, through implementation, of the water monitoring it is determined that there are impacts to wells with associated active ground water use with water rights attributable to the Project, whether predicted or not, then the following mitigation measures would be implemented. The combined surface water and ground water monitoring results would be used to trigger the implementation of Mitigation Measure 3.2.3.6-3b.</p> <p>Mitigation Measure 3.2.3.6-3b: If monitoring (Mitigation Measure 3.2.3.6-3a) indicates that mine-induced drawdown impacts a well with associated active ground water use with water rights, the following measures would be implemented:</p> <ol style="list-style-type: none"> The BLM would evaluate the available information and determine whether mitigation is required. If mitigation is required by the BLM, then EML would be responsible for preparing a detailed, site-specific plan to enhance or replace the impacted ground water. The mitigation plan would be submitted to the BLM identifying drawdown impacts to ground water resources. Mitigation would depend on the actual impacts and site-specific conditions and could include: <ul style="list-style-type: none"> Lowering the pump in an existing well; Deepening an existing well; Drilling a new well for replacement of water supply; Providing a replacement water supply of equivalent yield and general water quality; Pay for any incremental increase in pumping costs; Modifying the KVCWF pumping regime (well locations or rates) during operations to reduce draw down in the area of the impacted ground water resources; Infiltrating or injecting water during operations at strategic locations to limit drawdown propagation in certain areas. An approved site-specific mitigation plan would be implemented followed by monitoring and reporting to measure the effectiveness of the implemented measures. <p>Mitigation Measure 3.2.3.6-3c: For any significant impacts to wells with associated active ground water use with water rights that do not occur until after the end of mining and milling operations, the operational measures described above may not be available. For the post-Project delayed impacts of drawdown, the ground water flow model would be updated during the final year of the Project using the accumulated field data for pumping rates, consumptive use, and observed drawdown within the HSA to re-evaluate projected drawdown that would occur after the end of mining and milling operations. Wells with associated active ground water use with water rights that are not owned or controlled by EML that are indicated to be significantly impacted would then be mitigated by EML using one or more of the following measures, as directed by the NDWR, the BLM, or the appropriate regulatory agency:</p> <ol style="list-style-type: none"> Installation of a deeper well and pump at affected locations to restore the historical yield of the well (including incremental increase in pumping costs). Posting of a funding mechanism to provide for potential future impacts to potentially affected water sources. | <p>holder for the increase in pumping costs based on historic usage. In addition, EML would implement the water monitoring provisions outlined in Section 2.1.15 and Appendix C. If, through implementation of the water monitoring it is determined that there are impacts to wells with associated active ground water use with water rights attributable to the Project, whether predicted or not, then the following mitigation measures would be implemented. The combined surface water and ground water monitoring results would be used to trigger the implementation of Mitigation Measure 3.2.3.7-3b.</p> <p>Mitigation Measure 3.2.3.7-3b: If monitoring (Mitigation Measure 3.2.3.7-3a) indicates that mine-induced drawdown impacts a well with associated active ground water use with water rights, the following measures would be implemented:</p> <ol style="list-style-type: none"> The BLM would evaluate the available information and determine whether mitigation is required. If mitigation is required by the BLM, then EML would be responsible for preparing a detailed, site-specific plan to enhance or replace the impacted ground water. The mitigation plan would be submitted to the BLM identifying drawdown impacts to ground water resources. Mitigation would depend on the actual impacts and site-specific conditions and could include the following: <ul style="list-style-type: none"> Lowering the pump in an existing well; Deepening an existing well; Drilling a new well for replacement of water supply; Providing a replacement water supply of equivalent yield and general water quality; Pay for an incremental increase in pumping costs; Modifying the KVCWF pumping regime (well locations or rates) during operations to reduce drawdown in the area of the impacted ground water resources; Infiltrating or injecting water during operations at strategic locations to limit drawdown propagation in certain areas. An approved site-specific mitigation plan would be implemented followed by monitoring and reporting to measure the effectiveness of the implemented measures. <p>Mitigation Measure 3.2.3.7-3c: For any significant impacts to wells with associated active ground water use with water rights that do not occur until after the end of mining and milling operations, the operational measures described above may not be available. For the post-Project delayed impacts of drawdown, the ground water flow model would be updated during the final year of the Project using the accumulated field data for pumping rates, consumptive use, and observed drawdown within the HSA to re-evaluate projected drawdown that would occur after the end of mining and milling operations. Wells with associated active ground water use with water rights that are not owned or controlled by EML that are indicated to be significantly impacted would then be mitigated by EML using one or more of the following measures, as directed by the NDWR, the BLM, or the appropriate regulatory agency:</p> <ol style="list-style-type: none"> Installation of a deeper well and pump at affected locations to restore the historical yield of the well (including incremental increase in pumping costs). Posting of a funding mechanism to provide for potential future impacts to potentially affected water sources. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Implementation of Mitigation Measure 3.2.3.3-3b and the use of any of the options outlined above would be effective at mitigating | N/A | Effectiveness of Mitigation and Residual Effects: Implementation of the Mitigation Measure 3.2.3.5-3b and the use of any of the options outlined above would be effective at | Effectiveness of Mitigation and Residual Effects: Implementation of the Mitigation Measure 3.2.3.6-3b and the use of any of the options outlined above would be effective at | Effectiveness of Mitigation and Residual Effects: Implementation of the Mitigation Measure 3.2.3.7-3b and the use of any of the options outlined above would be effective at |

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| | the impacts to wells with associated active ground water use with water rights. Mitigation would be designed to address the specific ground water source that is affected, which enhances the effectiveness of the mitigation. Because the mitigation measures are specifically intended to directly address the impact by providing financial compensation or ensuring that the water is made available, and because the measures would be reviewed and assessed by the BLM, these mitigation measures are expected to be effective. If initial implementation were unsuccessful, the BLM may require implementation of additional measures. The feasibility and success of mitigation would depend on site-specific conditions and details of the mitigation plan. Any residual effects to ground water uses would be fully mitigated and over a long period of time (tens to hundreds of years) the drawdown effects would fully diminish, except in the vicinity of the open pit where the effects would be in perpetuity. | | mitigating the impacts to wells with associated active ground water use with water rights. Mitigation would be designed to address the specific ground water source that is affected, which enhances the effectiveness of the mitigation. These mitigation measures are expected to be effective because the mitigation measures are specifically intended to directly address the impact by providing financial compensation or ensuring that the water is made available, and because the measures would be reviewed and assessed by the BLM. If initial implementation was not successful, the BLM may require implementation of additional measures. The feasibility and success of mitigation would depend on site-specific conditions and details of the mitigation plan. Any residual effects to ground water rights would be fully mitigated and over a long period of time (tens to hundreds of years) the drawdown effects would fully diminish, except in the vicinity of the open pit where the effects would be in perpetuity. | mitigating the impacts to wells with associated active ground water use with water rights. Mitigation would be designed to address the specific ground water source that is affected, which enhances the effectiveness of the mitigation. These mitigation measures are expected to be effective because the mitigation measures are specifically intended to directly address the impact by providing financial compensation or ensuring that the water is made available, and because the measures would be reviewed and assessed by the BLM. If initial implementation was not successful, the BLM may require implementation of additional measures. The feasibility and success of mitigation would depend on site-specific conditions and details of the mitigation plan. Any residual effects to ground water uses would be fully mitigated and over a long period of time (tens to hundreds of years) the drawdown effects would fully diminish, except in the vicinity of the open pit where the effects would be in perpetuity. | mitigating the impacts to wells with associated active ground water use with water rights. Mitigation would be designed to address the specific ground water source that is affected, which enhances the effectiveness of the mitigation. These mitigation measures are expected to be effective because the mitigation measures are specifically intended to directly address the impact by providing financial compensation or ensuring that the water is made available, and because the measures would be reviewed and assessed by the BLM. If initial implementation was not successful, the BLM may require implementation of additional measures. The feasibility and success of mitigation would depend on site-specific conditions and details of the mitigation plan. Any residual effects to ground water rights would be mitigated and over a long period of time (tens to hundreds of years) the drawdown effects should fully diminish, except in the vicinity of the open pit where the effects would be in perpetuity. |
| Impact: | Impact 3.2.3.3-4: Ground water flow modeling indicates that there could be up to approximately a 25 percent decrease in ET of ground water in Kobeh Valley due to phreatophyte plant reduction resulting from temporary mine-induced drawdown. | Impact 3.2.3.4-4: Ground water flow modeling indicates that there would be a continued decrease in ET of ground water in Diamond Valley resulting from expanded drawdown associated with continued agricultural pumping. | Impact 3.2.3.5-4: Ground water flow modeling indicates that there could be up to an approximately 25 percent decrease in ET of ground water in Kobeh Valley due to a change in phreatophyte composition and percent cover resulting from temporary mine-induced drawdown. | Impact 3.2.3.6-4: Ground water flow modeling indicates that there could be up to an approximately 25 percent decrease in ET of ground water in Kobeh Valley due to a change in phreatophyte composition and percent cover resulting from temporary mine-induced drawdown, which would partially offset the mine-related consumptive use of water from the Kobeh Valley basin during mining and milling operations. | Impact 3.2.3.7-4: Ground water flow modeling indicates that there could be up to approximately 25 percent decrease in ET of ground water in Kobeh Valley due to a change in phreatophyte composition and percent cover resulting from temporary mine-induced drawdown. |
| Significance of the Impact: | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: Impacts associated with the No Action Alternative are considered significant; however, these impacts are not under BLM jurisdiction and no mitigation is proposed (see Section 3.26 of this EIS). | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.2.3.3-5: Ground water flow modeling indicates that there could be a time-varying net change (decrease or increase) in the available ground water in Diamond Valley that is due solely to effects of the Proposed Action by the end of mining and milling operations and for at least 50 years post-Project; however, the magnitude of the predicted changes are less than 0.1 percent, compared to the overall ground water budget for Diamond Valley. | Impact 3.2.3.4-5: Ground water flow modeling indicates that there would be a further decrease in the available ground water stored in Diamond Valley due to continued agricultural pumping under the No Action Alternative, and that the declining trend in available ground water would persist until Year 2105 or longer depending upon future pumping rates. | Impact 3.2.3.5-5: Ground water flow modeling indicates that there could be a time-varying net change (decrease or increase) in the available ground water in Diamond Valley that is due solely to effects of the Partial Backfill Alternative by the end of mining and milling operations and for at least 50 years post-Project; however, the magnitude of the projected changes are less than 0.1 percent compared to the overall ground water budget for Diamond Valley. | Impact 3.2.3.6-5: Ground water flow modeling indicates that there could be a time-varying net change (decrease or increase) in the available ground water in Diamond Valley that is due solely to effects of the Off-Site Transfer of Ore Concentrate for Processing Alternative by the end of mining and milling operations and for at least 50 years post-Project; however, the magnitude of the predicted changes are less than 0.1 percent compared to the overall ground water budget for Diamond Valley. | Impact 3.2.3.7-5: Ground water flow modeling indicates that there could be a time-varying net change (decrease or increase) in the available ground water in Diamond Valley that is due solely to effects of the Slower, Longer Project Alternative by the end of mining and milling operations and for at least 50 years post-Project; however, the magnitude of the predicted changes are less than 0.2 percent, compared to the overall ground water budget for Diamond Valley. |
| Significance of the Impact: | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: Impacts associated with the No Action Alternative are considered significant; however, these impacts are not under BLM jurisdiction and no mitigation is proposed (see Section 3.26 of this EIS) | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.2.3.3-6: Consumptive use of water during mining and milling operations would support a beneficial use and would not be expected to adversely impact water resources. Long-term consumptive use of ground water by evaporation from the pit lake surface is predicted to be approximately 100 gpm (161 afy) and would continue in perpetuity. This consumptive loss would only occur under the Proposed Action (and the Off-Site Transfer of Ore Concentrate for Processing Alternative and the Slower, Longer Project Alternative), and so represents a negative impact compared to the No Action Alternative. | Impact 3.2.3.4-6: Consumptive use of water for authorized agricultural irrigation, stock watering, mining and milling, or municipal uses constitute beneficial uses of water resources. However, the historical and existing (2009) rates of consumptive usage in Diamond Valley already appear to have impacted some water resources and may be unsustainable in the long term. Some of the pumping-related consumption of ground water in Diamond Valley is offset by the reduction in ground water loss due to less ET as the water table declines. | Impact 3.2.3.5-6: Consumptive use of water during mining and milling operations would support a beneficial use and would not be expected to adversely impact water resources. Long-term consumptive use of water by evaporation from the pit lake surface would not occur under the Partial Backfill Alternative, which is a positive impact compared to the Proposed Action and is a neutral impact compared to the No Action Alternative. | Impact 3.2.3.6-6: Consumptive use of water during mining and milling operations would support a beneficial use and would not be expected to adversely impact water resources, and EML would have adequate water rights to cover the consumptive use. Long-term consumptive use of ground water by evaporation from the pit lake surface is predicted to be approximately 100 gpm (161 afy) and would continue in perpetuity. This consumptive loss would only occur under the Off-Site Transfer of Ore Concentrate for Processing Alternative (and the Proposed Action and the Slower, Longer Project Alternative), and so represents a negative impact compared to the No Action Alternative. The 161 afy is less than 0.1 percent of the | Impact 3.2.3.7-6: Consumptive use of water during mining and milling operations would support a beneficial use and would not be expected to adversely impact water resources, and EML would have adequate water rights to cover the consumptive use. Long-term consumptive use of ground water by evaporation from the pit lake surface is predicted to be approximately 100 gpm (161 afy) and would continue in perpetuity. This consumptive loss would occur under the Slower, Longer Project Alternative (and the Proposed Action), and so represents a negative impact compared to the No Action Alternative. The 161 afy is less than 0.1 percent of the combined water budget for the Kobeh and Diamond Valleys. |

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| | | | | combined water budget for the Kobeh and Diamond Valleys. | |
| Significance of the Impact: | Significance of the Impact: Impacts during mining and milling operations are less than significant. After those operations cease, direct impacts of pit lake evaporation do not result in significant impacts. | Significance of the Impact: Impacts associated with the No Action Alternative are not considered significant | Significance of the Impact: There is a positive impact compared to the Proposed Action and a neutral impact compared to the No Action Alternative. Impacts during mining and milling operations are less than significant. After those operations cease, direct impacts of pit lake evaporation would not occur and would, therefore, not result in significant impacts. | Significance of the Impact: Impacts during mining and milling operations are less than significant. After those operations cease, direct impacts of pit lake evaporation do not result in significant impacts. | Significance of the Impact: Impacts during mining and milling operations are less than significant. After those operations cease, direct impacts of pit lake evaporation do not result in significant impacts. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
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| Impact: | Impact 3.2.3.3-7: A small change in aquifer characteristics is expected to result from compaction of the aquifer materials. Ground subsidence of greater than one-half-foot is projected to extend approximately four miles quasi-radially from the center of subsidence effects in the northern part of the KVCWF area, and a maximum subsidence of approximately 2.5 feet is projected in a small part of that central area. The subsidence would result primarily from a permanent reduction in porosity of the finer grained sediments (clays and silty clays), which are not the primary water-bearing materials in the basin-fill aquifer. | Impact 3.2.3.4-7: A change in aquifer characteristics is expected to result from compaction of the aquifer materials. Ground subsidence of greater than one-half-foot is projected to extend approximately 13 miles to the north and south and five miles to the east and west from the center of maximum subsidence (approximately 13.5 feet) in southern Diamond Valley. The subsidence would result primarily from a permanent reduction in porosity of the finer grained sediments (clays and silty clays), but some reduction in the porosity of the primary water-bearing materials in the basin-fill aquifer may also occur. | Impact 3.2.3.5-7: A small change in aquifer characteristics is expected to result from compaction of the aquifer materials. Ground subsidence of greater than one-half-foot is projected to extend approximately four miles quasi-radially from the center of subsidence effects in the northern part of the KVCWF area, and a maximum subsidence of approximately 2.5 feet is projected in a small part of that central area. The subsidence would result primarily from a permanent reduction in porosity of the finer grained sediments (clays and silty clays), which are not the primary water-bearing materials in the basin-fill aquifer. | Impact 3.2.3.6-7: A small change in aquifer characteristics is expected to result from compaction of the aquifer materials. Ground subsidence of greater than one-half-foot is projected to extend approximately four miles quasi-radially from the center of subsidence effects in the northern part of the KVCWF area, and a maximum subsidence of approximately 2.5 feet is projected in a small part of that central area. The subsidence would result primarily from a permanent reduction in porosity of the finer grained sediments (clays and silty clays), which are not the primary water-bearing materials in the basin-fill aquifer. | Impact 3.2.3.7-7: A small change in aquifer characteristics is expected to result from compaction of the aquifer materials. Ground subsidence of greater than one-half-foot is projected to extend approximately four miles quasi-radially from the center of subsidence effects in the northern part of the KVCWF area, and a maximum subsidence of approximately 1.5 feet is projected in a small part of that central area. The subsidence would result primarily from a permanent reduction in porosity of the finer grained sediments (clays and silty clays), which are not the primary water-bearing materials in the basin-fill aquifer. |
| Significance of the Impact: | Significance of the Impact: The potential for the Kobeh Valley basin-fill aquifer to transmit or store water is not expected to be significantly impacted. | Significance of the Impact: Impacts associated with the No Action Alternative are considered significant; however, these impacts are not under BLM jurisdiction and no mitigation is proposed (see Section 3.26 of this EIS). | Significance of the Impact: The potential for the Kobeh Valley basin-fill aquifer to transmit or store water is not expected to be significantly impacted. | Significance of the Impact: The potential for the Kobeh Valley basin-fill aquifer to transmit or store water is not expected to be significantly impacted. | Significance of the Impact: The potential for the Kobeh Valley basin-fill aquifer to transmit or store water is not expected to be significantly impacted. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.2.3.3-8: Differential subsidence could result in the development of fissures, creating a potential to degrade waters of the state. Fissures could provide a preferential flow path for uncontained process fluids or chemical or hydrocarbon releases. Capture of surface runoff by fissures may form erosional fissure gullies, which represent a safety risk to wildlife, livestock, wild horses, and people. | Impact 3.2.3.4-8: Differential subsidence could result in the development of fissures, creating a potential to degrade waters of the state. Fissures could provide a preferential flow path for contaminants released at the ground surface to reach the ground water system. Capture of surface runoff by fissures may form erosional fissure gullies, which represent a safety risk to wildlife, livestock, wild horses, and people. | Impact 3.2.3.5-8: Differential subsidence could result in the development of fissures, creating a potential to degrade waters of the state. Fissures could provide a preferential flow path for uncontained process fluids or chemical or hydrocarbon releases. Capture of surface runoff by fissures may form erosional fissure gullies, which represent a safety risk to wildlife, livestock, wild horses, and people. | Impact 3.2.3.6-8: Differential subsidence could result in the development of fissures, creating a potential to degrade waters of the state. Fissures could provide a preferential flow path for uncontained process fluids or chemical or hydrocarbon releases. Capture of surface runoff by fissures may form erosional fissure gullies, which represent a safety risk to wildlife, livestock, wild horses, and people. | Impact 3.2.3.7-8: Differential subsidence could result in the development of fissures, creating a potential to degrade waters of the state. Fissures could provide a preferential flow path for uncontained process fluids or chemical or hydrocarbon releases. Capture of surface runoff by fissures, may form erosional fissure gullies, which represent a safety risk to wildlife, livestock, wild horses, and people. |
| Significance of the Impact: | Significance of the Impact: The impact would be significant if fissure gullies formed. | Significance of the Impact: Impacts associated with the No Action Alternative are considered significant; however, these impacts are not under BLM jurisdiction and no mitigation is proposed (see Section 3.26 of this EIS). | Significance of the Impact: The impact would be significant if fissure gullies formed. | Significance of the Impact: The impact would be significant if fissure gullies formed. | Significance of the Impact: The impact would be significant if fissure gullies formed. |
| Mitigation Measure: | Mitigation Measure 3.2.3.3-8: EML would be responsible for specifically monitoring for fissure gully development. If fissure gullies form, they would be filled in with clean, coarse-grained alluvium, with the intent of providing a rapid means of dissipation for any surface water entering the fissure and thereby reducing the propagation of the fissure through continued erosion. The fill material then would be seeded with a BLM-approved seed mix. | N/A | Mitigation Measure 3.2.3.5-8: As part of the comprehensive water resources monitoring program (Mitigation Measure 3.2.3.5-2a), EML would be responsible for specifically monitoring for fissure gully development. If fissure gullies form, they would be filled in with clean, coarse-grained alluvium, with the intent of providing a rapid means of dissipation for any surface water entering the fissure and thereby reducing the propagation of the fissure through continued erosion. The fill material then would be seeded with a BLM-approved seed mix. | Mitigation Measure 3.2.3.6-8: EML would be responsible for specifically monitoring for fissure gully development. If fissure gullies form, they would be filled in with clean, coarse-grained alluvium, with the intent of providing a rapid means of dissipation for any surface water entering the fissure, thereby reducing the propagation of the fissure through continued erosion. The fill material then would be seeded with a BLM-approved seed mix. | Mitigation Measure 3.2.3.7-8: EML would be responsible for specifically monitoring for fissure gully development. If fissure gullies form, they would be filled in with clean, coarse-grained alluvium, with the intent of providing a rapid means of dissipation for any surface water entering the fissure, thereby reducing the propagation of the fissure through continued erosion. The fill material then would be seeded with a BLM-approved seed mix. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Implementation of Mitigation Measure 3.2.3.3-8 would be effective at mitigating the fissures that develop because they would be filled immediately. Any residual effects of fissure development would be fully mitigated during the life of the Project. | N/A | Effectiveness of Mitigation and Residual Effects: Implementation of the Mitigation Measure 3.2.3.5-8 would be effective at mitigating the fissures that develop. Any residual effects of fissure development would be fully mitigated during the life of the Project. | Effectiveness of Mitigation and Residual Effects: Implementation of the Mitigation Measure 3.2.3.6-8 would be effective at mitigating the fissures that develop. Any residual effects of fissure development would be fully mitigated during the life of the Project. | Effectiveness of Mitigation and Residual Effects: Implementation of the Mitigation Measure 3.2.3.7-8 would be effective at mitigating the fissures that develop. Any residual effects of fissure development would be fully mitigated during the life of the Project. |

| | PROPOSED ACTION | NO ACTION ALTERNATIVE | PARTIAL BACKFILL ALTERNATIVE | OFF-SITE TRANSFER OF ORE CONCENTRATE FOR PROCESSING ALTERNATIVE | SLOWER, LONGER PROJECT ALTERNATIVE |
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| Impact: | Impact 3.3.3.3-1: There would be a moderate to high potential for impacts to surface water quality due to erosion and possible breaching of the North TSF under the Proposed Action. | N/A | Impact 3.3.3.5-1: There would be a moderate to high potential for impacts to surface water quality due to erosion and possible breaching of the North TSF under the Partial Backfill Alternative. | Impact 3.3.3.6-1: There would be a moderate to high potential for impacts to surface water quality due to erosion and possible breaching of the North TSF under the Off-Site Transfer of Ore Concentrate for Processing Alternative. | Impact 3.3.3.7-1: There would be a moderate to high potential for impacts to surface water quality due to erosion and possible breaching of the North TSF under the Slower, Longer Project Alternative. |
| Significance of the Impact: | Significance of the Impact: The impact is considered potentially significant. | N/A | Significance of the Impact: The impact is considered potentially significant. | Significance of the Impact: The impact is considered potentially significant. | Significance of the Impact: The impact is considered potentially significant. |
| Mitigation Measure: | Mitigation Measure 3.3.3.3-1: EML would submit a North TSF upstream diversion structure design. This design would be of sufficient capacity to divert run-on from the North TSF so that the current evaporate pond design would be sufficient to contain the designed storm events. The design would be submitted to the BLM 24 months prior to the anticipated start of construction. The BLM would approve the design prior to the commencement of construction. | N/A | Mitigation Measure 3.3.3.5-1: EML would submit a North TSF upstream diversion structure design. This design would be of sufficient capacity to divert run-on from the North TSF so that the current evaporate pond design would be sufficient to contain the designed storm events. The design would be submitted to the BLM 24 months prior to the anticipated start of construction. The BLM would approve the design prior to the commencement of construction. | Mitigation Measure 3.3.3.6-1: EML would submit a North TSF upstream diversion structure design. This design would be of sufficient capacity to divert run-on from the North TSF so that the current evaporate pond design would be sufficient to contain the designed storm events. The design would be submitted to the BLM 24 months prior to the anticipated start of construction. The BLM would approve the design prior to the commencement of construction. | Mitigation Measure 3.3.3.7-1: EML would submit a North TSF upstream diversion structure design. This design would be of sufficient capacity to divert run-on from the North TSF so that the current evaporate pond design would be sufficient to contain the designed storm events. The design would be submitted to the BLM 24 months prior to the anticipated start of construction. The BLM would approve the design prior to the commencement of construction. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Implementation of the Mitigation Measure 3.3.3.3-1 would be effective at preventing erosion and possible breaching of the North TSF. The design would be based on an engineering evaluation of the topography and design precipitation event (24 hour-100 year event) as required by the NDEP so that the design event would effectively be conveyed away from the North TSF. | N/A | Effectiveness of Mitigation and Residual Effects: Implementation of the Mitigation Measure 3.3.3.5-1 would be effective preventing erosion and possible breaching of the North TSF. The design would be based on an engineering evaluation of the topography and design precipitation event (24 hour-100 year event) as required by the NDEP so that the design event would effectively be conveyed away from the North TSF. | Effectiveness of Mitigation and Residual Effects: Implementation of the Mitigation Measure 3.3.3.6-1 would be effective at preventing erosion and possible breaching of the North TSF. The design would be based on an engineering evaluation of the topography and design precipitation event (24 hour-100 year event) as required by the NDEP so that the design event would effectively be conveyed away from the North TSF. With the implementation of the mitigation measure, the residual impact of the Off-Site Transfer of Ore Concentrate for Processing Alternative would be limited to natural erosion processes. | Effectiveness of Mitigation and Residual Effects: Implementation of the Mitigation Measure 3.3.3.7-1 would be effective at preventing erosion and possible breaching of the North TSF. The design would be based on an engineering evaluation of the topography and design precipitation event (24 hour-100 year event) as required by the NDEP so that the design event would effectively be conveyed away from the North TSF. With the implementation of the mitigation measure, the residual impact of the Slower, Longer Project Alternative would be limited to natural erosion processes. |
| Impact: | Impact 3.3.3.3-2: The ground water drawdown is predicted to be greater than ten feet for the perennial stream segments of Roberts Creek for varying periods of time up to at least 400 years after the end of mining and milling operations. | N/A | Impact 3.3.3.5-2: The ground water drawdown is predicted to be more than ten feet for the perennial stream segments of Roberts Creek for varying periods of time up to at least 400 years after the end of mining and milling operations. | Impact 3.3.3.6-2: The ground water drawdown is predicted to be more than ten feet for the perennial stream segments of Roberts Creek for varying periods of time up to at least 400 years after the end of mining and milling operations. | Impact 3.3.3.7-2: The ground water drawdown is predicted to be more than ten feet for the perennial stream segments of Roberts Creek for varying periods of time up to at least 400 years after the end of mining and milling operations. |
| Significance of the Impact: | Significance of the Impact: The impact is considered potentially significant. | N/A | Significance of the Impact: The impact is considered potentially significant. | Significance of the Impact: The impact is considered potentially significant. | Significance of the Impact: The impact is considered potentially significant. |
| Mitigation Measure: | Mitigation Measure 3.3.3.3-2: The measures outlined under Mitigation Measure 3.2.3.3-2 would address the potential reduced flows outlined in the impact. | N/A | Mitigation Measure 3.3.3.5-2: The measures outlined under Mitigation Measure 3.2.3.5-2 would address the potential reduced flows outlined in the impact. | Mitigation Measure 3.3.3.6-2: The measures outlined under Mitigation Measure 3.2.3.3-2 would address the potential reduced flows outlined in the impact. | Mitigation Measure 3.3.3.7-2: The measures outlined under Mitigation Measure 3.2.3.7-2 would address the potential reduced flows outlined in the impact. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Implementation of the Mitigation Measure 3.3.3.3-2 would be effective at preventing degradation of water quality in Roberts Creek. The mitigation measure would restore flows to the creek, which would remove the underlying cause of this potential impact. | N/A | Effectiveness of Mitigation and Residual Effects: Implementation of the Mitigation Measure 3.3.3.5-2 would be effective at preventing degradation of water quality in Roberts Creek. The mitigation measure would restore flows to the creek, which would remove the underlying cause of this potential impact. | Effectiveness of Mitigation and Residual Effects: Implementation of the Mitigation Measure 3.3.3.6-2 would be effective at preventing degradation of water quality in Roberts Creek. The mitigation measure would restore flows to the creek, which would remove the underlying cause of this potential impact. | Effectiveness of Mitigation and Residual Effects: Implementation of the Mitigation Measure 3.3.3.7-2 would be effective at preventing degradation of water quality in Roberts Creek. The mitigation measure would restore flows to the creek, which would remove the underlying cause of this potential impact. |
| Impact: | | N/A | Impact 3.3.3.5-3: There would be a low potential for impacts to ground water quality due to drainage from tailings impoundments and waste rock piles under the Partial Backfill Alternative. | Impact 3.3.3.6-3: There would be a low potential for impacts to ground water quality due to drainage from tailings impoundments and waste rock piles under the Off-Site Transfer of Ore Concentrate for Processing Alternative. | Impact 3.3.3.7-3: There would be a low potential for impacts to ground water quality due to drainage from tailings impoundments and WRDFs under the Slower, Longer Project Alternative. |
| Significance of the Impact: | Significance of the Impact: The impact is not considered significant. | N/A | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.3.3.3-4: There would be a low potential for impacts to ground water quality due to the formation of a ground water sink in | N/A | Impact 3.3.3.5-4: It is expected that the ground water flowing from backfill material would exceed Nevada DWS under the | Impact 3.3.3.6-4: There would be a low potential for impacts to ground water quality due to the formation of a ground water | Impact 3.3.3.7-4: There would be a low potential for impacts to ground water quality due to the formation of a ground water |

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| | the open pit under the Proposed Action. | | Partial Backfill Alternative. | sink in the open pit under the Off-Site Transfer of Ore Concentrate for Processing Alternative. | sink in the open pit under the Slower, Longer Project Alternative. |
| Significance of the Impact: | Significance of the Impact: The impact is not considered significant. | N/A | Significance of the Impact: The impacts to ground water quality under the Partial Backfill Alternative would be significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | Mitigation Measure 3.3.3.5-4: Mitigation for this impact would require the removal of sufficient backfill material for the formation of an evaporative ground water sink. Implementation of this mitigation would be otherwise inconsistent with the reasoning for selecting this alternative. | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
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| Impact: | Impact 3.4.3.3-1: Implementation of the Proposed Action would result in resource extraction and production of 1.1 billion pounds of Mo. | Impact 3.4.3.4-1: A known mineral resource with 1.1 billion pounds of recoverable Mo would not be developed due to implementation of the No Action Alternative. | Impact 3.4.3.5-1: Implementation of the Partial Backfill Alternative would result in resource extraction and production of 1.1 billion pounds of Mo. | Impact 3.4.3.6-1: Implementation of the Proposed Action would result in resource extraction and production of 1.1 billion pounds of Mo. | Impact 3.4.3.7-1: Implementation of the Slower, Longer Project Alternative would result in resource extraction and production of 1.1 billion pounds of Mo. |
| Significance of the Impact: | Significance of the Impact: This is not considered a potentially significant impact to geology and minerals. However, the impact is economically significant. | Significance of the Impact: This impact is considered significant; however, no mitigation measures appear feasible. | Significance of the Impact: This is not considered a potentially significant impact to geology and minerals. However, the impact is economically significant. | Significance of the Impact: This is not considered a potentially significant impact to geology and minerals. However, the impact is economically significant. | Significance of the Impact: This is not considered a potentially significant impact to geology and minerals. However, the impact is economically significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
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| Impact: | Impact 3.4.3.3-2: Implementation of the Proposed Action would result in the extraction of waste rock that would be placed adjacent to the open pit and limit the future development of the identified Zn mineralization located to the north of the open pit. | N/A | Impact 3.4.3.5-2: Implementation of the Partial Backfill Alternative would result in the extraction of waste rock that would be placed adjacent to the open pit and then replaced within the open pit, thus limiting the future development of the identified Zn mineralization located to the north of the open pit to a degree that is greater than under the Proposed Action. | Impact 3.4.3.6-2: Implementation of the Proposed Action would result in the extraction of waste rock that would be placed adjacent to the open pit and limit the future development of the identified Zn mineralization located to the north of the open pit. | Impact 3.4.3.7-2: Implementation of the Slower, Longer Project Alternative would result in the extraction of waste rock that would be placed adjacent to the open pit and limit the future development of the identified Zn mineralization located to the north of the open pit. |
| Significance of the Impact: | Significance of the Impact: This is not considered a potentially significant impact to geology and minerals, because a known Zn mineralization has not been sufficiently defined and potentially could be developed using underground mining techniques. | N/A | Significance of the Impact: This is not considered a potentially significant impact to geology and minerals, because a known Zn mineralization has not been sufficiently defined and potentially could be developed using underground mining techniques. | Significance of the Impact: This is not considered a potentially significant impact to geology and minerals, because a known Zn mineralization has not been sufficiently defined and potentially could be developed using underground mining techniques. | Significance of the Impact: This is not considered a potentially significant impact to geology and minerals, because a known Zn mineralization has not been sufficiently defined and potentially could be developed using underground mining techniques. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
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| Impact: | Impact 3.6.3.3-1: Emissions of PM ₁₀ , PM _{2.5} , and Pb would be generated by numerous processes as a result of the Proposed Action, including the resuspension of road dust, wind erosion of exposed dirt surfaces, and activities related to the processing of ore materials. These activities are inherent to the mining process and would be ongoing throughout the life of the Proposed Action. The modeled PM ₁₀ , PM _{2.5} , and Pb concentrations show levels below the NSAAQS and NAAQS, even with the addition of the background values. | Impact 3.6.3.4-1: Emissions of PM ₁₀ , PM _{2.5} , and Pb would be generated by the No Action Alternative in an amount substantially less than under the Proposed Action. The modeled PM ₁₀ , PM _{2.5} , and Pb concentrations under the Proposed Action support the conclusion that these concentrations under the No Action Alternative would be below the NSAAQS and NAAQS, even with the addition of the background values. | Impact 3.6.3.5-1: The emissions of PM ₁₀ , PM _{2.5} , and Pb would be generated by numerous processes as a result of the Partial Backfill Alternative, including the resuspension of road dust, wind erosion of exposed dirt surfaces, and activities related to the processing of ore materials. These activities are inherent to the mining process and would be ongoing throughout the life of the Partial Backfill Alternative. Since this alternative is essentially the same as the Proposed Action, just longer in duration, the PM ₁₀ , PM _{2.5} , and Pb concentrations would be below the NSAAQS and NAAQS, even with the addition of the background values. | Impact 3.6.3.6-1: Emissions of PM ₁₀ , PM _{2.5} , and Pb would be generated by numerous processes as a result of the Off-Site Transfer of Ore Concentrate for Processing Alternative, including the resuspension of road dust, wind erosion of exposed dirt surfaces, and activities related to the processing of ore materials. These activities are inherent to the mining process and would be ongoing throughout the life of the Project. The PM ₁₀ , PM _{2.5} , and Pb concentrations would be below the NSAAQS and NAAQS, even with the addition of the background values. | Impact 3.6.3.7-1: The emissions of PM ₁₀ , PM _{2.5} , and Pb would be generated by essentially identical processes as discussed under the Proposed Action. However, the concentrations of these pollutants would be lower than modeled for the Proposed Action due to the halved production rate and decreased operating thresholds of smaller equipment and facilities. The resulting concentrations of PM ₁₀ , PM _{2.5} , and Pb would be lower than the Proposed Action which are below the NSAAQS and NAAQS. |
| Significance of the Impact: | Significance of the Impact: This impact is not considered significant. | Significance of the Impact: This impact is not considered significant. | Significance of the Impact: This impact is not considered significant. | Significance of the Impact: This impact is not considered significant. | Significance of the Impact: This impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |

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| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.6.3.3-2: Combustion emissions of CO, NO ₂ , SO ₂ , PM ₁₀ , PM _{2.5} , and VOC would be generated by numerous processes as a result of the Proposed Action, including combustion emissions from diesel engines and burning propane, fuel oil, or diesel in various process equipments. The modeled CO, NO ₂ , SO ₂ , PM ₁₀ , PM _{2.5} , and VOC show levels below the NSAAQS and NAAQS. | Impact 3.6.3.4-2: Combustion emissions of CO, NO ₂ , SO ₂ , PM ₁₀ , PM _{2.5} , and VOC would be generated by the No Action Alternative in amounts that would be substantially less than under the Proposed Action. The modeled CO, NO ₂ , SO ₂ , PM ₁₀ , PM _{2.5} , and O ₃ concentrations under the Proposed Action support the conclusion that these concentrations under the No Action Alternative would be below the NSAAQS and NAAQS, even with the addition of the background values. | Impact 3.6.3.5-2: Combustion emissions of CO, NO ₂ , SO ₂ , PM ₁₀ , PM _{2.5} , and VOC would be generated by numerous processes as a result of the Partial Backfill Alternative, including combustion emissions from diesel engines and burning propane, fuel oil, or diesel in various process equipment. These emissions would be essentially the same as under the Proposed Action, except longer in duration. Therefore, the CO, NO ₂ , SO ₂ , PM ₁₀ , PM _{2.5} , and O ₃ concentrations would be below the NSAAQS and NAAQS. | Impact 3.6.3.6-2: Combustion emissions of CO, NO ₂ , SO ₂ , PM ₁₀ , PM _{2.5} , and VOC would be generated by numerous processes as a result of the Off-Site Transfer of Ore Concentrate for Processing Alternative, including combustion emissions from diesel engines, and burning propane, fuel oil, or diesel in various process equipments. The CO, NO ₂ , SO ₂ , PM ₁₀ , PM _{2.5} , and O ₃ concentrations would be below the NSAAQS and NAAQS. | Impact 3.6.3.7-2: Combustion emissions of CO, NO ₂ , SO ₂ , PM ₁₀ , PM _{2.5} , and VOC (and resultant O ₃ concentrations) would be generated by numerous processes as a result of the Slower, Longer Project Alternative, including combustion emissions from diesel engines and burning propane, fuel oil, or diesel in various process equipment. These emissions would be lower than the Proposed Action when examined on a daily, monthly or annual basis (according to the exposure time period the air quality standards are associated with). Therefore, the CO, NO ₂ , SO ₂ , PM ₁₀ , PM _{2.5} , and O ₃ concentrations would be below the NSAAQS and NAAQS. |
| Significance of the Impact: | Significance of the Impact: This impact is not considered significant. | Significance of the Impact: This impact is not considered significant. | Significance of the Impact: This impact is not considered significant. | Significance of the Impact: This impact is not considered significant. | Significance of the Impact: This impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.6.3.3-3: The modeled PM ₁₀ , PM _{2.5} , Pb, CO, NO ₂ , SO ₂ , and O ₃ from the Proposed Action emissions show a very small increase in these pollutants at the sensitive receptors. | Impact 3.6.3.4-3: The emissions of PM ₁₀ , PM _{2.5} , Pb, CO, NO ₂ , SO ₂ , and O ₃ from the No Action Alternative emissions may show a very small increase in these pollutants at the sensitive receptors and any potential impacts would be less than those under the Proposed Action. | Impact 3.6.3.5-3: The PM ₁₀ , PM _{2.5} , Pb, CO, NO ₂ , SO ₂ , and O ₃ concentrations from the Partial Backfill Alternative would show a very small increase in these pollutants at the sensitive receptors. | Impact 3.6.3.6-3: The PM ₁₀ , PM _{2.5} , Pb, CO, NO ₂ , SO ₂ , and VOC concentrations from the Off-Site Transfer of Ore Concentrate for Processing Alternative would show a very small increase in these pollutants at the sensitive receptors. | Impact 3.6.3.7-3: The PM ₁₀ , PM _{2.5} , Pb, CO, NO ₂ , SO ₂ , and O ₃ concentrations from the Slower, Longer Project Alternative would show a decrease in these pollutants at the sensitive receptors. |
| Significance of the Impact: | Significance of the Impact: This impact is not considered significant. | Significance of the Impact: This impact is not considered significant. | Significance of the Impact: This impact is not considered significant. | Significance of the Impact: This impact is not considered significant. | Significance of the Impact: This impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.7.3.3-1: The proposed mining activities would be visible from all five KOPs. The visual impacts would be consistent with VRM Class IV management at KOPs #1, #3, #4, and #5. From KOP #2, which is the only KOP where the Class III management area is visible, the view is not consistent with that management class. | N/A | Impact 3.7.3.5-1: The proposed mining activities would be visible from all five KOPs. The visual impacts would be consistent with VRM Class IV management at KOPs #1, #3, #4, and #5. From KOP #2, which is the only KOP where the Class III management area is visible, the view is not consistent with that management class. | Impact 3.7.3.6-1: The proposed mining activities would be visible from all five KOPs. The visual impacts would be consistent with VRM Class IV management at KOPs #1, #3, #4, and #5. From KOP #2, which is the only KOP where the Class III management area is visible, the view is not consistent with that management class. | Impact 3.7.3.7-1: The proposed mining activities would be visible from all five KOPs. The visual impacts would be consistent with VRM Class IV management at KOPs #1, #3, #4, and #5. From KOP #2, which is the only KOP where the Class III management area is visible, the view is not consistent with that management class. |
| Significance of the Impact: | Significance of the Impact: This impact is considered significant because of the views from KOP #2. The following mitigation measure would reduce the adverse effects of the impact. | N/A | Significance of the Impact: This impact is considered significant, because of the views from KOP #2. The following mitigation measure would reduce the adverse effects of the impact. | Significance of the Impact: This impact is considered significant, because of the views from KOP #2. The following mitigation measure would reduce the adverse effects of the impact. | Significance of the Impact: This impact is considered significant, because of the views from KOP #2. The following mitigation measure would reduce the adverse effects of the impact. |
| Mitigation Measure: | Mitigation Measure 3.7.3.3-1: For reducing visual contrast, minimization of disturbance would be the most effective mitigation technique. Where disturbance is proposed, repetition of the basic landscape elements (form, line, color, and texture) would be implemented to minimize visual change. In order to lessen long-term visual impacts from the pit wall, treatment may be required to ensure that the final pit wall mimics the surrounding landscape colors as visible from KOP #2. Methods could include, but are not limited to, painting, staining, varnishing, or some other treatment that minimizes the contrast of the visibly exposed and unweathered rock of the pit wall. Any mitigation applications must be pH neutral and contain no caustic or alkaline chemicals to avoid potential adverse environmental impacts. Treatment may occur when the pit wall reaches its final slope configuration. The need for this treatment would be determined by the BLM at that time based on the color of the exposed pit wall surface and its contrast with the surrounding landscape. Specific dimensions and areas of mitigation would be determined by the BLM, based on the actual color of the final pit wall. | N/A | Mitigation Measure 3.7.3.5-1: For reducing visual contrast, minimization of disturbance would be the most effective mitigation technique. Where disturbance is proposed, repetition of the basic landscape elements (form, line, color, and texture) would be implemented to minimize visual change. In order to lessen long-term visual impacts from the pit wall, treatment may be required to ensure that the final pit wall mimics the surrounding landscape colors as visible from KOP #2. Methods could include, but are not limited to, painting, staining, varnishing, or some other treatment that minimizes the contrast of the visibly exposed and unweathered rock of the pit wall. Any mitigation applications must be pH neutral and contain no caustic or alkaline chemicals to avoid potential adverse environmental impacts. Treatment may occur when the pit wall reaches its final slope configuration. The need for this treatment would be determined by the BLM at that time based on the color of the exposed pit wall surface and its contrast with the surrounding landscape. Specific dimensions and areas of mitigation would be determined by the BLM, based on the actual color of the final pit wall. | Mitigation Measure 3.7.3.6-1: For reducing visual contrast, minimization of disturbance would be the most effective mitigation technique. Where disturbance is proposed, repetition of the basic landscape elements (form, line, color, and texture) would be implemented to minimize visual change. In order to lessen long-term visual impacts from the pit wall, treatment may be required to ensure that the final pit wall mimics the surrounding landscape colors as visible from KOP #2. Methods could include, but are not limited to, painting, staining, varnishing, or some other treatment that minimizes the contrast of the visibly exposed and unweathered rock of the pit wall. Any mitigation applications must be pH neutral and contain no caustic or alkaline chemicals to avoid potential adverse environmental impacts. Treatment may occur when the pit wall reaches its final slope configuration. The need for this treatment would be determined by the BLM at that time based on the color of the exposed pit wall surface and its contrast with the surrounding landscape. Specific dimensions and areas of mitigation would be determined by the BLM, based on the actual color of the final pit wall. | Mitigation Measure 3.7.3.7-1: For reducing visual contrast, minimization of disturbance would be the most effective mitigation technique. Where disturbance is proposed, repetition of the basic landscape elements (form, line, color, and texture) would be implemented to minimize visual change. In order to lessen long-term visual impacts from the pit wall, treatment may be required to ensure that the final pit wall mimics the surrounding landscape colors as visible from KOP #2. Methods could include, but are not limited to, painting, staining, varnishing, or some other treatment that minimizes the contrast of the visibly exposed and unweathered rock of the pit wall. Any mitigation applications must be pH neutral and contain no caustic or alkaline chemicals to avoid potential adverse environmental impacts. Treatment may occur when the pit wall reaches its final slope configuration. The need for this treatment would be determined by the BLM at that time based on the color of the exposed pit wall surface and its contrast with the surrounding landscape. Specific dimensions and areas of mitigation would be determined by the BLM, based on the actual color of the final pit wall. |

| | PROPOSED ACTION | NO ACTION ALTERNATIVE | PARTIAL BACKFILL ALTERNATIVE | OFF-SITE TRANSFER OF ORE CONCENTRATE FOR PROCESSING ALTERNATIVE | SLOWER, LONGER PROJECT ALTERNATIVE |
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| | Clearing of land for WRDFs and facility construction would be done by creating curvilinear boundaries instead of straight lines to minimize disturbance of the landscape. Grading would proceed in a manner that would minimize erosion and conform to the natural topography. Revegetation following recontouring would also reduce visual impacts. The specifics on the final reclamation design implementation would be completed in consultation with interested parties. | | Clearing of land for WRDFs and facility construction would be done by creating curvilinear boundaries instead of straight lines to minimize disturbance of the landscape. Grading would proceed in a manner that would minimize erosion and conform to the natural topography. Revegetation following recontouring would also reduce visual impacts. The specifics on the final reclamation design implementation would be completed in consultation with interested parties. | Clearing of land for WRDFs and facility construction would be done by creating curvilinear boundaries instead of straight lines to minimize disturbance of the landscape. Grading would proceed in a manner that would minimize erosion and conform to the natural topography. Revegetation following recontouring would also reduce visual impacts. The specifics on the final reclamation design implementation would be completed in consultation with interested parties. | Clearing of land for WRDFs and facility construction would be done by creating curvilinear boundaries instead of straight lines to minimize disturbance of the landscape. Grading would proceed in a manner that would minimize erosion and conform to the natural topography. Revegetation following recontouring would also reduce visual impacts. The specifics on the final reclamation design implementation would be completed in consultation with interested parties. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: The effectiveness of this mitigation in reducing the impact to less than significant is not likely; however, given the type and scale of the action this mitigation would be the most effective approach at limiting the impact. The Proposed Action would result in unavoidable physical change in the existing contour and character of the Project Area. The changes would be visibly most apparent over the active life of the Project, but would diminish through the completion of reclamation and revegetation activities contained as part of the Proposed Action. The physical changes to the area would be permanent, but would lessen following the completion of final reclamation as natural processes continue to soften the line and form to match the surrounding landscape. | N/A | Effectiveness of Mitigation and Residual Effects: The effectiveness of this mitigation in reducing the impact to less than significant is not likely; however, given the type and scale of the action this mitigation would be the most effective at limiting the impact. | Effectiveness of Mitigation and Residual Effects: The effectiveness of this mitigation in reducing the impact to less than significant is not likely; however, given the type and scale of the action this mitigation would be the most effective at limiting the impact. | Effectiveness of Mitigation and Residual Effects: The effectiveness of this mitigation in reducing the impact to less than significant is not likely; however, given the type and scale of the action this mitigation would be the most effective at limiting the impact. The Slower, Longer Project Alternative would result in unavoidable physical change in the existing contour and character of the Project Area. The changes would be visibly most apparent over the active life of the Project, but would diminish through the completion of reclamation and revegetation activities contained as part of the Slower, Longer Project Alternative. The physical changes to the area would be permanent, but would lessen following the completion of final reclamation as natural processes continue to soften the line and form to match the surrounding landscape. |
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| Impact: | Impact 3.7.3.3-2: The proposed buildings associated with mining activities would be visible from KOP #2 during mining and processing operations, which is not consistent with VRM Class III management. | N/A | Impact 3.7.3.5-2: The proposed buildings associated with the Partial Backfill Alternative would be visible from KOP #2 during mining and processing operations, which is not consistent with VRM Class III management. | Impact 3.7.3.6-2: The proposed buildings associated with the Off-Site Transfer of Ore Concentrate for Processing Alternative would be visible from KOP #2 during mining and processing, which is not consistent with VRM Class III management. | Impact 3.7.3.7-2: The proposed buildings associated with the Slower, Longer Project Alternative would be visible from KOP #2, which is not consistent with VRM Class III management. |
| Significance of the Impact: | Significance of the Impact: This impact is considered significant because of the views from KOP #2. The following mitigation measure would reduce the adverse effects of the impact. | N/A | Significance of the Impact: This impact is considered significant because of the views from KOP #2. The following mitigation measure would reduce the adverse effects of the impact. | Significance of the Impact: This impact is considered significant because of the views from KOP #2. The following mitigation measure would reduce the adverse effects of the impact. | Significance of the Impact: This impact is considered significant because of the views from KOP #2 during mining and process operations. The following mitigation measure would reduce the adverse effects of the impact. |
| Mitigation Measure: | Mitigation Measure 3.7.3.3-2: Visual contrast, associated with the buildings, would be reduced by using construction materials or paints that are earth tones. This would minimize color contrasts with the surrounding landscape and help meet VRM objectives. | N/A | Mitigation Measure 3.7.3.5-2: Visual contrast, associated with the buildings, would be reduced by using construction materials or paints that are earth tones. This would minimize color contrasts with the surrounding landscape. | Mitigation Measure 3.7.3.6-2: Visual contrast, associated with the buildings, would be reduced by using construction materials or paints that are earth tones. This would minimize color contrasts with the surrounding landscape. | Mitigation Measure 3.7.3.7-2: Visual contrast, associated with the buildings, would be reduced by using construction materials or paints that are earth tones. This would minimize color contrasts with the surrounding landscape. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Implementation of this measure would minimize color contrasts within the viewshed and effectively mitigate visual impacts from the buildings. There would be no residual effects from this impact. | N/A | Effectiveness of Mitigation and Residual Effects: Implementation of this measure would minimize color contrasts within the viewshed and effectively mitigate visual impacts from the buildings. There would be no residual effects from this impact. | Effectiveness of Mitigation and Residual Effects: Implementation of this measure would minimize color contrasts within the viewshed and effectively mitigate visual impacts from the buildings. There would be no residual effects from this impact. | Effectiveness of Mitigation and Residual Effects: Implementation of this measure would minimize color contrasts within the viewshed and effectively mitigate visual impacts from the buildings. There would be no residual effects from this impact. |
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| Impact: | Impact 3.7.3.3-3: The proposed mining activities would increase light pollution in the region. | N/A | Impact 3.7.3.5-3: The proposed mining activities associated with the Partial Backfill Alternative would increase light pollution in the region. | Impact 3.7.3.6-3: The proposed mining activities associated with the Off-Site Transfer of Ore Concentrate for Processing Alternative would increase light pollution in the region. | Impact 3.7.3.7-3: The proposed mining activities associated with the Off-Site Transfer of Ore Concentrate for Processing Alternative would increase light pollution in the region. |
| Significance of the Impact: | Significance of the Impact: This impact is not considered significant; however, the following mitigation measure would reduce the adverse effects of the impact. | N/A | Significance of the Impact: This impact is not considered significant; however, the following mitigation measure would reduce the adverse effects of the impact. | Significance of the Impact: This impact is not considered significant; however, the following mitigation measure would reduce the adverse effects of the impact. | Significance of the Impact: This impact is not considered significant; however, the following mitigation measure would reduce the adverse effects of the impact. |
| Mitigation Measure: | Mitigation Measure 3.7.3.3-3: To maintain dark sky conditions, and minimize visual disturbance, facility perimeter lighting, including lighting used to illuminate walkways, roadways, staging areas and parking areas, would be shielded so that the light would be cast in a downward direction. Low-pressure sodium lighting (or an improved technology, if readily available) would be used to reduce or eliminate detrimental lighting impacts and prevent unnecessary light pollution. | N/A | Mitigation Measure 3.7.3.5-3: To maintain dark sky conditions, and minimize visual disturbance, facility perimeter lighting, including lighting used to illuminate walkways, roadways, staging areas and parking areas, would be shielded so that the light would be cast in a downward direction. Low-pressure sodium lighting (or an improved technology, if readily available) would be used to reduce or eliminate detrimental lighting impacts and prevent unnecessary light pollution. | Mitigation Measure 3.7.3.6-3: To maintain dark sky conditions, and minimize visual disturbance, facility perimeter lighting, including lighting used to illuminate walkways, roadways, staging areas and parking areas, would be shielded so that the light would be cast in a downward direction. Low-pressure sodium lighting (or an improved technology, if readily available) would be used to reduce or eliminate detrimental lighting impacts and prevent unnecessary light pollution. | Mitigation Measure 3.7.3.7-3: To maintain dark sky conditions, and minimize visual disturbance, facility perimeter lighting, including lighting used to illuminate walkways, roadways, staging areas and parking areas, would be shielded so that the light would be cast in a downward direction. Low-pressure sodium lighting (or an improved technology, if readily available) would be used to reduce or eliminate detrimental lighting impacts and prevent unnecessary light pollution. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Implementation of this measure would reduce the effects on the surrounding area and effectively mitigate impacts associated with light pollution in keeping with the objectives of dark sky goals. | N/A | Effectiveness of Mitigation and Residual Effects: Implementation of this measure would reduce the effects on the surrounding area and effectively mitigate impacts associated with light pollution in keeping with the objectives of dark sky goals. | Effectiveness of Mitigation and Residual Effects: Implementation of this measure would reduce the effects on the surrounding area and effectively mitigate impacts associated with light pollution in keeping with the objectives of dark sky goals. | Effectiveness of Mitigation and Residual Effects: Implementation of this measure would reduce the effects on the surrounding area and effectively mitigate impacts associated with light pollution in keeping with the objectives of dark sky goals. |

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| Impact: | Impact 3.8.3.3-1: Based on the 8,355 acres of direct disturbance of soils and the potential indirect effect to soils in Kobeh Valley as a result of potential fissure development and loss of vegetation, accelerated soil erosion rates may occur under the Proposed Action due to continued surface soil disturbance, the removal of vegetation cover, alterations in soil compaction and slope gradients, and soil salvaging and stockpiling activities. | Impact 3.8.3.4-1: Based on the 35 acres of direct effects to soils, accelerated soil erosion rates may occur under the No Action Alternative due to continued surface soil disturbance, the removal of vegetation cover, alterations in soil compaction and slope gradients, and soil salvaging and stockpiling activities. | Impact 3.8.3.5-1: Based on the 8,355 acres of direct disturbance of soils and the potential indirect effect to soils in Kobeh Valley as a result of potential fissure development and loss of vegetation, accelerated soil erosion rates may occur under the Partial Backfill Alternative due to continued surface soil disturbance, the removal of vegetation cover, alterations in soil compaction and slope gradients, and soil salvaging and stockpiling activities. | Impact 3.8.3.6-1: Based on the 8,315 acres of direct disturbance of soils and the potential indirect effect to soils in Kobeh Valley as a result of potential fissure development and loss of vegetation, accelerated soil erosion rates may occur under the Off-Site Transfer of Ore Concentrate for Processing Alternative due to continued surface soil disturbance, the removal of vegetation cover, alterations in soil compaction and slope gradients, and soil salvaging and stockpiling activities. | Impact 3.8.3.7-1: Based on the 8,355 acres of direct disturbance of soils and the potential indirect effect to soils in Kobeh Valley as a result of potential fissure development and loss of vegetation, accelerated soil erosion rates may occur under the Slower, Longer Project Alternative due to continued surface soil disturbance, the removal of vegetation cover, alterations in soil compaction and slope gradients, and soil salvaging and stockpiling activities. |
| Significance of the Impact: | Significance of the Impact: Based upon the implementation of applicant committed practices, BMPs, and reclamation activities, this impact is not considered significant. | Significance of the Impact: Based upon the implementation of applicant committed practices, BMPs, reclamation activities, and the insignificant amount of surface disturbance that would be caused by the No Action Alternative, this impact is considered less than significant, and no further mitigation measures are proposed. | Significance of the Impact: Based upon the implementation of applicant committed practices, BMPs, and reclamation activities, this impact is not considered significant. | Significance of the Impact: Based upon the implementation of applicant committed practices, BMPs, and reclamation activities, this impact is not considered significant. | Significance of the Impact: Based upon the implementation of applicant committed practices, BMPs, and reclamation activities, this impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.8.3.3-2: Growth media availability and quality necessary for the successful reclamation of the Project Area may decrease as a result of surface disturbance activities under the Proposed Action. | Impact 3.8.3.4-2: Growth media availability and quality necessary for the successful reclamation of the Project Area may decrease as a result of surface disturbance activities under the No Action Alternative. | Impact 3.8.3.5-2: Growth media availability and quality necessary for the successful reclamation of the Project Area may decrease as a result of surface disturbance activities under the Partial Backfill Alternative. | Impact 3.8.3.6-2: Growth media availability and quality necessary for the successful reclamation of the Project Area may decrease as a result of surface disturbance activities under the Off-Site Transfer of Ore Concentrate for Processing Alternative. | Impact 3.8.3.7-2: Growth media availability and quality necessary for the successful reclamation of the Project Area may decrease as a result of surface disturbance activities under the Slower, Longer Project Alternative. |
| Significance of the Impact: | Significance of the Impact: Based upon the implementation of the GMMP, this impact is not considered significant. | Significance of the Impact: Based upon the pre-existing soil conditions and the proven methods for growth media management that would be implemented under the No Action Alternative, this impact is considered less than significant, and no further mitigation measures are proposed. | Significance of the Impact: Based upon the implementation of the GMMP, which would provide sufficient growth media for use during reclamation of the additional 527 acres required under the Partial Backfill Alternative, this impact is not considered significant. | Significance of the Impact: Based upon the implementation of the GMMP, this impact is not considered. | Significance of the Impact: Based upon the implementation of the GMMP, this impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.8.3.3-3: Surface disturbance activities under the Proposed Action would cause the unavoidable mixing of existing soil horizons that may decrease soil productivity. | Impact 3.8.3.4-3: Surface disturbing activities under the No Action Alternative would cause the unavoidable mixing of existing soil horizons that may decrease soil productivity. | Impact 3.8.3.5-3: Surface disturbing activities under the Partial Backfill Alternative would cause the unavoidable mixing of existing soil horizons that may decrease soil productivity. | Impact 3.8.3.6-3: Surface disturbance activities under the Off-Site Transfer of Ore Concentrate for Processing Alternative would cause the unavoidable mixing of existing soil horizons that may decrease soil productivity. | Impact 3.8.3.7-3: Surface disturbance activities under the Slower, Longer Project Alternative would cause the unavoidable mixing of existing soil horizons that may decrease soil productivity. |
| Significance of the Impact: | Significance of the Impact: Based upon the pre-existing soil conditions and the proven methods for growth media management that would be implemented under the Proposed Action, this impact is considered less than significant, and no further mitigation measures are proposed. | Significance of the Impact: Based upon the pre-existing soil conditions and the insignificant amount of surface disturbance that would be caused by the No Action Alternative, this impact is considered less than significant, and no further mitigation measures are proposed. | Significance of the Impact: Based upon the pre-existing soil conditions and the proven methods for growth media management that would be implemented under the Partial Backfill Alternative, this impact is not considered significant. | Significance of the Impact: Based upon the pre-existing soil conditions and the proven methods for growth media management that would be implemented under the Off-Site Transfer of Ore Concentrate for Processing Alternative, this impact is not considered significant. | Significance of the Impact: Based upon the pre-existing soil conditions and the proven methods for growth media management that would be implemented under the Slower, Longer Project Alternative, this impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.9.3.3-1: Disturbance or removal of vegetation community types would occur as a direct result of the Proposed Action. | Impact 3.9.3.4-1: Implementation of the No Action Alternative would result in the general removal of vegetation. | Impact 3.9.3.5-1: Disturbance or removal of vegetation community types would occur as a result of the Partial Backfill Alternative. | Impact 3.9.3.6-1: Implementation of the Off-Site Transfer of Ore Concentrate for Processing Alternative would result in the general removal of vegetation. | Impact 3.9.3.7-1: Disturbance or removal of vegetation community types would occur as a result of the Slower, Longer Project Alternative. |
| Significance of the Impact: | Significance of the Impact: The impact would be considered less than significant because the disturbance would not occur all at once and would include concurrent reclamation. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |

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| Impact: | Impact 3.9.3.3-2: Phreatophyte vegetation would potentially experience a change in species composition and percent cover due to the predicted water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table in the area of phreatophytes is not expected to result in a net loss of vegetation in these communities. | N/A | Impact 3.9.3.5-2: Phreatophyte vegetation would potentially experience a change in species composition and percent cover due to the predicted water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table in the area of phreatophytes is not expected to result in a net loss of vegetation in these communities. | Impact 3.9.3.6-2: Phreatophyte vegetation would potentially experience a change in species composition and percent cover due to the predicted water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table in the area of phreatophytes is not expected to result in a net loss of vegetation in these communities. | Impact 3.9.3.7-2: Phreatophyte vegetation would potentially experience a change in species composition and percent cover due to the predicted water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table in the area of phreatophytes is not expected to result in a net loss of vegetation in these communities. |
| Significance of the Impact: | Significance of the Impact: The impact is not considered significant. | N/A | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.9.3.3-3: Vegetation in the immediate vicinity of the Project Area could suffer periodic short-term reductions in primary production due to airborne particulate deposition onto exposed surfaces. | N/A | Impact 3.9.3.5-3: Vegetation in the immediate vicinity of the Project Area could suffer periodic short-term reductions in primary production due to airborne particulate deposition onto exposed surfaces. | Impact 3.9.3.6-3: Vegetation in the immediate vicinity of the Project Area could suffer periodic short-term reductions in primary production due to airborne particulate deposition onto exposed surfaces. | Impact 3.9.3.7-3: Vegetation in the immediate vicinity of the Project Area could suffer periodic short-term reductions in primary production due to airborne particulate deposition onto exposed surfaces. |
| Significance of the Impact: | Significance of the Impact: The impact is not considered significant. | N/A | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.9.3.3-4: The Project would result in limitations and enhancements to the BLM's fire management activities within the vicinity of the Project Area. | N/A | Impact 3.9.3.5-4: The Project would result in limitations and enhancements to the BLM's fire management activities within the vicinity of the Project Area. | Impact 3.9.3.6-4: The Project would result in limitations and enhancements to the BLM's fire management activities within the vicinity of the Project Area. | Impact 3.9.3.7-4: The Project would result in limitations and enhancements to the BLM's fire management activities within the vicinity of the Project Area. |
| Significance of the Impact: | Significance of the Impact: Based on the conclusions from the analysis, the impact is not significant. The following mitigation is proposed for this impact. | N/A | Significance of the Impact: conclusions from the analysis, the impact is not significant. The following mitigation is proposed for this impact. | Significance of the Impact: Based on the conclusions from the analysis, the impact is not significant. The following mitigation is proposed for this impact. | Significance of the Impact: Based on the conclusions from the analysis, the impact is not significant. The following mitigation is proposed for this impact. |
| Mitigation Measure: | Mitigation Measure 3.9.3.3-4: During periods of high fire danger, EML would utilize welding tents during welding activities along the pipeline or powerline routes in the Project Area | N/A | Mitigation Measure 3.9.3.5-4: During periods of high fire danger, EML would utilize welding tents during welding activities along the pipeline or powerline routes in the Project Area. | Mitigation Measure 3.9.3.6-4: During periods of high fire danger, EML would utilize welding tents during welding activities along the pipeline or powerline routes in the Project Area. | Mitigation Measure 3.9.3.7-4: During periods of high fire danger, EML would utilize welding tents during welding activities along the pipeline or powerline routes in the Project Area. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.9.3.3-4 would be effective at reducing the potential for Project activities to result in wildland fires. | N/A | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.9.3.5-4 would be effective at reducing the potential for Project activities to result in wildland fires. | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.9.3.6-4 would be effective at reducing the potential for Project activities to result in wildland fires. | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.9.3.7-4 would be effective at reducing the potential for Project activities to result in wildland fires. |
| Impact: | Impact 3.9.3.3-5: Disturbance or removal of potential habitat for Beatley buckwheat and windloving buckwheat could occur as a result of the Proposed Action. | N/A | Impact 3.9.3.5-5: Disturbance or removal of potential habitat for Beatley buckwheat and windloving buckwheat could occur as a result of the Proposed Action. | Impact 3.9.3.6-5: Disturbance or removal of potential habitat for Beatley buckwheat and windloving buckwheat could occur as a result of the Off-Site Transfer of Ore Concentrate for Processing Alternative. | Impact 3.9.3.7-5: Disturbance or removal of potential habitat for Beatley buckwheat and windloving buckwheat could occur as a result of the Slower, Longer Project Alternative. |
| Significance of the Impact: | Significance of the Impact: The impact is not considered significant. | N/A | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.9.3.3-6: Potential, unsurveyed habitat for least phacelia located outside of the Project Area would potentially experience water stress due to the water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table in the potential habitat could potentially impact these species indirectly. | N/A | Impact 3.9.3.5-6: Potential, unsurveyed habitat for least phacelia located outside of the Project Area would potentially experience water stress due to the water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table in the potential habitat could potentially impact these species indirectly. | Impact 3.9.3.6-6: Potential, unsurveyed habitat for least phacelia located outside of the Project Area would potentially experience water stress due to the water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table in the potential habitat could potentially impact these species indirectly. | Impact 3.9.3.7-6: Potential, unsurveyed habitat for least phacelia located outside of the Project Area would potentially experience water stress due to the water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table in the potential habitat could potentially impact these species indirectly. |
| Significance of the Impact: | Significance of the Impact: The impact is not considered significant. | N/A | Significance of the Impact: The indirect impact of the Proposed Action to potential habitat of these species would not meet the significance criteria listed in Section 3.9.3.1. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The indirect impact of the Proposed Action to potential habitat of these species would not meet the significance criteria listed in Section 3.9.3.1. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |

| | PROPOSED ACTION | NO ACTION ALTERNATIVE | PARTIAL BACKFILL ALTERNATIVE | OFF-SITE TRANSFER OF ORE CONCENTRATE FOR PROCESSING ALTERNATIVE | SLOWER, LONGER PROJECT ALTERNATIVE |
|---|--|-----------------------|--|--|--|
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.9.3.3-7: Occupied and potential habitat for the Monte Neva Indian paintbrush is not expected to experience water stress because it is located outside of the predicted water table drawdown associated with ground water pumping and subsequent recovery of the water table. However, lowering of the water table in the occupied and potential habitat could potentially impact this species. | N/A | Impact 3.9.3.5-7: Occupied and potential habitat for the Monte Neva Indian paintbrush is not expected to experience water stress because it is located outside of the predicted water table drawdown associated with ground water pumping and subsequent recovery of the water table. However, lowering of the water table in the occupied and potential habitat could potentially impact this species. | Impact 3.9.3.6-7: Occupied and potential habitat for the Monte Neva Indian paintbrush is not expected to experience water stress because it is located outside of the predicted water table drawdown associated with ground water pumping and subsequent recovery of the water table. However, lowering of the water table in the occupied and potential habitat could potentially impact this species. | Impact 3.9.3.7-7: Occupied and potential habitat for the Monte Neva Indian paintbrush is not expected to experience water stress because it is located outside of the predicted water table drawdown associated with ground water pumping and subsequent recovery of the water table. However, lowering of the water table in the occupied and potential habitat could potentially impact this species. |
| Significance of the Impact: | Significance of the Impact: No indirect impact from the Proposed Action is expected to this species or occupied habitat because they are located outside of the predicted water table drawdown. Yearly monitoring would be conducted for this species. If impacts to the species from the Project are detected mitigation would be developed by the BLM and EML. | N/A | Significance of the Impact: No indirect impact from the Proposed Action is expected to this species or occupied habitat because they are located outside of the predicted water table drawdown. Yearly monitoring would be conducted for this species. If impacts to the species from the Project are detected, mitigation would be developed by the BLM and EML. | Significance of the Impact: No indirect impact from the Off-Site Transfer of Ore Concentrate for Processing Alternative is expected to this species or occupied habitat because they are located outside of the predicted water table drawdown. Yearly monitoring would be conducted for this species. If impacts to the species from the Project are detected mitigation would be developed by the BLM and EML. | Significance of the Impact: No indirect impact of the Proposed Action is expected to this species or occupied habitat because they are located outside of the predicted water table drawdown. Yearly monitoring would be conducted for this species. If impacts to the species from the Project are detected, mitigation would be developed by the BLM and EML. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.10.3.3-1: Implementation of the Proposed Action could result in the introduction and spread of noxious weeds, invasive and nonnative species. | N/A | Impact 3.10.3.5-1: Implementation of the Partial Backfill Alternative could result in the introduction and spread of noxious weeds, invasive and nonnative plant species. | Impact 3.10.3.6-1: Implementation of the Off-Site Transfer of Ore Concentrate for Processing Alternative could result in the introduction and spread of noxious weeds, invasive and nonnative plant species. | Impact 3.10.3.7-1: Implementation of the Slower, Longer Project Alternative could result in the introduction and spread of noxious weeds, invasive and nonnative plant species. |
| Significance of the Impact: | Significance of the Impact: The impact is not considered significant. | N/A | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| 5Impact: | Impact 3.10.3.3-2: Phreatophyte vegetation, riparian corridors, and wet meadows would potentially experience changes in species composition and density due to the water table drawdown associated with ground water pumping and subsequent recovery of the water table. Noxious weeds as well as invasive and nonnative species associated with existing surface disturbance or those transported into the phreatophytes, riparian corridors, and wet meadows could potentially invade areas that experience changes in species composition and density. | N/A | Impact 3.10.3.5-2: Phreatophyte vegetation, riparian corridors, and wet meadows would potentially experience changes in species composition and density due to the water table drawdown associated with ground water pumping and subsequent recovery of the water table. Noxious weeds as well as invasive and nonnative species associated with existing surface disturbance or those transported into the phreatophytes, riparian corridors, and wet meadows could potentially invade areas that experience changes in species composition and density. | Impact 3.10.3.6-2: Phreatophyte vegetation, riparian corridors, and wet meadows would potentially experience changes in species composition and density due to the water table drawdown associated with ground water pumping and subsequent recovery of the water table. Noxious weeds as well as invasive and nonnative species associated with existing surface disturbance or those transported into the phreatophytes, riparian corridors, and wet meadows could potentially invade areas that experience changes in species composition and density. | Impact 3.10.3.7-2: Phreatophyte vegetation, riparian corridors, and wet meadows would potentially experience changes in species composition and density due to the water table drawdown associated with ground water pumping and subsequent recovery of the water table. Noxious weeds as well as invasive and nonnative species associated with existing surface disturbance or those transported into the phreatophytes, riparian corridors, and wet meadows could potentially invade areas that experience changes in species composition and density. |
| Significance of the Impact: | Significance of the Impact: The impact is not considered significant. | N/A | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.11.3.3-1: The Project would not result in the removal or disturbance (direct impact) of wetlands in the Project Area. | N/A | Impact 3.11.3.5-1: The Partial Backfill Alternative would not result in the possible removal or disturbance of wetlands in the Project Area. | Impact 3.11.3.6-1: The Off-Site Transfer of Ore Concentrate for Processing Alternative would not result in the removal or disturbance of wetlands in the Project Area. | Impact 3.11.3.7-1: The Slower, Longer Project Alternative would not result in the removal or disturbance of wetlands in the Project Area. |
| Significance of the Impact: | Significance of the Impact: The impact is not considered significant. | N/A | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |

| | PROPOSED ACTION | NO ACTION ALTERNATIVE | PARTIAL BACKFILL ALTERNATIVE | OFF-SITE TRANSFER OF ORE CONCENTRATE FOR PROCESSING ALTERNATIVE | SLOWER, LONGER PROJECT ALTERNATIVE |
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| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.11.3.3-2: Phreatophyte vegetation would potentially experience a change in species composition and percent cover due to the predicted water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table in the area of phreatophytes is not expected to result in a net loss of vegetation in these communities. | N/A | Impact 3.11.3.5-2: Phreatophyte vegetation would potentially experience a change in species composition and percent cover due to the predicted water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table in the area of phreatophytes is not expected to result in a net loss of vegetation in these communities. | Impact 3.11.3.6-2: Phreatophyte vegetation would potentially experience a change in species composition and percent cover due to the predicted water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table in the area of phreatophytes is not expected to result in a net loss of vegetation in these communities. | Impact 3.11.3.7-2: Phreatophyte vegetation would potentially experience a change in species composition and percent cover due to the predicted water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table in the area of phreatophytes is not expected to result in a net loss of vegetation in these communities. |
| Significance of the Impact: | Significance of the Impact: The impact is not considered significant. | N/A | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | Mitigation Measure 3.11.3.6-2: The BLM would provide EML with a list of appropriate seed mixes for those areas within and outside the Project Area impacted by water table drawdown that should be seeded. The nature of the seed mix may vary depending on the conditions encountered as a result of the drawdown. If there is insufficient water to support phreatophytes or aquatic-dependent species, the BLM may provide a salt scrub, or other appropriate, seed mix. The BLM would provide this seed mix at the time the mitigation would be implemented. | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.11.3.6-2 would reduce potential impacts to phreatophyte vegetation from water stress due to the water table drawdown during Project activities. Reseeding with appropriate seed mixes would reduce long-term impacts associated with the loss of phreatophyte vegetation. | N/A |
| Impact: | Impact 3.11.3.3-3: Vegetation dependent on springs, seeps, and perennial streams (i.e., riparian vegetation) would potentially experience water stress due to the water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table in the area where these plants are located would potentially cause a decline in the riparian vegetation community. Additionally, direct impacts to the 0.22 acre of riparian vegetation associated with the Zinc adit are expected from the Project. | N/A | Impact 3.11.3.5-3: Vegetation dependent on springs, seeps, and perennial streams (i.e., riparian vegetation) would potentially experience water stress due to the water table drawdown associated with mine dewatering and subsequent filling of the open pit. Lowering of the water table in the area where these plants are located would potentially cause a decline in the riparian vegetation community. Additionally, direct impacts to the 0.22 acre of riparian vegetation associated with the Zinc adit are expected from the Project. | Impact 3.11.3.6-3: Vegetation dependent on springs, seeps, and perennial streams (i.e., riparian vegetation) would potentially experience water stress due to the water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table in the area where these plants are located would potentially cause a decline in the riparian vegetation community. Additionally, direct impacts to the 0.22 acre of riparian vegetation associated with the Zinc adit are expected from the Project. | Impact 3.11.3.7-3: Vegetation dependent on springs, seeps, and perennial streams (i.e., riparian vegetation) would potentially experience water stress due to the water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table in the area where these plants are located would potentially cause a decline in the riparian vegetation community. Additionally, direct impacts to the 0.22 acre of riparian vegetation associated with the Zinc adit are expected from the Project. |
| Significance of the Impact: | Significance of the Impact: Potential impacts to riparian vegetation areas within the area directly or indirectly affected by Project activities would be monitored as outlined in Section 2.1.15 and in the Plan. The impact is considered potentially significant. | N/A | Significance of the Impact: Potential impacts to riparian vegetation areas within the area directly or indirectly affected by Project activities would be monitored as outlined in Section 2.1.15 and the Plan. The impact is considered potentially significant. | Significance of the Impact: Potential impacts to riparian vegetation areas within the area directly or indirectly affected by Project activities would be monitored as outlined in Section 2.1.15 and the Plan. The impact is considered potentially significant. | Significance of the Impact: Potential impacts to riparian vegetation areas within the area directly or indirectly affected by Project activities would be monitored as outlined in the Plan. The impact is considered potentially significant. |
| Mitigation Measure: | Mitigation Measure 3.11.3.3-3: As stated in Mitigation Measure 3.2.3.3-2a specific mitigation for the two perennial stream segments and 22 perennial or potentially perennial spring sites are outlined in Table 3.2-9. Implementation of the mitigation outlined in this table would result in up to 46.3 acres of additional surface disturbance associated with the pipeline construction and maintenance. This supplemental water should sustain riparian vegetation. EML, in coordination with the BLM, would identify sites for mitigation in the area affected and implement mitigation measures at a three to one ratio with local cuttings, plugs, or seeds within one year of direct disturbance. EML would monitor these sites on an annual basis for at least three years after treatment to ensure effectiveness. | N/A | Mitigation Measure 3.11.3.5-3: As stated in Mitigation Measure 3.2.3.3-2a, specific mitigation for the two perennial stream segments and 22 perennial or potentially perennial spring sites are outlined in Table 3.2-9. Implementation of the mitigation outlined in this table would result in up to 46.3 acres of additional surface disturbance associated with the pipeline construction and maintenance. This supplemental water should sustain riparian vegetation. EML, in coordination with the BLM, would identify sites for mitigation in the area affected and implement mitigation measures at a three to one ratio with local cuttings, plugs, or seeds within one year of direct disturbance. EML would monitor these sites on an annual basis for at least three years after treatment to ensure effectiveness. | Mitigation Measure 3.11.3.6-3: As stated in Mitigation Measure 3.2.3.3-2a, specific mitigation for the two perennial stream segments and 22 perennial or potentially perennial spring sites are outlined in Table 3.2-9. Implementation of the mitigation outlined in this table would result in up to 46.3 acres of additional surface disturbance associated with the pipeline construction and maintenance. This supplemental water should sustain riparian vegetation. EML, in coordination with the BLM, would identify sites for mitigation in the area affected and implement mitigation measures at a three to one ratio with local cuttings, plugs, or seeds within one year of direct disturbance. EML would monitor these sites on an annual basis for at least three years after treatment to ensure effectiveness. | Mitigation Measure 3.11.3.7-3: As stated in Mitigation Measure 3.2.3.3-2a, specific mitigation for the two perennial stream segments and 22 perennial or potentially perennial spring sites are outlined in Table 3.2-9. Implementation of the mitigation outlined in this table would result in up to 46.3 acres of additional surface disturbance associated with the pipeline construction and maintenance. This supplemental water should sustain riparian vegetation. EML, in coordination with the BLM, would identify sites for mitigation in the area affected and implement mitigation measures at a three to one ratio with local cuttings, plugs, or seeds within one year of direct disturbance. EML would monitor these sites on an annual basis for at least three years after treatment to ensure effectiveness. |

| | PROPOSED ACTION | NO ACTION ALTERNATIVE | PARTIAL BACKFILL ALTERNATIVE | OFF-SITE TRANSFER OF ORE CONCENTRATE FOR PROCESSING ALTERNATIVE | SLOWER, LONGER PROJECT ALTERNATIVE |
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| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.2.3.3-2a is designed to address the specific spring or surface water that is affected, which enhances the effectiveness of the mitigation. In addition, a variety of approaches to mitigation can be used within these measures to achieve the objective. These mitigation measures are expected to be effective because the mitigation measures are specifically intended to directly address the impact by restoring or enhancing surface flows, and because the measures would be reviewed and addressed by the BLM. Mitigation Measure 3.11.3.3-3 would reduce impacts to the loss of riparian vegetation during Project activities. Replacement with local cuttings, plugs, or seeds would ensure no long-term impacts to the loss of riparian vegetation. | N/A | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.2.3.3-2a is designed to address the specific spring or surface water that is affected, which enhances the effectiveness of the mitigation. In addition, a variety of approaches to mitigation can be used within these measures to achieve the objective. These mitigation measures are expected to be effective because the mitigation measures are specifically intended to directly address the impact by restoring or enhancing surface flows, and because the measures would be reviewed and addressed by the BLM. Mitigation Measure 3.11.3.5-3 would reduce impacts to the loss of riparian vegetation during Project activities. Replacement with local cuttings, plugs, or seeds would ensure no long-term impacts to the loss of riparian vegetation. | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.2.3.3-2a is designed to address the specific spring or surface water that is affected, which enhances the effectiveness of the mitigation. In addition, a variety of approaches to mitigation can be used within these measures to achieve the objective. These mitigation measures are expected to be effective because the mitigation measures are specifically intended to directly address the impact by restoring or enhancing surface flows, and because the measures would be reviewed and addressed by the BLM. Mitigation Measure 3.11.3.5-3 would reduce impacts to the loss of riparian vegetation during Project activities. Replacement with local cuttings, plugs, or seeds would ensure no long-term impacts to the loss of riparian vegetation. | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.2.3.3-2a is designed to address the specific spring or surface water that is affected, which enhances the effectiveness of the mitigation. In addition, a variety of approaches to mitigation can be used within these measures to achieve the objective. These mitigation measures are expected to be effective because the mitigation measures are specifically intended to directly address the impact by restoring or enhancing surface flows, and because the measures would be reviewed and addressed by the BLM. Mitigation Measure 3.11.3.5-3 would reduce impacts to the loss of riparian vegetation during Project activities. Replacement with local cuttings, plugs, or seeds would ensure no long-term impacts to the loss of riparian vegetation. |
| Impact: | Impact 3.12.3.3-1: Project development and operation under the Proposed Action would result in the permanent loss of 32 AUMs and the loss of 781 AUMs for approximately 70 years from allotments within the fenced Project Area. | N/A | Impact 3.12.3.5-1: Project development and operation under the Partial Backfill Alternative would result in the permanent loss of 32 AUMs and the loss of 781 AUMs for approximately 70 years from allotments within the fenced Project Area. | Impact 3.12.3.6-1: Project development and operation under the Off-Site Transfer of Ore Concentrate for Processing Alternative would result in the permanent loss of 32 AUMs and the loss of 781 AUMs for approximately 70 years from allotments within the fenced Project Area. | Impact 3.12.3.7-1: Project development and operation under the Slower, Longer Project Alternative would result in permanent loss of 32 AUMs and the loss of 781 AUMs for approximately 115 years from allotments within the Project Area. |
| Significance of the Impact: | Significance of the Impact: The impact is considered potentially significant. | N/A | Significance of the Impact: The impact is considered potentially significant. | Significance of the Impact: The impact is considered potentially significant. | Significance of the Impact: The impact is considered potentially significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.12.3.3-2: Phreatophyte vegetation would potentially experience a change in species composition and percent cover due to the predicted water table drawdown associated with ground water pumping and subsequent recovery of the water table. Although the lowering of the water table in the area of phreatophytes is not expected to result in a net loss of vegetation in these communities, it is possible that the changes in phreatophyte community would result in a loss of forage productivity. Impacts to other vegetation communities as a result of drawdown are not expected. | N/A | Impact 3.12.3.5-2: Phreatophyte vegetation would potentially experience a change in species composition and percent cover due to the predicted water table drawdown associated with ground water pumping and subsequent recovery of the water table. Although the lowering of the water table in the area of phreatophytes is not expected to result in a net loss of vegetation in these communities, it is possible that the changes in phreatophyte community would result in a loss of forage productivity. Impacts to other vegetation communities as a result of drawdown are not expected. | Impact 3.12.3.6-2: Phreatophyte vegetation would potentially experience a change in species composition and percent cover due to the predicted water table drawdown associated with ground water pumping and subsequent recovery of the water table. Although the lowering of the water table in the area of phreatophytes is not expected to result in a net loss of vegetation in these communities, it is possible that the changes in phreatophyte community would result in a loss of forage productivity. Impacts to other vegetation communities as a result of drawdown are not expected. | Impact 3.12.3.7-2: Phreatophyte vegetation would potentially experience a change in species composition and percent cover due to the predicted water table drawdown associated with ground water pumping and subsequent recovery of the water table. Although the lowering of the water table in the area of phreatophytes is not expected to result in a net loss of vegetation in these communities, it is possible that the changes in phreatophyte community would result in a loss of forage productivity. Impacts to other vegetation communities as a result of drawdown are not expected. |
| Significance of the Impact: | Significance of the Impact: The impact is considered potentially significant. The following mitigation has been identified for this impact. | N/A | Significance of the Impact: The impact is considered potentially significant. The following mitigation has been identified for this impact. | Significance of the Impact: The impact is considered potentially significant. The following mitigation has been identified for this impact. | Significance of the Impact: The impact is considered potentially significant. The following mitigation has been identified for this impact. |
| Mitigation Measure: | Mitigation Measure 3.12.3.3-2: The BLM would monitor for changes to forage productivity as a result of ground water drawdown associated with Project-related ground water pumping. If the BLM detects a loss of forage productivity attributed to the Project, the BLM would develop and provide EML with a list of appropriate seed mixes for those areas within and outside the Project Area impacted by water table drawdown that should be seeded. The nature of the seed mix may vary depending on the conditions encountered as a result of the drawdown. If the BLM determines reseeding to be necessary, the BLM would coordinate the conditions for reseeding (including a possible two-year grazing closure) with local permittees in order to reduce impacts to AUMs. Mitigation for the potential loss of water available for livestock from stock water rights and other surface waters are described in the Water Resources - Water Quantity impacts discussion (Mitigation Measures 3.2.3.3-2 and 3.2.3.3-3). Mitigation for loss of water available would also mitigate the loss of vegetation (livestock forage). | N/A | Mitigation Measure 3.12.3.5-2: The BLM would monitor for changes to forage productivity as a result of ground water drawdown associated with Project-related ground water pumping. If the BLM detects a loss of forage productivity attributed to the Project, the BLM would develop and provide EML with a list of appropriate seed mixes for those areas within and outside the Project Area impacted by water table drawdown that should be seeded. The nature of the seed mix may vary depending on the conditions encountered as a result of the drawdown. If the BLM determines reseeding to be necessary, the BLM would coordinate the conditions for reseeding (including a possible two-year grazing closure) with local permittees in order to reduce impacts to AUMs. Mitigation for the potential loss of water available for livestock from stock water rights and other surface waters are described in the Water Resources - Water Quantity impacts discussion (Mitigation Measures 3.2.3.3-2 and 3.2.3.3-3). Mitigation for loss of water available would also mitigate the loss of vegetation (livestock forage). | Mitigation Measure 3.12.3.6-2: The BLM would monitor for changes to forage productivity as a result of ground water drawdown associated with Project-related ground water pumping. If the BLM detects a loss of forage productivity attributed to the Project, the BLM would develop and provide EML with a list of appropriate seed mixes for those areas within and outside the Project Area impacted by water table drawdown that should be seeded. The nature of the seed mix may vary depending on the conditions encountered as a result of the drawdown. If the BLM determines reseeding to be necessary, the BLM would coordinate the conditions for reseeding (including a possible two-year grazing closure) with local permittees in order to reduce impacts to AUMs. Mitigation for the potential loss of water available for livestock from stock water rights and other surface waters are described in the Water Resources - Water Quantity impacts discussion (Mitigation Measures 3.2.3.3-2 and 3.2.3.3-3). Mitigation for loss of water available would also mitigate the loss of vegetation (livestock forage). | Mitigation Measure 3.12.3.7-2: The BLM would monitor for changes to forage productivity as a result of ground water drawdown associated with Project-related ground water pumping. If the BLM detects a loss of forage productivity attributed to the Project, the BLM would develop and provide EML with a list of appropriate seed mixes for those areas within and outside the Project Area impacted by water table drawdown that should be seeded. The nature of the seed mix may vary depending on the conditions encountered as a result of the drawdown. If the BLM determines reseeding to be necessary, the BLM would coordinate the conditions for reseeding (including a possible two-year grazing closure) with local permittees in order to reduce impacts to AUMs. Mitigation for the potential loss of water available for livestock from stock water rights and other surface waters are described in the Water Resources - Water Quantity impacts discussion (Mitigation Measures 3.2.3.3-2 and 3.2.3.3-3). Mitigation for loss of water available would also mitigate the loss of vegetation (livestock forage). |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Mitigation measure 3.12.3.3-2 would reduce potential impacts to local permittees from changes in vegetation species composition and percent cover as a result of water table drawdown during Project activities. Monitoring vegetation and possible reseeding with an appropriate seed mix, as well as BLM coordination with local | N/A | Effectiveness of Mitigation and Residual Effects: Mitigation measure 3.12.3.5-2 would reduce potential impacts to local permittees from changes in vegetation species composition and percent cover as a result of water table drawdown during Project activities. Monitoring vegetation and possible reseeding with an appropriate seed mix, as well as BLM coordination | Effectiveness of Mitigation and Residual Effects: Mitigation measure 3.12.3.6-2 would reduce potential impacts to local permittees from changes in vegetation species composition and percent cover as a result of water table drawdown during Project activities. Monitoring vegetation and possible reseeding with an appropriate seed mix, as well as BLM coordination | Effectiveness of Mitigation and Residual Effects: Mitigation measure 3.12.3.7-2 would reduce potential impacts to local permittees from changes in vegetation species composition and percent cover as a result of water table drawdown during Project activities. Monitoring vegetation and possible reseeding with an appropriate seed mix, as well as BLM coordination |

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| | permittees following reseeding, would reduce the long-term impacts to AUMs. | | with local permittees following reseeding, would reduce the long-term impacts to AUMs. | with local permittees following reseeding, would reduce the long-term impacts to AUMs. | with local permittees following reseeding, would reduce the long-term impacts to AUMs. |
| Impact: | Impact 3.12.3.3-3: Livestock dependent on existing water sources in the Project Area would potentially experience water stress due to the water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table could result in reduced water available for use in rangeland management. | N/A | Impact 3.12.3.5-3: Livestock dependent on existing water sources in the Project Area would potentially experience water stress due to the water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table could result in reduced water available for use in rangeland management. | Impact 3.12.3.6-3: Livestock dependent on existing water sources in the Project Area would potentially experience water stress due to the water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table could result in reduced water available for use in rangeland management. | Impact 3.12.3.7-3: Livestock dependent on existing water sources in the Project Area would potentially experience water stress due to the water table drawdown associated with ground water pumping and subsequent recovery of the water table. Lowering of the water table could result in reduced water available for use in rangeland management. |
| Significance of the Impact: | Significance of the Impact: The impact could be potentially significant. The following mitigation has been identified for this impact. | N/A | Significance of the Impact: The impact could be potentially significant. The following mitigation has been identified for this impact. | Significance of the Impact: The impact could be potentially significant. The following mitigation has been identified for this impact. | Significance of the Impact: The impact could be potentially significant. The following mitigation has been identified for this impact. |
| Mitigation Measure: | Mitigation Measure 3.12.3.3-3: Mitigation for the potential loss of water availability for livestock from stock water rights and other surface waters are described in the Water Resources - Water Quantity impacts discussion (Mitigation Measures 3.2.3.3-2 and 3.2.3.3-3). Implementation of any of the specific mitigation outlined in these measures for springs located on private land would be subject to the authorization of the private land owner. Mitigation for loss of water available would also mitigate the loss of vegetation (livestock forage). Additionally, where livestock and wild horse use overlap those mitigation measures identified for wild horses (Mitigation Measure 3.13.3.3-1) would also benefit livestock. | N/A | Mitigation Measure 3.12.3.5-3: Mitigation for the potential loss of water availability for livestock is described in the Water Resources - Water Quantity impacts discussion (Mitigation Measures 3.2.3.3-2 and 3.2.3.3-3). Implementation of any of the specific mitigation outlined in these measures for springs located on private land would be subject to the authorization of the private land owner. Mitigation for loss of water available would also mitigate the loss of vegetation (livestock forage). Additionally, where livestock and wild horse use overlap those mitigation measures identified for wild horses (Mitigation Measure 3.13.3.3-1) would also benefit livestock. | Mitigation Measure 3.12.3.6-3: Mitigation for the potential loss of water availability for livestock is described in the Water Resources - Water Quantity impacts discussion (Mitigation Measures 3.2.3.3-2 and 3.2.3.3-3). Implementation of any of the specific mitigation outlined in these measures for springs located on private land would be subject to the authorization of the private land owner. Mitigation for loss of water available would also mitigate the loss of vegetation (livestock forage). Additionally, where livestock and wild horse use overlap those mitigation measures identified for wild horses (Mitigation Measure 3.13.3.3-1) would also benefit livestock. | Mitigation Measure 3.12.3.7-3: Mitigation for the potential loss of water availability for livestock from stock water rights and other surface waters is described in the Water Resources - Water Quantity impacts discussion (Mitigation Measures 3.2.3.3-2 and 3.2.3.3-3). Implementation of any of the specific mitigation outlined in these measures for springs located on private land would be subject to the authorization of the private land owner. Mitigation for loss of water available would also mitigate the loss of vegetation (livestock forage). Additionally, where livestock and wild horse use overlap those mitigation measures identified for wild horses (Mitigation Measure 3.13.3.3-1) would also benefit livestock. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Implementation of Mitigation Measures in Section 3.2.3 would effectively mitigate any reductions in water available for use in rangeland management (i.e., this includes livestock grazing), with the exception of impacts to forage on private land associated with riparian areas. The BLM cannot require a private land owner to consent to the implementation of mitigation on their private land; therefore, there is a potential loss of forage associated with the riparian areas on private land. Ongoing monitoring included in the mitigation measures would ensure that adequate water supplies are maintained and available for livestock. | N/A | Effectiveness of Mitigation and Residual Effects: Implementation of Mitigation Measures in Section 3.2.3 would effectively mitigate any reductions in water available for use in rangeland management, with the exception of impacts to forage on private land associated with riparian areas. The BLM cannot require a private land owner to consent to the implementation of mitigation on their private land; therefore, there is a potential loss of forage associated with the riparian areas on private land. Ongoing monitoring included in the mitigation measures would ensure that adequate water supplies are maintained and available for livestock. | Effectiveness of Mitigation and Residual Effects: Implementation of Mitigation Measures in Section 3.2.3 would effectively mitigate any reductions in water available for use in rangeland management, with the exception of impacts to forage on private land associated with riparian areas. The BLM cannot require a private land owner to consent to the implementation of mitigation on their private land; therefore, there is a potential loss of forage associated with the riparian areas on private land. Ongoing monitoring included in the mitigation measures would ensure that adequate water supplies are maintained and available for livestock. | Effectiveness of Mitigation and Residual Effects: Implementation of Mitigation Measures in Section 3.2.3 would effectively mitigate any reductions in water available for use in rangeland management, with the exception of impacts to forage on private land associated with riparian areas. The BLM cannot require a private land owner to consent to the implementation of mitigation on their private land; therefore, there is a potential loss of forage associated with the riparian areas on private land. Ongoing monitoring included in the mitigation measures would ensure that adequate water supplies are maintained and available for livestock. |
| Impact: | Impact 3.13.3.3-1: Approximately 14,204 acres of wild horse habitat would be directly removed as a result of the fence. Approximately 232 acres of wild horse habitat in the Project Area would be potentially affected over the 44-year mine life and subsequent reclamation outside of the fenced portion of the Project, excluding approximately 124 acres associated with the powerline portion of the Project Area and 50 acres associated with exploration. The location of the 50 acres of surface disturbance associated with exploration cannot be determined at this time. The location of the 124 acres of surface disturbance associated with the powerline would occur with the powerline portion of the Project Area; however, the exact location of this disturbance has not been specified yet. The exact number of acres of surface disturbance for these two Project features within each HMA cannot be calculated at this time. Impacts to wild horses would also include a loss of access to water within the fenced portion of the Project Area. Impacts to wild horses could last approximately 70 years. | N/A | Impact 3.13.3.5-1: Approximately 14,204 acres of wild horse habitat would be directly removed as a result of the fence. Approximately 232 acres of wild horse habitat in the Project Area would be potentially affected over the 44-year mine life and subsequent reclamation outside of the fenced portion of the Project, excluding approximately 124 acres associated with the powerline portion of the Project Area and 50 acres associated with exploration. The location of the 50 acres of surface disturbance associated with exploration cannot be determined at this time. The location of the 124 acres of surface disturbance associated with the powerline would occur with the powerline portion of the Project Area; however, the exact location of this disturbance has not been specified yet. The exact number of acres of surface disturbance for these two Project features within each HMA cannot be calculated at this time. Impacts to wild horses would also include a loss of access to water within the fenced portion of the Project Area. | Impact 3.13.3.6-1: Approximately 14,204 acres of wild horse habitat would be directly removed as a result of the fence. Approximately 232 acres of wild horse habitat in the Project Area would be potentially affected over the 44-year mine life and subsequent reclamation outside of the fenced portion of the Project, excluding approximately 124 acres associated with the powerline portion of the Project Area and 50 acres associated with exploration. The location of the 50 acres of surface disturbance associated with exploration cannot be determined at this time. The location of the 124 acres of surface disturbance associated with the powerline would occur with the powerline portion of the Project Area; however, the exact location of this disturbance has not been specified yet. The exact number of acres of surface disturbance for these two Project features within each HMA cannot be calculated at this time. Impacts to wild horses would also include a loss of access to water within the fenced portion of the Project Area. | Impact 3.13.3.7-1: Approximately 14,204 acres of wild horse habitat would be directly removed as a result of the fence. Approximately 232 acres of wild horse habitat in the Project Area would be potentially affected over the extended mine life and subsequent reclamation outside of the fenced portion of the Project, excluding approximately 124 acres associated with the powerline portion of the Project Area and 50 acres associated with exploration. The location of the 50 acres of surface disturbance associated with exploration cannot be determined at this time. The location of the 124 acres of surface disturbance associated with the powerline would occur with the powerline portion of the Project Area; however, the exact location of this disturbance has not been specified yet. The exact number of acres of surface disturbance for these two Project features within each HMA cannot be calculated at this time. Impacts to wild horses would also include a loss of access to water within the fenced portion of the Project Area. Impacts to wild horses could last approximately twice as long as the Proposed Action. |
| Significance of the Impact: | Significance of the Impact: The impact is considered significant for wild horse access to water. | N/A | Significance of the Impact: The impact is considered significant for wild horse access to water. | Significance of the Impact: The impact is considered significant for wild horse access to water. | Significance of the Impact: The impact is considered significant for wild horse access to water. |
| Mitigation Measure: | Mitigation Measure 3.13.3.3-1: Specific mitigation for surface water resources identified as being impacted by the Project is listed in Table 3.2-9. In order to further mitigate the loss of habitat and water sources to wild horses through the Project Area, EML would provide alternative water sources for wild horses. Six locations within the Whistler Mountain and Roberts Mountain HMAs have been identified in coordination with the BLM and would be developed as water sources for horses and could also be used by wildlife and livestock in areas historically used by wild horses (Figure 3.13.1). These sites consist of existing stock wells that are | N/A | Mitigation Measure 3.13.3.5-1: Mitigation under the Partial Backfill Alternative would be the same as mitigation under the Proposed Action. | Mitigation Measure 3.13.3.6-1: Mitigation under the Off-Site Transfer of Ore Concentrate for Processing Alternative would be the same as mitigation under the Proposed Action. | Mitigation Measure 3.13.3.7-1: Specific mitigation for surface water resources that has been identified as being impacted by the Project is listed in Tables 3.2-9 and 3.2-18. Otherwise, the mitigation under the Slower, Longer Project Alternative would be the same as mitigation under the Proposed Action. |

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| | <p>not currently functioning or do not have pumps or troughs and two new sources tapped from Project production wells. These sources would provide water where it has not been available previously or where availability has been limited. These sources would replace water sources located within the Project boundary fence that would no longer be available to wild horses. Distribution of wild horse use would also be improved. The Project's Mitigation Plan is included in this EIS as Appendix D.</p> <p>The development of these six sites is detailed in Appendix D, Attachment 2. Appendix D, Attachment 2 includes a description of how each site would be developed. The sites would be owned and operated by EML. Operations would include periodic inspections and maintenance, turning water on and off, and winterizing water sources as determined through coordination with the BLM. Upon Project completion, improvements associated with the stock watering wells and spring would remain in place for the continued support of wild horses, wildlife, and livestock within the HMA's and grazing allotments. EML would implement the mitigation plan in Appendix D, Attachment 2. Should EML decide not to retain ownership of the associated water rights, agreements would be reached at that time between EML, and those associated with the current grazing privileges on the specific allotment(s), NDOW, and BLM to transfer ownership of these improvements to the appropriate parties.</p> <p>The selection of new or replacement troughs and tanks would be based on design to reduce evaporation in the summer and reduce freezing in the winter. All pipelines from wellheads to the Project fence line under this mitigation would be buried below the ground to avoid limiting wild horse movement.</p> <p>If Project activities caused a water source to become unavailable to wild horses, the Authorized Officer could require a new well to be drilled or another water development to be constructed in the general area to provide adequate water for the wild horses. Should monitoring indicate that wild horses were being negatively impacted by the mining activities, the Mount Lewis Field Manager could require additional measures for the protection of wild horses such as seasonal restrictions during the peak foaling period.</p> <p>Mitigation could include annual, biennial, or quarterly helicopter population inventory flights of the area in addition to on the ground monitoring by BLM and Project personnel. However, the use of a helicopter below 500 feet would not occur between March 1 and June 30 in order to prevent disruption during foaling period, causing orphaned or abandoned foals.</p> <p>Fences constructed around the Project Area would use white-topped steel posts. Additional reflectors may be necessary if problems with horses impacting fences occur. Fences should be continuous with no breaks (no drift fences). Horses climb steep or rocky terrain and may go around the ends of fences.</p> <p>Should horses be discovered within the fenced areas, Project personnel would contact the BLM immediately to assist with the removal of the horses. Wild horses could be fence-wise and difficult to push through gates or fence openings. This often results in horses attempting to jump fences and becoming cut by barbed wire. BLM staff have materials to assist in the removal of wild horses. Project personnel would not "haze" wild horses out of fenced areas.</p> <p>EML would avoid the BLM's Key Management Areas for vegetation monitoring established near Mount Hope and in Kobeh Valley.</p> <p>Additional mitigation for livestock grazing and production is summarized in Appendix D.</p> | | | | |

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| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Implementation of Mitigation Measure 3.13.3.3-1 would be effective to reduce any impacts to the loss of habitat or resources within the HMA to less than significant. The Mitigation Plan would also ensure the effectiveness of this mitigation measure (Appendix D). | N/A | Effectiveness of Mitigation and Residual Effects: Implementation of Mitigation Measure 3.13.3.5-1 would reduce any impacts to the loss of acreage or resources within the HMA to less than significant. | Effectiveness of Mitigation and Residual Effects: Implementation of Mitigation Measure 3.13.3.6-1 would reduce any impacts to the loss of acreage or resources within the HMA to less than significant. The Mitigation Plan would also ensure the effectiveness of this mitigation measure (Appendix D, Attachment 2). | Effectiveness of Mitigation and Residual Effects: Implementation of Mitigation Measure 3.13.3.7-1 would reduce any impacts to the loss of acreage or resources within the HMA to less than significant. The Mitigation Plan would also ensure the effectiveness of this mitigation measure (Appendix D, Attachment 2). |
| Impact: | Impact 3.13.3.3-2: Project-related activities, such as the addition of a fence to the Project Area or noise from human presence, blasting, vehicular traffic, or other sources, associated with the Proposed Action could result in wild horse displacement and changes in wild horse use throughout the HMA for the 44-year Project life. | N/A | Impact 3.13.3.5-2: Project-related activities, such as the addition of a fence to the Project Area or noise from blasting or other sources, associated with the Partial Backfill Alternative could result in wild horse displacement and changes in wild horse use throughout the HMA for the life of the Project. | Impact 3.13.3.6-2: Project-related activities, such as the addition of a fence to the Project Area or noise from human presence, blasting, vehicular traffic, or other sources, associated with the Proposed Action could result in wild horse displacement and changes in wild horse use throughout the HMA for the life of the Project. | Impact 3.13.3.7-2: Project-related activities, such as the addition of a fence to the Project Area or noise from blasting or other sources, associated with the Slower, Longer Project Alternative could result in wild horse displacement and changes in wild horse use throughout the HMA for the duration of the Project, which would be twice as long as the Proposed Action. |
| Significance of the Impact: | Significance of the Impact: The mitigation outlined above and in Appendix D, Attachment 2 would reduce the potential impacts to the distribution of wild horses. This impact is not considered significant. | N/A | Significance of the Impact: The mitigation outlined above and in Appendix D, Attachment 2 would reduce the potential impacts to the distribution of wild horses. Impacts from the Partial Backfill Alternative would be the same as impacts from the Proposed Action. | Significance of the Impact: Impacts from the Partial Backfill Alternative would be the same as impacts from the Proposed Action. The mitigation outlined above and in Appendix D, Attachment 2 would reduce the potential impacts to the distribution of wild horses. | Significance of the Impact: Impacts from the Slower, Longer Project Alternative would be the same as impacts from the Proposed Action. The mitigation outlined above and in Appendix D, Attachment 2 would reduce the potential impacts to the distribution of wild horses. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.14.3.3-1: Public lands currently utilized for livestock grazing, wild horse habitat, and mineral exploration would be removed from use as a result of the construction and operation of the Project. The Proposed Action would result in the removal of 14,204 acres from multiple use as a result of the Project facilities and fencing for the life of the Project. In addition, 8,355 acres of disturbance would occur within the fenced portion of the Project Area. Reclamation would be completed for 7,621 acres, or 91 percent, of the disturbed area (Section 2.1.17). Approximately 734 acres of public land in the vicinity of the open pit would not be reclaimed to the pre-mining land use. | N/A | Impact 3.14.3.5-1: Public lands currently utilized for livestock grazing, wild horse habitat, and mineral exploration would be removed from use as a result of the construction and operation of the Project. The Partial Backfill Alternative would result in the removal of 14,204 acres from multiple use as a result of the Project facilities and fencing. In addition, 8,355 acres of disturbance would occur within the fenced portion of the Project Area. Reclamation would be completed for 7,621 acres, or 91 percent, of the disturbed area (Section 2.1.17). Approximately 734 acres of public land in the vicinity of the open pit would be partially reclaimed, but not available to wildlife habitat pre-mining land use. | Impact 3.14.3.6-1: Public lands currently utilized for livestock grazing, wild horse habitat, and mineral exploration would be removed from use as a result of the construction and operation of the Project. The Off-Site Transfer of Ore Concentrate for Processing Alternative would result in the removal of 14,204 acres from multiple use as a result of the Project facilities and fencing. In addition, 8,355 acres of disturbance would occur within the fenced portion of the Project Area. Reclamation would be completed for 7,621 acres, or 91 percent, of the disturbed area (Section 2.1.17). Approximately 734 acres of public land in the vicinity of the open pit would not be reclaimed to the pre-mining land use. | Impact 3.14.3.7-1: Public lands currently utilized for livestock grazing, wild horse habitat, and mineral exploration would be removed from use as a result of the construction and operation of the Project. The Slower, Longer Project Alternative would result in the removal of 14,204 acres from multiple use as a result of the Project facilities and fencing. In addition, 8,355 acres of disturbance would occur within the fenced portion of the Project Area. Reclamation would be completed for 7,621 acres, or 91 percent, of the disturbed area (Section 2.1.17). Approximately 734 acres of public land in the vicinity of the open pit would not be reclaimed to the pre-mining land use. |
| Significance of the Impact: | Significance of the Impact: This impact is not considered significant. | N/A | Significance of the Impact: This impact is not considered significant. | Significance of the Impact: This impact is not considered significant. | Significance of the Impact: This impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.14.3.3-2: Public lands currently occupied by ROWs and other land use authorizations would be altered, which would result in the alteration or removal of up to 15 ROWs and other land use authorizations. | N/A | Impact 3.14.3.5-2: Public lands currently occupied by ROWs and land use authorizations would be altered, which would result in the alteration or removal of up to 15 ROWs and land use authorizations. | Impact 3.14.3.6-2: Public lands currently occupied by ROWs and land use authorizations would be altered, which would result in the alteration or removal of up to 15 ROWs and land use authorizations. | Impact 3.14.3.7-2: Public lands currently utilized for ROWs and other land use authorizations would be altered, which would result in the alteration or removal of up to 15 ROWs and other land use authorizations. |
| Significance of the Impact: | Significance of the Impact: This impact is considered less than significant; however, mitigation measures are considered appropriate. | N/A | Significance of the Impact: This impact is considered less than significant; however, mitigation measures are considered appropriate. | Significance of the Impact: This impact is considered less than significant; however mitigation measures are considered appropriate. | Significance of the Impact: This impact is considered less than significant; however, mitigation measures are considered appropriate. |
| Mitigation Measure: | Mitigation Measure 3.14.3.3-2: EML would, in consultation with the BLM and authorized holders of the affected ROWs, reestablish the structures that would be altered or removed, as appropriate. | N/A | Mitigation Measure 3.14.3.5-2: EML would, in consultation with the BLM and authorized holders of the affected ROWs, reestablish the structures that would be altered or removed, as appropriate. | Mitigation Measure 3.14.3.6-2: EML would, in consultation with the BLM and authorized holders of the affected ROWs, reestablish the structures that would be altered or removed, as appropriate. | Mitigation Measure 3.14.3.7-2: EML would, in consultation with the BLM and authorized holders of the affected ROWs and other land use authorizations, reestablish the structures that would be altered or removed, as appropriate. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Implementation of this mitigation measure would be effective at maintaining the impact level as less than significant by reestablishing the authorized structures that would be removed or altered during Project construction and operation. | N/A | Effectiveness of Mitigation and Residual Effects: Implementation of this mitigation measure would be effective at maintaining the impact level as less than significant by reestablishing the authorized structures that would be removed or altered during Project construction and operation. | Effectiveness of Mitigation and Residual Effects: Implementation of this mitigation measure would be effective at maintaining the impact level as less than significant by reestablishing the authorized structures that would be removed or altered during Project construction and operation. | Effectiveness of Mitigation and Residual Effects: Implementation of this mitigation measure would be effective at maintaining the impact level as less than significant by reestablishing the authorized structures that would be removed or altered during Project construction and operation. |

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| Impact: | Impact 3.14.3.3-3: The Proposed Action would have a potential indirect effect to private land uses as a result of ground water drawdown. | N/A | Impact 3.14.3.5-3: The Partial Backfill Alternative would have a potential indirect effect to private land uses as a result of ground water drawdown. | Impact 3.14.3.6-3: The Off-Site Transfer of Ore Concentrate for Processing Alternative would have a potential indirect effect to private land uses as a result of ground water drawdown. | Impact 3.14.3.7-3: The Slower, Longer Project Alternative would have a potential indirect effect to private land uses as a result of ground water drawdown. |
| Significance of the Impact: | Significance of the Impact: This impact is considered potentially significant; however, mitigation measures described in Section 3.2.3 are considered appropriate to reduce the impact to less than significant. No mitigation is proposed for this impact; see Section 3.1.1 for a general discussion of significance and the development of mitigation measures. See Section 3.26 for suggested mitigation outside the BLM's jurisdiction. | N/A | Significance of the Impact: This impact is considered potentially significant; however, mitigation measures described in Section 3.2.3 are considered appropriate to reduce the impact to less than significant. No mitigation is proposed for this impact; see Section 3.1.1 for a general discussion of significance and the development of mitigation measures. See Section 3.26 for suggested mitigation outside the BLM's jurisdiction. | Significance of the Impact: This impact is considered potentially significant; however, mitigation measures described in Section 3.2.3 are considered appropriate to reduce the impact to less than significant. No mitigation is proposed for this impact; see Section 3.1.1 for a general discussion of significance and the development of mitigation measures. See Section 3.26 for suggested mitigation outside the BLM's jurisdiction. | Significance of the Impact: This impact is considered potentially significant; however, mitigation measures described in Section 3.2.3 are considered appropriate to reduce the impact to less than significant. No mitigation is proposed for this impact; see Section 3.1.1 for a general discussion of significance and the development of mitigation measures. See Section 3.26 for suggested mitigation outside the BLM's jurisdiction. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| | | | | | |
| Impact: | Impact 3.15.3.3-1: Public lands within the fenced portion of the Project Area (14,204 acres) potentially used for dispersed recreation would be removed from use in the short term as a result of the construction and operation of the Project. | Impact 3.15.3.4-1: Public lands potentially used for dispersed recreation adjacent to the mineral exploration and data acquisition areas would be removed from use for the duration of those activities. | Impact 3.15.3.5-1: Public lands within the fenced portion of the Project Area (14,204 acres) potentially used for dispersed recreation would be removed from use in the short term as a result of the construction and operation of the Project. | Impact 3.15.3.6-1: Public lands within the fenced portion of the Project Area (14,204 acres) potentially used for dispersed recreation would be removed from use in the short term as a result of the construction and operation of the Project. | Impact 3.15.3.7-1: Public lands within the fenced portion of the Project Area (14,204 acres) potentially used for dispersed recreation would be removed from use in the short-term as a result of the construction and operation of the Project. |
| Significance of the Impact: | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.15.3.1. | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.15.3.1. | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.15.3.1. | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.15.3.1. | Significance of the Impact: The impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| | | | | | |
| Impact: | Impact 3.15.3.3-2: A total of 734 acres within the Project Area would be closed to public access and users in the long term. | N/A | Impact 3.15.3.5-2: A total of 734 acres within the Project Area would be closed to public access and users in the long term through the installation of the berms and fencing. | Impact 3.15.3.6-2: A total of 734 acres within the Project Area would be closed to public access and users in the long term through the installation of the berms and fencing. | Impact 3.15.3.7-2: A total of 734 acres within the Project Area would be closed to public access and users in the long-term. |
| Significance of the Impact: | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.15.3.1. | N/A | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.15.3.1. | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.15.3.1. | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.15.3.1. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| | | | | | |
| Impact: | Impact 3.15.3.3-3: Public lands, developed recreation sites, and community recreation facilities would be impacted by increased use and demand. | N/A | Impact 3.15.3.5-3: Public lands, developed recreation sites, and community recreation facilities would be impacted by increased use and demand. | Impact 3.15.3.6-3: Public lands, developed recreation sites, and community recreation facilities would be impacted by increased use and demand. | Impact 3.15.3.7-3: Public lands, developed recreation sites, and community recreation facilities would be impacted by increased use and demand. |
| Significance of the Impact: | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.15.3.1. | N/A | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.15.3.1. | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.15.3.1. | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.15.3.1. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| | | | | | |
| Impact: | Impact 3.16.3.3-1: Ambient noise levels associated with the Proposed Action could be increased and affect ambient noise levels at the nearest ranch houses and residences. | N/A | Impact 3.16.3.5-1: Ambient noise levels associated with the Partial Backfill Alternative could be increased and affect ambient noise levels at the nearest ranch houses or residences. | Impact 3.16.3.6-1: Ambient noise levels associated with the Off-Site Transfer of Ore Concentrate for Processing Alternative could be increased and affect ambient noise levels at the nearest ranch houses or residences. | Impact 3.16.3.7-1: Ambient noise levels associated with the Slower, Longer Project Alternative could be increased and affect ambient noise levels at the nearest ranch houses. |
| Significance of the Impact: | Significance of the Impact: The predicted changes in hourly ambient noise levels at the nearest ranch houses are 1 dB or less. The impact would be similar at the residences in Diamond Valley because of the similar distances from the Project activities. This impact would be considered less than significant. | N/A | Significance of the Impact: The predicted changes in hourly ambient noise levels at the nearest ranch houses are 1 dB or less. The impact would be similar at the residences in Diamond Valley. This impact would be considered less than significant. | Significance of the Impact: The predicted changes in hourly ambient noise levels at the nearest ranch houses are 1 dB or less. The impact would be similar at the residences in Diamond Valley. This impact would be considered less than significant. | Significance of the Impact: The predicted changes in hourly ambient noise levels at the nearest ranch houses are 1 dB or less and would be considered less than significant. |

| | PROPOSED ACTION | NO ACTION ALTERNATIVE | PARTIAL BACKFILL ALTERNATIVE | OFF-SITE TRANSFER OF ORE CONCENTRATE FOR PROCESSING ALTERNATIVE | SLOWER, LONGER PROJECT ALTERNATIVE |
|---|--|-----------------------|--|---|---|
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.16.3.3-2: Project-related noise levels associated with the Proposed Action could be increased to noise levels that would be less than 55 dBA as measured at a sensitive receptor site. | N/A | Impact 3.16.3.5-2: Project-related noise levels associated with the Partial Backfill Alternative could be increased to noise levels that are less than 55 dBA as measured at a sensitive receptor site. | Impact 3.16.3.6-2: Project-related noise levels associated with the Off-Site Transfer of Ore Concentrate for Processing Alternative could be increased to noise levels to less than 55 dBA as measured at a sensitive receptor site. | Impact 3.16.3.7-2: Project-related noise levels associated with the Slower, Longer Project Alternative could be increased to noise levels in excess of 55 dBA measured at a sensitive receptor site. |
| Significance of the Impact: | Significance of the Impact: The impact would be considered less than significant. | N/A | Significance of the Impact: The impact would be considered less than significant. | Significance of the Impact: The impact would be considered less than significant. | Significance of the Impact: The impact would be considered less than significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.16.3.3-3: The Proposed Action would cause increases in traffic noise levels. | N/A | Impact 3.16.3.5-3: The Partial Backfill Alternative would cause increases in traffic noise levels. | Impact 3.16.3.6-3: The Off-Site Transfer of Ore Concentrate for Processing Alternative would cause increases in traffic noise levels. | Impact 3.16.3.7-3: The Slower, Longer Project Alternative would cause increases in traffic noise levels. |
| Significance of the Impact: | Significance of the Impact: The predicted changes in traffic noise levels are less than 3 dB where the existing traffic noise level exceeds 60 dB L _{dn} ; therefore, the predicted changes in traffic noise levels due to the Proposed Action would be less than significant. The predicted Project-related mining and processing noise level in the vicinity of the Project access road and SR 278 is approximately 39 dB L _{dn} . This level of noise would not cause a significant change in ambient noise levels at that location in terms of L _{dn} , since the existing traffic noise would be nearly 20 dB higher than the mining and processing noise level. | N/A | Significance of the Impact: The predicted changes in traffic noise levels are less than 3 dB where the existing traffic noise level exceeds 60 dB L _{dn} ; therefore, the predicted changes in traffic noise levels due to the Partial Backfill Alternative would be less than significant. The predicted Project-related mining and processing noise level in the vicinity of the Project access road and SR 278 is approximately 39 dB L _{dn} . This level of noise would not cause a significant change in ambient noise levels at that location in terms of L _{dn} , since the existing traffic noise would be nearly 20 dB higher than the mining and processing noise level. | Significance of the Impact: The predicted changes in traffic noise levels are less than 3 dB where the existing traffic noise level exceeds 60 dB L _{dn} ; therefore, the predicted changes in traffic noise levels due to the Off-Site Transfer of Ore Concentrate for Processing Alternative would be less than significant. The predicted Project-related mining and processing noise level in the vicinity of the Project access road and SR 278 is approximately 39 dB L _{dn} . This level of noise would not cause a significant change in ambient noise levels at that location in terms of L _{dn} , since the existing traffic noise would be nearly 20 dB higher than the mining and processing noise level. | Significance of the Impact: The predicted changes in traffic noise levels are less than 3 dB where the existing traffic noise level exceeds 60 dB L _{dn} ; therefore, the predicted changes in traffic noise levels due to the Slower, Longer Project Alternative would be less than significant. The predicted Project-related mining and processing noise level in the vicinity of the Project access road and SR 278 is approximately 39 dB L _{dn} . This level of noise would not cause a significant change in ambient noise levels at that location in terms of L _{dn} , since the existing traffic noise would be nearly 20 dB higher than the mining and processing noise level. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.16.3.3-4: The Proposed Action would cause increases in noise levels that could impact local residences through construction activities or poorly maintained construction equipment. The maximum noise levels received at the nearest ranch house, which is approximately two miles away from the nearest areas where grading would occur, would be reduced by approximately 23 dB as compared to the values shown on Table 3.16-6, ignoring sound absorption or any shielding provided by topography; therefore, maximum construction noise levels at the nearest ranch house would be in the range of approximately 47 to 67 dB. In practice, considering the topography of the Project Area, much of the construction equipment would be shielded from view of the nearest ranch house by topography. In those cases, the construction noise levels would be further reduced by 5 to 10 dB or greater. | N/A | Impact 3.16.3.5-4: The Partial Backfill Alternative would cause increases in noise levels that could impact local residences through construction activities or poorly maintained construction equipment. The maximum noise levels received at the nearest ranch house, which is approximately two miles away from the nearest areas where grading would occur, would be reduced by approximately 23 dB as compared to the values shown on Table 3.16-6, ignoring sound absorption or any shielding provided by topography; therefore, maximum construction noise levels at the nearest ranch house would be in the range of approximately 47 to 67 dB. In practice, considering the topography of the Project Area, much of the construction equipment would be shielded from view of the nearest ranch house by topography. In those cases, the construction noise levels would be further reduced by five to 10 dB or greater. | Impact 3.16.3.6-4: The Off-Site Transfer of Ore Concentrate for Processing Alternative would cause increases in noise levels that could impact local residences through construction activities or poorly maintained construction equipment. The maximum noise levels received at the nearest ranch house, which is approximately two miles away from the nearest areas where grading would occur, would be reduced by approximately 23 dB as compared to the values shown on Table 3.16-6, ignoring sound absorption or any shielding provided by topography; therefore, maximum construction noise levels at the nearest ranch house would be in the range of approximately 47 to 67 dB. In practice, considering the topography of the Project Area, much of the construction equipment would be shielded from view of the nearest ranch house by topography. In those cases, the construction noise levels would be further reduced by five to 10 dB or greater. | Impact 3.16.3.7-4: The Slower, Longer Project Alternative would cause increases in noise levels that could impact local residences through construction activities or poorly maintained construction equipment. The maximum noise levels received at the nearest ranch house, which is approximately two miles away from the nearest areas where grading would occur, would be reduced by approximately 23 dB as compared to the values shown on Table 3.16-6, ignoring sound absorption or any shielding provided by topography; therefore, maximum construction noise levels at the nearest ranch house would be in the range of approximately 47 to 67 dB. In practice, considering the topography of the Project Area, much of the construction equipment would be shielded from view of the nearest ranch house by topography. In those cases, the construction noise levels would be further reduced by 5 to 10 dB or greater. |
| Significance of the Impact: | Significance of the Impact: Noise levels produced by construction activities or poorly maintained construction equipment in the vicinity of the Roberts Creek Ranch house could be significant if such activities occurred at nighttime or if the noise level exceeds 55 dB. | N/A | Significance of the Impact: Noise levels produced by construction activities or poorly maintained construction equipment in the vicinity of the Roberts Creek Ranch house could be significant if such activities occurred at nighttime or if the noise level exceeds 55 dB. | Significance of the Impact: Noise levels produced by construction activities or poorly maintained construction equipment in the vicinity of the Roberts Creek Ranch house could be significant if such activities occurred at nighttime or if the noise level exceeds 55 dB. | Significance of the Impact: Noise levels produced by construction activities or poorly maintained construction equipment in the vicinity of the Roberts Creek Ranch house could be significant if such activities occurred at nighttime or if the noise level exceeds 55 dB. |
| Mitigation Measure: | Mitigation Measure 3.16.3.3-4: Construction in the vicinity of the Roberts Creek Ranch house and greater sage-grouse leks would be limited to daylight hours and would be limited during lekking periods (see Appendix D, Attachment 3). Construction equipment used in the vicinity of residences would be fitted with the best available technology manufacturers' noise control equipment, | N/A | Mitigation Measure 3.16.3.5-4: Construction in the vicinity of the Roberts Creek Ranch house or greater sage-grouse leks would be limited to daylight hours and would be limited during lekking periods (see Appendix D, Attachment 3). Construction equipment used in the vicinity of residences would be fitted with the best available technology manufacturers' noise control | Mitigation Measure 3.16.3.6-4: Construction in the vicinity of the Roberts Creek Ranch house or greater sage-grouse leks would be limited to daylight hours and would be limited during lekking periods (see Appendix D, Attachment 3). Construction equipment used in the vicinity of residences would be fitted with the best available technology manufacturers' noise control | Mitigation Measure 3.16.3.7-4: Construction in the vicinity of the Roberts Creek Ranch house or greater sage-grouse leks would be limited to daylight hours and would be limited during lekking periods (see Appendix D, Attachment 3). Construction equipment used in the vicinity of residences would be fitted with the best available technology manufacturers' noise control |

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| | including engine exhaust silencers and acoustical enclosures. Noise control equipment would be maintained in good working order. Implementation of this mitigation measure would result in a less than significant impact. | | equipment, including engine exhaust silencers and acoustical enclosures. Noise control equipment would be maintained in good working order. | equipment, including engine exhaust silencers and acoustical enclosures. Noise control equipment would be maintained in good working order. Implementation of this mitigation measure would result in a less than significant impact. | equipment, including engine exhaust silencers and acoustical enclosures. Noise control equipment would be maintained in good working order. Implementation of this mitigation measure would result in a less than significant impact. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: The implementation of this mitigation measure would be effective at reducing the potential impact to less than significant by controlling the generation of the noise. | N/A | Effectiveness of Mitigation and Residual Effects: The implementation of this mitigation measure would be effective at reducing the potential impact to less than significant by controlling the generation of the noise. | Effectiveness of Mitigation and Residual Effects: The implementation of this mitigation measure would be effective at reducing the potential impact to less than significant by controlling the generation of the noise. | Effectiveness of Mitigation and Residual Effects: The implementation of this mitigation measure would be effective at reducing the potential impact to less than significant by controlling the generation of the noise. |
| Impact: | Impact 3.16.3.3-5: Noise caused by blasting during construction and mining could cause annoyance if residents were startled by unexpected blasts, or if blasting overpressures caused rattling of residence windows. The Proposed Action would not otherwise impact auditory resources associated with blasting. | N/A | Impact 3.16.3.5-5: Noise caused by blasting during construction and mining could cause annoyance if residents were startled by unexpected blasts, or if blasting overpressures caused rattling of residence windows. The Partial Backfill Alternative would not otherwise impact auditory resources associated with blasting. | Impact 3.16.3.6-5: Noise caused by blasting during construction and mining could cause annoyance if residents were startled by unexpected blasts, or if blasting overpressures caused rattling of residence windows. The Off-Site Transfer of Ore Concentrate for Processing Alternative would not otherwise impact auditory resources associated with blasting. | Impact 3.16.3.7-5: Noise caused by blasting during construction and mining could cause annoyance if residents were startled by unexpected blasts, or if blasting overpressures caused rattling of residence windows. The Slower, Longer Project Alternative would not otherwise impact auditory resources associated with blasting. |
| Significance of the Impact: | Significance of the Impact: This impact is not considered significant. | N/A | Significance of the Impact: This impact is not considered significant. | Significance of the Impact: This impact is not considered significant. | Significance of the Impact: This impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.16.3.3-6: The Proposed Action could generate flyrock. However, Project design would limit the potential for flyrock to travel beyond the Project fence. | N/A | Impact 3.16.3.5-6: The Proposed Action could generate flyrock. However, Project design would limit the potential for flyrock to travel beyond the Project fence. | Impact 3.16.3.6-6: The Proposed Action could generate flyrock. However, Project design would limit the potential for flyrock to travel beyond the Project fence. | Impact 3.16.3.7-6: The Proposed Action could generate flyrock. However, Project design would limit the potential for flyrock to travel beyond the Project fence. |
| Significance of the Impact: | Significance of the Impact: This impact would not be considered significant. | N/A | Significance of the Impact: This impact would not be considered significant. | Significance of the Impact: This impact would not be considered significant. | Significance of the Impact: This impact would not be considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.17.3.3-1: The Proposed Action would result in substantial long-term expansion of most sectors of the southern Eureka County economy, especially the mining, retail and service sectors. The construction sector would also undergo substantial expansion during Project construction and the initial years of operations as local housing, commercial and community infrastructure is built to accommodate the Project workforce. The Project-related economic and employment opportunities would be seen as beneficial by many at the regional and local levels. Locally, the substantially increased labor demand during construction and the initial period of operations could result in competition for workers and upward pressure on wages, primarily during Project construction and early operations, which could be seen as adverse for some public and private sector employers, particularly those that would not benefit economically from development of the Project. For local and regional residents, the increased opportunity for high-paying employment would be considered beneficial. There is potential that competition for motel rooms and RV parks could affect businesses that depend specifically on tourism and recreation visitors (e.g., gift shops and tourist attractions) but those effects would likely be temporary during the construction phase of the Project. There has been concern among Diamond Valley agricultural interests that the Project could affect the quantity of water available for irrigation, which would in turn result in adverse effects on the agricultural sector of the local economy. The monitoring and mitigation measures outlined in Sections 2.1.16 and Section 3.2 of this EIS are intended to avoid or reduce potential adverse effects on ground water in Diamond Valley. | N/A | Impact 3.17.3.5-1: The Partial Backfill Alternative would result in substantial economic expansion similar to the Proposed Action. Project employment levels would be somewhat higher in the later years of Project operations. | Impact 3.17.3.6-1: The Off-Site Transfer of Ore Concentrate for Processing Alternative would result in substantial demand for employees and compete with regional employers for workers. | Impact 3.17.3.7-1: The Slower, Longer Project Alternative would generate substantial expansion of the southern Eureka County economy similar to the Proposed Action, but at a somewhat lower rate and for a substantially longer period of time. This alternative would similarly result in substantial demand for employees but at a somewhat lower level (fewer employees) and longer period of time than the Proposed Action. Labor competition during construction and early operations would be slightly less than the Proposed Action. |

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| | The Project would diversify the local mining sector by adding a new commodity. | | | | |
| Significance of the Impact: | Significance of the Impact: The degree of this impact is considered significant. Impacts would be both beneficial and adverse. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. | N/A | Significance of the Impact: This impact is considered significant; however, no mitigation measures are proposed. Continued employment of an existing workforce is likely to be viewed as beneficial. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. | Significance of the Impact: This impact is considered significant. Continued employment of an existing workforce is likely to be viewed as beneficial. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. | Significance of the Impact: This impact is considered significant. Continued employment of an existing workforce would likely to be viewed as beneficial. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| | | | | | |
| Impact: | Impact 3.17.3.3-2: The Proposed Action would result in substantial growth and concentration of population. Population growth would present new economic opportunities for southern Eureka County businesses and support additional commercial development. These effects would be seen as positive for some. The changes from the current relatively stable and smaller population would be seen as adverse by others. | N/A | Impact 3.17.3.5-2: The Partial Backfill Alternative would result in substantial growth and concentration of population. | Impact 3.17.3.6-2: The Off-Site Transfer of Ore Concentrate for Processing Alternative would result in substantial growth and concentration of population. | Impact 3.17.3.7-2: The Slower, Longer Project Alternative would result in a substantial growth and concentration of population. Project-related population would be somewhat lower than under the Proposed Action, but the population would remain in the area for a substantially longer period of time. |
| Significance of the Impact: | Significance of the Impact: This impact is considered a significant effect on social and economic values. The impact has both positive and potentially adverse, short term and long term, attributes. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. | N/A | Significance of the Impact: This impact is considered significant. This impact is likely to be viewed as beneficial as it would delay community population losses associated with mine closure. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. | Significance of the Impact: This impact is considered significant. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. | Significance of the Impact: This impact is considered significant. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| | | | | | |
| Impact: | Impact 3.17.3.3-3: The Proposed Action would result in substantial demand for housing in southern Eureka County. Absent a housing plan and development program, adequate housing is unlikely to be available during Project construction and the early years of Project operations. A housing shortage would likely result in additional daily and weekly commuting during construction and early Project operations and could inflate housing costs and rents, adversely affecting renters with fixed incomes. The substantial investment and associated economic opportunities generated in response to housing demand would be seen as beneficial by some in the community as would the expansion of the housing stock. Landlords would likely view increased housing costs as beneficial, renters and prospective buyers would view increased costs as adverse. | N/A | Impact 3.17.3.5-3: The Partial Backfill Alternative would result in substantial demand for new housing. | Impact 3.17.3.6-3: The Off-Site Transfer of Ore Concentrate for Processing Alternative would result in substantial demand for new housing. | Impact 3.17.3.7-3: The Slower, Longer Project Alternative would result in substantial demand for new housing. Project-related housing demand would be somewhat lower than under the Proposed Action, but occur over a substantially longer period of time. As noted in Section 3.17.3.2.3, the decrease in housing demand over a 20-year period during the reduction in mining activities and eventual closure could place a large number of housing units on the market, potentially depressing housing values in the area. Potentially negative effects of Project closure on the southern Eureka County housing market would be substantially delayed under this alternative compared to the Proposed Action. |
| Significance of the Impact: | Significance of the Impact: This impact is considered significant and has both beneficial and potentially adverse aspects. Nevertheless, it is suggested that EML and Eureka County build on previous and current planning efforts to develop housing resources to accommodate the needs of the construction and operations-related population. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. | N/A | Significance of the Impact: This impact is considered significant. This impact is likely to be viewed as beneficial as it would delay potential adverse effects on the southern Eureka County housing market. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. | Significance of the Impact: This impact is considered significant. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. | Significance of the Impact: This impact is considered significant. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |

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| Impact: | Impact 3.17.3.3-4: The Proposed Action would result in a substantial demand for public infrastructure and services in southern Eureka County. Expansion and improvement of public infrastructure and services could in some cases provide a higher level of services for current residents and the associated expansion of infrastructure could support the County's long-term community and economic development plans. Conversely the substantial expansion of County services and infrastructure to support Project-related demand would be required over a relatively short period of time and likely strain the resources of County government. | N/A | Impact 3.17.3.5-4: The Partial Backfill Alternative would result in a substantial demand for public services. | Impact 3.17.3.6-4: The Off-Site Transfer of Ore Concentrate for Processing Alternative would result in a substantial demand for public services. | Impact 3.17.3.7-4: The Slower, Longer Project Alternative would result in substantial demand for public infrastructure and services, although at a somewhat lower level than under the Proposed Action; however, demand would occur over a substantially longer period. |
| Significance of the Impact: | Significance of the Impact: This impact is considered significant and has both beneficial and potentially adverse aspects. Nevertheless, it is suggested that EML and Eureka County build on previous and current planning efforts to address public infrastructure and service issues. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. | N/A | Significance of the Impact: This impact is considered significant and has both beneficial and potentially adverse aspects. Nevertheless, it is suggested that EML and Eureka County build on previous and current planning efforts to address public infrastructure and service issues. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. | Significance of the Impact: This impact is considered significant and has both beneficial and potentially adverse aspects. Nevertheless, it is suggested that EML and Eureka County build on previous and current planning efforts to address public infrastructure and service issues. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. | Significance of the Impact: This impact is considered significant and has both beneficial and potentially adverse aspects. Nevertheless, it is suggested that EML and Eureka County build on previous and current planning efforts to address public infrastructure and service issues. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.17.3.3-5: The Proposed Action would result in substantial short- and long-term increases in tax revenues as well as expenditures for Eureka County and ECSD. | N/A | Impact 3.17.3.5-5: The Partial Backfill Alternative would result in a substantial increase in revenues and expenditures for Eureka County and the ECSD. | Impact 3.17.3.6-5: The Off-Site Transfer of Ore Concentrate for Processing Alternative would result in a decrease in revenues and expenditures for Eureka County and the ECSD, compared to the Proposed Action. | Impact 3.17.3.7-5: Similar to the other action alternatives, the Slower, Longer Project Alternative would result in a substantial increase in revenues and expenditures for Eureka County and the ECSD, but the revenues would be less on an annual basis and accrue over a substantially longer period of time. At the same time, the demand on services and need for expenditures would also be lower but extend over a longer period, as compared to the Proposed Action. |
| Significance of the Impact: | Significance of the Impact: This impact is considered significant. While the long-term tax revenues would likely provide for increased infrastructure expenditures, it is suggested that EML and Eureka County build on previous and current planning efforts in order to prepare for the possible timing differences between expenditures and tax revenues. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. | N/A | Significance of the Impact: This impact is considered significant. While the long-term tax revenues would likely provide for increased infrastructure expenditures, it is suggested that EML and Eureka County build on previous and current planning efforts in order to prepare for the possible timing differences between expenditures and tax revenues. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. | Significance of the Impact: This impact is considered significant. While the long-term tax revenues would likely provide for increased infrastructure expenditures, it is suggested that EML and Eureka County build on previous and current planning efforts in order to prepare for the possible timing differences between expenditures and tax revenues. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. | Significance of the Impact: This impact is considered significant. While the long-term tax revenues would likely provide for increased infrastructure expenditures, it is suggested that EML and Eureka County build on previous and current planning efforts in order to prepare for the possible timing differences between expenditures and tax revenues. The implementation of mitigation measures for socioeconomic effects is beyond the jurisdiction of the BLM. See Section 3.26 of this EIS for a more detailed discussion of mitigation measures beyond the BLM's jurisdiction. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.19.3.3-1: A spill of hazardous materials could adversely affect public safety and the environment. | Impact 3.19.3.4-1: A spill of hazardous materials could adversely affect public safety and the environment. | Impact 3.19.3.5-1: A spill of hazardous materials could adversely affect public safety and the environment. | Impact 3.19.3.6-1: A spill of hazardous materials could adversely affect public safety and the environment. | Impact 3.19.3.7-1: A spill of hazardous materials could adversely affect public safety and the environment. |
| Significance of the Impact: | Significance of the Impact: This impact is considered less than significant; however, the following mitigation measure is provided to reduce the adverse effects of this potential impact. | Significance of the Impact: This impact is considered less than significant, and no mitigation measures are proposed. | Significance of the Impact: This impact is considered less than significant; however, the following mitigation measure is provided to reduce the adverse effects of this potential impact. | Significance of the Impact: This impact is considered less than significant; however, the following mitigation measure is provided to reduce the adverse effects of this potential impact. | Significance of the Impact: This impact is considered less than significant; however, the following mitigation measure is provided to reduce the adverse effects of this potential impact. |
| Mitigation Measure: | Mitigation Measure 3.19.3.3-1: EML would maintain their existing Emergency Response Plan (EML 2006; Appendix 11). | N/A | Mitigation Measure 3.19.3.5-1: EML would maintain their existing Emergency Response Plan (EML 2006; Appendix 11). | Mitigation Measure 3.19.3.6-1: EML would maintain their existing Emergency Response Plan (EML 2006; Appendix 11). | Mitigation Measure 3.19.3.7-1: EML would maintain their existing Emergency Response Plan (EML 2006; Appendix 11). |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: The implementation of this mitigation measure would result in EML completing the necessary steps to understand how to respond to emergency situations with hazardous materials. This mitigation measure would be effective when an emergency condition develops because EML would have completed readiness preparation for | N/A | Effectiveness of Mitigation and Residual Effects: The implementation of this mitigation measure would result in EML completing the necessary steps to understand how to respond to emergency situations with hazardous materials. This mitigation measure would be effective when an emergency condition develops because EML would have completed readiness | Effectiveness of Mitigation and Residual Effects: The implementation of this mitigation measure would result in EML completing the necessary steps to understand how to respond to emergency situations with hazardous materials. This mitigation measure would be effective when an emergency condition develops because EML would have completed readiness | Effectiveness of Mitigation and Residual Effects: The implementation of this mitigation measure would result in EML completing the necessary steps to understand how to respond to emergency situations with hazardous materials. This mitigation measure would be effective when an emergency condition develops because EML would have completed readiness |

| | PROPOSED ACTION | NO ACTION ALTERNATIVE | PARTIAL BACKFILL ALTERNATIVE | OFF-SITE TRANSFER OF ORE CONCENTRATE FOR PROCESSING ALTERNATIVE | SLOWER, LONGER PROJECT ALTERNATIVE |
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| | responding to the emergency conditions. | | preparation for responding to the emergency conditions. | preparation for responding to the emergency conditions. | preparation for responding to the emergency conditions. |
| Impact: | Impact 3.20.3.3-1: The Proposed Action would permanently modify the viewshed from the historic trail within three miles of the centerline to a degree that is not consistent with the BLM VRM Class II threshold. | N/A | Impact 3.20.3.5-1: The Partial Backfill Alternative would permanently modify the viewshed from the historic trail within three miles of the centerline to a degree that is not consistent with the BLM VRM Class II threshold. | Impact 3.20.3.6-1: The Off-Site Transfer of Ore Concentrate for Processing Alternative would permanently modify the viewshed from the historic trail within three miles of the centerline to a degree that is not consistent with the BLM VRM Class II threshold. | Impact 3.20.3.7-1: The Slower, Longer Project Alternative would permanently modify the viewshed from the historic trail within three miles of the centerline to a degree that is not consistent with the BLM VRM Class II threshold. |
| Significance of the Impact: | Significance of the Impact: This potential impact to the historic trail is significant. The following mitigation has been identified for this impact. | N/A | Significance of the Impact: This potential impact to the historic trail is significant. The following mitigation has been identified for this impact. | Significance of the Impact: This potential impact to the historic trail is significant. The following mitigation has been identified for this impact. | Significance of the Impact: This potential impact to the historic trail is significant. The following mitigation has been identified for this impact. |
| Mitigation Measure: | Mitigation Measure 3.20.3.3-1: As part of the Historic Treatment Plan, mitigation for the historic trail would include photodocumentation to capture the setting and feel of the Pony Express Trail adjacent to the Project that would be visually impacted. The Treatment Plan would also include off-site mitigation in the form of GPS mapping and surveying of off-site portions of the Pony Express Trail located on public land. Segments would be selected at a one to one ratio of linear mileage based on the length of segments of the trail that would be impacted by the Project and are considered eligible as discussed in Section 3.21.3. Additionally, Mitigation Measure 3.7.3.3-1 would reduce visual impacts to users of the Pony Express Trail. | N/A | Mitigation Measure 3.20.3.5-1: As part of the Historic Treatment Plan, EML for the historic trail would include photodocumentation to capture the setting and feel of the Pony Express Trail adjacent to the Project that would be visually impacted. The Treatment Plan would also include off-site mitigation in the form of GPS mapping and surveying of off-site portions of the Pony Express Trail located on public land. Segments would be selected at a one to one ratio of linear mileage based on the length of segments of the trail that would be impacted by the Project and are considered eligible as discussed in Section 3.21.3. Additionally, Mitigation Measure 3.7.3.3-1 would reduce visual impacts to users of the Pony Express Trail. | Mitigation Measure 3.20.3.6-1: As part of the Historic Treatment Plan, mitigation for the historic trail would include photodocumentation to capture the setting and feel of the Pony Express Trail adjacent to the Project that would be visually impacted. The Treatment Plan would also include off-site mitigation in the form of GPS mapping and surveying of off-site portions of the Pony Express Trail located on public land. Segments would be selected at a one to one ratio of linear mileage based on the length of segments of the trail that would be impacted by the Project and are considered eligible as discussed in Section 3.21.3. Additionally, Mitigation Measure 3.7.3.3-1 would reduce visual impacts to users of the Pony Express Trail. | Mitigation Measure 3.20.3.7-1: As part of the Historic Treatment Plan, mitigation for the historic trail would include photodocumentation to capture the setting and feel of the Pony Express Trail adjacent to the Project that would be visually impacted. The Treatment Plan would also include off-site mitigation in the form of GPS mapping and surveying of off-site portions of the Pony Express Trail located on public land. Segments would be selected at a one to one ratio of linear mileage based on the length of segments of the trail that would be impacted by the Project and are considered eligible as discussed in Section 3.21.3. Additionally, Mitigation Measure 3.7.3.3-1 would reduce visual impacts to users of the Pony Express Trail. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: The effectiveness of this mitigation in reducing the impact to less than significant is not likely; however, given the type and scale of the action this mitigation would be the most effective approach at limiting the impact. The mitigation is designed to document the user experience of those segments of the trail that would be impacted by the Project and enhance the understanding of unevaluated segments of the trail. Therefore, these measures and the ones identified in Mitigation Measure 3.7.3.3-1 would be effective at mitigating visual impacts to the Pony Express Trail. | N/A | Effectiveness of Mitigation and Residual Effects: The effectiveness of this mitigation in reducing the impact to less than significant is not likely; however, given the type and scale of the action this mitigation would be the most effective approach at limiting the impact. The mitigation is designed to document the user experience of those segments of the trail that would be impacted by the Project and enhance the understanding of unevaluated segments of the trail. Therefore, these measures and the ones identified in Mitigation Measure 3.7.3.3-1 would be effective at mitigating visual impacts to the Pony Express Trail. | Effectiveness of Mitigation and Residual Effects: The effectiveness of this mitigation in reducing the impact to less than significant is not likely; however, given the type and scale of the action this mitigation would be the most effective approach at limiting the impact. The mitigation is designed to document the user experience of those segments of the trail that would be impacted by the Project and enhance the understanding of unevaluated segments of the trail. Therefore, these measures and the ones identified in Mitigation Measure 3.7.3.3-1 would be effective at mitigating visual impacts to the Pony Express Trail. | Effectiveness of Mitigation and Residual Effects: The effectiveness of this mitigation in reducing the impact to less than significant is not likely; however, given the type and scale of the action this mitigation would be the most effective approach at limiting the impact. The mitigation is designed to document the user experience of those segments of the trail that would be impacted by the Project and enhance the understanding of unevaluated segments of the trail. Therefore, these measures and the ones identified in Mitigation Measure 3.7.3.3-1 would be effective at mitigating visual impacts to the Pony Express Trail. |
| Impact: | Impact 3.20.3.3-2: The Proposed Action would eliminate access to that portion of the historic trail within the Project exclusion fence. | N/A | Impact 3.20.3.5-2: The Partial Backfill Alternative would eliminate access to that portion of the historic trail within the Project exclusion fence. | Impact 3.20.3.6-2: The Off-Site Transfer of Ore Concentrate for Processing Alternative would eliminate access to that portion of the historic trail within the Project exclusion fence. | Impact 3.20.3.7-2: The Slower, Longer Project Alternative would eliminate access to that portion of the historic trail within the Project exclusion fence. |
| Significance of the Impact: | Significance of the Impact: This potential impact to the historic trail access is significant. | N/A | Significance of the Impact: This potential impact to the historic trail access is significant. | Significance of the Impact: This potential impact to the historic trail access is significant. | Significance of the Impact: This potential impact to the historic trail access is significant. |
| Mitigation Measure: | Mitigation Measure 3.20.3.3-2: EML would implement the mitigation plan included in Appendix D, Attachment 1 to provide access through the Project Area during the annual Pony Express re-ride, which generally occurs in June. This mitigation would allow for independent (non-NPEA) re-riders to follow the trail through the Project Area at other times of the year, subject to 30-day advance notice and certain safety restrictions, and subject to EML's approval, and to provide for an alternative route for trail riders during other times of the year, weather permitting. | N/A | Mitigation Measure 3.20.3.5-2: EML would implement the mitigation plan included in Appendix D, Attachment 1 to provide access through the Project Area during the annual Pony Express re-ride, which generally occurs in June. This mitigation would allow for independent (non-NPEA) re-riders to follow the trail through the Project Area at other times of the year, subject to 30-day advance notice and certain safety restrictions, and subject to EML's approval, and to provide for an alternative route for trail riders during other times of the year, weather permitting. | Mitigation Measure 3.20.3.6-2: EML would implement the mitigation plan included in Appendix D, Attachment 1 to provide access through the Project Area during the annual Pony Express re-ride, which generally occurs in June. This mitigation would allow for independent (non-NPEA) re-riders to follow the trail through the Project Area at other times of the year, subject to 30-day advance notice and certain safety restrictions, and subject to EML's approval, and to provide for an alternative route for trail riders during other times of the year, weather permitting. | Mitigation Measure 3.20.3.7-2: EML would implement the mitigation plan included in Appendix D, Attachment 1 to provide access through the Project Area during the annual Pony Express re-ride, which generally occurs in June. This mitigation would allow for independent (non-NPEA) re-riders to follow the trail through the Project Area at other times of the year, subject to 30-day advance notice and certain safety restrictions, and subject to EML's approval, and to provide for an alternative route for trail riders during other times of the year, weather permitting. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Implementation of this mitigation measure would effectively mitigate the impact for those times in June of each year when the re-ride occurs, as well as individual use at other times of the year. In addition, the mitigation would be effective by providing a continuous route, although not the designated route, year round. However, this mitigation has no effect on the closure of the designated route for most of the year. | N/A | Effectiveness of Mitigation and Residual Effects: Implementation of this mitigation measure would effectively mitigate the impact for those times in June of each year when the re-ride occurs, as well as individual use at other times of the year. In addition, the mitigation would be effective by providing a continuous route, although not the designated route, year round. However, this mitigation has no effect on the closure of the designated route for most of the year. | Effectiveness of Mitigation and Residual Effects: Implementation of this mitigation measure would effectively mitigate the impact for those times in June of each year when the re-ride occurs, as well as individual use at other times of the year. In addition, the mitigation would be effective by providing a continuous route, although not the designated route, year round. However, this mitigation has no effect on the closure of the designated route for most of the year. | Effectiveness of Mitigation and Residual Effects: Implementation of this mitigation measure would effectively mitigate the impact for those times in June of each year when the re-ride occurs, as well as individual use at other times of the year. In addition, the mitigation would be effective by providing a continuous route, although not the designated route, year round. However, this mitigation has no effect on the closure of the designated route for most of the year. |
| Impact: | Impact 3.21.3.3-1: Implementation of the Proposed Action would result in adverse effects to 83 officially eligible sites within the area of direct impacts. Outside of this area but within the Project APE, this action would also have indirect impacts on 180 officially | N/A | Impact 3.21.3.5-1: Implementation of the Partial Backfill Alternative would result in adverse effects to 83 officially eligible sites within the area of direct impacts. Outside of this area but within the Project APE, this action would also have | Impact 3.21.3.6-1: Implementation of the Off-Site Transfer of Ore Concentrate for Processing Alternative would result in adverse effects to 83 officially eligible sites within the area of direct impacts. Outside of this area but within the Project APE, | Impact 3.21.3.7-1: Implementation of the Slower, Longer Project Alternative would result in adverse effects to 83 officially eligible sites within the area of direct impacts. Outside of this area but within the Project APE, this action |

| | PROPOSED ACTION | NO ACTION ALTERNATIVE | PARTIAL BACKFILL ALTERNATIVE | OFF-SITE TRANSFER OF ORE CONCENTRATE FOR PROCESSING ALTERNATIVE | SLOWER, LONGER PROJECT ALTERNATIVE |
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| | eligible and one unevaluated site. | | indirect impacts to 180 officially eligible and one unevaluated site. | this action would also have indirect impacts on 180 officially eligible and one unevaluated site. | would also have indirect impacts on 180 officially eligible and one unevaluated site. |
| Significance of the Impact: | Significance of the Impact: These direct impacts are considered to be significant. However, indirect impacts to eligible and unevaluated cultural resources within the Project APE are not considered to be significant at this time. | N/A | Significance of the Impact: These direct impacts are considered to be significant. However, indirect impacts to eligible and unevaluated cultural resources within the Project APE are not considered to be significant at this time. | Significance of the Impact: These impacts are considered to be significant. However, indirect impacts to eligible and unevaluated cultural resources within the Project APE are not considered to be significant at this time. | Significance of the Impact: These impacts are considered to be significant. However, indirect impacts to eligible and unevaluated cultural resources within the Project APE are not considered to be significant at this time. |
| Mitigation Measure: | Mitigation Measure 3.21.3.3-1: EML would develop, and submit to the BLM for approval, a treatment plan to address the potential direct impacts to the 83 officially eligible sites within the Project APE. EML would implement the treatment plan prior to any surface disturbance of eligible sites within the area of direct impacts. All adverse effects under the NHPA and direct and indirect impacts under the NEPA to known-eligible properties identified within the Project APE would be mitigated in accordance with the PA and the treatment plan prepared for the Project. Any previously unknown-eligible properties that may be discovered during construction activities would be mitigated in accordance with the PA. No residual adverse effects are anticipated, as all known-eligible sites would be mitigated in accordance with the PA and the treatment plan prepared for the Project. Any previously unknown-eligible properties that may be discovered during construction activities would be mitigated in accordance with the PA. | N/A | Mitigation Measure 3.21.3.5-1: EML would develop, and submit to the BLM for approval, a treatment plan to address the potential impacts to the 83 officially eligible sites within the Project APE. EML would implement the treatment plan prior to any surface disturbance of eligible sites within the area of direct impacts. All adverse effects under the NHPA and direct and indirect impacts under NEPA to known-eligible properties identified within the Project APE would be mitigated in accordance with the PA and the treatment plan prepared for the Project. Any previously unknown-eligible properties that may be discovered during construction activities would be mitigated in accordance with the PA. No residual adverse effects are anticipated, as all known-eligible sites would be mitigated in accordance with the PA and the treatment plan prepared for the Project. | Mitigation Measure 3.21.3.6-1: EML would develop, and submit to the BLM for approval, a treatment plan to address the potential impacts to the 83 officially eligible sites within the Project APE. EML would implement the treatment plan prior to any surface disturbance of eligible sites within the area of direct impacts. This mitigation would be effective at reducing the impacts to cultural resources. All adverse effects under the NHPA and direct and indirect impacts under NEPA to known-eligible properties identified within the Project APE would be mitigated in accordance with the PA and the treatment plan prepared for the Project. Any previously unknown-eligible properties that may be discovered during construction activities would be mitigated in accordance with the PA. No residual adverse effects are anticipated, as all known-eligible sites would be mitigated in accordance with the PA and the treatment plan prepared for the Project. | Mitigation Measure 3.21.3.7-1: EML would develop, and submit to the BLM for approval, a treatment plan to address the potential impacts to the 83 officially eligible sites within the Project APE. EML would implement the treatment plan prior to any surface disturbance of eligible sites within the area of direct impacts. This mitigation would be effective at reducing the impacts to cultural resources. All adverse effects under the NHPA and direct and indirect impacts under NEPA to known-eligible properties identified within the Project APE would be mitigated in accordance with the PA and the treatment plan prepared for the Project. Any previously unknown-eligible properties that may be discovered during construction activities would be mitigated in accordance with the PA. No residual adverse effects are anticipated, as all known-eligible sites would be mitigated in accordance with the PA and the treatment plan prepared for the Project. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: The implementation of the treatment plan under the mitigation measure would be effective at lessening the impact. | N/A | Effectiveness of Mitigation and Residual Effects: The implementation of the treatment plan under the mitigation measure would be effective at lessening the impact. | Effectiveness of Mitigation and Residual Effects: The implementation of the treatment plan under the mitigation measure would be effective at lessening the impact. | Effectiveness of Mitigation and Residual Effects: The implementation of the treatment plan under the mitigation measure would be effective at lessening the impact. |
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| Impact: | Impact 3.21.3.3-2: Within the viewshed APE, 436 eligible and unevaluated historic and multi-component sites with a historic component would be indirectly impacted by reducing each site's integrity of setting as a result of the Proposed Action. | N/A | Impact 3.21.3.5-2: Within the viewshed APE, 436 eligible and unevaluated historic and multi-component sites with a historic component would be indirectly impacted by reducing each site's integrity of setting as a result of the Proposed Action. | Impact 3.21.3.6-2: Within the viewshed APE, 436 eligible and unevaluated historic and multi-component sites with a historic component would be indirectly impacted by reducing each site's integrity of setting as a result of the Proposed Action. | Impact 3.21.3.7-2: Within the viewshed APE, 436 eligible and unevaluated historic and multi-component sites with a historic component would be indirectly impacted by reducing each site's integrity of setting as a result of the Proposed Action. |
| Significance of the Impact: | Significance of the Impact: Within the viewshed APE, eligible and unevaluated cultural resources would be indirectly affected by the Project and have also been previously impacted by past and present actions. The indirect impacts to eligible and unevaluated cultural resources within the viewshed APE (outside the project area) are not considered to be significant at this time. | N/A | Significance of the Impact: Within the viewshed APE, eligible and unevaluated cultural resources would be indirectly affected by the Project and have been previously impacted by past and present actions. The indirect impacts to eligible and unevaluated cultural resources within the viewshed APE (outside the project area) are not considered to be significant at this time. | Significance of the Impact: Within the viewshed APE, eligible and unevaluated cultural resources would be indirectly affected by the Project and have been previously impacted by past and present actions. The indirect impacts to eligible and unevaluated cultural resources within the viewshed APE (outside the project area) are not considered to be significant at this time. | Significance of the Impact: Within the viewshed APE, eligible and unevaluated cultural resources would be indirectly affected by the Project and have been previously impacted by past and present actions. The indirect impacts to eligible and unevaluated cultural resources within the viewshed APE (outside the project area) are not considered to be significant at this time. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
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| Impact: | Impact 3.21.3.3-3: As a result of the Proposed Action, there could be an impact to Native American remains or artifacts. | N/A | Impact 3.21.3.5-3: As a result of the Proposed Action, there could be an impact to Native American remains or artifacts. | Impact 3.21.3.6-3: As a result of the Proposed Action, there could be an impact to Native American remains or artifacts. | Impact 3.21.3.7-3: As a result of the Proposed Action, there could be an impact to Native American remains or artifacts. |
| Significance of the Impact: | Significance of the Impact: This impact would be considered potentially significant; however, the impact would become less than significant after implementation of the mitigation measure described below. | N/A | Significance of the Impact: This impact would be considered potentially significant; however, the impact would become less than significant after implementation of the mitigation measure described below. | Significance of the Impact: This impact would be considered potentially significant; however, the impact would become less than significant after implementation of the mitigation measure described below. | Significance of the Impact: This impact would be considered potentially significant; however, the impact would become less than significant after implementation of the mitigation measure described below. |
| Mitigation Measure: | Mitigation Measure 3.21.3.3-3: In the case of inadvertent discovery of human remains, the BMDO Policy for the Discovery of Human Remains (IM NV-2010-001) – notification procedures - would be followed. If the remains are determined to be native, NAGPRA inadvertent discovery procedures would be adhered to. Under the NAGPRA, section (3)(d)(1), it states that the discovering individual must notify the land manager in writing of such a discovery. If the discovery occurs in connection with an authorized use, the activity, which caused the discovery, is to cease and the materials are to be protected until the land manager can respond to the situation. Tribes, tribal organizations, possible lineal descendants, and individuals would then be contacted to determine cultural affiliation and subsequent transfer of custody procedures would begin. | N/A | Mitigation Measure 3.21.3.5-3: In the case of inadvertent discovery of human remains, the BMDO Policy for the Discovery of Human Remains (IM NV-2010-001) – notification procedures - would be followed. If the remains are determined to be native, NAGPRA inadvertent discovery procedures would be adhered to. Under the NAGPRA, section (3)(d)(1), it states that the discovering individual must notify the land manager in writing of such a discovery. If the discovery occurs in connection with an authorized use, the activity, which caused the discovery, is to cease and the materials are to be protected until the land manager can respond to the situation. Tribes, tribal organizations, possible lineal descendants, and individuals would then be contacted to determine cultural affiliation and subsequent transfer of custody procedures would begin. | Mitigation Measure 3.21.3.6-3: In the case of inadvertent discovery of human remains, the BMDO Policy for the Discovery of Human Remains (IM NV-2010-001) – notification procedures - would be followed. If the remains are determined to be native, NAGPRA inadvertent discovery procedures would be adhered to. Under the NAGPRA, section (3)(d)(1), it states that the discovering individual must notify the land manager in writing of such a discovery. If the discovery occurs in connection with an authorized use, the activity, which caused the discovery, is to cease and the materials are to be protected until the land manager can respond to the situation. Tribes, tribal organizations, possible lineal descendants, and individuals would then be contacted to determine cultural affiliation and subsequent transfer of custody procedures would begin. | Mitigation Measure 3.21.3.7-3: In the case of inadvertent discovery of human remains, the BMDO Policy for the Discovery of Human Remains (IM NV-2010-001) – notification procedures - would be followed. If the remains are determined to be native, NAGPRA inadvertent discovery procedures would be adhered to. Under the NAGPRA, section (3)(d)(1), it states that the discovering individual must notify the land manager in writing of such a discovery. If the discovery occurs in connection with an authorized use, the activity, which caused the discovery, is to cease and the materials are to be protected until the land manager can respond to the situation. Tribes, tribal organizations, possible lineal descendants, and individuals would then be contacted to determine cultural affiliation and subsequent transfer of custody procedures would begin. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: The Project could result in the exposure of Native American remains or artifacts. Implementation of Mitigation Measure 3.21.3.3-3 would prevent any impacts to these discoveries. | N/A | Effectiveness of Mitigation and Residual Effects: The Project could result in the exposure of Native American remains or artifacts. Implementation of Mitigation Measure 3.21.3.5-3 would prevent any impacts to these discoveries. | Effectiveness of Mitigation and Residual Effects: The Project could result in the exposure of Native American remains or artifacts. Implementation of Mitigation Measure 3.21.3.6-3 would prevent any impacts to these discoveries. | Effectiveness of Mitigation and Residual Effects: The Project could result in the exposure of Native American remains or artifacts. Implementation of Mitigation Measure 3.21.3.7-3 would prevent any impacts to these discoveries. |

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| Impact: | Impact 3.22.3.3-1: As a result of the Proposed Action, there could be an impact to Native American remains or artifacts. | Impact 3.22.3.4-1: The No Action Alternative Action would remove a small and undetermined number of acres of piñon-juniper habitat, which would then not be available for pine nut gathering. | Impact 3.22.3.5-1: As a result of the Partial Backfill Alternative, there could be an impact to Native American remains or artifacts. | Impact 3.22.3.6-1: As a result of the Off-Site Transfer of Ore Concentrate for Processing Alternative, there could be an impact to Native American remains or artifacts. | Impact 3.22.3.7-1: As a result of the Slower, Longer Project Alternative, there could be an impact to Native American remains or artifacts. |
| Significance of the Impact: | Significance of the Impact: This impact would be considered potentially significant; however, the impact would become less than significant after implementation of the mitigation measure described below. | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.22.3.1; therefore, no mitigation measures are proposed. | Significance of the Impact: This impact would be considered potentially significant; however, the impact would become less than significant after implementation of the mitigation measure described below. | Significance of the Impact: This impact would be considered potentially significant; however, the impact would become less than significant after implementation of the mitigation measure described below. | Significance of the Impact: This impact would be considered potentially significant; however, the impact would become less than significant after implementation of the mitigation measure described below. |
| Mitigation Measure: | Mitigation Measure 3.22.3.3-1: In the case of inadvertent discovery of human remains, the BMDO Policy for the Discovery of Human Remains (IM NV-2010-001) – notification procedures - would be followed. If the remains are determined to be native, NAGPRA inadvertent discovery procedures would be adhered to. Under the NAGPRA, section (3)(d)(1), it states that the discovering individual must notify the land manager in writing of such a discovery. If the discovery occurs in connection with an authorized use, the activity, which caused the discovery, is to cease and the materials are to be protected until the land manager can respond to the situation. Tribes, tribal organizations, possible lineal descendants, and individuals would then be contacted to determine cultural affiliation and subsequent transfer of custody procedures would begin. | N/A | Mitigation Measure 3.22.3.5-1: In the case of inadvertent discovery of human remains, the BMDO Policy for the Discovery of Human Remains (IM NV-2010-001) – notification procedures - would be followed. If the remains are determined to be native, NAGPRA inadvertent discovery procedures would be adhered to. Under the NAGPRA, section (3)(d)(1), it states that the discovering individual must notify the land manager in writing of such a discovery. If the discovery occurs in connection with an authorized use, the activity, which caused the discovery, is to cease and the materials are to be protected until the land manager can respond to the situation. Tribes, tribal organizations, possible lineal descendants, and individuals would then be contacted to determine cultural affiliation and subsequent transfer of custody procedures would begin. | Mitigation Measure 3.22.3.6-1: In the case of inadvertent discovery of human remains, the BMDO Policy for the Discovery of Human Remains (IM NV-2010-001) – notification procedures - would be followed. If the remains are determined to be native, NAGPRA inadvertent discovery procedures would be adhered to. Under the NAGPRA, section (3)(d)(1), it states that the discovering individual must notify the land manager in writing of such a discovery. If the discovery occurs in connection with an authorized use, the activity, which caused the discovery, is to cease and the materials are to be protected until the land manager can respond to the situation. Tribes, tribal organizations, possible lineal descendants, and individuals would then be contacted to determine cultural affiliation and subsequent transfer of custody procedures would begin. | Mitigation Measure 3.22.3.7-1: In the case of inadvertent discovery of human remains, the BMDO Policy for the Discovery of Human Remains (IM NV-2010-001) – notification procedures - would be followed. If the remains are determined to be native, NAGPRA inadvertent discovery procedures would be adhered to. Under the NAGPRA, section (3)(d)(1), it states that the discovering individual must notify the land manager in writing of such a discovery. If the discovery occurs in connection with an authorized use, the activity, which caused the discovery, is to cease and the materials are to be protected until the land manager can respond to the situation. Tribes, tribal organizations, possible lineal descendants, and individuals would then be contacted to determine cultural affiliation and subsequent transfer of custody procedures would begin. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: The Project could result in the exposure of Native American remains or artifacts. Implementation of Mitigation Measure 3.22.3.3-1 would prevent any impacts to these discoveries. | N/A | Effectiveness of Mitigation and Residual Effects: The Project could result in the exposure of Native American remains or artifacts. Implementation of Mitigation Measure 3.22.3.5-1 would prevent any impacts to these discoveries. | Effectiveness of Mitigation and Residual Effects: The Project could result in the exposure of Native American remains or artifacts. Implementation of Mitigation Measure 3.22.3.6-1 would prevent any impacts to these discoveries. | Effectiveness of Mitigation and Residual Effects: The Project could result in the exposure of Native American remains or artifacts. Implementation of Mitigation Measure 3.22.3.7-1 would prevent any impacts to these discoveries. |
| Impact: | Impact 3.22.3.3-2: The Proposed Action would remove 3,296 acres of piñon-juniper habitat, which includes piñon trees that would then not be available for pine nut gathering. | N/A | Impact 3.22.3.5-2: The Partial Backfill Alternative would remove 3,296 acres of piñon-juniper habitat, which would then not be available for pine nut gathering. | Impact 3.22.3.6-2: The Off-Site Transfer of Ore Concentrate for Processing Alternative would remove 3,296 acres of piñon-juniper habitat, which would then not be available for pine nut gathering. | Impact 3.22.3.7-2: The Slower, Longer Project Alternative would remove 3,296 acres of piñon-juniper habitat, which would then not be available for pine nut gathering. |
| Significance of the Impact: | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.22.3.1 since there are no identified avoidance areas. No mitigation is proposed. | N/A | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.22.3.1 since there are no identified avoidance areas. No mitigation is proposed. | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.22.3.1 since there are no identified avoidance areas. No mitigation is proposed. | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.22.3.1 since there are no identified avoidance areas. No mitigation is proposed. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.22.3.3-3: The Proposed Action would restrict 4,600 acres of piñon-juniper habitat within the Project boundary fence, which would then not be available for pine nut gathering for the duration of the Project. | N/A | Impact 3.22.3.5-3: The Partial Backfill Project Alternative would restrict 4,600 acres of piñon-juniper habitat within the Project boundary fence, which would then not be available for pine nut gathering for the duration of the Project. | Impact 3.22.3.6-3: The Off-Site Transfer of Ore Concentrate for Processing Alternative would restrict 4,600 acres of piñon-juniper habitat within the Project boundary fence, which would then not be available for pine nut gathering for the duration of the Project. | Impact 3.22.3.7-3: The Slower, Longer Project Alternative would restrict 4,600 acres of piñon-juniper habitat within the Project boundary fence, which would then not be available for pine nut gathering for the duration of the Project. |
| Significance of the Impact: | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.22.3.1 since there are no identified avoidance areas. However, the following mitigation measure is proposed. | N/A | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.22.3.1 since there are no identified avoidance areas. However, the following mitigation measure is proposed. | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.22.3.1 since there are no identified avoidance areas. However, the following mitigation measure is proposed. | Significance of the Impact: The impact does not meet the significance criteria listed in Section 3.22.3.1 since there are no identified avoidance areas. However, the following mitigation measure is proposed. |
| Mitigation Measure: | Mitigation Measure 3.22.3.3-3: In years of greater than average cone production, as determined by the BLM and requested by the tribes, EML would make areas within the Project Area fence available for Native American pine nut gathering, subject to all applicable MSHA requirements. | N/A | Mitigation Measure 3.22.3.5-3: In years of greater than average cone production, as determined by the BLM and requested by the tribes, EML would make areas within the Project Area fence available for Native American pine nut gathering, subject to all applicable MSHA requirements. | Mitigation Measure 3.22.3.6-3: In years of greater than average cone production, as determined by the BLM and requested by the tribes, EML would make areas within the Project Area fence available for Native American pine nut gathering, subject to all applicable MSHA requirements. | Mitigation Measure 3.22.3.7-3: In years of greater than average cone production, as determined by the BLM and requested by the tribes, EML would make areas within the Project Area fence available for Native American pine nut gathering, subject to all applicable MSHA requirements. |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |

| | PROPOSED ACTION | NO ACTION ALTERNATIVE | PARTIAL BACKFILL ALTERNATIVE | OFF-SITE TRANSFER OF ORE CONCENTRATE FOR PROCESSING ALTERNATIVE | SLOWER, LONGER PROJECT ALTERNATIVE |
|---|---|-----------------------|---|--|--|
| Impact: | Impact 3.22.3.3-4: The Proposed Action could impact 22 springs, 7.7 miles of perennial streams (Roberts Creek and Henderson Creek), and 61.4 acres of riparian areas associated with these creeks, which are, in a general nature, considered sacred by Native Americans. | N/A | Impact 3.22.3.5-4: The Partial Backfill Alternative could impact 22 springs, 7.7 miles of perennial streams (Roberts Creek and Henderson Creek), and 61.4 acres of riparian areas associated with these creeks, which are, in a general nature, considered sacred by Native Americans. | Impact 3.22.3.6-4: The Off-Site Transfer of Ore Concentrate for Processing Alternative could impact 22 springs, 7.7 miles of perennial streams (Roberts Creek and Henderson Creek), and 61.4 acres of riparian areas associated with these creeks, which are, in a general nature, considered sacred by Native Americans. | Impact 3.22.3.7-4: The Slower, Longer Project Alternative could impact 29 springs, 7.7 miles of perennial streams (Roberts Creek and Henderson Creek), and 61.4 acres of riparian areas associated with these creeks, which are, in a general nature, considered sacred by Native Americans. |
| Significance of the Impact: | Significance of the Impact: Even though water has been identified through Native American Consultation by the BLM as an important issue to the Western Shoshone, none of the springs or perennial streams that could potentially be impacted by the Proposed Action have been specifically identified as traditional or religious use areas. Therefore, the Proposed Action impact does not meet the significance criteria listed in Section 3.22.3.1, and no resource specific mitigation measures were determined necessary. Mitigation for impacts to water resources have been identified in Section 3.2.3.3, which would have the potential of reducing some of the impacts. | N/A | Significance of the Impact: Even though water has been identified through Native American Consultation by the BLM as an important issue to the Western Shoshone, none of the springs or perennial streams that could potentially be impacted by the Proposed Action have been specifically identified as traditional or religious use areas. Therefore, the Partial Backfill Alternative impact does not meet the significance criteria listed in Section 3.22.3.1, and no resource specific mitigation measures were proposed. Mitigation for impacts to water resources have been identified in Section 3.2.3.5, which would have the potential of reducing some of the impacts. | Significance of the Impact: Even though water has been identified through Native American Consultation by the BLM as an important issue to the Western Shoshone, none of the springs or perennial streams that could potentially be impacted by the Proposed Action have been specifically identified as traditional or religious use areas. Therefore, the Off-Site Transfer of Ore Concentrate for Processing Alternative impact does not meet the significance criteria listed in Section 3.22.3.1, and no resource specific mitigation measures were determined necessary. Mitigation for impacts to water resources have been identified in Section 3.2.3.6, which would have the potential of reducing some of the impacts. | Significance of the Impact: Even though water has been identified through Native American Consultation by the BLM as an important issue to the Western Shoshone, none of the springs or perennial streams that could potentially be impacted by the Proposed Action have been specifically identified as traditional or religious use areas. Therefore, the Slower, Longer Project Alternative impact does not meet the significance criteria listed in Section 3.22.3.1, and no resource specific mitigation measures were determined necessary. Mitigation for impacts to water resources have been identified in Section 3.2.3.5, which would have the potential of reducing some of the impacts. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.22.3.3-5: The Proposed Action could impact 100 prehistoric cultural sites by removing them from the landscape. | N/A | Impact 3.22.3.5-5: The Partial Backfill Alternative could impact 100 prehistoric cultural sites by removing them from the landscape. | Impact 3.22.3.6-5: The Off-Site Transfer of Ore Concentrate for Processing Alternative could impact 100 prehistoric cultural sites by removing them from the landscape. | Impact 3.22.3.7-5: The Slower, Longer Project Alternative could impact 100 prehistoric cultural sites by removing them from the landscape. |
| Significance of the Impact: | Significance of the Impact: The removal of any sites from the landscape is considered significant by the Native Americans. Therefore this impact is significant. As outlined in Section 3.21, those sites that are eligible for the NRHP would be treated prior to Project activities; however, this does not reduce the impact to Native Americans. Although prehistoric and ethnohistoric sites and associated artifacts exist within the general area of the proposed expansion, no Native American traditional use sites, activities, or associated resources are known to exist in proposed disturbance areas. Therefore, no mitigation measures specific to contemporary tribal uses are proposed. However, for those archaeological sites (prehistoric and historic) scheduled or proposed for treatment (i.e., data recovery/excavation), tribal participants would be given the opportunity to monitor the data recovery efforts, and provide interpretation of any artifacts or features discovered during the process. In addition, the BLM or a contracted Cultural Resources Specialist/Archaeologist, accompanied by designated tribal representatives and/or descendants, may conduct periodical or stipulated monitoring of sites scheduled for avoidance before, during, and after Project construction. Monitoring of identified archaeological sites within and in close proximity to proposed disturbance areas could occur throughout the life of the Project to ensure agreed upon avoidance. | N/A | Significance of the Impact: The removal of any sites from the landscape is considered significant by the Native Americans. Therefore this impact is significant. As outlined in Section 3.21, those sites that are eligible for the NRHP would be treated prior to Project activities; however, this does not reduce the impact to Native Americans. Although prehistoric and ethnohistoric sites and associated artifacts exist within the general area of the proposed expansion, no Native American traditional use sites, activities, or associated resources are known to exist in proposed disturbance areas. Therefore, no mitigation measures specific to contemporary tribal uses are proposed. However, for those archaeological sites (prehistoric and historic) scheduled or proposed for treatment (i.e., data recovery/excavation), tribal participants would be given the opportunity to monitor the data recovery efforts, and provide interpretation of any artifacts or features discovered during the process. In addition, the BLM or a contracted Cultural Resources Specialist/Archaeologist, accompanied by designated tribal representatives and/or descendants, may conduct periodical or stipulated monitoring of sites scheduled for avoidance before, during, and after Project construction. Monitoring of identified archaeological sites within and in close proximity to proposed disturbance areas could occur throughout the life of the Project to ensure agreed upon avoidance. | Significance of the Impact: The removal of any sites from the landscape is considered significant by the Native Americans. Therefore this impact is significant. As outlined in Section 3.21, those sites that are eligible for the NRHP would be treated prior to Project activities; however, this does not reduce the impact to Native Americans. Although prehistoric and ethnohistoric sites and associated artifacts exist within the general area of the proposed expansion, no Native American traditional use sites, activities, or associated resources are known to exist in proposed disturbance areas. Therefore, no mitigation measures specific to contemporary tribal uses is proposed. However, for those archaeological sites (prehistoric and historic) scheduled or proposed for treatment (i.e., data recovery/excavation), tribal participants would be given the opportunity to monitor the data recovery efforts, and provide interpretation of any artifacts or features discovered during the process. In addition, the BLM or a contracted Cultural Resources Specialist/Archaeologist, accompanied by designated tribal representatives and/or descendants, may conduct periodical or stipulated monitoring of sites scheduled for avoidance before, during, and after project construction. Monitoring of identified archaeological sites within and in close proximity to proposed disturbance areas could occur throughout the life of the project to ensure agreed upon avoidance. | Significance of the Impact: The removal of any sites from the landscape is considered significant by the Native Americans. Therefore this impact is significant. As outlined in Section 3.21, those sites that are eligible for the NRHP would be treated prior to Project activities; however, this does not reduce the impact to Native Americans. Although prehistoric and ethnohistoric sites and associated artifacts exist within the general area of the proposed expansion, no Native American traditional use sites, activities, or associated resources are known to exist in proposed disturbance areas. Therefore, no mitigation measures specific to contemporary tribal uses is proposed. However, for those archaeological sites (prehistoric and historic) scheduled or proposed for treatment (i.e., data recovery/excavation), tribal participants would be given the opportunity to monitor the data recovery efforts, and provide interpretation of any artifacts or features discovered during the process. In addition, the BLM or a contracted Cultural Resources Specialist/Archaeologist, accompanied by designated tribal representatives and/or descendants, may conduct periodical or stipulated monitoring of sites scheduled for avoidance before, during, and after Project construction. Monitoring of identified archaeological sites within and in close proximity to proposed disturbance areas could occur throughout the life of the Project to ensure agreed upon avoidance. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.23.3.3-1: Approximately 8,355 acres of wildlife habitat would be directly removed as a result of the Proposed Action over the 44-year mine life. | N/A | Impact 3.23.3.5-1: Approximately 8,355 acres of wildlife habitat would be directly removed as a result of the Proposed Action over the 44-year mine life. | Impact 3.23.3.6-1: Approximately 8,355 acres of wildlife habitat would be directly removed as a result of the Proposed Action over the 44-year mine life. | Impact 3.23.3.7-1: Approximately 8,355 acres of wildlife habitat would be directly removed as a result of the Slower, Longer Project Alternative over the extended mine life. |
| Significance of the Impact: | Significance of the Impact: The impact is not considered significant. | N/A | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. |

| | PROPOSED ACTION | NO ACTION ALTERNATIVE | PARTIAL BACKFILL ALTERNATIVE | OFF-SITE TRANSFER OF ORE CONCENTRATE FOR PROCESSING ALTERNATIVE | SLOWER, LONGER PROJECT ALTERNATIVE |
|---|---|-----------------------|--|--|--|
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.23.3.3-2: Modification of wildlife habitat and subsequent reclamation efforts would result in less available mature vegetation for cover, forage, and nesting habitat for many species of wildlife in the short term. | N/A | Impact 3.23.3.5-2: Modification of wildlife habitat and subsequent reclamation efforts would result in less available mature vegetation for cover, forage, and nesting habitat for many species of wildlife in the short term. | Impact 3.23.3.6-2: Modification of wildlife habitat and subsequent reclamation efforts would result in less available mature vegetation for cover, forage, and nesting habitat for many species of wildlife in the short term. | Impact 3.23.3.7-2: Modification of wildlife habitat and subsequent reclamation efforts would result in less available mature vegetation for cover, forage, and nesting habitat for many species of wildlife for the duration of this alternative. |
| Significance of the Impact: | Significance of the Impact: The impact is not considered significant. | N/A | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.23.3.3-3: Loud and sudden noises associated with the Proposed Action could result in wildlife displacement for the life of the Project. | N/A | Impact 3.23.3.5-3: Loud and sudden noises associated with the Partial Backfill Alternative could result in wildlife displacement for the life of the Project. | Impact 3.23.3.6-3: Loud and sudden noises associated with the Proposed Action could result in wildlife displacement for the life of the Project. | Impact 3.23.3.7-3: Loud and sudden noises associated with the Slower, Longer Project Alternative could result in wildlife displacement for the life of the Project. |
| Significance of the Impact: | Significance of the Impact: The proposed Project may produce an increase greater than 10 dB above ambient noise levels, which can be detrimental to lekking greater sage-grouse. Therefore, the impact is considered significant and the following mitigation measure has been identified | N/A | Significance of the Impact: The proposed Project may produce an increase greater than 10 dB above ambient noise levels, which can be detrimental to lekking greater sage-grouse. Therefore, the impact is considered significant and the following mitigation measure has been identified. | Significance of the Impact: The proposed Project may produce an increase greater than 10 dB above ambient noise levels, which can be detrimental to lekking greater sage-grouse. Therefore, the impact is considered significant and the following mitigation measure has been identified. | Significance of the Impact: The proposed Project may produce an increase greater than 10 dB above ambient noise levels, which can be detrimental to lekking greater sage-grouse. Therefore, the impact is considered significant and the following mitigation measure has been identified. |
| Mitigation Measure: | Mitigation Measure 3.23.3.3-3: Mitigation for noise impacts is included in Mitigation Measure 3.23.3.3-6 (as identified in the Sage Grouse Conservation Measures in Appendix D, Attachment 3) and includes noise reducing enclosures that would be installed on the Project's booster stations in Kobeh Valley as well as possible modification to the pumping regime during lekking season. | N/A | Mitigation Measure 3.23.3.5-3: Mitigation for noise impacts is included in Mitigation Measure 3.23.3.3-6 (as identified in the Sage Grouse Conservation Measures in Appendix D, Attachment 3) and includes noise reducing enclosures that would be installed on the Project's booster stations in Kobeh Valley as well as possible modification to the pumping regime during lekking season. | Mitigation Measure 3.23.3.6-3: Mitigation for noise impacts is included in Mitigation Measure 3.23.3.3-6 (as identified in the Sage Grouse Conservation Measures in Appendix D, Attachment 3) and includes noise reducing enclosures that would be installed on the Project's booster stations in Kobeh Valley as well as possible modification to the pumping regime during lekking season. | Mitigation Measure 3.23.3.7-3: Mitigation for noise impacts is included in Mitigation Measure 3.23.3.3-6 (as identified in the Sage Grouse Conservation Measures in Appendix D, Attachment 3) and includes noise reducing enclosures that would be installed on the Project's booster stations in Kobeh Valley as well as possible modification to the pumping regime during lekking season. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Implementation of Mitigation Measure 3.23.3.3-3 would be effective to reduce any impacts from noise to greater sage-grouse to less than significant. | N/A | Effectiveness of Mitigation and Residual Effects: Implementation of Mitigation Measure 3.23.3.5-3 would be effective to reduce any impacts from noise to greater sage-grouse to less than significant. | Effectiveness of Mitigation and Residual Effects: Implementation of Mitigation Measure 3.23.3.6-3 would be effective to reduce any impacts from noise to greater sage-grouse to less than significant. | Effectiveness of Mitigation and Residual Effects: Implementation of Mitigation Measure 3.23.3.7-3 would be effective to reduce any impacts from noise to greater sage-grouse to less than significant. |
| Impact: | Impact 3.23.3.3-4: Wildlife dependent on vegetation growing near perennial streams, springs, and seeps would potentially experience water stress due to the water table drawdown associated with mine dewatering and subsequent filling of the open pit. Lowering of the water table in the area of these plants would potentially cause a decline in the wetland vegetation community and the associated wildlife species. The lowering of the water table would also potentially result in less water for wildlife consumption. | N/A | Impact 3.23.3.5-4: Wildlife dependent on vegetation growing near perennial streams, springs, and seeps would potentially experience water stress due to the water table drawdown associated with mine dewatering and subsequent filling of the open pit. Lowering of the water table in the area of these plants would potentially cause a decline in the wetland vegetation community and the associated wildlife species. The lowering of the water table would also potentially result in less water for wildlife consumption. | Impact 3.23.3.6-4: Wildlife dependent on vegetation growing near perennial streams, springs, and seeps would potentially experience water stress due to the water table drawdown associated with mine dewatering and subsequent filling of the open pit. Lowering of the water table in the area of these plants would potentially cause a decline in the wetland vegetation community and the associated wildlife species. The lowering of the water table would also potentially result in less water for wildlife consumption. | Impact 3.23.3.7-4: Wildlife dependent on vegetation growing near perennial streams, springs, and seeps would potentially experience water stress due to the water table drawdown associated with mine dewatering and subsequent filling of the open pit. Lowering of the water table in the area of these plants would potentially cause a decline in the wetland vegetation community and the associated wildlife species. The lowering of the water table would also potentially result in less water for wildlife consumption. |
| Significance of the Impact: | Significance of the Impact: The impact could be significant. The BLM has identified the following mitigation that would benefit wildlife. | N/A | Significance of the Impact: The impact could be significant. The BLM has identified the following mitigation that would benefit wildlife. | Significance of the Impact: The impact would not be significant; however, the BLM has identified the following mitigation that would benefit wildlife. | Significance of the Impact: The impact would not be significant; however, the BLM has identified the following mitigation that would benefit wildlife. |
| Mitigation Measure: | Mitigation Measure 3.23.3.3-4: Mitigation for the potential loss of water would include the development of six water sites (Figure 3.13.1) that were identified for wild horses and two additional sites that would be designed specifically for wildlife use. Although the sites shown on Figure 3.13.1 were identified as part of mitigation for wild horses (Section 3.13), development of the sites could also result in indirect beneficial impacts to wildlife species throughout the Project Area. The locations and design of the wildlife-specific water developments would be determined by the Wildlife Working Group described in the Sage Grouse Conservation Measures in Appendix D, Attachment 3. Additional mitigation has been proposed for wetland vegetation in Section 3.11 (Mitigation Measure 3.11.3.3-3). | N/A | Mitigation Measure 3.23.3.5-4: Mitigation for the potential loss of water would include the development of six water sites (Figure 3.13.1) that were identified for wild horses and two additional sites that would be designed specifically for wildlife use. Although the sites shown on Figure 3.13.1 were identified as part of mitigation to wild horses (Section 3.13), development of the sites could also result in indirect beneficial impacts to wildlife species throughout the Project Area. The locations and design of the wildlife-specific water developments would be determined by the Wildlife Working Group described in the Sage Grouse Conservation Measures in Appendix D, Attachment 3. Additional mitigation has been proposed for wetland vegetation in Section 3.11 (Mitigation Measure 3.11.3.3-3). | Mitigation Measure 3.23.3.6-4: Mitigation for the potential loss of water would include the development of six water sites (Figure 3.13.1) that were identified for wild horses and two additional sites that would be designed specifically for wildlife use. Although the sites shown on Figure 3.13.1 were identified as part of mitigation to wild horses (Section 3.13), development of the sites could also result in indirect beneficial impacts to wildlife species throughout the Project Area. The locations and design of the wildlife-specific water developments would be determined by the Wildlife Working Group described in the Sage Grouse Conservation Measures in Appendix D, Attachment 3. Additional mitigation has been proposed for wetland vegetation in Section 3.11 (Mitigation Measure 3.11.3.3-3). | Mitigation Measure 3.23.3.7-4: Mitigation for the potential loss of water would include the development of six water sites (Figure 3.13.1) that were identified for wild horses and two additional sites that would be designed specifically for wildlife use. Although the sites shown on Figure 3.13.1 were identified as part of mitigation to wild horses (Section 3.13), development of the sites could also result in indirect beneficial impacts to wildlife species throughout the Project Area. The locations and design of the wildlife-specific water developments would be determined by the Wildlife Working Group described in the Sage Grouse Conservation Measures in Appendix D, Attachment 3. Additional mitigation has been proposed for wetland vegetation in Section 3.11 (Mitigation Measure 3.11.3.3-3). |

| | PROPOSED ACTION | NO ACTION ALTERNATIVE | PARTIAL BACKFILL ALTERNATIVE | OFF-SITE TRANSFER OF ORE CONCENTRATE FOR PROCESSING ALTERNATIVE | SLOWER, LONGER PROJECT ALTERNATIVE |
|---|--|-----------------------|---|--|--|
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Mitigation Measures 3.11.3.3-1 and 3.23.3.3-4 would reduce impacts to the loss of riparian habitat during Project activities. Replacement with local cuttings, plugs, or seeds would ensure no long-term impacts to the temporary loss of riparian vegetation. | N/A | Effectiveness of Mitigation and Residual Effects: Mitigation Measures 3.11.3.3-1 and 3.23.3.3-4 would reduce impacts to the loss of riparian habitat during Project activities. Replacement with local cuttings, plugs, or seeds would ensure no long-term impacts to the temporary loss of riparian vegetation. | Effectiveness of Mitigation and Residual Effects: Mitigation Measures 3.11.3.3-1 and 3.23.3.3-4 would reduce impacts to the loss of riparian habitat during Project activities. Replacement with local cuttings, plugs, or seeds would ensure no long-term impacts to the temporary loss of riparian vegetation. | Effectiveness of Mitigation and Residual Effects: Mitigation Measures 3.11.3.3-1 and 3.23.3.3-4 would reduce impacts to the loss of riparian habitat during Project activities. Replacement with local cuttings, plugs, or seeds would ensure no long-term impacts to the temporary loss of riparian vegetation. |
| Impact: | Impact 3.23.3.3-5: The result of the assessment for wildlife (terrestrial and avian) indicates a low risk based on calculated species-specific toxicity criteria using recent EPA developed TRVs. None of the chemicals of potential ecological concern identified in the predicted pit lake water poses a credible risk to wildlife that may inhabit the area and use the pit lake as a drinking water source. | N/A | Impact 3.23.3.5-5: The result of the assessment for wildlife (terrestrial and avian) indicate a low risk based on calculated species-specific toxicity criteria using recent EPA developed TRVs. None of the chemicals of potential ecological concern identified in the predicted pit lake water poses a credible risk to wildlife that may inhabit the area and use the pit lake as a drinking water source. | Impact 3.23.3.6-5: For wildlife (terrestrial and avian), the results of the SLERA assessment indicate a low risk based on calculated species-specific toxicity criteria using more recent EPA developed TRVs. None of the chemicals of potential ecological concern identified in the predicted pit lake water poses a credible risk to wildlife that may inhabit the area and use the pit lake as a drinking water source. | Impact 3.23.3.7-5: For wildlife (terrestrial and avian), the results of the SLERA assessment indicate a low risk based on calculated species-specific toxicity criteria using more recent EPA developed TRVs. None of the chemicals of potential ecological concern identified in the predicted pit lake water poses a credible risk to wildlife that may inhabit the area and use the pit lake as a drinking water source. |
| Significance of the Impact: | Significance of the Impact: The potential to adversely affect the health of terrestrial or avian life is considered negligible. Based on the predicted pit lake chemistry, calculated toxicity criteria, and predicted utilization of the open pit water by wildlife, the overall ecological risk of the Proposed Action is considered to be low. The impact is not considered significant. | N/A | Significance of the Impact: The potential to adversely affect the health of terrestrial or avian life is considered negligible. Based on the predicted pit lake chemistry, calculated toxicity criteria, and predicted utilization of the open pit water by wildlife, the overall ecological risk of the Proposed Action is considered to be low. The impact is not considered significant. | Significance of the Impact: The potential to adversely affect the health of terrestrial or avian life is considered negligible. Based on the predicted pit lake chemistry, calculated toxicity criteria, and predicted utilization of the open pit water by wildlife, the overall ecological risk from the Off-Site Transfer of Concentrate for Processing Alternative is considered to be low. The impact is not considered significant. | Significance of the Impact: The potential to adversely affect the health of terrestrial or avian life is considered negligible. Based on the predicted pit lake chemistry, calculated toxicity criteria, and predicted utilization of the Mount Hope open pit water by wildlife, the overall ecological risk from the Slower, Longer Project Alternative is considered to be low. The impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| Impact: | Impact 3.23.3.3-6: Greater sage-grouse individuals as well as approximately 3,544 acres of PPH and approximately 1,965 acres of PGH within the Project Area could be impacted as a result of the Proposed Action. | N/A | Impact 3.23.3.5-6: The development of a perpetual lake over the backfill would create a potential ecological risk to mammalian and avian species that used the lake. | Impact 3.23.3.6-6: Greater sage-grouse individuals as well as approximately 3,544 acres of PPH and approximately 1,965 acres of PGH within the Project Area could be impacted as a result of the Proposed Action. | Impact 3.23.3.7-6: Greater sage-grouse individuals as well as approximately 3,544 acres of PPH and approximately 1,965 acres of PGH within the Project Area could be impacted as a result of the Slower, Longer Project Alternative. |
| Significance of the Impact: | Significance of the Impact: This impact is considered potentially significant with respect to greater sage-grouse, a USFWS candidate species and a BLM sensitive species, and greater sage-grouse habitat and the following mitigation measures have been identified. | N/A | Significance of the Impact: This impact is considered potentially significant with respect to those mammalian and avian species and the following mitigation measure has been identified. | Significance of the Impact: This impact is considered potentially significant with respect to greater sage-grouse, a USFWS candidate species and a BLM sensitive species, and greater sage-grouse habitat and the following mitigation measures have been identified. | Significance of the Impact: This impact is considered potentially significant with respect to greater sage-grouse, a USFWS candidate species and a BLM sensitive species, and greater sage-grouse habitat and the following mitigation measures have been identified. |
| Mitigation Measure: | Mitigation Measure 3.23.3.3-6: Mitigation measures are identified in the Mount Hope Sage Grouse Conservation Measures (Appendix D, Attachment 3). The measures identified in this attachment include the following: conservation measures for low profile camouflaged equipment, water pipelines, transmission lines, nesting/perching maintenance, noise, perimeter fence collision prevention, seasonal restrictions, and minimization of additional disturbance; off-site mitigation; formation of a Wildlife Working Group; research; and treatment options for burial of the above-ground powerline and vegetation treatments. Additional mitigation developed for pygmy rabbits (Mitigation Measure 3.23.3.3-9) would reduce the effect to sagebrush habitat utilized by greater sage-grouse. Mitigation Measure 3.13.3.3-1 also minimizes habitat fragmentation from the wellfield pipeline. | N/A | Mitigation Measure 3.23.3.5-6: Mitigation under the Partial Backfill Alternative would be the same as mitigation under the Water Resources - Water Quality for the Partial Backfill Alternative (Mitigation Measure 3.3.3.5-3). | Mitigation Measure 3.23.3.6-6: Mitigation under the Off-Site Transfer of Ore Concentrate for Processing Alternative would be the same as mitigation under the Proposed Action (Mitigation Measure 3.23.3.3-6). | Mitigation Measure 3.23.3.7-6: The mitigation measures identified in the Sage Grouse Conservation Measures (Appendix D, Attachment 3). |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.23.3.3-6 would reduce impacts to greater sage-grouse during Project activities to less than significant through the implementation of conservation measures and off-site mitigation (Appendix D). | N/A | Effectiveness of Mitigation and Residual Effects: Mitigation for this impact would require the removal of sufficient backfill material for the formation of an evaporative ground water sink. Implementation of this mitigation would otherwise be inconsistent with the reasoning for selecting this alternative. | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.23.3.6-6 would reduce impacts to greater sage-grouse during Project activities to less than significant through the implementation of conservation measures and off-site mitigation (Appendix D, Attachment 3). | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.23.3.6-6 would reduce impacts to greater sage-grouse during Project activities to less than significant through the implementation of conservation measures and off-site mitigation (Appendix D, Attachment 3). |
| Impact: | Impact 3.23.3.3-7: Approximately 8,355 acres of migratory bird and raptor habitat would be directly removed over the 44-year mine life as a result of the Proposed Action. | N/A | Impact 3.23.3.5-7: Greater sage-grouse individuals as well as approximately 3,544 acres of PPH and approximately 1,965 acres of PGH within the Project Area could be impacted as a result of the Proposed Action. | Impact 3.23.3.6-7: Approximately 8,355 acres of migratory bird and raptor habitat would be directly removed over the 44-year mine life as a result of the Proposed Action. | Impact 3.23.3.7-7: Approximately 8,355 acres of migratory bird and raptor habitat would be directly removed over the extended mine life as a result of the Slower, Longer Project Alternative. |
| Significance of the Impact: | Significance of the Impact: This impact is considered potentially significant with respect to vegetation removal during the avian breeding season that results in a violation of the MBTA and the following mitigation measure has been identified. | N/A | Significance of the Impact: This impact is considered potentially significant with respect to greater sage-grouse, a USFWS candidate species and a BLM sensitive species, and greater sage-grouse habitat and the following mitigation measure have been identified. | Significance of the Impact: This impact is considered potentially significant with respect to vegetation removal during the avian breeding season that results in a violation of the MBTA and the following mitigation measure has been identified. | Significance of the Impact: This impact is considered potentially significant with respect to vegetation removal during the avian breeding season that results in a violation of the MBTA and the following mitigation is proposed. |

| | PROPOSED ACTION | NO ACTION ALTERNATIVE | PARTIAL BACKFILL ALTERNATIVE | OFF-SITE TRANSFER OF ORE CONCENTRATE FOR PROCESSING ALTERNATIVE | SLOWER, LONGER PROJECT ALTERNATIVE |
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| Mitigation Measure: | Mitigation Measure 3.23.3.3-7: Land clearing would be conducted outside the avian breeding season, which is March 1 st through August 31 st for raptors and April 1 st through August 1 st for other migratory birds. If this is not possible, then a qualified biologist would survey the area to be cleared prior to clearing, within 14 days of disturbance. If disturbance has not occurred within 14 days of the survey, another survey would be conducted. If active nests were identified, or if other evidence of nesting (mated pairs, territorial defense, carrying nesting material, transporting food) was observed as a result of this survey, then a protective buffer (the size of which would depend on the requirements of the species) would be delineated and the delineated protective buffer avoided to prevent destruction or disturbance to nests until the nests were no longer active or nesting activities were no longer observed. | N/A | Mitigation Measure 3.23.3.5-7: Mitigation under the Partial Backfill Alternative would be the same as mitigation under the Proposed Action (Mitigation Measure 3.23.3.3-6). | Mitigation Measure 3.23.3.6-7: Mitigation under the Off-Site Transfer of Ore Concentrate for Processing Alternative would be the same as mitigation under the Proposed Action (Mitigation Measure 3.23.3.5-7). | Mitigation Measure 3.23.3.7-7: Land clearing would be conducted outside the avian breeding season. If this is not possible, then a qualified biologist would survey the area to be cleared prior to clearing. If active nests were identified, or if other evidence of nesting (mated pairs, territorial defense, carrying nesting material, transporting food) was observed as a result of this survey, then a protective buffer (the size of which would depend on the requirements of the species) would be delineated and the delineated protective buffer avoided to prevent destruction or disturbance to nests until the nests were no longer active or nesting activities were no longer observed. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.23.3.3-7 would reduce impacts to migratory birds during Project activities to less than significant by ensuring no direct impacts to nesting birds would occur. | N/A | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.23.3.3-6 would reduce impacts to greater sage-grouse during Project activities to less than significant through the implementation of conservation measures and off-site mitigation (Appendix D, Attachment 3). | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.23.3.3-7 would reduce impacts to migratory birds during Project activities to less than significant by ensuring no direct impacts to nesting birds would occur. | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.23.3.3-7 would reduce impacts to migratory birds during Project activities to less than significant by ensuring no direct impacts to nesting birds would occur. |
| Impact: | Impact 3.23.3.3-8: Loud or sudden noises associated with the Proposed Action could result in an indirect impact (i.e., disturbance) to golden eagles nesting east of the Project Area. | N/A | Impact 3.23.3.5-8: Approximately 8,355 acres of migratory bird and raptor habitat would be directly removed over the 44-year mine life as a result of the Proposed Action. | Impact 3.23.3.6-8: Loud or sudden noises associated with the Off-Site Transfer of Ore Concentrate for Processing Alternative could result in an indirect impact (i.e., disturbance) to golden eagles nesting east of the Project Area. | Impact 3.23.3.7-8: Loud or sudden noises associated with the Slower, Longer Project Alternative could result in an indirect impact (i.e., disturbance) to golden eagles nesting east of the Project Area. |
| Significance of the Impact: | Significance of the Impact: This impact is considered potentially significant with respect to Project activities during the golden eagle breeding season that may result in a violation of the Bald and Golden Eagle Protection Act and the following monitoring and adaptive management mitigation have been identified. | N/A | Significance of the Impact: This impact is considered potentially significant with respect to vegetation removal during the avian breeding season that results in a violation of the MBTA and the following mitigation measure has been identified. | Significance of the Impact: This impact is considered potentially significant with respect to Project activities during the golden eagle breeding season that may result in a violation of the Bald and Golden Eagle Protection Act and the following mitigation measure has been identified. | Significance of the Impact: This impact is considered potentially significant with respect to Project activities during the golden eagle breeding season that may result in a violation of the Bald and Golden Eagle Protection Act and the following mitigation measure has been identified. |
| Mitigation Measure: | Mitigation Measure 3.23.3.3-8: All suitable golden eagle nesting habitat located within a five-mile radius of the Project Area boundary would be surveyed twice a year by a qualified biologist for the life of the Project to check the use status of golden eagle nests and habitat. If a nest is determined to be active, the nests would be monitored by video (with still images recorded every five minutes) and the recording would be reviewed by a qualified biologist once a week until the young have fledged. During the 18- to 24-month construction phase, the timing of weekly monitoring of active nests would occur from sunrise to sunset by video (with still images recorded every five minutes). During the 44-year mine life, the weekly monitoring for active nests would coincide with blasting activities. The video camera would record the nest beginning two hours before the blast and end two hours after the blast (with continuous video images recording). Annual reports would be submitted to the BLM biologist summarizing the results of the surveys. Following one year of monitoring, the qualified biologist would develop interpretable metrics to evaluate whether disturbance affects golden eagles. If there are impacts to golden eagles identified, the qualified biologist would coordinate with the BLM and USFWS to develop an adaptive management strategy to mitigate impacts for subsequent years. If a negative impact to nesting golden eagles is detected during monitoring, the BLM biologist would be contacted by electronic mail or phone by the next business day. | N/A | Mitigation Measure 3.23.3.5-8: Mitigation under the Partial Backfill Alternative would be the same as mitigation under the Proposed Action (Mitigation Measure 3.23.3.3-7). | Mitigation Measure 3.23.3.6-8: Mitigation under the Off-Site Transfer of Ore Concentrate for Processing Alternative would be the same as mitigation under the Proposed Action (Mitigation Measure 3.23.3.3-8). | Mitigation Measure 3.23.3.7-8: Mitigation under the Slower, Longer Project Alternative would be the same as mitigation under the Proposed Action (Mitigation Measure 3.23.3.3-8). |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.23.3.3-8 would reduce impacts to golden eagles during Project activities to less than significant by ensuring no direct impacts to nesting birds would occur. | N/A | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.23.3.3-7 would reduce impacts to migratory birds during Project activities to less than significant by ensuring no direct impacts to nesting birds would occur. | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.23.3.3-8 would reduce impacts to golden eagles during Project activities to less than significant by ensuring no direct impacts to nesting birds would occur. | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.23.3.3-8 would reduce impacts to golden eagles during Project activities to less than significant by ensuring no direct impacts to nesting birds would occur. |
| Impact: | Impact 3.23.3.3-9: Pygmy rabbit individuals and habitat could be impacted as a result of the Proposed Action. | N/A | Impact 3.23.3.5-9: Loud or sudden noises associated with the Partial Backfill Alternative could result in an indirect impact (i.e., disturbance) to golden eagles nesting east of the Project Area. | Impact 3.23.3.6-9: Pygmy rabbit individuals and habitat could be impacted as a result of the Proposed Action. | Impact 3.23.3.7-9: Pygmy rabbit individuals and habitat could be impacted as a result of the Proposed Action. |
| Significance of the Impact: | Significance of the Impact: This impact is not considered significant with respect to pygmy rabbits; however, the BLM proposes the following mitigation measure. | N/A | Significance of the Impact: This impact is considered potentially significant with respect to Project activities during the golden eagle breeding season that may result in a violation of the Bald and Golden Eagle Protection Act and the following | Significance of the Impact: This impact is not considered significant with respect to pygmy rabbits; however, the BLM proposes the following mitigation measure. | Significance of the Impact: This impact is not considered significant with respect to pygmy rabbits; however, the BLM proposes the following mitigation measure. |

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| Mitigation Measure: | Mitigation Measure 3.23.3.3-9: EML would fund future sagebrush habitat improvement projects in the area that would directly benefit pygmy rabbits. Based on a ratio of two acres per every acre disturbed, EML would provide 950 acres of habitat improvement projects. Projects would be selected by the Wildlife Working Group which would review greater sage-grouse habitat projects (described in Appendix D, Attachment 3). Projects that benefit both greater sage-grouse and pygmy rabbits could count toward both acreage requirements as approved by the Wildlife Working Group. | N/A | mitigation measure has been identified. Mitigation Measure 3.23.3.5-9: Mitigation under the Partial Backfill Alternative would be the same as mitigation under the Proposed Action (Mitigation Measure 3.23.3.3-8). | Mitigation Measure 3.23.3.6-9: Mitigation under the Off-Site Transfer of Ore Concentrate for Processing Alternative would be the same as mitigation under the Proposed Action (Mitigation Measure 3.23.3.3-9). | Mitigation Measure 3.23.3.7-9: Mitigation under the Slower, Longer Project Alternative would be the same as mitigation under the Proposed Action (Mitigation Measure 3.23.3.3-9). |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Although direct effects to pygmy rabbits and their habitat would occur in the Project Area, this mitigation would ensure additional pygmy rabbit habitat is created to replace the habitat removed at a two to one ratio. | N/A | Effectiveness of Mitigation and Residual Effects: Mitigation Measure 3.23.3.3-8 would reduce impacts to golden eagles during Project activities to less than significant by ensuring no direct impacts to nesting birds would occur. | Effectiveness of Mitigation and Residual Effects: Although direct effects to pygmy rabbits and their habitat would occur in the Project Area, this mitigation would ensure additional pygmy rabbit habitat is created to replace the habitat removed at a two to one ratio. | Effectiveness of Mitigation and Residual Effects: Although direct effects to pygmy rabbits and their habitat would occur in the Project Area, this mitigation would ensure additional pygmy rabbit habitat is created to replace the habitat removed at a two to one ratio. |
| Impact: | Impact 3.23.3.3-10: There may be a decrease in flows within Henderson Creek, which may affect the creek's criteria for use in LCT recovery. | N/A | Impact 3.23.3.5-10: Pygmy rabbit individuals and habitat could be impacted as a result of the Proposed Action. | Impact 3.23.3.6-10: There may be a decrease in flows within Henderson Creek, which may affect the creek's criteria for use in LCT recovery. | Impact 3.23.3.7-10: There may be a decrease in flows within Henderson Creek, which may affect the creek's criteria for use in LCT recovery. |
| Significance of the Impact: | Significance of the Impact: This impact is considered potentially significant with respect to a LCT recovery creek. The following mitigation has been identified by the BLM to limit to potential effects to Henderson Creek and to ensure that there would not be an effect to Birch Creek or Pete Hanson Creek. | N/A | Significance of the Impact: This impact is not considered significant with respect to pygmy rabbits; however, the BLM proposes the following mitigation measure. | Significance of the Impact: This impact is considered potentially significant with respect to a LCT recovery creek. The following mitigation has been identified by the BLM to limit the potential effect to Henderson Creek and ensure that there would not be an effect to Birch Creek or Pete Hanson Creek. | Significance of the Impact: This impact is considered potentially significant with respect to a LCT recovery creek. The following mitigation has been identified by the BLM to limit to potential effects to Henderson Creek and to ensure that there would not be an effect to Birch Creek or Pete Hanson Creek. |
| Mitigation Measure: | Mitigation Measure 3.23.3.3-10: The mitigation measures identified in Section 3.2.3 would be sufficient to mitigate the impacts to LCT from the Proposed Action. | N/A | Mitigation Measure 3.23.3.5-10: Mitigation under the Partial Backfill Alternative would be the same as mitigation under the Proposed Action (Mitigation Measure 3.23.3.3-9). | Mitigation Measure 3.23.3.6-10: Mitigation under the Off-Site Transfer of Ore Concentrate for Processing Alternative would be the same as mitigation under the Proposed Action (Mitigation Measure 3.23.3.3-10). | Mitigation Measure 3.23.3.7-10: The mitigation measure identified in Section 3.2.3 to ensure that the development of the ten-foot drawdown contour is consistent with the analysis in this EIS (Mitigation Measure 3.2.3.3-2a and 3.2.3.3-2b) would be sufficient to mitigate the impact to LCT from the Proposed Action. |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: Implementation of Mitigation Measure 3.2.3.3-2b and the use of any of the options outlined in Section 3.2.3 would be effective at mitigating the impacts from reduced surface water flows. The effectiveness of Mitigation Measure 3.2.3.3-2c, if implemented, is less certain since the implementation would be many decades in the future. However, if measures used in Mitigation Measure 3.2.3.3-2b are implemented, then the measure should be effective at mitigating the impacts from reduced surface water flows. Over a long period of time (tens to hundreds of years) the effects to most surface water flows would diminish; however, for the springs nearest to the open pit, flows would be reduced or eliminated in perpetuity. | N/A | Effectiveness of Mitigation and Residual Effects: Although direct effects to pygmy rabbits and their habitat would occur in the Project Area, this mitigation would ensure additional pygmy rabbit habitat is created to replace the habitat removed at a two to one ratio. | Effectiveness of Mitigation and Residual Effects: Implementation of Mitigation Measure 3.2.3.3-2b and the use of any of the options outlined in Section 3.2.3 would be effective at mitigating the impacts from reduced surface water flows. The effectiveness of Mitigation Measure 3.2.3.3-2c, if implemented, is less certain since it would be many decades in the future. However, if measures used in Mitigation Measure 3.2.3.3-2b are implemented, then the measure should be effective at mitigating the impacts from reduced surface water flows. Over a long period of time (tens to hundreds of years) the effects to most surface water flows would diminish; however, for the springs nearest to the open pit, flows would be reduced or eliminated in perpetuity. | Effectiveness of Mitigation and Residual Effects: Implementation of Mitigation Measure 3.2.3.3-2b and the use of any of the options outlined in Section 3.2.3 would be effective at mitigating the impacts from reduced surface water flows. The effectiveness of Mitigation Measure 3.2.3.3-2c, if implemented, is less certain since it would be many decades in the future. However, if measures used in Mitigation Measure 3.2.3.3-2b are implemented, then the measure should be effective at mitigating the impacts from reduced surface water flows. Over a long period of time (tens to hundreds of years) the effects to most surface water flows would diminish; however, for the springs nearest to the open pit, flows would be reduced or eliminated in perpetuity. |
| Impact: | Impact 3.23.3.3-11: Bat foraging habitat would be impacted as a result of the Proposed Action over the 44-year mine life. | N/A | Impact 3.23.3.5-11: There may be a decrease in flows within Henderson Creek, which may affect the creek's criteria for use in LCT recovery. | Impact 3.23.3.6-11: Bat foraging habitat would be impacted as a result of the Partial Backfill Alternative for the duration of the Project. | Impact 3.23.3.7-11: Bat foraging habitat would be impacted as a result of the Slower, Longer Project Alternative for the duration of the Project. |
| Significance of the Impact: | Significance of the Impact: This impact is not considered significant; however, the following mitigation is proposed. | N/A | Significance of the Impact: This impact is considered potentially significant with respect to a LCT recovery creek. The following mitigation has been identified by the BLM to limit the potential effect to Henderson Creek and to ensure that there would not be an effect to Birch Creek or Pete Hanson Creek. | Significance of the Impact: This impact is not considered significant; however, the following mitigation is proposed. | Significance of the Impact: This impact is not considered significant; however, the following mitigation is proposed. |
| Mitigation Measure: | Mitigation Measure 3.23.3.3-11: In order to minimize impacts to bat habitat, prior to the initiation of Project activities, EML would close those mine workings that would be removed over the life of the Project (after bats have been evacuated) and install bat-friendly closures on openings that would not be directly impacted by the Project in order to preserve access to the remaining bat habitat (also see Appendix D, Attachment 4). | N/A | Mitigation Measure 3.23.3.5-11: Mitigation under the Partial Backfill Alternative would be the same as mitigation under the Proposed Action (Mitigation Measure 3.23.3.3-10). | Mitigation Measure 3.23.3.6-11: In order to minimize impacts to bat habitat, prior to the initiation of Project activities, EML would close those mine workings that would be removed over the life of the Project (after bats have been evacuated) and install bat-friendly closures on openings that would not be directly impacted by the Project in order to preserve access to the remaining bat habitat (also see Appendix D, Attachment 4). | Mitigation Measure 3.23.3.7-11: In order to minimize impacts to bat habitat, prior to the initiation of Project activities, EML would close those mine workings that would be removed over the life of the Project (after bats have been evacuated) and install bat-friendly closures on openings that would not be directly impacted by the Project in order to preserve access to the remaining bat habitat (also see Appendix D, Attachment 4). |
| Effectiveness of Mitigation and Residual Effects: | Effectiveness of Mitigation and Residual Effects: The protection of specific mine openings in the Project Area would be effective as mitigation for the loss of habitat associated with those mines that would be removed as a result of Project activities. Bats excluded from the closed mines in the Project Area are familiar with the mine openings that would remain accessible and would take advantage of its preservation. | N/A | Effectiveness of Mitigation and Residual Effects: Implementation of Mitigation Measure 3.2.3.3-2b and the use of any of the options outlined in Section 3.2.3 would be effective at mitigating the impacts from reduced surface water flows. The effectiveness of Mitigation Measure 3.2.3.3-2c, if implemented, is less certain since it would be many decades in the future. However, if measures used in Mitigation Measure | Effectiveness of Mitigation and Residual Effects: The protection of specific mine openings in the Project Area would be effective as mitigation for the loss of habitat associated with those mines that would be removed as a result of Project activities. Bats excluded from the closed mines in the Project Area are familiar with the mine openings that would remain accessible and would take advantage of its preservation. | Effectiveness of Mitigation and Residual Effects: The protection of specific mine openings in the Project Area would be effective as mitigation for the loss of habitat associated with those mines that would be removed as a result of Project activities. Bats excluded from the closed mines in the Project Area are familiar with the mine openings that would remain accessible and would take advantage of its preservation. |

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| | | | 3.2.3.3-2b are implemented, then the measure should be effective at mitigating the impacts from reduced surface water flows. Over a long period of time (tens to hundreds of years) the effects to most surface water flows would diminish; however, for the springs nearest to the open pit, flows would be reduced or eliminated in perpetuity. | | |
| Impact: | N/A | N/A | Impact 3.23.3.5-12: Bat foraging habitat would be impacted as a result of the Partial Backfill Alternative for the duration of the Project. | N/A | N/A |
| Significance of the Impact: | N/A | N/A | Significance of the Impact: This impact is not considered significant; however, the following mitigation is proposed. | N/A | N/A |
| Mitigation Measure: | N/A | N/A | Mitigation Measure 3.23.3.5-12: In order to minimize impacts to bat habitat, prior to the initiation of Project activities, EML would close those mine workings that would be removed over the life of the Project (after bats have been evacuated) and install bat-friendly closures on openings that would not be directly impacted by the Project in order to preserve access to the remaining bat habitat (also see Appendix D, Attachment 4). | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | Effectiveness of Mitigation and Residual Effects: The protection of specific mine openings in the Project Area would be effective as mitigation for the loss of habitat associated with those mines that would be removed as a result of Project activities. Bats excluded from the closed mines in the Project Area are familiar with the mine openings that would remain accessible and would take advantage of its preservation. | N/A | N/A |
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| Impact: | Impact 3.24.3.3-1: For the 18- to 24-month construction period of the Project, there would be a peak increase in traffic from trucks, cars, pickup trucks, vans, and buses of between 150 and 700 percent over the existing traffic volumes on SR 278 and U.S. Highway 50. | N/A | Impact 3.24.3.5-1: For the 18- to 24-month construction period of the Project, there would be a peak increase in traffic from trucks, cars, pickup trucks, vans, and buses of between 150 and 700 percent over the existing traffic volumes on SR 278 and U.S. Highway 50. | Impact 3.24.3.6-1: For the 18- to 24-month construction period of the Project, there would be a peak increase in traffic from trucks, cars, pickup trucks, vans, and buses of between 150 and 700 percent over the existing traffic volumes on SR 278 and U.S. Highway 50. | Impact 3.24.3.7-1: For the 18- to 24-month construction period of the Project, there would be a peak increase in traffic from trucks, cars, pickup trucks, vans, and buses of between 150 and 700 percent over the existing traffic volumes on SR 278 and U.S. Highway 50. |
| Significance of the Impact: | Significance of the Impact: The impact is considered significant. SR 278 and U.S. Highway 50 are public roads that are maintained by the NDOT, and the NDOT has jurisdiction over these routes. The Roberts Creek Road is a public road maintained by Eureka County and Eureka County has jurisdiction over this route. It is beyond the BLM's jurisdiction to impose mitigation measures for activities on these public roads. See Section 3.26 of this EIS. | N/A | Significance of the Impact: The impact is considered significant. SR 278 and U.S. Highway 50 are public roads that are maintained by the NDOT, and the NDOT has jurisdiction over these routes. The Roberts Creek Road is a public road maintained by Eureka County and Eureka County has jurisdiction over this route. It is beyond the BLM's jurisdiction to impose mitigation measures for activities on these public roads. See Section 3.26 of this EIS. | Significance of the Impact: The impact is considered significant. SR 278 and U.S. Highway 50 are public roads that are maintained by the NDOT, and the NDOT has jurisdiction over these routes. The Roberts Creek Road is a public road maintained by Eureka County and Eureka County has jurisdiction over this route. It is beyond the BLM's jurisdiction to impose mitigation measures for activities on these public roads. See Section 3.26 of this EIS. | Significance of the Impact: The impact is considered significant. SR 278 and U.S. Highway 50 are public roads that are maintained by the NDOT, and the NDOT has jurisdiction over these routes. The Roberts Creek Road is a public road maintained by Eureka County and Eureka County has jurisdiction over this route. It is beyond the BLM's jurisdiction to impose mitigation measures for activities on these public roads. See Section 3.26 of this EIS. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
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| Impact: | Impact 3.24.3.3-2: For the life of the Project, which could be up to 70 years, there would be an increase in trucks (approximately 13 percent) on SR 278 and an increase in car, pickup, van, and bus traffic of between 26 and 34 percent on SR 278 and 12 percent on U.S. Highway 50. | N/A | Impact 3.24.3.5-2: For the life of the Project, which could be up to 70 years, there would be an increase in trucks (approximately 13 percent) on SR 278 and an increase in car, pickup, van, and bus traffic of between 26 and 34 percent on SR 278 and 12 percent on U.S. Highway 50. | Impact 3.24.3.6-2: For the life of the Project, which could be up to 70 years, there would be an increase in trucks (approximately 13 percent) on SR 278 and an increase in car, pickup, van, and bus traffic of between 26 and 34 percent on SR 278 and 12 percent on U.S. Highway 50. | Impact 3.24.3.7-2: For the life of the Project, which could be up to 114 years, there would be an increase in trucks (approximately six percent) on SR 278 and an increase in car, pickup, van, and bus traffic of between 18 and 23 percent on SR 278 and six percent on U.S. Highway 50. |
| Significance of the Impact: | Significance of the Impact: The impact is not considered significant. SR 278 and U.S. Highway 50 are public roads that are maintained by the NDOT, and the NDOT has jurisdiction over these routes. It is beyond the BLM's jurisdiction to impose mitigation measures for activities on these public roads. See Section 3.26 of this EIS. | N/A | Significance of the Impact: This impact is not considered less than significant. SR 278 and U.S. Highway 50 are public roads that are maintained by the NDOT, and the NDOT has jurisdiction over these routes. It is beyond the BLM's jurisdiction to impose mitigation measures for activities on these public roads. See Section 3.26 of this EIS. | Significance of the Impact: This impact is considered less than significant. SR 278 and U.S. Highway 50 are public roads that are maintained by the NDOT, and the NDOT has jurisdiction over these routes. It is beyond the BLM's jurisdiction to impose mitigation measures for activities on these public roads (see Section 3.26 of this EIS). | Significance of the Impact: This impact is considered less than significant. SR 278 and U.S. Highway 50 are public roads that are maintained by the NDOT, and the NDOT has jurisdiction over these routes. It is beyond the BLM's jurisdiction to impose mitigation measures for activities on these public roads. See Section 3.26 of this EIS. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |

| | PROPOSED ACTION | NO ACTION ALTERNATIVE | PARTIAL BACKFILL ALTERNATIVE | OFF-SITE TRANSFER OF ORE CONCENTRATE FOR PROCESSING ALTERNATIVE | SLOWER, LONGER PROJECT ALTERNATIVE |
|---|--|--|--|--|--|
| Impact: | Impact 3.24.3.3-3: For the life of the Project, which could be up to 70 years, access through the Project Area would be restricted. Public access to surrounding areas would remain available throughout the construction, mining, and reclamation phases of the Project. | N/A | Impact 3.24.3.5-3: For the life of the Project, which could be up to 70 years, access through the Project Area would be restricted. Public access to surrounding areas would remain available throughout the construction, mining, and reclamation phases of the Project. | Impact 3.24.3.6-3: For the life of the Project, which could be up to 70 years, access through the Project Area would be restricted. Public access to surrounding areas would remain available throughout the construction, mining, and reclamation phases of the Project. | Impact 3.24.3.7-3: For the life of the Project, which could be up to twice as long (approximately 115 years) as the Proposed Action, access through the Project Area would be restricted. Public access to surrounding areas would remain available throughout the construction, mining, and reclamation phases of the Project. |
| Significance of the Impact: | Significance of the Impact: This impact is not considered significant. | N/A | Significance of the Impact: This impact is considered less than significant. | Significance of the Impact: This impact is considered less than significant. | Significance of the Impact: This impact is considered less than significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |
| | | | | | |
| Impact: | Impact 3.25.3.3-1: Disturbance or removal of 3,296 acres of vegetation with a singleleaf piñon and Utah juniper component would occur as a result of the Proposed Action. | Impact 3.25.3.4-1: Implementation of the No Action Alternative would result in the removal of vegetation including forest products. | Impact 3.25.3.5-1: Disturbance or removal of 3,296 acres of vegetation with a singleleaf piñon and Utah juniper component would occur as a result of the Proposed Action. | Impact 3.25.3.6-1: Disturbance or removal of 3,296 acres of vegetation with a singleleaf piñon and Utah juniper component would occur as a result of the Proposed Action. | Impact 3.25.3.7-1: Disturbance or removal of 3,296 acres of vegetation with a singleleaf piñon and Utah juniper component would occur as a result of the Proposed Action. |
| Significance of the Impact: | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. | Significance of the Impact: The impact is not considered significant. |
| Mitigation Measure: | N/A | N/A | N/A | N/A | N/A |
| Effectiveness of Mitigation and Residual Effects: | N/A | N/A | N/A | N/A | N/A |