

**Blue Arc LLC  
Exploration Project  
Zortman, MT  
AMD1  
DRAFT  
Environmental Assessment**

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Montana Department of Environmental Quality
Air, Energy, & Mining Division
Hard Rock Mining Bureau
ENVIRONMENTAL ASSESSMENT

COMPANY NAME: Blue Arc LLC
EA DATE: DRAFT- 10/28/2020
PROJECT: Zortman-Landusky Exploration Project
LICENSE: #00846
AMENDMENT: AMD1
LOCATION: 47.937731°, -108.561548° COUNTY: Phillips
PROPERTY OWNERSHIP: FEDERAL STATE PRIVATE X

COMPLIANCE WITH THE MONTANA ENVIRONMENTAL POLICY ACT

Under the Montana Environmental Policy Act (MEPA), Montana agencies are required to prepare an environmental review for state actions that may have an impact on the human environment. The proposed action is considered to be a state action that may have an impact on the human environment and, therefore, the Department of Environmental Quality (DEQ) must prepare an environmental review. This environmental assessment (EA) will examine the proposed action and alternatives to the proposed action and disclose potential impacts that may result from the proposed and alternative actions. DEQ will determine the need for additional environmental review based on consideration of the criteria set forth in Administrative Rules of Montana (ARM) 17.4.608.

PROPOSED ACTION

DEQ would issue Exploration License #00846 (license) to Blue Arc LLC (Blue Arc) and approve an amendment (AMD1) to the license if DEQ has determined that Blue Arc has met the criteria set forth in 82-4-332, Montana Code Annotated (MCA). The application for Exploration License #00846 was submitted on March 3, 2020. Blue Arc has revised and resolved outstanding deficiencies regarding their exploration license, and the last substantial change to the project was submitted on September 21, 2020.

PURPOSE AND NEED FOR PROPOSED ACTION

DEQ's purpose and need in conducting the environmental review is to act upon Blue Arc's application to conduct mineral exploration in compliance with the Metal Mine Reclamation Act (MMRA). On June 17, 2020, Blue Arc's Exploration License Application was determined to be complete. Pursuant to 82-4-332 (2), MCA, the application was:

- 1. Submitted in writing;
2. Included a map of sufficient detail to determine whether significant environmental problems would be encountered;
3. Stated the type of prospecting and excavation techniques that would be employed.

Under 82-4-332 (1), MCA, DEQ must issue an exploration license if the applicant meets the criteria

set forth in that section, which are that the applicant must:

1. Pay a fee of \$100 to the department.
2. Agree to reclaim surface disturbance that would result from their exploration activities.
3. Not be in default of any other reclamation obligation under 82-4-332, MCA.

Table 1. Summary of activities proposed in AMD1

<b>Summary of Activities Proposed in AMD1</b>	
General Overview	Blue Arc has proposed to extract up to a 1,000-ton bulk sample from a single site at the former Zortman Mine for shipment and metallurgical testing at a facility in Nevada. Blue Arc would use an excavator with a hammer attachment to remove the bulk sample from an exposed high wall left behind from the previous mine operation.
<b>Dimensions and Quantities of Approximate Disturbance Proposed in AMD1</b>	
Trench dimension (feet)	1 excavation measuring about 10'x 30'x 90'
New access road (linear feet)	2400 feet
Use of Existing Road (linear feet)	1900 feet
Ore Stockpile (acre)	0.08 acre
Waste Rock Stockpile (acre)	0.16 acre
Trench Area (acre)	0.36 acre
Total Load Out Area (acre)	0.09 acre
Potential Disturbance over the Capped Waste rock Repository	0.04 acre
<b>Total surface disturbance</b>	<b>1.39 acre</b>
<b>Proposed Actions in AMD1</b>	
Duration and timing	<ul style="list-style-type: none"> <li>- Construction would commence after approval of AMD1.</li> <li>- The project would last for about 4 months (weather permitting).</li> <li>- Work would occur during daytime shifts which would generally occur between 7:00 a.m. and 5:30 p.m.</li> <li>- Final reclamation may occur within one month of completion of the project and would be required to be completed no later than 2 years following conclusion of project.</li> </ul>
Equipment	<ul style="list-style-type: none"> <li>- Medium sized excavator with associated buckets and hydraulic hammer</li> <li>- ATV</li> <li>- Light passenger trucks, one with slip tank for equipment refueling</li> <li>- Over the road semi with side dump</li> <li>- 30 cubic yard dump truck with tow behind pup</li> <li>- 20-ft 5<sup>th</sup> wheel camper</li> <li>- Water Truck for dust control</li> <li>- Portable toilet</li> <li>- Small enclosed tool supply trailer</li> </ul>
Location and Analysis Area	<ul style="list-style-type: none"> <li>- The proposed project would be located within the former Zortman mine site operations boundary.</li> <li>- The site would be located about 2 miles northwest of the town of Zortman, MT.</li> <li>- The area being analyzed as part of this environmental review includes the immediate project area (Figure 1) as well as immediate downstream water sources and neighboring lands surrounding the analysis area as reasonably appropriate for the impacts being considered.</li> </ul>
Personnel Onsite	Onsite personnel would vary per task, but generally would include 2 full time equipment operators/laborers, 1 part time project manager, and various transient workers including truck drivers.
Structures	There would be no new structures other than a temporary portable toilet and tool supply trailer
Project Water Source	No water use would be anticipated for the proposed project, apart from personal consumption purchased offsite.
Supplemental Lighting	The need for supplemental lighting would not be anticipated.
Air Quality	<ul style="list-style-type: none"> <li>- Blue Arc anticipates no more than 3 trucks per day. Trucks would travel at reduced ground speeds to limit airborne dust. If dust concerns are not mitigated by reduced speeds, Blue Arc would apply magnesium chloride to the roads ½ mile before the town of Zortman, through</li> </ul>

	Zortman, and up to ½ mile after the town of Zortman to inhibit dust generation.
Erosion Control and Sediment Transport	Erosion control would be accomplished using a variety of Best Management Practices (BMP) including hay bales and grass waddles.
Solid Waste	- Solid waste generated would be placed in a fully enclosed container located in the back of a pickup and would be removed from the project site daily.
Cultural Resources	- The project would be entirely located on land previously mined through the 1980's and 1990's. No cultural resources would be anticipated to be encountered.
Hazardous Substances	- No onsite ore processing would occur. - Diesel fuel and equipment oils including hydraulic oil would be located onsite. All extra fluids would be located in clearly marked containers that would be stored in a supply trailer, or equipment refueling truck.
Reclamation Plans	- Blue Arc has proposed avoiding crossing the capped waste rock repository and having an access road around the waste rock repository. This new access road would not be reclaimed around the capped waste rock repository for the landowner's use. - Blue Arc would contract with a qualified engineer to test three locations of the waste rock repository liner. Test locations would be coordinated with DEQ and would be determined following exploration activities. An excavator would dig to approximately 32-inches of depth across a 12-square foot area above the liner, the last 10 inches would be hand dug to expose the liner for testing. The liner would be inspected for stretching, tearing or punctures and if any damage is found, causation would be examined. All testing would be photographed and documented. DEQ or representative may be present during testing. If any damage is identified, additional testing may be conducted in coordination with DEQ. If no damage is identified, the liner would be reburied. Blue Arc would be responsible for repairing any damage caused by the exploration project. - As exploration is completed at the site, disturbed ground would be contoured and seeded with an approved upland seed mix. - Erosion control BMPs would be installed for long term soil stabilization. - Weed control measures, including spraying approved weed herbicides, would be used during the spring and fall following reclamation. - Portable bathroom would be removed from the project area.

Figure 1. General project location

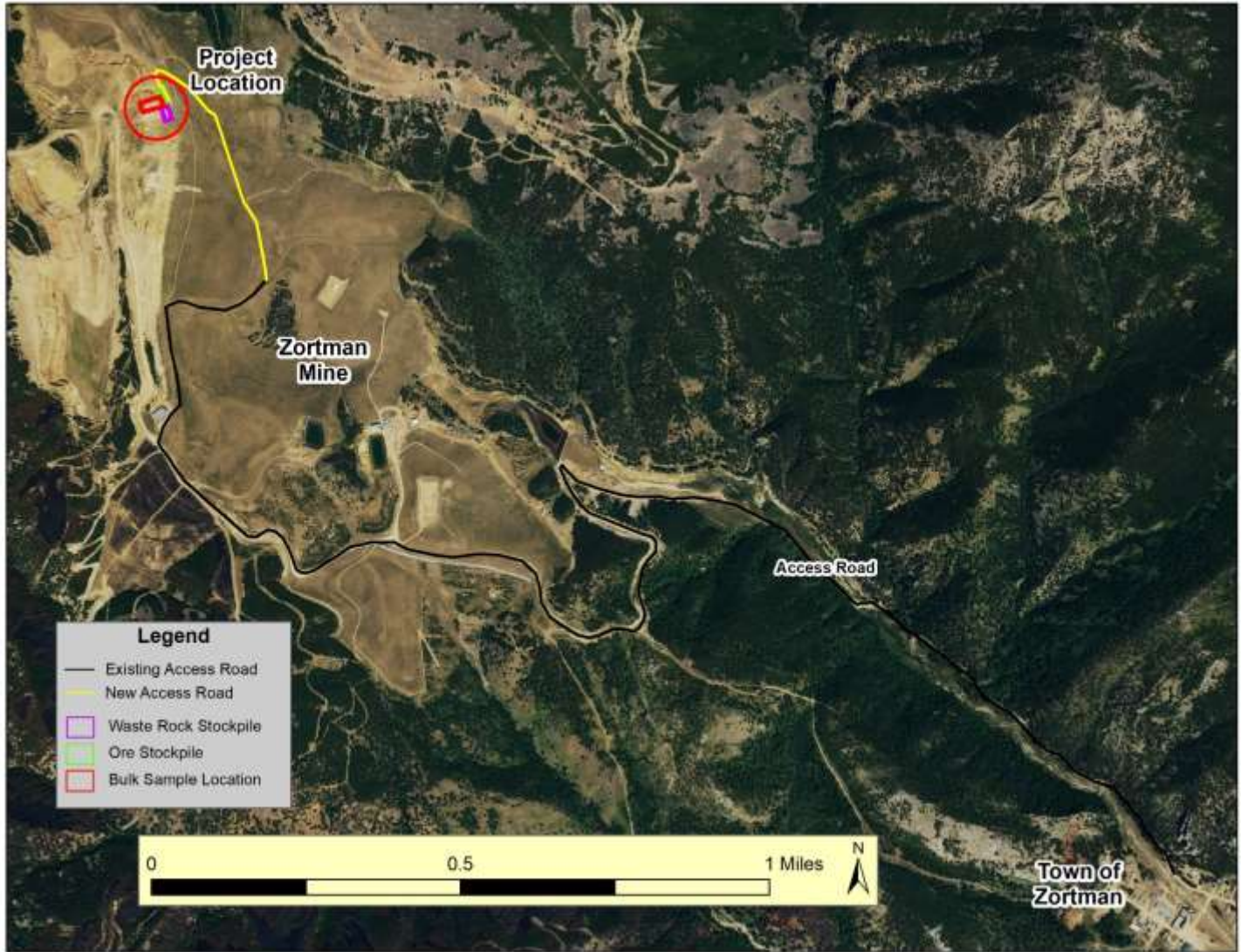


Figure 2. Project Access Roads

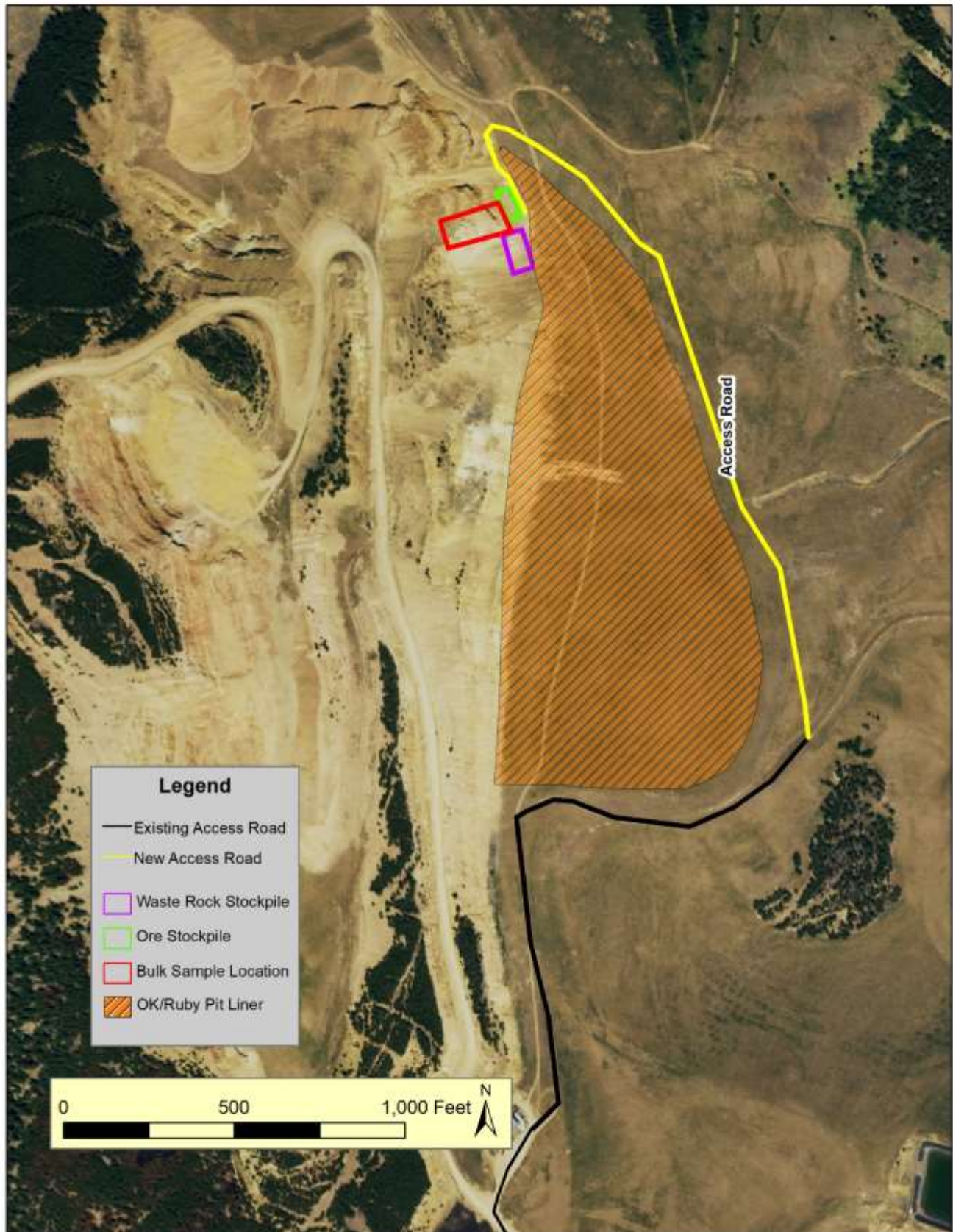




Figure 3. Project Features

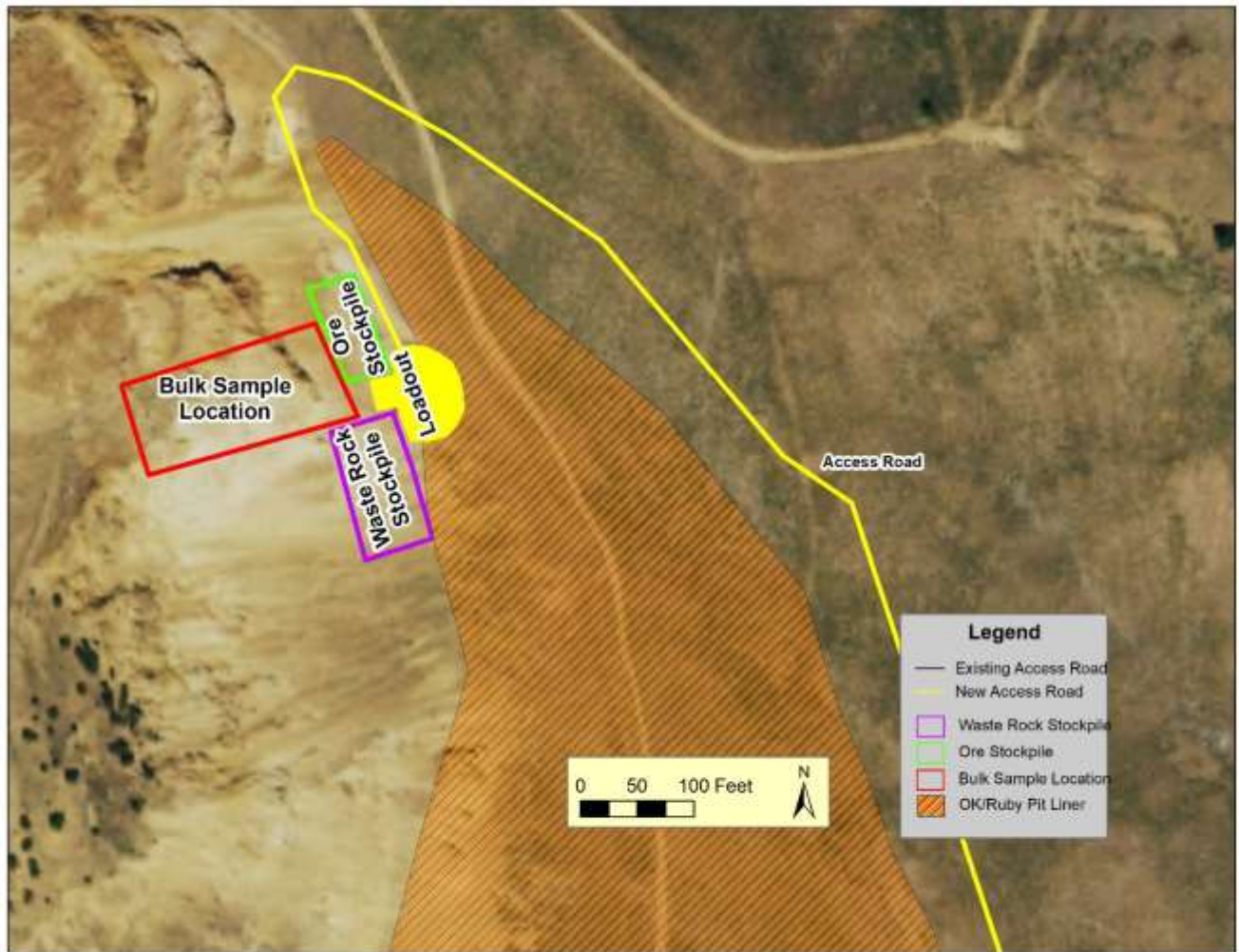


Figure 4. 3D view of project features



## **SUMMARY OF POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS:**

The impact analysis will identify and estimate whether the impacts are direct or secondary impacts. Direct impacts occur at the same time and place as the action that causes the impact. Secondary impacts are a further impact to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action ((ARM) 17.4.603(18)). Where impacts would occur, the impacts analysis will also estimate the duration and intensity of the impact. The duration is quantified as follows:

- Short-term: Short-term impacts are defined as those impacts that would not last longer than the life of the project, including final reclamation.
- Long-term: Long-term impacts are impacts that would remain or occur following project completion.

The intensity of the impacts is measured using the following:

- No impact: There would be no change from current conditions.
- Negligible: An adverse or beneficial effect would occur but would be at the lowest levels of detection.
- Minor: The effect would be noticeable but would be relatively small and would not affect the function or integrity of the resource.
- Moderate: The effect would be easily identifiable and would change the function or integrity of the resource.
- Major: The effect would alter the resource.

### **1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE**

*Are soils present, which are fragile, erosive, susceptible to compaction, or unstable? Are there unusual or unstable geologic features? Are there special reclamation considerations?*

The area of proposed exploration would be located on a previously mined and exposed rock surface. The applicant's targeted area for exploration is a mineralized vein on an exposed highwall from the Ruby Pit within the Zortman Mine Complex. The exploration project would be excavating a bulk sample of the mineralized vein material that was part of the mined Ruby Pit Highwall. Although the project area was subject to previous mining, the area has been previously reclaimed by the State of Montana and BLM.

Blue Arc would salvage topsoil for use in reclamation. Erosion control would be accomplished using a variety of BMPs including but not limited to: haybales and grass waddles.

#### *Direct Impacts:*

No unusual or unstable geologic features are present, and no fragile or particularly erosive or unstable soils are present. The exploration project could result in erosion of some disturbed soil (Table 2).

Surface soil disturbance could allow for the establishment of weeds. Weed control is a condition of an exploration license and Blue Arc would be required to control the spread of noxious weeds. Noxious weeds are further addressed in "Section 4. Vegetation Cover, Quantity and Quality" (Table 2). Impacts to the geology, soil quality, stability and moisture would be short-term and minor and therefore would not be significant (Table 2).

#### *Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the

human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to the geology and soil quality, stability and moisture would be expected.

## **2. WATER QUALITY, QUANTITY, AND DISTRIBUTION**

*Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?*

The project area is located near a topographic high point, at about 5,300 feet above sea level and receives a mean annual precipitation of 21.24 (StreamStats, 2019). The project area would be located approximately 0.3-mile northwest of Ruby Creek and no disturbance associated with the proposed project would occur to the creek. The project area is located with an area of recent large scale open-pit mining and associated reclamation, and the hydrologic flow patterns have been significantly altered from the natural pre-mining flow patterns.

The National Wetland Inventory identified one small freshwater emergent wetland located about 4,500 feet to the south east of the project site in the Ruby Creek drainage. No wetlands were identified in the immediate project area. No land disturbance or work is proposed within a wetland or riparian areas.

A search of the Groundwater Information Center (GWIC) indicated that 17 groundwater monitoring wells are located within the same section as the proposed project. The nearest domestic well would be located over 1.75 miles southeast of the project area, associated with the community of Zortman.

The only disturbance that could occur to the waste rock capped repository of the Ruby or Ross pit could be the turnaround area of the loadout area of the project and would be only about 0.01 acre of disturbance. The applicant has proposed at the conclusion of the project to verify no impact to the liner.

### *Direct Impacts:*

The proposed project disturbance would not be expected to impact surface or groundwater resources in the vicinity. Stormwater controls would minimize impacts to surface water resources and the short duration and small footprint of the project would assist in the minimal impacts to water resources. The nearest surface water would be Ruby Gulch which begins about 5,000 feet down gradient (southeast) from the project area. Surface water in Glory Hole Gulch, a tributary to Lodgepole Creek, begins about 1,500 feet north of the project site, but this creek is located over a topographic divide from the project site. Impacts to surface water would be short-term and minor and would not be significant as a result of this project.

All of the project features would occur in existing mined and exposed rock faces except for the access road. Impacts to surface or groundwater resulting from this project would not be expected.

### *Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to water quality, quantity and distribution would be expected.

### **3. AIR QUALITY:**

*Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?*

#### *Direct Impacts:*

The only class 1 airshed is about 30 miles away from the proposed project and is not expected to impact this type of airshed. Dust particulate would be produced or become airborne during road construction, bulk sample trenching, and travel along existing roads to and from the project area (Table 2).

Mechanized equipment would produce some exhaust fumes. Dust would also be produced while driving on/off site (Table 2). The operator would be expected to maintain compliance with Montana's law regarding the need to take reasonable precautions to control airborne particulate matter.

Impacts to air quality would be short-term and minor and therefore would not be significant as a result of this project (Table 2).

#### *Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to air quality would be expected.

### **4. VEGETATION COVER, QUANTITY AND QUALITY:**

*Will vegetative communities be significantly impacted? Are any rare plants or cover types present?*

The vegetative communities in this project area are predominantly previously mined pit highwalls and reclaimed seed mix. The seed mix for the reclamation was a general grass-forb mix which included alfalfa, red clover, white clover, meadow brome, hard fescue, Canada bluegrass, yarrow and blue flax. Typically, reclamation vegetative would not include rare plants or cover types. Vegetation cover in reclamation would be striving for a diverse plant community which would provide optimal cover to prevent erosion. The proposed project could disturb vegetation along the access road and loadout area. The rest of the project would be disturbing existing rock outcrop or former pit highwall.

Spotted Knapweed and Dalmation Toadflax, both listed noxious weeds, have been identified in the immediate project area.

#### *Direct Impacts:*

Land disturbance at the site may result in propagation of noxious weeds except this would only be expected to be limited to the area of the proposed loadout area and access road (Table 2). Any surface disturbances would be reclaimed and seeded with an appropriate seed mix. If AMD1 were approved, weed control during and after exploration activities would be a requirement. The project area would be subject to the County Weed Management Plan. Impacts to vegetative cover, quantity or quality resulting from this project would be short-term and minor and would therefore not be significant (Table 2).

#### *Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to vegetation cover, quantity and quality would be expected.

## **5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:**

*Is there substantial use of the area by important wildlife, birds or fish?*

The project is located in the Little Rocky Mountains. Topography within the mountains are rugged, with high outcrops and steep valleys. The area of the proposed project has been previously disturbed by past mining and been reclaimed. The surrounding area which has not been disturbed by historical mining includes lodgepole pine forest, ponderosa pine forest, Douglas fir forest, shrubland and outcrop/scree communities. These habitats support well-known species including big game animals, raptors and bats (EIS 1995). No endangered or threatened species were identified in the project area. Only five species of concern are year-round resident of the project area (Western milksnake, Clark's nutcracker, Golden eagle, Townsend's Big-eared bat and Little brown myotis) and the other wildlife and birds were migratory in their use of the area (Montana Natural Heritage Program. Environmental Summary Export for Latitude 47.91395 to 47.95863 and Longitude - 108.52277 to -108.58865. Retrieved on 7/29/2020.)

### *Direct Impacts:*

Impacts to terrestrial and avian habitats would potentially include temporary displacement of animals, although habitat found within the project area is common throughout the larger ecosystem (Table 2). Any displaced animals could find other suitable habitat nearby and return to the project area shortly after the project conclusion. Impacts to terrestrial, avian, amphibious, and aquatic life and habitat would be short term and minor and would not be significant.

### *Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to terrestrial, avian and aquatic life and habitats stimulated or induced by the direct impacts analyzed above would be expected.

## **6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:**

*Are any federally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?*

A search of the MTNHP identified potential habitat for 12 mammal, reptile, invertebrate, bird, and amphibian SOC, potential SOC, sensitive, or threatened species in the habitat of the proposed project. Habitat for these species is common and not unique to the project area. No wetlands or riparian habitat would be disturbed from the project. The proposed project is similar to previous reclamation activities of short-duration equipment and disturbance which has occurred in this environment for the last 20 years.

### *Direct Impacts:*

Impacts to unique, endangered, fragile or limited environmental resources would potentially include temporary displacement of birds or mammals (Table 2), although habitat within the project area is common throughout the larger ecosystem and any animals displaced could find other nearby suitable habitat and return to the project area shortly after the project conclusion. Impacts to unique, endangered, fragile or limited environmental resources would be short-term and minor and would not be significant.

### *Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the

human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to unique, endangered, fragile, or limited environmental resources that could be stimulated or induced by the direct impacts analyzed above would be expected.

## **7. HISTORICAL AND ARCHAEOLOGICAL SITES:**

*Are any historical, archaeological or paleontological resources present?*

The proposed project disturbance would occur on previously mined and reclaimed areas. There would be no historical, archaeological or paleontological resources present at the proposed disturbance areas.

*Direct Impacts:*

The proposed exploration activities would occur on private land owned by the applicant. No direct impacts would be disturbed since previous mining and reclamation has already taken place at this site.

*Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to historical and archaeological sites would be expected.

## **8. AESTHETICS:**

*Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?*

The proposed exploration activities would occur on private land owned by the applicant. The project area would be located near a topographic high point but there are no populated areas to view the proposed disturbance (Figure 2). Although the daily work schedule would consist of work occurring during the day (Table 1). Reclamation is proposed to occur immediately following completion of the project and would be expected to be completed within one month of project completion; however, as a condition of an exploration license, reclamation would be required to be completed within two years of the end of the proposed project .

*Direct Impacts:*

The proposed project could be visible to viewers located at observation points that are unobstructed by topography or forested vegetation via public lands in the area (Table 2). Aesthetic impacts from exploration activities would not be excessive to receptors in the area. Impacts to aesthetics would be short-term and low and therefore would not be significant (Table 2).

*Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to area aesthetics would be expected as a result of the proposed work.

## **9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:**

*Will the project use resources that are limited in the area? Are there other activities nearby that will affect the project?*

The proposed project would not use resources that are limited in the surrounding area. The proposed project could interfere with ongoing monitoring activities of the reclamation of the Zortman mine area but could be avoided if activities are coordinated with both parties.

*Direct Impacts:*

Any impacts on the demand on environmental resources of land, water, air or energy would be short-term and minor and would therefore not be significant as a result of this project.

*Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated or induced by, or otherwise result from a direct impact of the action. No secondary impacts to environmental resources of land, water, air or energy would be expected.

## **10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES:**

*Are there other activities nearby that will affect the project?*

DEQ searched the following websites or databases for nearby activities that may affect the project, however no other projects were identified:

- Montana Department of Natural Resource and Conservation
- Montana Department of Environmental Quality

*Direct Impacts:*

Impacts on other environmental resources are not likely to occur as a result of this project.

*Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated or induced by, or otherwise result from a direct impact of the action. No secondary impacts to other environmental resources would be expected as a result of the proposed work.

## **11. HUMAN HEALTH AND SAFETY:**

*Will this project add to health and safety risks in the area?*

The applicant would be required to adhere to all applicable state and federal safety laws. Industrial work such as the work proposed by the applicant is inherently dangerous. The Occupational Safety and Health Administration (OSHA) has developed rules and guidelines to reduce the risks associated with this type of labor. Few, if any, members of the public would be in the general project proximity during exploration operations.

*Direct Impacts:*

Impacts to human health and safety would be short-term and minor and would not be significant as a result of this project.

*Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated or induced by, or otherwise result from a direct impact of the action. No secondary impacts to human health and safety would be expected as a result of the proposed work.



## **12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION:**

*Will the project add to or alter these activities?*

### *Direct Impacts:*

As noted in the cumulative impacts analysis below, this project would add to the impacts of mining in the greater project area, however all disturbance related to this project would be reclaimed at the conclusion of the project. Reclamation is proposed to occur immediately following completion of the project and would be expected to be completed within one month of project completion; however, as a condition of an exploration license, reclamation would be required to be completed within two years of the end of the proposed project unless the project disturbance were incorporated into an Operating Permit. Impacts on the industrial, commercial, and agricultural activities and production in the area would be minor and short-term and would not be significant.

### *Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated or induced by, or otherwise result from a direct impact of the action. No secondary impacts to industrial, commercial and agricultural activities and production would be expected as a result of the proposed work.

## **13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:**

*Will the project create, move or eliminate jobs? If so, estimated number.*

The proposed project is estimated to create 2.5 jobs for the four-month period of project.

### *Direct Impacts:*

Significant positive or negative impacts on quantity and distribution of employment would not likely result from this project. The project plan calls for limited duration of construction employment at the site. No lasting positive or negative impacts to employment would be expected from this project.

### *Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to quantity and distribution of employment would be expected as a result of the proposed work.

## **14. LOCAL AND STATE TAX BASE AND TAX REVENUES:**

*Will the project create or eliminate tax revenue?*

The proposed project would have a limited increase in tax revenue related to the payroll taxes from the project.

### *Direct Impacts:*

Some positive, yet limited, benefit to the local and state economy could result from this project. However, due to the nature of the exploration project, minimal tax revenue from income or expenses would be expected from this project. The impact to local and state tax base and tax revenue would be short-term and negligible and would not be significant.

*Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. Minor beneficial secondary impacts to local and state tax base and tax revenues would be expected as a result of the proposed work.

**15. DEMAND FOR GOVERNMENT SERVICES:**

*Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?*

The proposed project would have a minimal amount of traffic to the existing roads. The project would only need to mobilize one excavator, an office trailer, an over the road semi-truck with a side dump trailer and then passenger vehicles for the 2.5 employees to get to the site.

*Direct Impacts:*

Impacts would not be expected on the demand for government services. All operations would be subject to local, seasonal restrictions as they apply.

*Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to the demand for government would be expected as a result of the proposed work.

**16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:**

*Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?*

The proposed exploration activities would be entirely on private land owned by the applicant. The current reclamation and associated monitoring of the Zortman Mine is managed by DEQ and the Bureau of Land Management (BLM). The applicant would have to ensure the proposed project does not jeopardize or hinder the existing water treatment, reclamation and monitoring activities of DEQ and BLM.

*Direct Impacts:*

DEQ is not aware of any other locally-adopted environmental plans or goals that would impact this proposed project or the project area. Impacts from or to locally-adopted environmental plans and goals would not be expected as a result of this project.

*Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to the locally-adopted environmental plans and goals would be expected as a result of the proposed work.

**17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:**

*Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational*

*potential within the tract?*

The proposed exploration activities would occur entirely on private land owned by the applicant, with no access to public recreational opportunities. The BLM land is in the vicinity of the proposed project, but public access is not allowed through this area to the BLM land. There are no designated wilderness or recreational areas in the vicinity of the project area.

*Direct Impacts:*

Impact to the access or quality of recreational and wilderness activities would not be expected to result from the project.

*Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to access and quality of recreational and wilderness activities would be expected as a result of the proposed work.

## **18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:**

*Will the project add to the population and require additional housing?*

Zortman is an unincorporated community in Phillips County, Montana. The population was 69 at the 2010 census. As noted above in “Section 13. Quantity and Distribution of Employment”, the project would not be expected to add to or decrease the local Montana City population or company employment of Ash Grove.

*Direct Impacts:*

Due to the short-term project duration and the temporary nature of the activity, no impact to population density and housing would be expected from this project.

*Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to density and distribution of population and housing would be expected as a result of the proposed work.

## **19. SOCIAL STRUCTURES AND MORES:**

*Is some disruption of native or traditional lifestyles or communities possible?*

*Direct Impacts:*

The proposed exploration activities would occur entirely on private land owned by the applicant. Due to the low population density nearby, the short-term project duration, no disruption of native or traditional lifestyles would be expected.

*Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated or induced by, or otherwise result from a direct impact of the action. No secondary impacts to social structures and mores would not be expected as a result of the proposed work.

## **20. CULTURAL UNIQUENESS AND DIVERSITY:**

*Will the action cause a shift in some unique quality of the area?*

### *Direct Impacts:*

The proposed project is at the former Zortman mine site and the proposed project would be a similar activity as that of the former mine site and reclamation activities. Due to the short-term project duration and the temporary nature of the activity, no impacts to cultural uniqueness and diversity would be expected from this project.

### *Secondary Impacts:*

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to cultural uniqueness and diversity would be expected as a result of the proposed work.

## **21. PRIVATE PROPERTY IMPACTS:**

*Are we regulating the use of private property under a regulatory statute adopted pursuant to the police power of the state? (Property management, grants of financial assistance, and the exercise of the power of eminent domain are not within this category.) If not, no further analysis is required. Does the proposed regulatory action restrict the use of the regulated person's private property? If not, no further analysis is required. Does the agency have legal discretion to impose or not impose the proposed restriction or discretion as to how the restriction will be imposed? If not, no further analysis is required. If so, the agency must determine if there are alternatives that would reduce, minimize or eliminate the restriction on the use of private property, and analyze such alternatives.*

The proposed project would take place on private land owned by the applicant. DEQ's approval of AMD1 would affect the real property of nearby private landowners. DEQ has determined, however, that the license conditions are reasonably necessary to ensure compliance with applicable requirements under the Metal Mine Reclamation Act and demonstrate compliance with those requirements or have been agreed to by the applicant. Therefore, DEQ's approval of AMD1 would not have private property-taking or damaging implications.

## **22. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:**

Due to the nature of the proposed exploration activities, and the limited project duration, no further direct or secondary impacts would be anticipated from this project.

## **ALTERNATIVES CONSIDERED:**

In addition to the proposed action, DEQ also considered the "no action" alternative. The "no action" alternative would deny the approval of AMD1. The applicant would lack the authority to conduct exploration for minerals on their private land. The applicant would still be allowed to conduct casual use-level activities, but would not be able to dig into the ground with mechanized equipment. Any potential impacts that would be authorized under AMD1 would not occur. However, DEQ does not consider the "no action" alternative to be appropriate because the applicant has demonstrated compliance with all applicable rules and regulations as required for approval. The no action alternative forms the baseline from which the impacts of the proposed action can be measured.

## **PUBLIC INVOLVEMENT:**

Scoping for this proposed action consisted of internal and external efforts to identify substantive issues and/or concerns related to the proposed project. Internal scoping consisted of internal review of the environmental assessment document by three DEQ Hard Rock Mining Staff. External scoping efforts also included queries to the following websites/ databases/ personnel:

- Montana State Historic Preservation Office
- Montana Department of Natural Resource and Conservation
- Montana Department of Environmental Quality
- Montana Department of Transportation
- US Geological Society – Stream Stats
- Montana Natural Heritage Program
- Montana Cadastral Mapping Program
- Montana Groundwater Information Center
- Montana Bureau of Mines and Geology
- United States Department of Interior Bureau of Land Management

#### **PUBLIC COMMENT PERIOD:**

Public comment on the draft EA for this proposed action included a 33-day period which began October 28, 2020 and ended November 30, 2020. Public were notified of the opportunity to comment on the draft EA through a DEQ-issued press release and posting on the DEQ website.

#### **OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION:**

The proposed project would be fully located on private land owned by the applicant. All applicable state and federal rules must be adhered to, which, at some level, may also include other state, federal, or tribal agency jurisdiction.

#### **CUMULATIVE IMPACTS:**

Cumulative impacts are the collective impacts on the human environment within the borders of Montana of the Proposed Action when considered in conjunction with other past and present actions related to the Proposed Action by location and generic type. Related future actions must also be considered when these actions are under concurrent consideration by any state agency through preimpact statement studies, separate impact statement evaluation, or permit processing procedures.

This environmental review analyzes the proposed project submitted by the applicant. Any impacts from the project would be temporary and would be fully reclaimed at the conclusion of the project and thus, would not contribute to the long-term cumulative effects of mining in the area. On October 7, 2020, the Bureau of Land Management (BLM) has proposed a mineral withdrawal of the public lands in the Zortman-Landusky Mine Reclamation Area from location and entry of new mining claims or sites for an additional 20-year period, subject to valid existing rights. The proposed project is completely on private lands and would not be subject to this proposed withdrawal.

DEQ considered all impacts related to this project and secondary impacts that may result. Cumulative impacts related to this project are identified in the Table 2. Cumulative impacts related to this project would not be significant.

#### **NEED FOR FURTHER ANALYSIS AND SIGNIFICANCE OF POTENTIAL IMPACTS**

When determining whether the preparation of an environmental impact statement is needed, DEQ is required to consider the seven significance criteria set forth in the Administrative Rules of Montana (ARM) 17.4.608, which are as follows:

1. The severity, duration, geographic extent, and frequency of the occurrence of the impact;
  - “Severity” is analyzed as the density of the potential impact while “extent” is described as the area where the impact is likely to occur. An example could be that a project may propagate ten noxious weeds on a surface area of 1 square foot. In this case, the impact may be a high severity over a low extent. If those ten noxious weeds were located over ten acres there may be a low severity over a larger extent.
  - “Duration” is analyzed as the time period in which the impact may occur while “frequency” is how often the impact may occur. For example, an operation that occurs throughout the night may have impacts associated with lighting that occur every night (frequency) over the course of the one season project (duration).
2. The probability that the impact will occur if the proposed action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur;
3. Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts;
4. The quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources and values;
5. The importance to the state and to society of each environmental resource or value that would be affected;
6. Any precedent that would be set as a result of an impact of the proposed action that would commit the department to future actions with significant impacts or a decision in principle about such future actions; and
7. Potential conflict with local, state, or federal laws, requirements, or formal plans.

Table 1: Summary of potential impacts that could result from AMD1.

Potential Impact	Affected Resource and Section Reference	Severity <sup>1</sup> , Extent <sup>2</sup> , Duration <sup>3</sup> , Frequency <sup>4</sup> , Uniqueness and Fragility (U/F)	Probability <sup>5</sup> impact would occur	Cumulative Impacts	Measures to reduce impact as proposed by applicant	Significance (yes/no)
Erosion of disturbed soil	Soil 1.) Geology	<b>S</b> -medium: The maximum of 0.56 acres of ground that would be disturbed, all could be susceptible to erosion, except some portions of the project such as the access road and rock outcrop would be less likely to have erosion events. <b>E</b> -medium: Total surface disturbance would be 0.56 acres. <b>D</b> -The entire project would occur within four months. Vegetation on the cap and areas not part of the rock outcrop would take time to be revegetated. <b>F</b> -During occasional storm events. <b>U/F</b> -Not unique or particularly fragile.	Possible	Erosion would add to cumulative impacts associated with potential erosion on existing roads, mined surfaces, reclaimed mine surfaces, and other historical disturbances in the proposed project area.	Blue Arc would manage erosion control using a variety of Best Management Practices (BMP) including but not limited to non-draining excavations, containment, diversion and control of surface run off, flow attenuation, revegetation, earthen berms, silt fences, and gravel packs.	No
Weed propagation associated with surface disturbance	Soil & Vegetation 1.) Geology 4.) Vegetation	<b>S</b> -high: All disturbed surfaces would be susceptible to weed propagation, except the areas that are a rock outcrop. <b>E</b> -small: Total surface disturbance would be less than 0.56 acres. Land owned by the applicant in the immediate project area that would also be susceptible to weed propagation. <b>D</b> - The entire project would occur within four months. <b>F</b> -After excavation and after reclamation. <b>U/F</b> -Not unique or particularly fragile.	Possible	Weed propagation from this project would add to any other area weeds that already exist within and near the proposed project area.	Weed control would be a requirement of an exploration license. The project would be subject to the 2017 Montana Noxious Weed Management Plan and Phillips County Weed Management Plan.	No
Dust and equipment exhaust	Air 3.) Air Quality	<b>S</b> -medium: Dust and other particulate would be generated during construction/reclamation and driving on/off site. Engines would produce some exhaust fumes. <b>E</b> -medium: Dust and exhaust fumes would be generated in proximity of moving/working equipment, and from dry exposed soil associated with new access road and trench area. <b>D</b> - The entire project would occur within four months. <b>F</b> -Daily: During exploration and reclamation operations. <b>U/F</b> -Not unique or particularly fragile.	Certain	Dust and exhaust would add to the cumulative impacts from other vehicles/engines operating in the area, and to potential natural wildfire smoke moving through the area.	Dust suppression would be minimized by the applicant. The applicant has committed to 10 mph speed to suppress the production of dust.	No
Displacement of animals	Animals 5.) Terrestrial, avian and aquatic life.	<b>S</b> -low: Just 0.56 acres of ground would be impacted. <b>E</b> -medium: Total surface disturbance would be only 0.56 acre. <b>D</b> - The entire project would occur within four months. <b>F</b> -Daily during the four-month schedule. <b>U/F</b> -Not unique or particularly fragile.	Probable	Displacement of animals as a result of this project would add to the cumulative impacts associated with the adjacent Zortman mine site.	None proposed	No

Potential Impact	Affected Resource and Section Reference	Severity <sup>1</sup> , Extent <sup>2</sup> , Duration <sup>3</sup> , Frequency <sup>4</sup> , Uniqueness and Fragility (U/F)	Probability <sup>5</sup> impact will occur	Cumulative Impacts	Measures to reduce impact as proposed by applicant	Significance (yes/no)
Impacts to aesthetics	8.) Aesthetics	<p><b>S</b>-low: Most disturbed surfaces would be visible to viewers in the vicinity of proposed project on public land. It would not contrast with the previous mine disturbances in the past or near the project.</p> <p><b>E</b>-low: Total surface disturbance would be 0.56 acres and would be visible to receptors located at observation points that are unobstructed by topography or forested vegetation.</p> <p><b>D</b>- The entire project would occur within four months.</p> <p><b>F</b>-Daily: until reclamation is complete</p> <p><b>U/F</b>-The viewshed would be not diminished; however, the viewshed is not particularly unique or fragile in the greater project area.</p>	Certain	Impacts to area aesthetics as a result of this project would add to the cumulative impacts associated with the adjacent Zortman mine site and reclamation surrounding the project area.	None proposed.	No
Impacts to Historical and Archaeological Sites	7.) Historical and Archaeological Sites:	<p><b>S</b> -low: All areas proposed for disturbance have been previously mined and reclaimed. No impact to sites are anticipated.</p> <p><b>E</b> – low: less than 0.56 acre would be disturbed</p> <p><b>D</b> – long-term, any disturbance to archaeological sites would be permanent</p> <p><b>F</b>- Once</p> <p><b>U/F</b>-The sites that would be disturbed as previous mining and reclamation could have already impacted them.</p>	Unlikely	Impacts to historical and archaeological sites associated with the project would add to the cumulative impacts associated with the surrounding private land that has been developed for the Zortman mine and reclamation.	None proposed.	No

1. Severity describes the density at which the impact may occur. Levels used are low, medium, high.
2. Extent describes the land area over which the impact may occur. Levels used are small, medium, and large.
3. Duration describes the time period over which the impact may occur. Descriptors used are discrete time increments (day, month, year, and season).
4. Frequency describes how often the impact may occur.
5. Probability describes how likely it is that the impact may occur without mitigation. Levels used are: impossible, unlikely, possible, probable, certain



The severity, duration, geographic extent and frequency of the occurrence of the impacts associated with the proposed exploration activities would be limited. The applicant is proposing to construct an approximately 2,400 linear feet gravel access road around the capped Ruby or Ross pit. The total measurement of potentially disturbed land would be 1.39 acres of surface area. Reclamation is proposed to occur immediately following completion of the project and would be expected to be completed within one month of project completion; however, as a condition of an exploration license, reclamation would be required to be completed within two years of the end of the proposed project .

DEQ has not identified any significant impacts associated with the proposed exploration activities for any environmental resource. Issuing Exploration License #00846 does not set any precedent that commits DEQ to future actions with significant impacts or a decision in principle about such future actions. If the applicant submits another exploration license application to conduct additional exploration, or an operating permit application, DEQ is not committed to issuing those authorizations. DEQ would conduct an environmental review for any subsequent authorizations sought by the applicant that require environmental review. DEQ would make a permitting decision based on the criteria set forth in the Metals Mine Reclamation Act. Approving Exploration License #00846 does not set a precedent for DEQ's review of other applications for exploration licenses, including the level of environmental review. The level of environmental review decision is made based on a case-specific consideration of the criteria set forth in ARM 17.4.608.

Finally, DEQ does not believe that the proposed exploration activities by the applicant have any growth-inducing or growth-inhibiting aspects or conflict with any local, state, or federal laws, requirements, or formal plans.

Based on a consideration of the criteria set forth in ARM 17.4.608, the proposed exploration activities are not predicted to significantly impact the quality of the human environment. Therefore, at this time, preparation of an environmental assessment is determined to be the appropriate level of environmental review under the Montana Environmental Protection Act.

**Environmental Assessment and Significance Determination Prepared By:**

A handwritten signature in blue ink, appearing to read 'Jacob Mohrmann', is written over a light blue horizontal line.

**Jacob Mohrmann, P.G.**  
Environmental Science Specialist –Exploration Program