Blue Arc LLC
Exploration Project
Zortman, MT
FINAL
Environmental Assessment

Contents

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

COMPANY NAME: Blue Arc LLC
EA DATE: 2/1/2021
PROJECT: Zortman-Landusky Exploration Project
LICENSE: #00846
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 impact statement for state actions significantly affecting the quality of the human environment. An agency may prepare an environmental assessment to determine the need to prepare an environmental impact statement. This environmental assessment (EA) will evaluate and determine the significance of potential impacts that may result from the proposed and alternative actions. DEQ will then determine the need for preparation of an environmental impact statement based on consideration of the criteria set forth in Administrative Rules of Montana (ARM) 17.4.608.

PURPOSE AND NEED FOR PROPOSED ACTION

DEQ's purpose and need in conducting the environmental review is to act upon Blue Arc's application for a mineral exploration license submitted under the Metal Mine Reclamation Act (MMRA). On September 21, 2020, Blue Arc's Exploration License Application was determined to be complete. Pursuant to 82-4-332 (2), MCA, and ARM 17.24.103, the application was:

1. Submitted in writing;
2. Included a map of sufficient detail to locate the area to be explored as well as the actual proposed disturbances, and to allow DEQ to adequately determine whether significant environmental problems would be encountered;
3. Stated the type of prospecting and excavation techniques that would be employed in disturbing the land and included a reclamation plan in sufficient detail to allow DEQ to determine whether the specific reclamation requirements of ARM 17.24.104 through 107 would be satisfied.

DEQ is required to issue an exploration license if the applicant meets the following criteria set forth in Section 82-4-332(1), MCA;

1. Pay a fee of $100 to the department.
2. Agree to reclaim any surface area damaged by the applicant during exploration operations, as may be reasonably required by the department.
3. Not be in default of any other reclamation obligation under the Metal Mine Reclamation Act.

In addition, under ARM 17.24.103, an applicant is required to submit a reclamation performance bond in a form and amount determined by DEQ before an exploration license can be issued.

Table 1. Summary of the Proposed Action

Summary of Activities in the Proposed Action	
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.
Dimensions and Quantities of Approximate Disturbance	
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
Total surface disturbance	**1.39 acre**
Details of the Proposed Action	
Duration and timing	- Construction would commence after issuance of the exploration license. - The project would last for about 4 months (weather permitting). - Work would occur during daytime shifts which would generally occur between 7:00 a.m. and 5:30 p.m. - 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.
Equipment	- Medium sized excavator with associated buckets and hydraulic hammer - ATV - Light passenger trucks, one with slip tank for equipment refueling - Over the road semi with side dump - 30 cubic yard dump truck with tow behind pup - 20-ft 5th wheel camper - Water Truck for dust control - Portable toilet - Small enclosed tool supply trailer
Location and Analysis Area	- The proposed project would be located within the former Zortman mine site operations boundary. - The site would be located about 2 miles northwest of the town of Zortman, MT. - 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.
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 use for supplemental lighting would not be anticipated.
Air Quality	- Blue Arc anticipates the project-related traffic through the town of Zortman would not exceed 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 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 Plan	-Blue Arc has proposed avoiding crossing the capped waste rock repository by constructing an access road around the waste rock repository. This new access road would be left in place following completion of other approved exploration reclamation activities at the request of the landowner for the landowner's post exploration use. Excavation of the exploration bulk sample from the highwall would leave a rocky cliff face very similar in appearance to currently existing adjacent lands. -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 determined. 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 to the liner caused by the exploration project. If liner damage is detected, additional liner would be uncovered and inspected, up to and including the entire loadout area and any access road located over the liner. New liner would be placed over existing liner, extending from the pit highwall eastward until undamaged liner is exposed or until the entire area impacted by Blue Arc's exploration traffic above liner is exposed. New and old liner would be overlapped and joined via welding, sealing with appropriate material, or other methods recommended by DEQ's on-site engineer. - Blue Arc would reclaim the trench as described: cut the sides in and collapse them into the trench. It would be raw rock like the adjacent sides of the trench but could be an indent into the trench wall. The face of the highwall is currently irregular in shape, and Blue Arc would contour the trench to not be flat but with an irregular contour to match the adjacent highwall. Blue Arc would collapse any loose material (waste rock) and the sides back into the area removed to (clean) the waste and to contour the face. - Erosion control BMPs would be installed for long tern 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

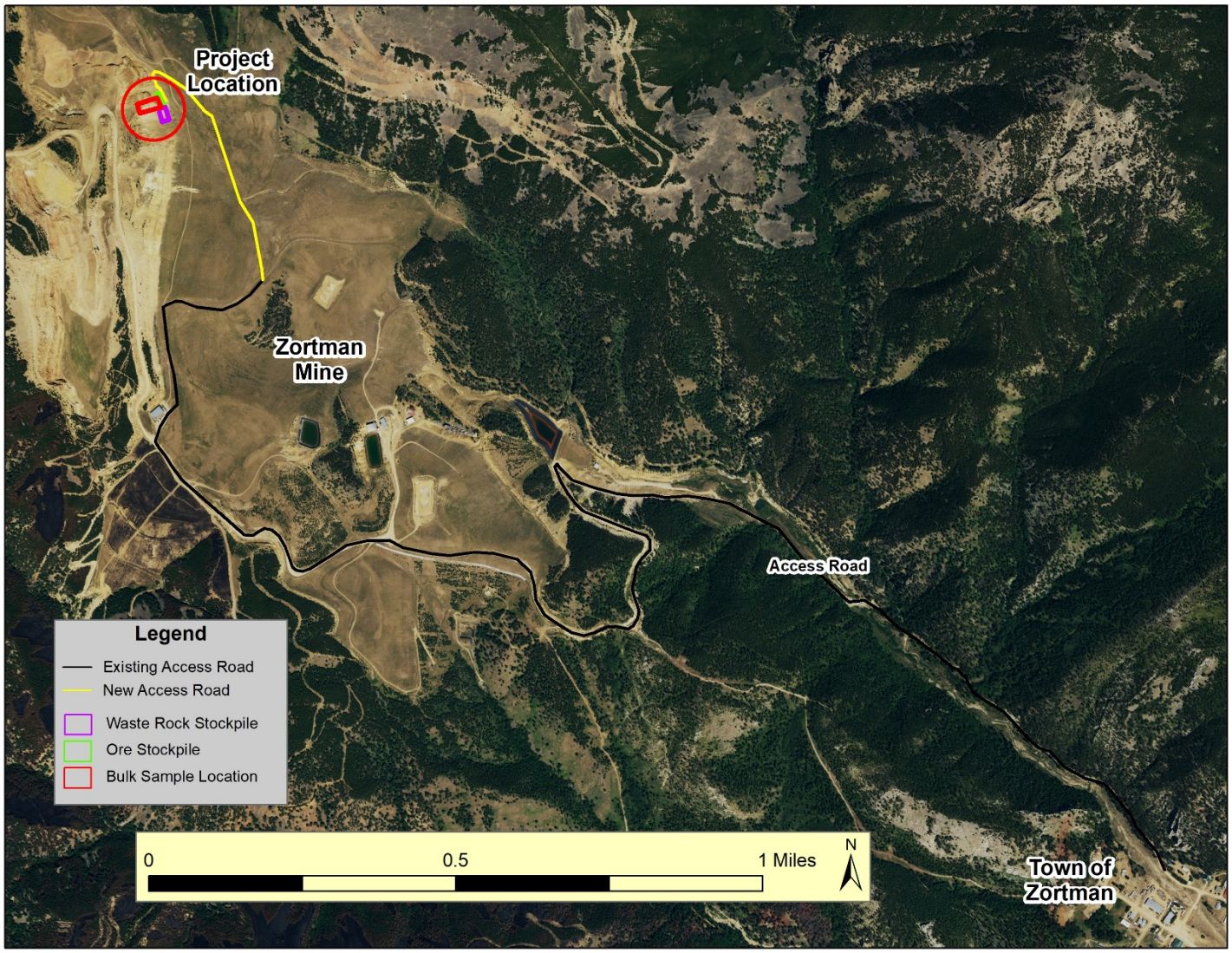


Figure 2. Project Access Roads

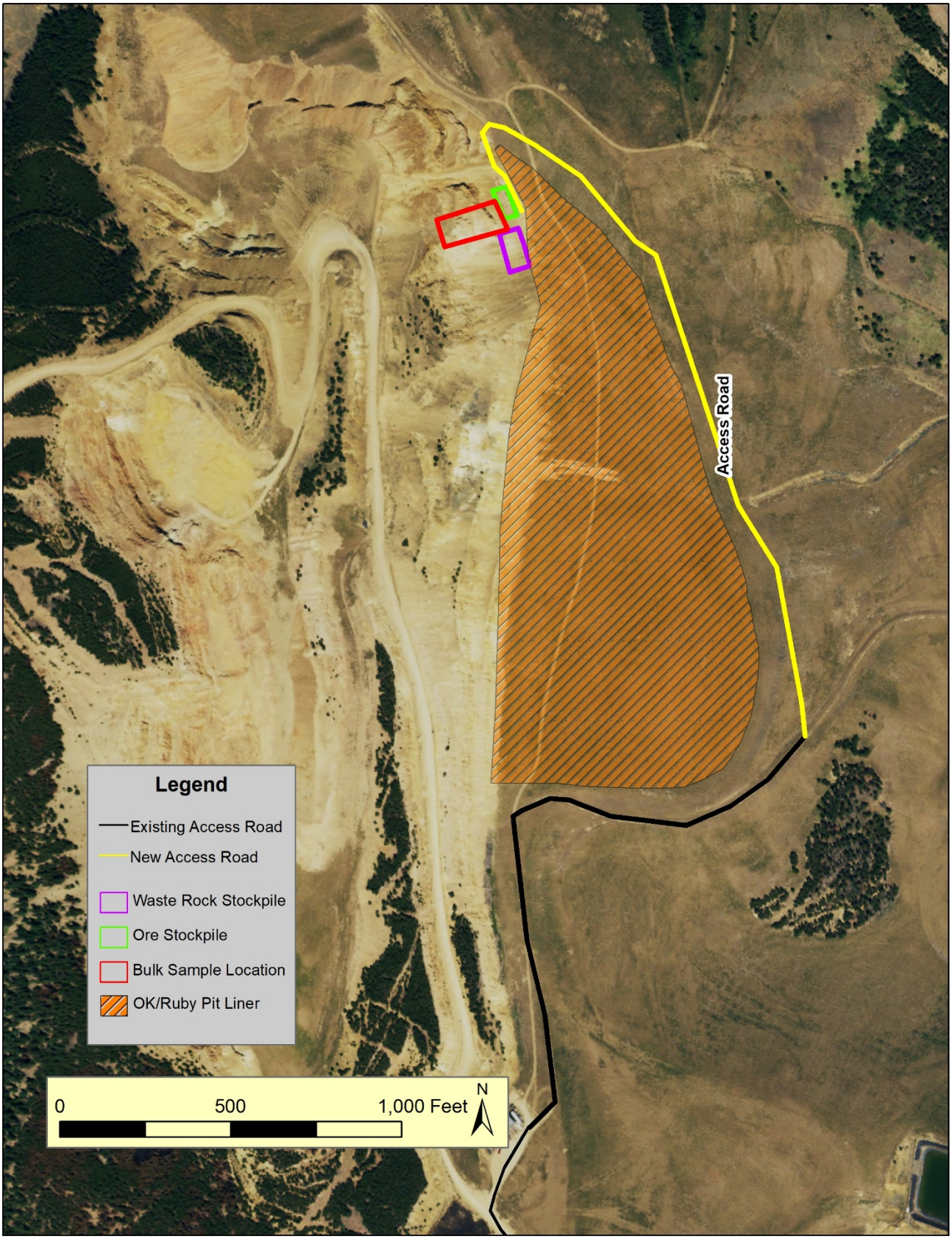


Figure 3. Project Features

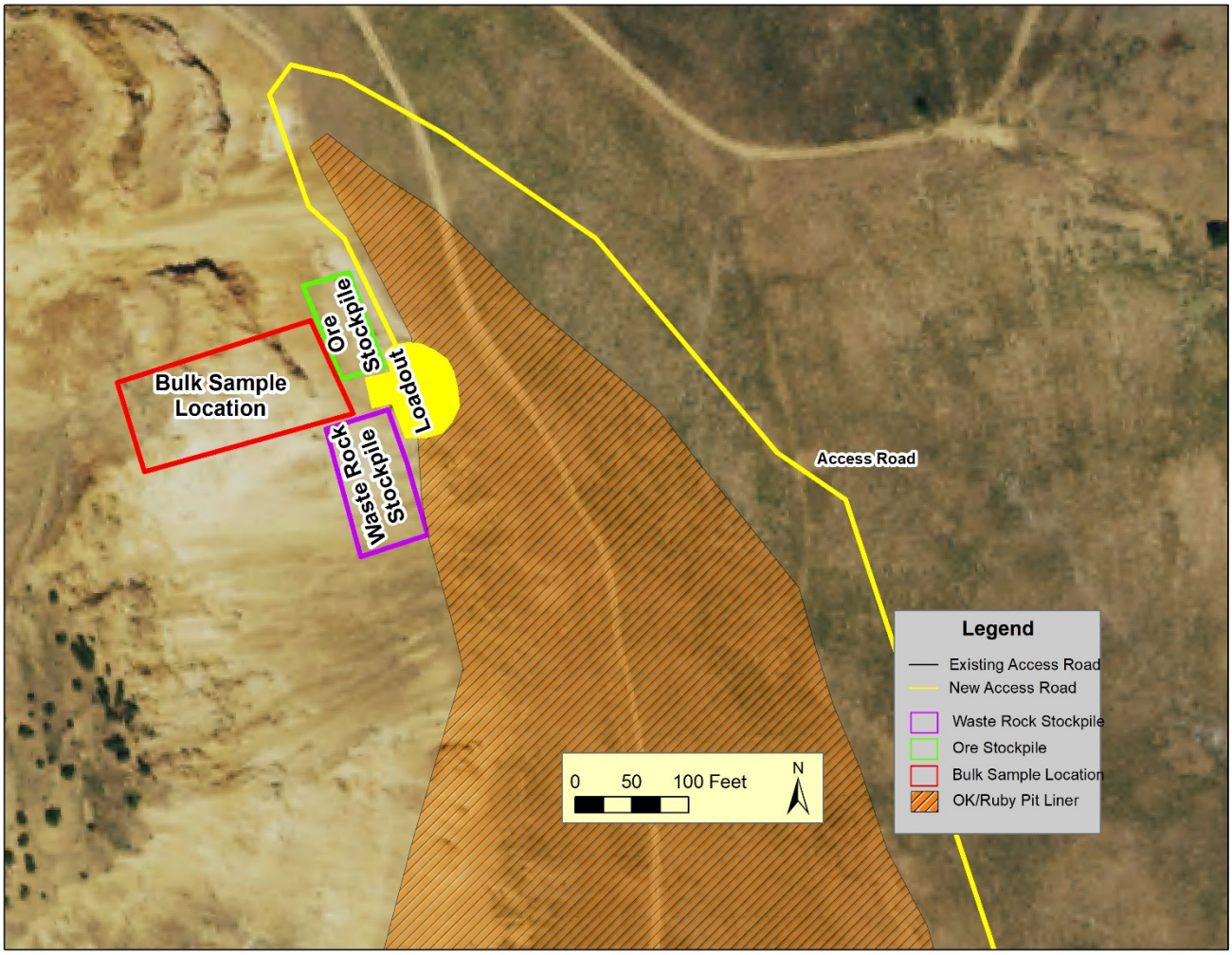
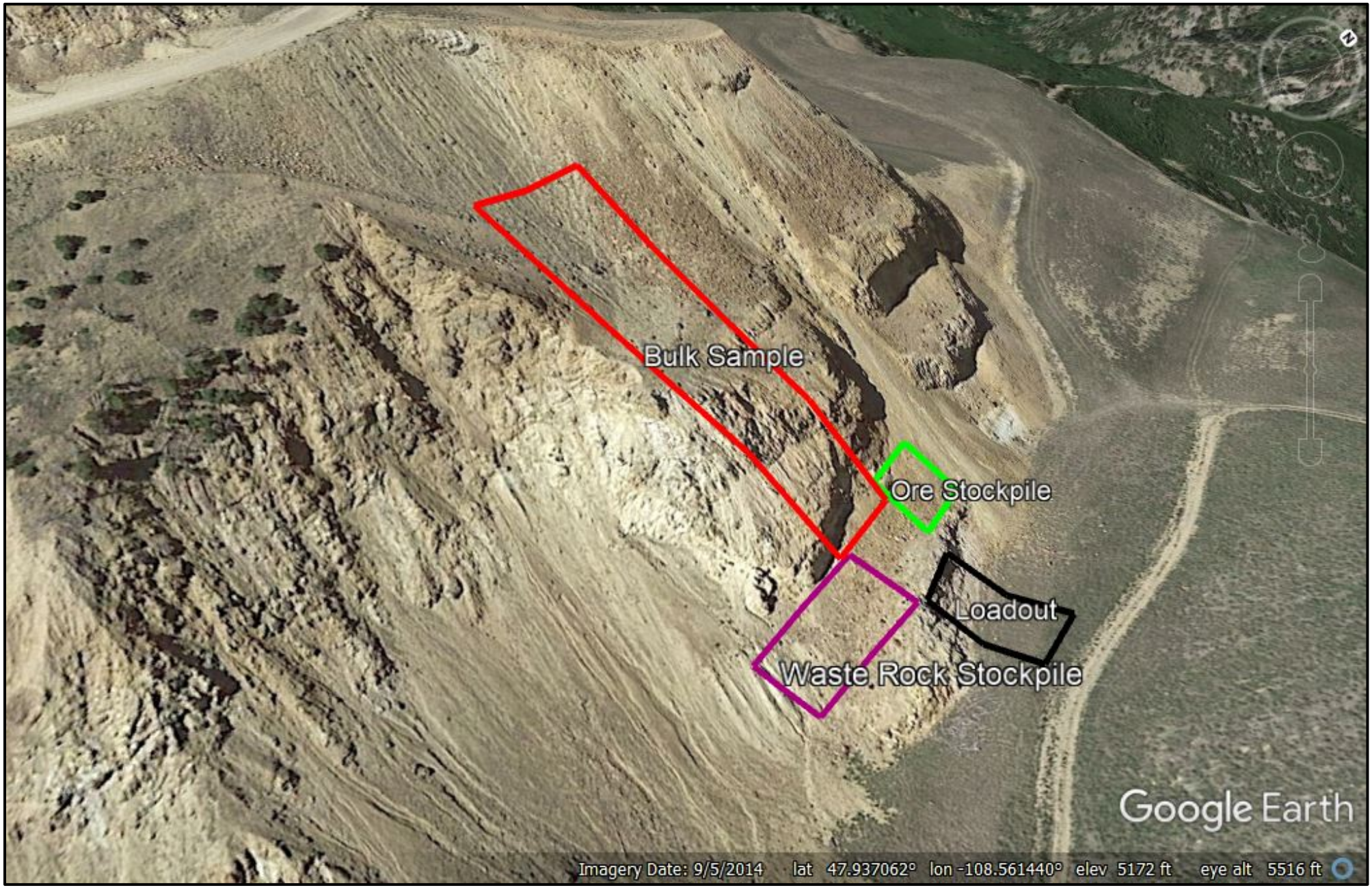


Figure 4. 3D view of project features



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 not salvage topsoil for as the exploration would be occurring on a rocky highwall. Erosion control would be accomplished using a variety of BMPs including but not limited to: haybales and grass waddles. These types of erosion control measures have been proven to be effective in preventing erosion.

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. The mine highwall where excavation of up to 1000 tons of rock for exploration purposes is proposed currently ravels due to freeze-thaw activity in the existing pit wall, resulting in accumulation of a talus slope at the base of the wall. The proposed project would not change this, but it may temporarily slow this process due to excavation of the outer layer of rock that is currently loose and

more prone to sloughing.

Increased exposure of acid-generating materials in the portion of pit wall to be disturbed is expected to be minimal. The vast majority of sulfide highwall in the Zortman pit complex was buried beneath the backfill during reclamation. Exposed highwall above the backfill level is largely oxide material and similar conditions are expected beneath the proposed shallow excavation. Oxide material is rock that has already weathered, meaning that sulfide (i.e. acid producing) minerals have already decomposed and will not produce additional acidic or metal-laden run-off. No damage to vegetation adjacent to the Zortman pit highwalls, which might be expected if storm water runoff contacted acid-generating sulfide materials, has been observed at the site since the backfilling and subsequent revegetation of the backfill surface occurred. 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 inches (StreamStats, 2020). The project area would be located approximately 0.3-mile northwest of Ruby Gulch and no disturbance associated with the proposed project would occur to this intermittent stream. The project area is located within 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 is located over 1.75 miles southeast of the proposed project area, associated with the community of Zortman. For the reasons described in the paragraphs below, impacts to groundwater associated with these wells is not anticipated.

The only disturbance that could occur to the waste rock capped repository of the Ruby pit could be the turnaround area of the loadout area of the project and would be about 0.04 acre of disturbance. In the turnaround area, the waste rock has been reclaimed by placing material that is approximately three feet in thickness above the liner. The proposed action over the liner is not trenching or digging

but turning trucks around which could compact the material over the liner. The liner might be subject to damage due to heavy truck traffic; however, the applicant has proposed at the conclusion of the project to expose and inspect portions of the liner to determine whether or not damage has occurred, and to replace the liner if determined necessary by DEQ (See Proposed Action above, Page 8, Table 1, Reclamation Plans).

Potential impacts to the liner that caps the waste rock backfill in the Ruby Pit would be limited to the designated load-out area, a very small area adjacent to the highwall where limited volumes of storm water runoff would be anticipated. In the event of liner damage, most storm water would likely still leave the load-out area as overland flow or as evapotranspiration rather than infiltrate into the underlying pit backfill and enter the groundwater system. Whether or not stormwater would infiltrate through the capping system is dependent on several factors, including the intensity and duration of precipitation events. Light rain tends to evaporate without infiltration. Moderate storm events can result in shallow infiltration that then either evaporates or is consumed by vegetation (i.e., transpiration). Short duration high intensity precipitation events often result in dominantly surface runoff with limited infiltration. Long duration or heavy precipitation events, and snow melt, may result in sufficient infiltration to saturate the soil above the liner, which if damaged, would result in seepage into underlying waste rock. DEQ estimates that damage to the liner would increase flows reporting to the Zortman Water Treatment Plant by less than 1%.

Direct Impacts:

The proposed project disturbance would not be expected to impact surface or groundwater resources in the vicinity. Stormwater controls would minimize potential impacts to surface water resources and the short duration and small footprint of the project would further assist to minimize potential 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.

Stormwater impacts are expected to be limited to slightly increased turbidity in runoff due to erosion of soil from the access road around the lined pit area, and that this sediment load would either drop out in local BMPs (in the case of routine storm events) or may be carried further in the case of major runoff events before settling out in permanent settling ponds in upper Ruby Gulch above the town of Zortman, in a section of the creek that is intermittent and typically only flows during storm events, spring runoff, or when the Zortman water treatment plant is operating and discharging. Any potential 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. Direct impacts to surface or groundwater resulting from this project are not expected.

Secondary Impacts:

Potential damage to the liner capping the Ruby Pit backfill would be limited to the designated load-out area, a very small area adjacent to the highwall where limited volumes of storm water runoff are anticipated. As discussed above, in the event of liner damage, most storm water would likely still leave the load-out area as overland flow or as evapotranspiration rather than infiltrate into the underlying pit backfill and enter the groundwater system.

With regard to potential groundwater impacts, the quantity of additional storm water that might enter the groundwater system, should the liner be damaged during this project, would not be significant, and is expected to not be distinguishable from year to year variations in flow associated with variable annual precipitation patterns, as explained below.

The proposed loadout area is located below a section of pit wall which is expected to direct storm water runoff away from the loadout site due to the local topography of the pit wall. Most highwall runoff would likely flow to one side or the other of the proposed loadout area, but not directly into it. Other than the highwall, there is no upgradient catchment area that would contribute runoff into the loadout area, so storm water that might infiltrate would be limited to direct precipitation.

Table 1 (above) indicates that disturbance over liner would be no more than 0.04 acre. Even a damaged liner would be partially effective at reducing infiltration (because it would slow down seepage compared with soil with no liner underneath, and because reducing infiltration rates allows time for evapotranspiration to remove much of the water). However, assuming the impact of liner damage caused by this project would be equivalent to having no liner at all in this area for a period of one year, then the following calculations provide an estimate of how the project would temporarily affect the local water balance:

> 0.04 acre x 1.75 feet of precipitation (21" annual average) = 0.07 acre-feet (x 325,851 ac-ft/gallon) = 22,810 gallons of precipitation. This volume is then multiplied by 0.35 (% of precipitation that typically infiltrates through coarse soil at Zortman, on average), reducing the projected volume that would infiltrate into the subsurface to 7,983 gallons per year.

The 10-year average volume of water treated at the Zortman water treatment plant (where seepage through this cap would report) is 93,200,000 gallons per year, so this project might increase the treated water volume by 7,983/93,200,000 or 0.008 % of the annual average. Over that 10-year period, actual volumes treated by the ZWTP varied from 52 million to 135 million gallons per year, so the annual treatment volume is about 93 million gallons +/- 40 million gallons, a variation of +/- over 40%. Compared with that natural variation, a project-induced increase of 0.008% is considered insignificant. Given that there is some uncertainty regarding infiltration rates, runoff volumes, and other assumptions in the above calculations, DEQ conservatively states elsewhere in this EA that the project would increase water treatment requirements by less than 1% until liner repairs are completed.

All contaminated groundwater beneath the lined pit backfill area is believed to drain via historic mine tunnels into the Ruby Gulch capture pond, from which water is pumped to the Zortman water treatment plant (ZWTP), treated, and returned to Ruby Gulch. Should this project result in short term (until repairs are completed) damage to the liner system, it is estimated that increased flows to the ZWTP would be substantially less than 1% of the total volume of water that is routinely treated by this system.

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 other secondary impacts to water quality, quantity and distribution are 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:

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. The operator would be expected to maintain compliance with Montana's law regarding the need to take reasonable precautions to control airborne particulate matter and has proposed that trucks would travel at reduced ground speeds to limit airborne dust. If dust concerns are not mitigated by reduced speeds, Blue Arc has committed to apply magnesium chloride to the roads ½ mile before the town of Zortman, through Zortman, and up to ½ mile after the town of Zortman to inhibit dust generation.

The closest class 1 airshed is about 30 miles southeast of the proposed project (UL Bend Wilderness Area). The proposed project would result in minimal dust emissions and is not expected to impact the airshed of the UL Bend Wilderness because of the distance between the proposed project and the wilderness area.

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 are 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 those that have reestablished on the previously mined pit highwalls and disturbed surfaces that were reclaimed using an approved reclamation 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 of reclaimed areas would strive 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 disturb 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. This would be limited to the area of the proposed loadout area and access road (Table 2). The area of the proposed loadout overlying the reclaimed waste rock would be reclaimed and seeded with an appropriate seed mix. If the proposed exploration project is approved, weed control during and after exploration activities would be required. 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 are 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). Other wildlife and birds are 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. 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 are 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 mammals, reptile, invertebrate, bird, and amphibian Species of Concern (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 potentially include temporary displacement of birds or mammals (Table 2).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 are 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 and that has been previously disturbed. The proposed action will not impact historical or archaeological sites because none are present at the site. The site has been previously mined and reclaimed.

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 are 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). The proposed project would within in an area where previous mining disturbance has occurred and would be similar in nature to the surrounding mine disturbance. The daily work schedule would consist of work occurring during the day (Table 1) and supplemental lighting would not be expected to be required. 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). Noise from the project may be heard by receptors located in an area where sound related to the project has not been fully diminished by distance or another sound dampening feature (Table 2). Noise impacts would be short-term due to the proposed project lasting four months. Aesthetic impacts from exploration activities would not be excessive to receptors in the area as it would occur on private land where access is restricted to members of the public. Impacts to aesthetics are 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 would not interfere with current monitoring being conducted at the reclaimed Zortman mine area. Monitoring in the area of the proposed exploration project is limited to scheduled sampling of surface water sites and groundwater monitoring wells. None are located in the immediate area of the project, and the project would not result in restricted access to the monitoring sites.

Direct Impacts:

The proposed project would not use resources that are limited in the surrounding area. Therefore, impacts on the demand on environmental resources of land, water, air or energy are not anticipated 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 are 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:

- Montana Department of Natural Resource and Conservation
- Montana Department of Environmental Quality
- Bureau of Land Management

No other projects were identified.

Direct Impacts:

DEQ did not identify any other nearby activities that may affect the project. Therefore, 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 are 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 are 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:

The proposed exploration project would occur in an area that has been previously disturbed by mining activities. The proposed exploration project would not affect any industrial, commercial or agricultural activities in the area. 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 are minor and short-term and are 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 are 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 the quantity and distribution of employment are not likely to 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 are 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 are expected from this project. The impact to local and state tax base and tax revenue are 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 are 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 add a minimal amount of traffic to the existing roads. The project would need to mobilize and demobilize one excavator, an office trailer, an over-the-road semi-truck with a side dump trailer, and t passenger vehicles for the 2.5 employees to get to the site. The limited traffic would occur during the limited life of the exploration project, including the period of time when disturbances associated with the exploration project are being reclaimed.

Direct Impacts:

Impacts are 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 services are 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 be required to ensure the proposed project does not interfere with the existing water treatment, reclamation and monitoring activities being conducted by DEQ and BLM at the Zortman mine.

Direct Impacts:

DEQ is not aware of any other locally-adopted environmental plans or goals that would be impacted by the proposed project. Therefore, impacts to locally-adopted environmental plans and goals are not 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 are 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. 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 are not 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 are 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 population or company employment of Blue Arc.

Direct Impacts:

Due to the short-term project duration and the temporary nature of the activity, no impact to population density and housing are 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 are 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 of the area and short-term duration of the project, no disruption of native or traditional lifestyles are 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 are 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 are 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 are 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.

If DEQ issues Blue Arc an exploration license, any conditions of the exploration license are either required to comply with applicable requirements of the Metal Mine Reclamation Act (including administrative rules adopted under the Metal Mine Reclamation Act) or be included in the exploration license with the consent of Blue Arc. DEQ is not proposing to include in the exploration license any conditions that are not required under the Metal Mine Reclamation Act or to which Blue Arc has not consented. Therefore, DEQ is not required to determine if there are alternatives that would reduce,

minimize or eliminate the restriction on the use of private property, and to analyze those alternatives.

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 are anticipated from this project.

ALTERNATIVES CONSIDERED:

The Proposed Action analyzed in this EA was modified several times by the applicant throughout the application review process. Some changes were made by the applicant after responding to review comments and requests for clarification from DEQ, while other changes were made by the applicant. All changes were incorporated into the applicants plan and is considered as the applicants Proposed Action. Some of the major changes made throughout the review process included curtailing the plan from three separate, distinct exploration projects proposed throughout the former Zortman-Landusky mine sites to one smaller project located at just the Zortman mine site (Figure 1-4). Another major change included re-routing the proposed new haul road to avoid as much as possible, travel over the waste rock liner. Blue Arc provided DEQ with maps that included additional requested project details, and provided DEQ with clarification on how and where test rock material would be transported and processed to ensure compliance with the restriction on cyanide use for processing surface material. These changes support the conclusion by DEQ to not consider further alternatives. The proponent addressed DEQ's concerns raised during the application review process by modifying the proposed action to reduce potential impacts; therefore, development of additional alternatives was not considered necessary.

In addition to the Proposed Action Alternative, DEQ considered a No Action Alternative. Under the No Action Alternative, DEQ would deny Blue Arc's application for an exploration license. Blue Arc would not obtain the authority to conduct exploration for minerals on their private land. Blue Arc would still be allowed to conduct casual use-level activities, but would not be able to dig into the ground with mechanized equipment. The potential impacts that may result Under the Proposed Action Alternative would not occur. The No Action Alternative forms the baseline from which the impacts of the proposed action can be measured.

CONSULTATION:

DEQ engaged in internal and external efforts to identify substantive issues and/or concerns related to the proposed project. DEQ queried 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:

Under the Montana Environmental Policy Act, an agency is responsible for providing opportunities for public review consistent with the seriousness and complexity of the environmental issues associated with a proposed action and the level of public interest. Methods of accomplishing public review include publishing a news release or legal notice to announce the availability of an EA, summarizing its content and soliciting public comment, holding public meetings or hearings, maintaining mailing lists of persons interested in a particular action or type of action and notifying them of the availability of EAs on such actions, and distributing copies of EAs for review and comment.

DEQ received public comment on the Draft EA for a 33-day period which began October 28, 2020 and ended November 30, 2020. Interested parties (Zortman Technical Working Group members) and the public were notified of the opportunity to comment on the Draft EA through a DEQ issued press release, a stakeholder email and a posting of the Draft EA on the DEQ website.

OTHER GOVERNMENTAL AGENCIES WITH JURSIDICTION:

The proposed project would be entirely 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. The proposed project would occur in an area that has been heavily impacted by previous mining and reclamation activities at the Zortman Mine. Any impacts from the proposed project would be temporary and would be reclaimed at the conclusion of the project pursuant to ARM 17.24.107. Thus, the proposed project would not contribute to the long-term cumulative impacts of mining in the area. DEQ could not identify any related future actions that are under concurrent consideration by any other state agency.

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 are not 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;

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 Proposed Action.

Potential Impact	Affected Resource and Section Reference	Severity[1], Extent[2], Duration[3], Frequency[4], Uniqueness and Fragility (U/F)	Probability[5] impact would occur	Cumulative Impacts	Measures to reduce impact as proposed by applicant	Significance (yes/no)
Erosion of disturbed soil	Soil 1.) Geology	**S**-medium: The maximum of 1.39 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. **E**-medium: Total surface disturbance would be 1.39 acres. **D**-The entire project would occur within four months. Vegetation on the cap and areas not part of the rock outcrop would take time to reestablish. **F**-During occasional storm events. **U/F**-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	**S**-high: All disturbed surfaces would be susceptible to weed propagation, except the areas that are rock covered. **E**-small: Total surface disturbance would be less than 1.39 acres. **D**- The entire project would occur within four months. **F**-After excavation and after reclamation. **U/F**-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	**S**-medium: Dust and other particulate would be generated during construction/reclamation and driving on/off site. Engines would produce some exhaust fumes. **E**-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. **D**- The entire project would occur within four months. **F**-Daily: During exploration and reclamation operations. **U/F**-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 with manganese chloride. 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.	**S**-low: Only1.39 acres of ground would be impacted. **E**-medium: Total surface disturbance would be only 1.39 acre. **D**- The entire project would occur within four months. **F**-Daily during the four-month schedule. **U/F**-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[1], Extent[2], Duration[3], Frequency[4], Uniqueness and Fragility (U/F)	Probability[5] impact will occur	Cumulative Impacts	Measures to reduce impact as proposed by applicant	Significance (yes/no)
Impacts to aesthetics	8.) Aesthetics	**S**-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. **E**-low: Total surface disturbance would be 1.39 acres and would be visible to receptors located at observation points that are unobstructed by topography or forested vegetation. Noise may be heard by receptors located in an area where sound related to the project has not been fully diminished by distance or another sound dampening feature. **D**- The entire project would occur within four months. **F**-Daily within limited hours of operation: until reclamation is complete **U/F**-The viewshed would be not diminished; the viewshed is not particularly unique or fragile in the greater project area.	Certain	Impacts to area aesthetics as a result of this project would add to the cumulative impacts associated with the surrounding Zortman mine site and reclamation surrounding the project area.	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 access road around the capped Ruby or Ross pit. The total measurement of potentially disturbed land would be 1.39 acre 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, preparation of an environmental assessment is the appropriate level of environmental review under the Montana Environmental Policy Act.

Environmental Assessment and Significance Determination Prepared By:

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

Appendix A: Response to Comments

November 30, 2020

Jake Mohrmann
Montana Department of Environmental Quality
Hard Rock Mining Bureau
1520 E. Sixth Ave., P.O. Box 200901
Helena, MT 59620-0901

Via electronic mail to DEQMEPA@mt.gov

Dear Mr. Mohrmann:

Thank you for the opportunity to comment on DEQ's Draft Environmental Assessment ("Draft EA") for the Blue Arc LLC Exploration Project in Zortman. These comments are submitted on behalf of the Fort Belknap Indian Community, Earthworks, Montana Environmental Information Center, and Montana Trout Unlimited.

The Draft EA is deficient in several respects. At the outset, the Draft EA was not prepared in accordance with the governing Montana Environmental Policy Act ("MEPA") regulations because DEQ failed to consult with the Fort Belknap Indian Community during its scoping process. Further, the Draft EA fails to disclose and take the requisite hard look at the potential for the proposed exploration project to damage the existing waste rock repository liner at the former Zortman Mine site or potential water quality impacts. The Draft EA also fails to provide an adequate discussion of mitigation strategies and requirements and unlawfully omits any analysis of the impacts that would result from future mine development. As a result, the Draft EA does not provide the public with the necessary information to understand and evaluate the project's environmental impacts and fails to provide rational support for DEQ's determination that the project's impacts will not be significant.

I. THE PROPOSED EXPLORATION PROJECT

Blue Arc proposes to extract up to 1,000 tons of material from an exposed high wall at the former Zortman Mine site for shipment and metallurgical testing at a Nevada facility. Draft EA at 5. The proposal also would involve approximately one-half mile of new road construction. Id. As DEQ is aware, operations at the former Zortman Mine inflicted catastrophic damage on surface and groundwater in the area and on the lands and cultural resources of the neighboring Fort Belknap Indian Community.[1] Management of contaminants from the prior mining activity at the Zortman site continues to pose major challenges with respect to the protection of water, land, and cultural resources in the area. As a result, the pending exploration proposal raises significant concerns—particularly for the leadership and membership of the Fort Belknap Indian Community.

[1] See, e.g., Larry D. Mitchell, Zortman & Landusky Mines, HJR 43 Water Quality Impacts, Mont. Envtl. Quality Council staff paper, 7-22 (Oct. 2004) (attached as Exhibit 1).

Comment #1

Comment # 1 Response:
Thank you for your comment.

II. DEQ FAILED TO CONSULT WITH THE FORT BELKNAP INDIAN COMMUNITY

At the outset, the Draft EA is deficient because DEQ failed to consult with the Fort Belknap Indian Community during the scoping process. MEPA regulations mandate that DEQ "shall … invite the participation of affected … Indian tribes" in its scoping process, ARM 17.4.615(2)(a), and this requirement applies to EAs, ARM 17.4.609(1). The Fort Belknap Indian Community has been engaged for years in efforts to address the environmental impacts of the former Zortman Mine operations; has a direct interest in the integrity and continued efficacy of existing reclamation measures at the site; has a direct interest in and may be affected by the impacts of the Blue Arc exploration proposal; and has knowledge regarding environmental, social, and cultural issues relevant to DEQ's analysis that the entities DEQ consulted during its external scoping process do not. In this regard, the Draft EA improperly assumes—without the benefit of the required consultation or any analysis—that the exploration project can have "no impacts to cultural uniqueness and diversity" of the area because it is proposed 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." Draft EA at 20.

Comment #2

III. THE DRAFT EA FAILS TO DISCLOSE ALL ENVRONMENTAL IMPACTS OF BLUE ARC'S EXPLORATION PROJECT

MEPA requires Montana agencies to "take a 'hard look' at the environmental impacts of a given project or proposal." Mont. Wildlife Fed'n v. Mont. Bd. of Oil & Gas Conservation, 2012 MT 128, ¶ 43, 365 Mont. 232, 280 P.3d 877 (citation omitted). MEPA analyses may take the form of either detailed environmental impact statements ("EISs") or more succinct EAs. A full EIS is required if a proposed action will "significantly affect[] the quality of the human environment." ARM 17.4.607(1). An EA is permissible where DEQ cannot determine without further evaluation whether the project will require an EIS, or where the otherwise significant impacts of the action can be mitigated "below the level of significance." ARM 17.4.607(3)(b), 607(4).

Where, as here, the agency prepares an EA, the EA must evaluate the direct, secondary, and cumulative environmental impacts of the proposed action, Mont. Wildlife Fed'n, ¶ 45; ARM 17.4.609(3)(e); reasonable alternatives to the proposed action, ARM 17.4.609(3)(f); and mitigation measures, ARM 17.4.609(3)(g). "The agency must examine the relevant data and articulate a satisfactory explanation for its action, including a rational connection between the facts found and the choice made." Montana Wildlife Fed'n, ¶ 43 (quoting Clark Fork Coal. v. Mont. DEQ, 2008 MT 407, ¶ 47, 347 Mont. 197, 211, 197 P.3d 482, 492). "[G]eneral statements about 'possible' effects and the existence of 'some risk' do not constitute a 'hard look' absent a justification regarding why more definitive information could not be provided." Id. (quoting Neighbors of Cuddy Mtn. v. U.S. Forest Serv., 137 F.3d 1372, 1380 (9th Cir. 1998)).

Comment #3

DEQ's EA for the Blue Arc exploration project fails to satisfy MEPA's fundamental mandate, as it does not disclose fully or evaluate rationally the project's environmental impacts. See MCA § 75-1-102 (MEPA's purposes); ARM 17.4.607 (purpose of EA). Without appropriate

Comment # 2 Response:
Administrative Rule of Montana (ARM) 17.4.609(1) states, "The agency may initiate a process to determine the scope of issues to be addressed in an EA. Whenever the agency elects to initiate this process, it shall follow the procedures contained in ARM 17.4.615". This allows the Department discretion in following the scoping procedure applicable to the preparation of an Environmental Impact Statement (EIS) when it prepares an Environmental Assessment (EA). The Department elected not to conduct the scoping procedure set forth in ARM 17.4.615 due to the 90-day time limit applicable to the preparation of an EA set forth in 75-1-208(4)(a)(ii), Montana Code Annotated (MCA). This statutory provision is found in the Montana Environmental Policy Act (MEPA).

The mailing list for the Draft EA included all members of the Zortman Technical Working Group and the President of The Nakoda and Aaniiih Nations. DEQ sought comment on the Draft EA from these tribal representatives. The proposed action is on previously mined and reclaimed areas of the Zortman mine high wall bench and capped material. The area of the proposed exploration is previously disturbed areas and would not disturb the historical, archaeological, or paleontologic resource as the material has already been handled during original mining and then during reclamation.

Comment # 3 Response:
ARM 17.4.609 governs the preparation and contents of an EA. Subsection 2 of that rule provides as follows:

> For a routine action with limited environmental impact, the contents of an EA may be reflected on a standard checklist format. At the other extreme, whenever an action is one that might normally require an EIS, but effects that otherwise might be deemed significant are mitigated in project design or by controls imposed by the agency, the analysis, format, and content must all be more substantial. The agency shall prepare the evaluations and present the information describe in (3) of this rule as applicable and in a level of detail appropriate to the following considerations:
>
> (a) the complexity of the proposed action;
>
> (b) the environmental sensitivity of the area affected be the proposed action;

disclosure and analysis of the project's impacts, DEQ cannot make a rational determination as to whether those impacts will be significant and the public is deprived of a full understanding of, and ability to comment on, the potential impacts.

A. The Draft EA Does Not Contain Adequate Disclosure or Analysis of Potential Impacts to the Existing Waste Rock Repository Liner

Comment #4

The Draft EA acknowledges that the exploration project may impact the integrity of the existing waste rock repository liner installed as part of the reclamation of the former Zortman Mine. Draft EA at 6, 12. However, the Draft EA fails to disclose how the proposed exploration activities could affect the liner integrity or what environmental impacts may result if the liner is damaged, in violation of MEPA. ARM 17.4.609(3)(e). Further, while the Draft EA states that Blue Arc will conduct testing at the end of the project to confirm that there has been no impact on the liner, Draft EA at 6, 12, the Draft EA does not disclose what steps would or could be required to address any adverse impacts that are detected. Compare ARM 17.4.609(3)(g) (providing that EA must include "a listing and appropriate evaluation of mitigation, stipulations, and other controls enforceable by the agency ….") with Draft EA at 6 (stating, without elaboration, that "Blue Arc would be responsible for repairing any damage [to the liner] caused by the exploration project").

B. The Draft EA Does Not Contain Adequate Disclosure or Analysis of Potential Water Quality Impacts

Comment #5

The Draft EA's discussion of potential water quality impacts is contradictory and inadequate. The Draft EA first states that "proposed project disturbance would not be expected to impact surface or groundwater resources in the vicinity," but then states that there would be impacts to surface water, which purportedly "would be short-term and minor." EA 12. Aside from being internally inconsistent, this discussion unlawfully fails to disclose, as MEPA requires, what the nature of the supposedly "short-term and minor" water quality impacts would be, ARM 17.4.609(3)(e), and what measures would or could be required to address those impacts, ARM 17.4.609(3)(g).

Further, as noted above, the Draft EA acknowledges that the project may damage the waste rock repository liner at the site, which would likely result in additional releases of contaminants from the waste rock repository to groundwater. Yet the EA unlawfully fails to disclose or provide any analysis of this potential impact in its discussion of water quality issues or, as described more fully below, any analysis of what measures would be required to address water contamination associated with possible damage to the liner.

These omissions are particularly egregious given the history of intractable water pollution from the prior mining operations at the Zortman site where the Blue Arc exploration project is proposed. As DEQ is well aware, significant acid rock drainage at the Zortman site has resulted in decades of persistent—and in some instances, worsening—groundwater and surface water contamination, with "metals concentrations in untreated water reporting to the Zortman and [nearby] Landusky treatment plants … generally several orders of magnitude higher than the

(c) the degree of uncertainty that the proposed action will have a significant impact on the quality of the human environment;
(d) the need for and complexity of mitigation required to avoid the presence of significant impacts.

Section (3) governs the content of an EA, including the requirement that it must include an evaluation of the impacts, including cumulative and secondary impacts, on the physical environment.

The EA evaluates the direct, secondary, and cumulative impacts in a level of detail commensurate with ARM 17.4.609(2). The proposed action is not complex. It involves the excavation of 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. The excavation would have a dimension of 10x30x90 feet, be conducted over a four-month period and have a surface disturbance of 1.39 acres. The area to be affected is not environmentally sensitive, but is located within the former Zortman mine site operations boundary and has been previously disturbed. Nor is there uncertainty that the proposed action will have a significant impact on the quality of the human environment. See Table 1 of the EA. Finally, the mitigation measures that will be included in the exploration license are not complex. They consist of routing the haul road to avoid travel over the waste repository liner, use of best management practices to control erosion, weed control, and a 10-mph speed limit and the use of magnesium chloride for dust suppression if necessary.

The EA discloses the direct, secondary, and cumulative impacts for each resource as required by MEPA statute and administrative rules. Please see page 25 of the EA in documenting the findings of significance of impacts of the proposed project. In the EA, the Department has disclosed the environmental impacts associated with the proposed action as required by MEPA. DEQ applied the significance criterion set forth in ARM 17.4.608 and has determined that preparation of an EIS is not required.

Comment #4 Response:
The EA has been revised to address the integrity of the liner underneath the truck turnaround area on the capped waste rock repository under the Water Quality, Quantity and Distribution Section.

The liner is buried beneath approximately three feet of tailings and soil. Frequent traffic has the potential to tear the liner beneath this

applicable water quality standards."[2] Even after "substantial" reductions in metals concentrations through active treatment, "the treated effluent commonly exceeds standards for several parameters" such as cadmium and selenium.[3] Given that the Blue Arc project would disturb and expose geologic material from the same formation, and under the same atmospheric conditions, that have generated such serious adverse water quality impacts in the past, a thorough analysis of potential impacts is essential. Indeed, the history of mining in Montana contains numerous examples of projects that produced severe water pollution despite agency and industry predictions that no contamination would occur, including but not limited to the former mine at the Zortman site.[4]

In this regard, DEQ must consider potential water quality impacts in the context of climate change. DEQ, the U.S. Bureau of Land Management, and Spectrum Engineering and Environmental LLC have already identified severe impacts to water quality, reclamation efforts and infrastructure at Zortman/Landusky due to events associated with climate change, including a large storm event in 2011, which resulted in a waste dump failure and the release of 54 million gallons of untreated acid rock drainage water at Zortman,[5] and a wildfire in 2017, which burned roughly 12,000 acres, including revegetated areas at the site and other forested and grasslands in the surrounding area, and resulted in damage to the Zortman 82 pond liner.[6]

DEQ's failure to take a hard look at the potential water quality impacts of Blue Arc's exploration proposal on top of those inflicted by the former Zortman Mine also violates the agency's duty to consider cumulative impacts. ARM 17.4.609(3)(d)-(e).

C. The Draft EA Does Not Contain Adequate Discussion of Reclamation Requirements

In addition, the Draft EA does not contain an adequate discussion of reclamation options and requirements. See ARM 17.4.609(3)(g). The Draft EA provides no details regarding reclamation plans or requirements, including but not limited to how Blue Arc will address potential impacts on the stability of the mine wall from which the bulk sample will be removed, see Draft EA at 6, 25, or how Blue Arc will address any damage to the waste rock repository liner that is detected at the close of exploration activities, see id. at 6, 12.

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[2] Mont. DEQ, Landusky Metals Total Maximum Daily Loads and Framework Water Quality Improvement Plan, at 2-10 (March 12, 2012) (attached as Exhibit 2).

[3] Id.

[4] See Ann Maest, et al., Predicted Versus Actual Water Quality at Hardrock Mine Sites: Effect of Inherent Geochemical and Hydrologic Characteristics at 1122, 1138-40 (2006) (attached as Exhibit 3); see also B. Gestring, Earthworks, U.S. Copper Porphyry Mines: The track record of water quality impacts resulting from pipeline spills, tailings failures and water collection and treatment failures (Rev'd Nov. 2012) (attached as Exhibit 4).

[5] https://www.mtech.edu/mwtp/2012_presentations/Dave%20Williams.pdf; https://www.mtech.edu/mwtp/2012_presentations/Warren%20McCullough.pdf,

[6] https://www.mtech.edu/mwtp/2018_presentations/wednesday/Bill-Maehl.pdf

Comment #6

cover layer. However, these impacts would be limited to the designated load-out area, a very small area adjacent to the highwall where limited volumes of storm water runoff are anticipated. In the event of liner damage, most storm water would still leave the load-out area as overland flow or as evapotranspiration rather than infiltrate into the underlying pit backfill and enter the groundwater system. Please refer to the Final EA for additional information. Details of liner inspection and repair are presented under the Reclamation Plan for the Proposed Action (page 6), and potential environmental consequences are evaluated under the Water Quality, Quantity, and Distribution section (pages 12-14).

DEQ will calculate an appropriate bond upon completion of this EA, if the action is authorized. Blue Arc proposes to expose and test the liner for evidence of damage in the traffic area (i.e. the load-out area). DEQ may require bonding to cover the cost of liner replacement in this limited area.

Comment #5 Response:

The EA indicates that the only potential impact to surface water is erosion from storm events during the four-month long duration of the Proposed Action. The best management practices that Blue Arc has committed to implementing are disclosed on page 6 of the EA. These types of erosion control measures have been proven to be effective in preventing erosion. Please see the previous response regarding the integrity of the liner.

MEPA precludes analysis of impacts associated with climate change. Section 75-1-201(2)(a), MCA, states that "Except as provided in (2)(b), an environmental review conducted pursuant to [MEPA} may not include a review of actual or potential impacts beyond Montana's borders. It may not include actual or potential impacts that are regional, national, or global in nature."

In this regard, the Draft EA contains no discussion of bonding requirements. Here again, this omission is unacceptable given that the proposal would involve significant new disturbance at the site of a former mine that is the poster child for insufficient bonding, and where the public is burdened with perpetual financial obligations to address the existing water pollution and reclamation issues due to that inadequate bonding. DEQ should disclose the bond for public review before granting an exploration license to avoid another underfunded mine cleanup situation that would further burden the Fort Belknap Indian Community and the broader public. DEQ should ensure that the bond amount accounts for potential water quality problems associated with increased exposure of acid-generating materials at the site, as well as the potential need for costly repairs to the existing waste rock repository liner. The adequacy of financial assurance is an essential component of an evaluation—both by DEQ and the public—of the likelihood of significant water quality impacts in the future. The level of financial assurance should therefore be made part of DEQ's environmental analysis to ensure appropriate scrutiny as required by MEPA.

The Draft EA is also inconsistent with respect to the proposed new access road, stating that the portion of the new access road around the capped waste rock repository would not be reclaimed for the landowner's use, Draft EA at 6, but then stating that reclamation of the approximately 2,400 linear feet gravel access road around the capped Ruby or Ross pit is proposed to occur immediately following completion of the project and would be expected to be concluded within one month of project completion, however as a condition of the exploration license, reclamation would be required to be completed within two years of the end of the proposed project, id. at 25. Will the new access road be reclaimed? When will it be reclaimed? And, if it won't be reclaimed, what are the potential long-term effects associated with this new road?

D. The Draft EA Fails to Consider the Impacts of Mine Development on Adjacent Federal Lands

Under MEPA, DEQ must consider a project's "cumulative and secondary impacts," ARM 17.4.609(3)(d)-(e), which include any "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). To satisfy MEPA's mandate in this case, DEQ must consider the potential for mine development on adjacent BLM lands as a consequence of the pending exploration proposal, because Blue Arc could utilize information generated from the exploration activities to attempt to establish a valid existing right to develop federal minerals.[7] In this regard, the commenters note that the existing federal mineral withdrawal in the project area expired on October 4, 2020;

[7] See Park County Envtl. Council v. Mont. DEQ, No. DV 17-126, at 19-26 (Mont. Sixth Judicial Dist. Ct. May 23, 2018) (holding DEQ violated MEPA by issuing EA for mineral exploration project that did not consider effects of potential mine development involving adjacent federal lands).

Comment #7

Comment # 6 Response:

The EA describes the reclamation plan included in the proposed action. EA, page 6. - Blue Arc would reclaim the trench as described: cut the sides in and collapse them into the trench. It would be raw rock like the adjacent sides of the trench but could be an indent into the trench wall. The face of the highwall is currently irregular in shape, and Blue Arc would contour the trench to not be flat but with an irregular contour to match the adjacent highwall. Blue Arc would collapse any loose material (waste rock) and the sides back into the area removed to (clean) the waste and to contour the face.

Bonding is not a resource area required to be addressed in an environmental review conducted under MEPA. ARM 17.4.609 (3)(d) indicates that an EA must include an evaluation of the impacts, including cumulative and secondary impacts, on the physical environment. That administrative rule provision also indicates that an EA an analysis of topics and impacts that are potentially significant, including, where appropriate: terrestrial and aquatic life and habitats; water quality, quantity and distribution; geology; soil quality, stability and moisture; vegetation cover, quantity and quality; aesthetics; air quality; unique, endangered, fragile, or limited environmental resources; historical and archaeological sites; and demands on environmental resources of land, water, air and energy. Bonding is not an impact to the physical environment and is not listed in ARM 174.609(3)(d). Furthermore, Section 82-4-337(2)(c) requires DEQ to issue its bond determination for Operating Permit applications within 40 days of completion of an environmental review conducted under MEPA, recognizing that DEQ's bonding is conducted outside the

MEPA review. See Section 82-4-332(2), MCA, for bonding associated with the issuance of exploration licenses under the Montana Metal Mine Reclamation Act.

Section 82-4-336(9)(a), MCA, requires all disturbed land other than open pits and rock faces to be reclaimed to comparable utility and stability as that of adjacent areas. However, this standard may not be applied to require the removal of mine related facilities that are valuable for postmining use. The landowner has requested that the access road be left in place for his use after the exploration project has been complete and reclaimed. Thus, the proposed new access would be kept for the post-exploration use by the private landowner . The access road would be void of revegetation immediately after completion of the proposed project. Then, depending on the extent of use by the private landowner on the access road, the access road may become a two-track road with vegetation overtaking the pathway over time.

Potential for damage to the pit backfill liner (and remedies) are discussed in Comment #4 response above. The mine highwall where excavation of up to 1000 tons of rock for exploration purposes is proposed currently ravels due to freeze-thaw activity in the existing pit wall, resulting in accumulation of a talus slope at the base of the wall. The proposed project would not change this, but it may temporarily slow this process due to excavation of the outer layer of rock that is currently loose and more prone to sloughing. Please see the Comment Response #6 for details of the trench area.

DEQ disagrees with the statement that this project would involve significant new disturbance, given that the proposal involves the extraction of only up to 1,000 tons of rock from an existing mine pit complex from which approximately 33,000,000 tons of rock were previously extracted. The excavation trench would measure 10x30x90 feet. The total disturbance that would occur under the Proposed Action would be 1.29 acres.

Increased exposure of acid-generating materials in the portion of pit wall to be disturbed is expected to be minimal. The vast majority of sulfide highwall in the Zortman pit complex was buried beneath the backfill during reclamation. Exposed highwall above the backfill level is largely oxide material (oxide material is rock that has already

weathered, meaning that sulfide (i.e. acid producing) minerals have already decomposed and will not produce additional acidic or metal-laden run-off) and similar conditions are expected beneath the proposed shallow excavation. No damage to vegetation adjacent to the Zortman pit highwalls, which might be expected if storm water runoff contacted acid-generating sulfide materials, has been observed at the site since the backfilling and subsequent revegetation of the backfill surface occurred.

Comment #7 Response:
The Montana Supreme Court has recently rejected the position expressed by the commenter in Park County Environmental Council v. Montana Department of Environmental Quality, 2020 MT 303. In that case, the Montana Supreme Court considered whether the district court had erred in faulting DEQ for failing to consider the impacts of full-scale mining on neighboring federal lands that could be conducted by Lucky Minerals as a result of information gained during Lucky Minerals' proposed exploration activities. The Montana Supreme Court ruled that the district court had so erred. The ruling was based on the fact that DEQ's decision to grant an exploration license to Lucky Minerals did not irreversibly set in motion a chain of events inevitably leading to full-scale mining. Lucky Minerals would be required to get another approval from DEQ prior to conducting any future mining operations. DEQ's consideration of an application for full-scale mining would once again be covered by MEPA.

As was the case in Park County, Blue Arc would be required to apply for an operating permit under the MMRA prior to conducting any future full-scale mining operation. DEQ would conduct another environmental review under MEPA to evaluate the potential impacts that may result from the proposed full-scale mining and reasonable alternatives to the proposed full-scale mining plans of operation and reclamation.

while the U.S. Department of the Interior has proposed a new administrative withdrawal, it is at this point only a proposal and would cover a smaller area than the prior withdrawal.[8]

IV. CONCLUSION

For the reasons stated above, DEQ's Draft EA does not satisfy the requirements of MEPA and cannot lawfully serve as the basis for granting Blue Arc's exploration license application. Should you have any questions regarding these comments, please contact Katherine O'Brien or Amanda Galvan at the email addresses or telephone number below.

Sincerely,

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[8] See U.S. Dep't of the Interior, Bureau of Land Mgmt., Dep't of the Interior Proposes Continued Withdrawal of the Zortman-Landusky Mine Reclamation Area, https://www.blm.gov/press-release/department-interior-proposes-continued-withdrawal-zortman-landusky-mine-reclamation (Oct. 7, 2020).

General themes from other submitted comments

- **"The proposed action is a mining project or an underground mine."**
    - **Response:** The proposed action is an exploration project and not a mine project or underground mining project. Please see response to comment # 7 above.
- **Carbon footprint of the project in shipping material to Nevada.**
    - **Response:** Please see response to comment # 5.
- **DEQ should deny the project.**
    - **Response: Section** 82-4-332(1), MCA, requires DEQ to issue an exploration license to any applicant that 1) pays a fee of $100 to the department; 2) agrees to reclaim any surface area damaged by the applicant during exploration operations, as may be reasonably required by the department; and 3) is not in default of any other reclamation obligation. In addition, the reclamation requirements applicable to exploration licenses are set forth in ARM 17.24.103 through 107. Blue Arc is required to post a reclamation bond in an amount determined by DEQ prior to issuance of an exploration license. There is no provision in the Metal Mine Reclamation Act or the administrative rules adopted under the Metal Mine Reclamation Act that allows DEQ to deny an application for an exploration license that has been determined to be complete and in compliance with the Metal Mine Reclamation Act.
- **The application maps are not sufficient as required by 82-4-332(2), MCA.**
    - **Response: Section** 82-4-332(2), MCA, requires the applicant to provide DEQ a map or sketch in sufficient detail to locate the area to be explored and to determine whether significant environmental problems would be encourntered. Blue Arc provided DEQ with four maps of varying resolution and detail, including a 3D perspective of the project site. **DEQ has determined that the maps are suffcient to meet the requirements of 82-4-332(2).**
- **If the project is permitted, how will the project be monitored?**
    - **Response:** The proposed project would last for approximately 4-months, after which Blue Arc will be required to reclaim the areas disturbed by the proposed project. During the life of the project and reclamation, DEQ may conduct compliance inspections. In addition, DEQ will conduct a reclamation bond release inspection after

revegetation has had an opportunity to establish. Finally, as part of long term management of the larger Zortman mine site within which this project would occur, DEQ's site management contractor conducts routine groundwater and surface water quality and quantity monitoring downstream of the proposed project area as well as monitoring of discharges from the existing water treatment plant.

- **The exposed high wall from which the 1,000 ton bulk sample will be taken will expose more acid generating rock to the atmosphere. With exposure to rain and snow such water will find its way into the stream and seeps into the groundwater.**

    - **Response**: Exposure of acid-generating materials in the portion of pit wall to be disturbed by the proposed project is expected to be minimal. The vast majority of sulfide highwall in the Zortman pit complex was buried beneath the backfill during reclamation. Exposed highwall above the backfill level is largely oxide material and similar conditions are expected beneath the proposed shallow excavation. No damage to vegetation adjacent to the Zortman pit highwalls, which might be expected if storm water runoff contacted acid-generating sulfide materials, has been observed at the site since the backfilling and subsequent revegetation of the backfill surface occurred.

- **PAGE 10: Figure 4. 3D view of project features: the bottom of the photo was 9/5/2014, what does the area look like today? Any changes?**

    - **Response:** Reclamation of the Zortman mine pit complex was completed during 2003. By 2014, revegetation had become well established and paths associated with occasional light vehicle traffic had also become established. There have been no obvious changes to these established patterns since 2014.

- **The exploration project would be within the Zortman mining complex from the Ruby Pit and focused on an area that is a mineralized vein on an exposed high wall that probably is a source for ARD and the exploration could exacerbate an already environmental unfriendly condition.**

    - **Response:** Exposure of acid-generating materials in the portion of pit wall to be disturbed by the proposed project is expected to be minimal. The vast majority of sulfide highwall in the Zortman pit complex was buried beneath the backfill during reclamation. Exposed highwall above the backfill level is largely oxide material and similar conditions are expected beneath the proposed shallow excavation. No damage to vegetation adjacent to the Zortman pit highwalls, which might be expected if storm water runoff contacted

acid-generating sulfide materials, has been observed at the site since the backfilling and subsequent revegetation of the backfill surface occurred.

- **It is assumed 21.24 for mean annual precipitation is in inches? One cannot be sure that 'no disturbance associated with the proposed project would occur to Ruby Creek' (see previous statement). Only monitoring could determine this and there could be a time lag between the exploration and possible water contamination reaching the creek. Blue Arc would salvage topsoil from where? This is not clear.**

    - **Response**: The proposed action would take place on a rocky highwall and topsoil would not need to be salvaged. The EA has been updated to reflect this change. Exposure of acid-generating materials in the portion of pit wall to be disturbed by the proposed project is expected to be minimal. The vast majority of sulfide highwall in the Zortman pit complex was buried beneath the backfill during reclamation. Exposed highwall above the backfill level is largely oxide material and similar conditions are expected beneath the proposed shallow excavation. No damage to vegetation adjacent to the Zortman pit highwalls, which might be expected if storm water runoff contacted acid-generating sulfide materials, has been observed at the site since the backfilling and subsequent revegetation of the backfill surface occurred.

- **Secondary Impacts: Reject project as one cannot say 'No secondary impacts to water quality, quantity and distribution would be expected'. One has to monitor the water to know this for either the short term or long term impacts.**

    - **Response**: Please see response to comment # 5. Also, as part of long term management of the larger Zortman mine site within which this project would occur, DEQ's site management contractor conducts routine groundwater and surface water quality and quantity monitoring downstream of the proposed project area as well as monitoring of discharges from the existing water treatment plant.