Adriatic Metals

Non-Technical Summary of the Environmental and Social Impact Assessment

Vares Polymetallic Mine

September 2021

wardell armstrong

Introduction

Document Overview

Adriatic Metals PLC, and their subsidiary Eastern Mining, is developing the Vares Project, which is located close to the town of Vares, Bosnia and Herzegovina. The Project consists of the Rupice polymetallic underground mine located 8.7km West of the town of Vares; and the Vares Processing Plant, located at Tisovci 3.5km east of Vares. A 24.5km haul road passing predominantly through forest land will be developed to connect the two sites. Adriatic Metals do not currently plan to restart operations at the previously operated Veovaca Open Pit.

The Mineral Resource Estimate for the Rupice Mine confirmed the composition of the deposit to include silver, gold, zinc and lead. Over the 14-year life-of-mine 7.3 million tonnes of ore and 1.8 million tonnes of waste rock will be mined. Pre-production/Construction will commence towards the end of 2021, and the first ore for processing is expected mid-2022.

The Project is committed to meeting good international industry practice (GIIP), as well as ensuring compliance with national mining and environmental laws and legislation. A mining scoping study led by CSA Consultants was completed in 2019, following which the Pre-feasibility Study (2020) and Definitive Feasibility Study (August 2021) were carried out by Ausenco Engineering Canada. These studies lay out the project design and operational activities, that will allow a functioning mine to be developed.

In additional to local permitting requirements, an Environmental and Social Impact Assessment (ESIA) has been developed in accordance with international best practice, such as the European Bank for Reconstruction and Development (EBRD) Performance Requirements and the International Finance Corporation's (IFC) Performance Standards. An international ESIA is developed to support applications to international financial institutions or Equator Principles Financial Institutions (EPFIs) for project funding. An international ESIA is not a legal requirement for BiH, but a route Adriatic Minerals PLC chose to pursue in their approach to potential project investors and to ensure they are aligned with Good International Industry Practice (GIIP).

In October 2020 EBRD acquired a 2.62% stake in Adriatic Metals to support the development of the Vares Project. Therefore, the EBRD's environmental and social policy, and associated requirements, have formed the basis of the ESIA.

ESIA Overview

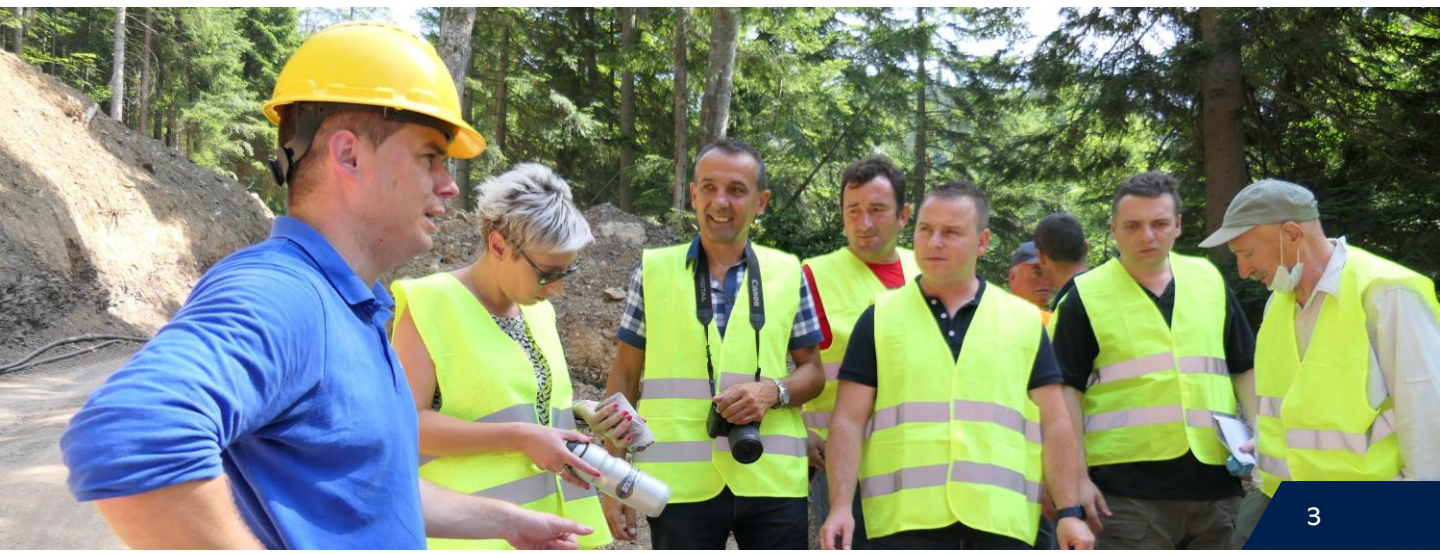
The ESIA assesses the current environmental and social conditions across the Project area and determines project activities that may result in impacts to the current status of the region. The ESIA defines methods of avoiding, mitigating and managing these impacts. This document presents a Non-Technical Summary (NTS) of the ESIA.

Throughout the preparation of the ESIA Adriatic Metals has engaged key specialists and contractors, using local organisations, individuals and companies where possible (see below). The ESIA incorporates inputs from all of these contributors and was completed in September 2021. In summary it contains the following:

- A review of the policies, laws and regulations that the Project must comply with as it is developed and operated. These include both National Bosnia and Herzegovina legal requirements and international best practice standards, which Adriatic Metals PLC. has committed to following, as well as their own suite of policies;
- A detailed description of the mine design, construction and operation;
- An assessment of the mine design and how this has evolved throughout the engineering studies, to ensure environmental and social components and community concerns were integrated into the final project;
- A description of the environmental and social baseline conditions in the Project area, including physical, biological, social and cultural elements;
- The impact assessment, which predicts potential impacts of the Project on baseline conditions, taking account of feedback from stakeholders, including those residing in affected communities, local government, businesses and other interested organisations;
- Identification of mitigation measures required to avoid, minimise and manage negative impacts (or enhance positive impacts), and which may apply to the engineering design, construction, operation or closure phases of the Project; and
- A series of management plans outlining mitigation measures for various infrastructural, environmental, and social elements of the Project.

ESIA Contributors

Organisation	Responsibility
Wardell Armstrong International Ltd. (UK Based Consultancy)	Oversight and development of the ESIA
Institute Kemal Kapetanovic Zenica	Collection and analysis of air quality data, noise monitoring, Biodiversity desk and field surveys, health impact assessment
Institute for Chemical Engineering Tuzla	Surface, spring and groundwater analysis and Soil analysis
Mining Institute Tuzla	Social surveys, engineering studies, Local permitting for Rupice
Enova Consultants (Sarajevo)	Social surveys, local permitting for Vares Processing Plant
National Museum of BiH, Sarajevo	Archaeology desk and field studies
Federal Institute of Agropedology, BiH	Soil Sampling and Analysis
Gradko International ltd UK	Air Quality analysis
Sistem Qualita S from Pale	Air Quality analysis
Other Personnel	Adriatic Metals / Eastern Mining Environmental and Social Team Kate Harcourt – Independent ESIA Advisor Esad Oruč – Hydrology and Hydrogeology Specialist from Sarajevo Joe Crummy – Geochemistry Specialist



BiH EIA and Permitting

The Vares Project is compliant with national permitting requirements (see below). Following the grant of the two concessions, exploration permits to undertaken drilling activities throughout the areas were approved. A demolition permit was required to allow for the removal of infrastructure at the Vares Processing Plant site, which involved both a preliminary water consent and an environmental permit, prior to the permit being granted.

The exploitation permit allows for the development and operation of the Vares Project. To obtain this permit several steps must first be taken, including the granting of a water permit, environmental permit, land use permit and forest permits, allowing for the transfer of land from forestry to industrial use.

BiH environmental regulations contain general requirements to guide the Environmental Impact Assessment (EIA) process and submission of applications for environmental approvals. To support the application for the environmental permits for both sites, an EIA to local legislative requirements was completed by Bosnian company, Enova, in October 2019 for Vares Processing Plant, and by Tuzla Mining Institute in October 2020 for Rupice. Environmental Permits for the Rupice mine and the Vares Processing Plant were subsequently granted by the Federal Ministry of Environment and Tourism.

Concession Agreement	Approved
Demolition Permit	Approved
Exploitation Permit	Approved for both Vares Processing Plant and Rupice
Main Mining Project	To be submitted following completion of engineering studies

NTS OVERVIEW

The focus of this document is to communicate the planned Project activities to all stakeholders, including how potential environmental and social risks and impacts will be managed. The NTS describes the national and international legislation, regulations and standards to which Project must adhere to. A brief description of the Project design, layout and planned operations is then provided.

A summary of the results of the ESIA is provided in section 3. This section aims to answer the following questions:

- What is the present state of the environment or social situation?
- What are the potential impacts from Project activities on the environment or communities?
- What will be done to manage or control potential impacts?
- What risks and impacts will remain after action is taken to control the impacts?

A summary of how Adriatic Metals / Eastern Mining will implement the findings of the ESIA through an environmental and social management system is provided, and finally, stakeholder engagement and the disclosure of the ESIA is described. This final section describes how community and stakeholder feedback from this NTS as well as the draft ESIA will be integrated into a final document.

Project Description

History and Background

The Vares area has had a history of mining lead, zinc, and iron ore since the Bronze Age (9th-8th century BC). Development of the modern mining industry in Vares began in the 1890s, evidence of which is scattered across the landscape, including large open pit mines, waste dumps and exploration adits. Mining remains an integral part of the history of Vares, recognised every year on the 16th August, the day in which the first blast furnace was opened in the area.

The Veovaca open pit mine, located adjacent to the Vares Processing Plant, was operated from 1983-1987, during which time over 400 thousand tonnes of ore were processed annually to produce zinc, lead and barite concentrates.

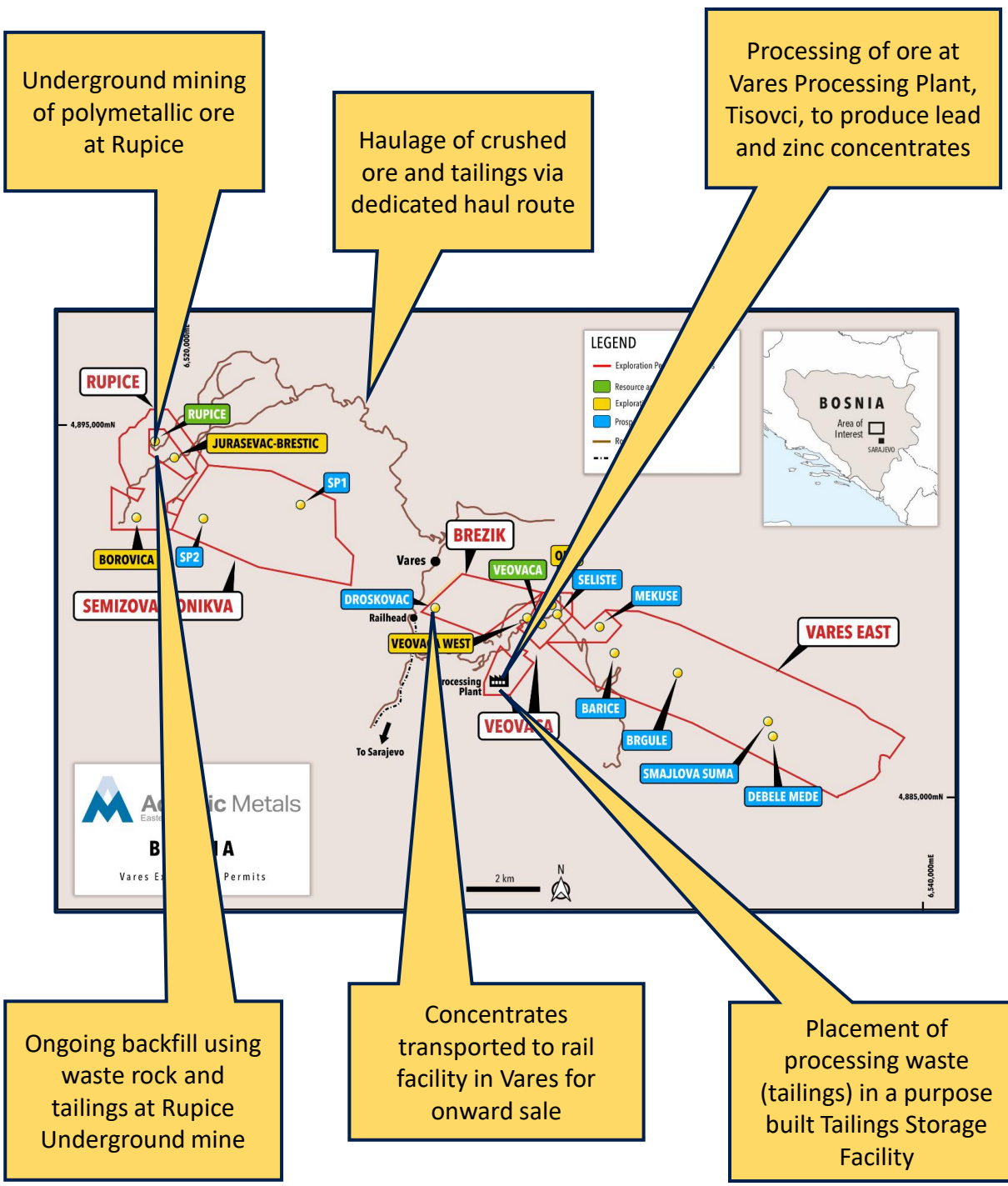
Location and Setting

The Project lies in the Dinaric Alps at an altitude of 1060-1250m above sea level, in the vicinity of Zvijesda Mountain and Vrući Potok valley. The landscape is alpine with steep, forested hillsides, mountain peaks, and narrow valleys, interspersed with open meadows and rural settlements. The climate is temperate with an average temperature range from 17.5°C in July to -3°C in January, with snowfall and icy conditions currently limiting access to the Rupice site in the winter.

Access to the concession consists of a series of sealed roads, passing through the mining town of Breza from the closest airport at Sarajevo 50km to the south of the Project. The Rupice mine and associated surface infrastructure is located within a steep valley adjacent to the Vrući Potok and the border with neighbouring municipality Kakanj. The Vares Processing Plant is located on a small plateau at a hilltop and is situated on land used for processing of metals during the mining of Veovaca Open Pit.

Project Overview

Adriatic Metals plans to extract rock from an underground mine to be developed at Rupice. The rock will be separated into ore (containing metal) and waste rock. The waste rock will be placed into a stockpile at Rupice, whilst the ore will be crushed and then loaded on trucks for transport to Vares Processing Plant. Here processing techniques will be used to extract the metal from the rock, giving the final products: lead-silver concentrate and zinc concentrate.



The overall footprint of the Project is 72ha, comprising 28.5ha at the Rupice Mine; 4.5ha for the processing plant; 11ha for the tailings storage facility; and a 28ha haul road corridor. Of the total development, 4.5ha is land previously used for mining and approximately 9ha consists of existing road.

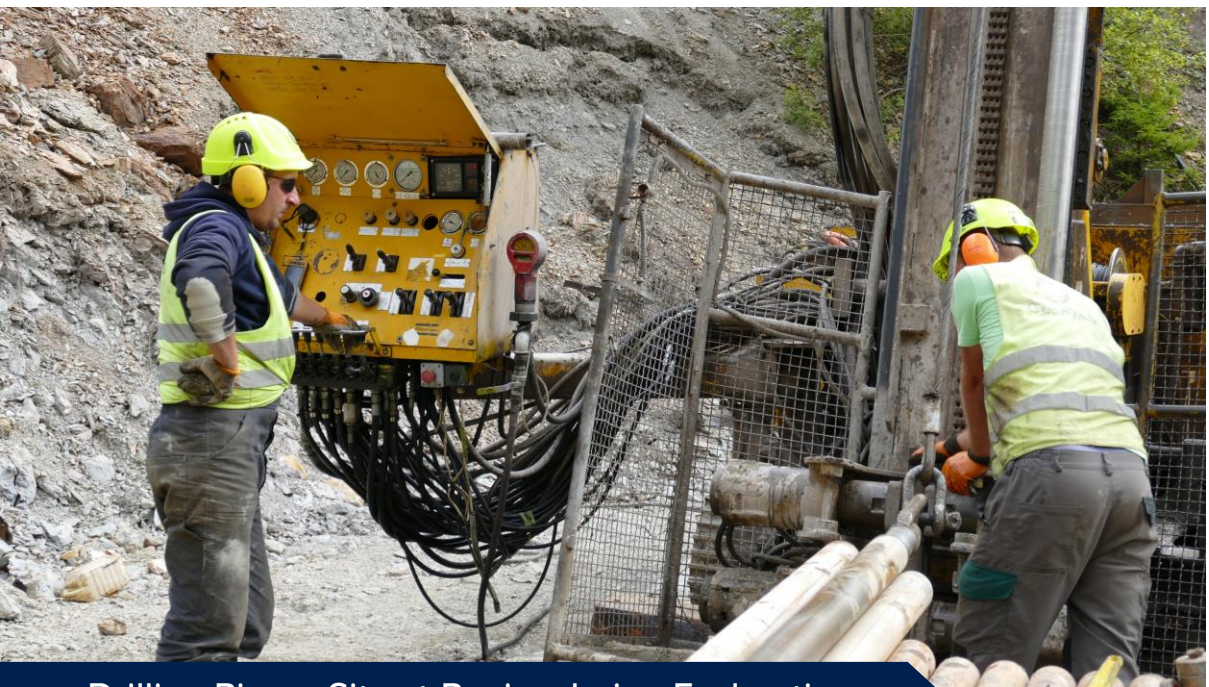
Overall, the size of the project development area has been assessed through an iterative design process to ensure that impacts to land and livelihoods are minimised.

A safety exclusion zone will be maintained around the processing plant and the Rupice sites, with fencing and/or other physical barriers to ensure the safety of local communities and personnel.

Mine Life and Schedule

The Construction and pre-production phase is anticipated to take approximately 9 months and will start in the latter part of 2021. Construction activities include the felling of trees for infrastructure development, preparation of mine access and associated infrastructure at Rupice and Vares Processing Plant. The majority of construction activities will take place from January 2022, with the aim to start mining in June 2022. The Vares Processing Plant construction will begin in October 2021 and will continue until February 2023. The haul route will be constructed and managed by contractors selected and managed by Vares Municipality. The remainder of the Project construction will be managed by Adriatic Metals / Eastern Mining.

The Life of Mine is expected to be approximately 14 years. The mining plan includes the storage of waste rock in the early years before it is combined with tailings as backfill material, minimising the need for waste disposal on surface, and improving land stability at closure.



Drilling Rig on Site at Rupice during Exploration

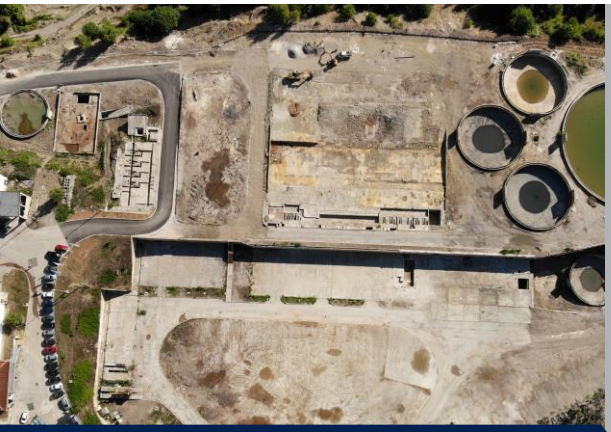
Site Layout

Rupice

At Rupice, three entrances or openings into the underground mine will be developed, two of these are for the purpose of excavating rock and bringing it to the surface, called production declines, whilst the third will ensure there is adequate airflow to the underground workings. The site will include areas levelled and prepared for the storage of waste rock and ore, as well as surface infrastructure including the crushing plant, backfill plant, refuelling station and maintenance workshop.

Haul Route

The haul route traverses eastwards from Rupice to connect the mine site to the Processing Plant. The planned route passes through forestry land north of Osredak, before traversing south and passing through Polozac. The planned road will pass the Smreka iron ore pit (where access to the pit will be limited by the routing), south of Vares, before traversing up the Zagarski Stream valley, through Bijelo Borje and entering the plant site from the south west. The road has been designed to utilise existing tracks where possible and to avoid the majority of communities.



Vares Processing Plant

At the plant site existing buildings and concrete structures have been demolished as necessary to accommodate the new facilities. New buildings to house processing equipment will be established predominantly on the northern half of the site. The existing administrative building will remain functional throughout the life of the Project. The tailings storage facility is located in the valley to the south west of the plant site.

Underground Mining and Transport of Ore

The underground mine will be developed by drilling holes in a pattern determined by the mine engineer, filling these with explosive and blasting the rock. The blasted rock will be hauled to the surface via large (42-tonne) mining trucks. A fleet of mining vehicles will be required for underground workings, these include drilling rigs, dump trucks, haul trucks, personnel transport and others. In total 31 vehicles/pieces of equipment will be required to develop the Rupice mine.

Ore and waste rock will be hauled to surface for three-stage crushing that will reduce the run-of-mine (ROM) material from 600mm to 8mm. Crushed ore will then be transported by 22 tonne road trucks to the Vares Processing Plant. 2000 tonnes per day of ore will be transported to the Processing Plant, requiring each truck to complete three deliveries per day.

As the mine develops a programme of backfilling will be undertaken, and tailings material will be trucked from the process plant to a backfill plant at Rupice. Any tailings not taken to Rupice will be trucked from the processing plant and deposited in a tailings storage facility to be constructed immediately to the south of the plant.

The route of the haul road for both crushed rock and backfill tailings will be developed and maintained by the Municipality for the mine and forestry contractors as well as the general public. The route will utilise 9km of existing forestry tracks and existing road and will require the development of 15.5 km new road. The haul road will have a predominantly gravelled surface throughout its length, and will have a 5m-wide driving width. Hauling activities along the road will be 24 hours 7 days per week, resulting in 91 mine-related vehicle movements per day, equating to approximately four every hour.

Processing and Transport to Market

To avoid, minimise and mitigate environmental, social and occupational health and safety impacts and risks, the Vares Processing Plant has been designed to conform with industry best practice and international standards. Crushed ore received at the Plant will go through a grinding circuit to reduce the ore from 8mm to 40µm. The metals will be processed simultaneously through a sequential flotation circuit consisting of a silver-lead flotation and regrinding and zinc flotation and regrinding. The process produces two saleable concentrates, silver-lead and zinc. The concentrates will then be thickened, filtered and sealed in shipping containers for transport from the railhead at Vares to European and Far-Eastern markets via the port of Ploče, Croatia.

Waste Management

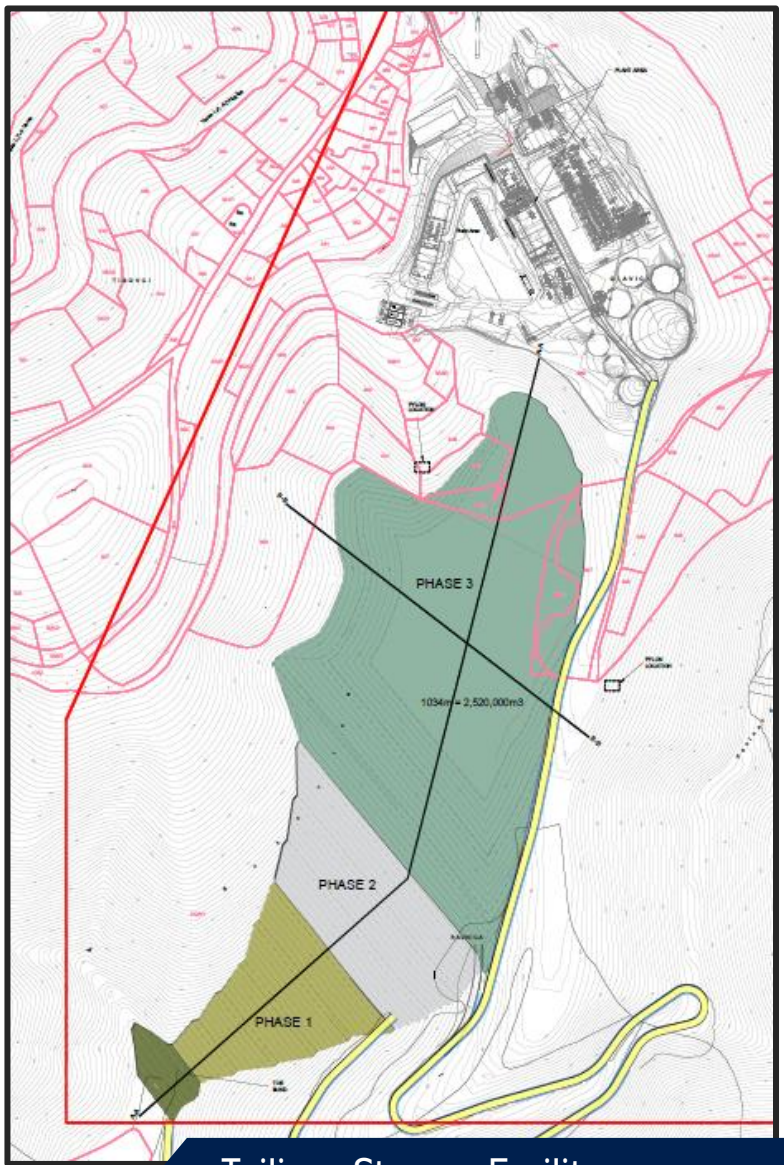
Management Plans have been developed in accordance with the Waste Management Law of BiH, and relevant EU environmental directives, including the Waste Framework Directive (2008/98/EC).

Waste tailings from processing will be dewatered and filtered prior to being transported via truck to the Rupice mine for use as backfill with crushed aggregate/waste rock and cement in the mine as required. Depending upon the volume of ore processed, approximately 39,000 tonnes per month of tailings will be generated. Excess tailings not required for backfill will be disposed of in the new dedicated tailings storage facility (TSF).

Dewatered tailings will be disposed of to the dry stack TSF by trucks, via a purpose-built access road. The TSF has a 14-year life-of-mine and 2.5Mm^3 capacity and will be lined and designed to collect seepages for treatment and disposal in accordance with local regulations. The TSF will be developed in three phases and progressively rehabilitated throughout the mine life.

Waste rock will be temporarily stored in a lined waste rock stockpile at the Rupice site prior to use as backfill in the mine. Any seepage from the rock stockpile, potential acid rock drainage and metal leaching (ARDML), and other site drainage will be collected in a partitioned dam and forwarded to a wastewater treatment plant to adjust pH and remove any traces of potential pollutants.

Non-mining waste created by the Project will be collected and disposed of by licensed carriers.



Tailings Storage Facility

Water Supply

Water supply sources have been reviewed extensively over the study period. Consideration has been given to a number of options, and careful analysis of existing water users and sensitive water courses has been undertaken, to ensure the final selection will be sufficient under periods of supply stress, such as dry summer months. The environmental and social constraints have been taken into consideration and the raw water source was chosen to ensure that impacts are minimised.

Water to the Rupice Mine will be supplied by JKP Vares (the local water utility) and abstracted from the Mrestilište Studeni Potok on the Bukovica River, which has a capacity of between 8 and 15l/s. Pumps will be installed at the abstraction point, and a pipeline will be constructed following the haul road alignment for 3km before leaving the road corridor, passing through woodlands to discharge to a header reservoir that has 150m^3 capacity situated above the Rupice mine.

At Vares Processing Plant, the required water (5.4l/s) will be supplied by the existing municipality supply network, provided by JKP Vares. The water originates from the Lalića Mlin spring which has a reported capacity of between 6 to 15 l/s and which also supplies water to the neighbouring villages of Pržići, Tisovici, Bijelo Borje, Mir and Stupni Do.

The project will require a preliminary water permit, a water consent and a final consent issued by Vares Municipality. Permitting, consenting and final detailed project design will be provided by licensed companies for this level of engineering.

Power Supply

Power will be supplied to the Project by the state company, JP Elektroprivreda BiH. At Rupice power will come from a sub-station in Vares Majdan via a 35kV cable buried alongside the haul road. A 1MW emergency generator at the Rupice mine site will maintain ventilation and pumping infrastructure in the event of a mains electricity supply power failure. At VPP power will be provided from the existing 35kV overhead powerline.

Further, solar panels have been installed on the roof of the administrative building at Vares Processing Plant, these have a capacity of approximately 44MkWh, saving 20,633kg CO_{2e} /year.

Staff

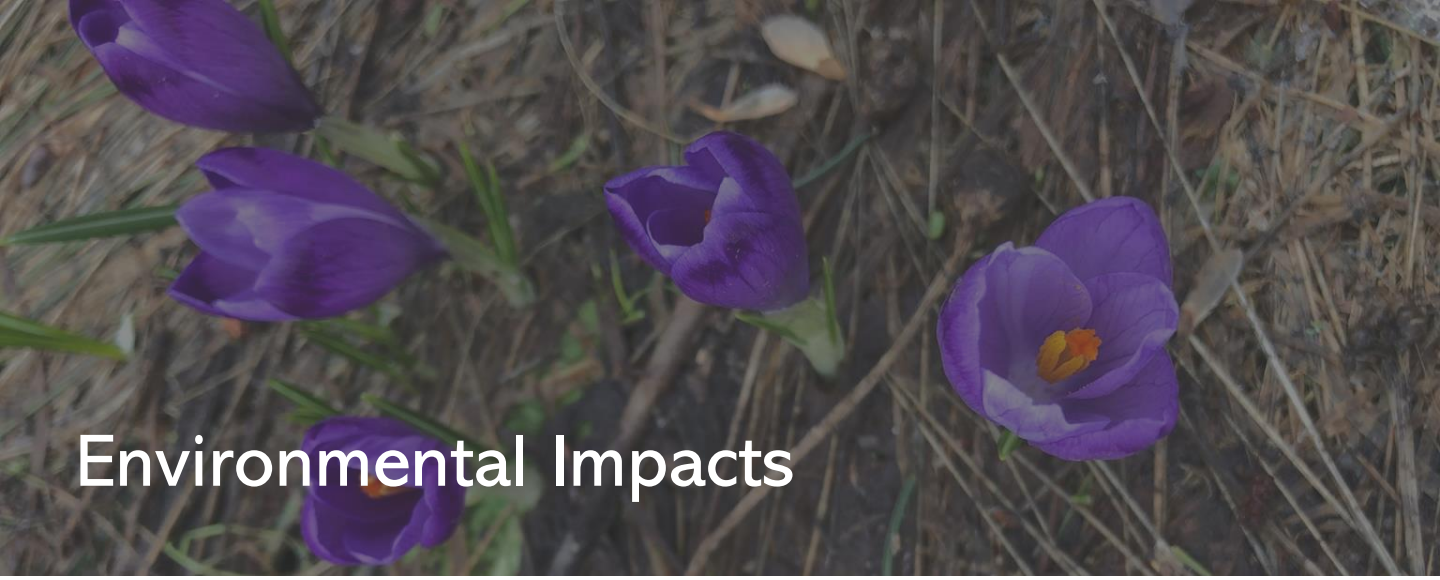
Adriatic Metals have adopted a resourcing strategy that, with the exception of 10 roles for highly qualified technical specialists, all employees will be FBiH nationals. The mine's workforce will require up to 321 personnel during operation.

Both mining operation and haulage will be undertaken by local contractors, who will be managed and overseen by Adriatic Metals. The contractors have not yet been decided but are currently in the tendering phase.

Staff, both employees and contractors, will be encouraged to live in Vares to reduce commuting time and boost local employment and the local economy. A bus service to Rupice and the Processing Plant will operate from a park and ride service at the rail facility south of Vares, and two shuttle-bus services to and from Sarajevo and Kakanj will operate for each shift. Private cars will not be permitted at either the mine or the processing plant.

The mine, processing plant and hauling activities will operate 24 hours per day, 365-days a year throughout the life-of-mine, expected to be approximately 14-years.

Eastern Mining Staff at Vares Processing Plant



Environmental Impacts

Greenhouse Gas Emissions and Climate Change

Background

There is scientific consensus that climate change is partly caused by Greenhouse Gas (GHG) emissions from human-related activities. New industrial activities that release GHGs, including those associated with the Vares Project, will add to the emissions thereby potentially accelerating climate change.

Gases known to influence climate change include CO_2, methane, nitrous oxide, and hydrofluorocarbons (HFCs). Accounting for the effect of greenhouse gas emissions is expressed as CO_2 equivalent (CO_{2e}).

The impact assessment looks at both the impacts of the Development on Climate, and the way in which the climate is expected to vary during Life of Mine and the effects of the changing climate on Project risks.

Potential Impacts

The main source of quantifiable GHG emissions associated with the Project relate to emissions from diesel engines including mining equipment, haulage lorries and project personnel transport vehicles; and emissions associated with electricity grid-tied project infrastructure, which include the Rupice mine and the Processing Plant.

Project emissions over the Life of Mine have been calculated as 556,862tCO_2e in total. The predicted emissions compare favourably with predicted emissions per unit recovered of these metals from a typical mine, based on a global average ahead of mitigation being implemented.

Global climate change may result in increased temperatures, rainfall and snowfall. These pose some risk to the Project and will need to be monitored and managed across the life of the mine. The Project design incorporates a large amount of drainage which would have capacity in storm event, ensuring the sites do not flood and environmental pollution to water courses does not occur.

Control Measures

GHG emissions have already been reduced within the project's design by:

- Using modern, energy efficient electrical equipment and fuel-efficient engines;
- Optimising mine logistics through transporting all mine personnel to site by bus from the park-and-ride in Vares;
- Optimising the transportation of ore and process tailings;
- Minimising land clearance required for project facilities and the use of a brownfield site for the processing plant;
- Incorporating renewable energy sources into the project design; and,
- Incorporating energy efficient and energy saving elements into the design of the mine and the plant, including energy saving systems, insulation and recycling of energy and heat in ore processing.

Further GHG mitigation opportunities will be explored through detailed design to reduce greenhouse gas emissions to as low as reasonably practical through the implementation of an effective environmental management system.

Air Quality

Present Air Quality Conditions

With minimal industry and associated traffic in the region, the perception is that Vares has low industrial emissions and good air quality. The primary sources of pollution currently are from the burning of wood for domestic heating, emissions from vehicles and localised dust emissions from saw mills across the region, specifically the sawmill in Daštansko, northeast of Vares Processing Plant.

Baseline ambient air quality monitoring has been carried out for the ESIA at ten locations. An analysis of the average values for SO_2 and NO_2 indicates that the air quality in the area is good, with the concentrations well within the national standards. The results show that there are high levels of dust deposition, which is attributed to the use of firewood for heating, and fuel with high sulphur content in district heating systems, as well as the dust generated by the sawmill. The deposited dust has high levels of lead, nickel and arsenic, often in exceedance of national standards.

Dust Emissions

The ore deposit at Rupice will be mined underground, thereby containing sources of dust pollution from blasting and loading the mine haul lorries. Surface activities that generate dust at the mine relate to crushing of ore, stockpiles of ore and loading of haulage lorries for transfer of the ore to the Vares Processing Plant.

The transport of ore and tailings via truck has potential to cause some dust emissions, as does transfer and stockpiling at the process plant. Water spraying will be undertaken at all dust sources to supress any potential dust emissions. This will be required predominantly during dry periods. Ongoing monitoring for dust will also be carried out to ensure any emissions from the Project are minimised.

Combustion Emissions

Combustion emissions will come from diesel-fuelled vehicles working at the mine and also the haul route. An estimated 91 truck movements per day are expected along the haul route. Using best practice methods, the impact from combustion emissions for this Project will be minimal, and will not cause significant change to the ambient conditions. Ongoing monitoring for combustion emissions, such as SO2 and NO2 and particulate matter will be undertaken to ensure significant emissions are not released. Modern machinery and vehicles will be used for the Project, to minimise potential combustion emissions as far as technically feasible.

Nuisance Odours

Nuisance odours during construction and operations could be generated from improperly managed domestic waste (storage and haulage) and domestic wastewater treatment/disposal. The management of these aspects is detailed in a specific waste management plan, which incorporates handling and storage procedures and treatment. With this implemented no significant impacts from nuisance odours are expected. All non-mining waste will be collected and disposed of offsite by licensed operators minimising potential associated odours.

Noise and Vibration

Present Noise Conditions

Noise, in this case, is a measure of the sounds from industrial processes that can be heard nearby. The assessment considers how local communities will experience potential impacts associated with noise coming from the mine, haul road and the processing plant.

A noise baseline assessment was carried out by Zenica Institute to measure daytime noise at seventeen monitoring locations representative of ambient noise levels where people may be affected. Night-time noise monitoring was conducted at locations closest to where the mine operations may cause disturbance during the night. Background noise levels in the project area are exceptionally low in most places.

Potential Noise and Vibration Impacts

Ambient noise levels will increase with commencement of construction for the Project and will continue throughout operations, ceasing post-closure. Construction noise will be short lived and will be associated with earth works and development of infrastructure across the Project area.

During operations, effect on the existing noise level will result from operations such as drilling and blasting underground, hauling of rock to the surface, crushing of rock, stacking and loading activities, transport of rock, ore and tailings along haul road and processing activities at the plant site. As the Project is to be operational 24 hours per day, increased noise levels may be experienced during the day and night-time.

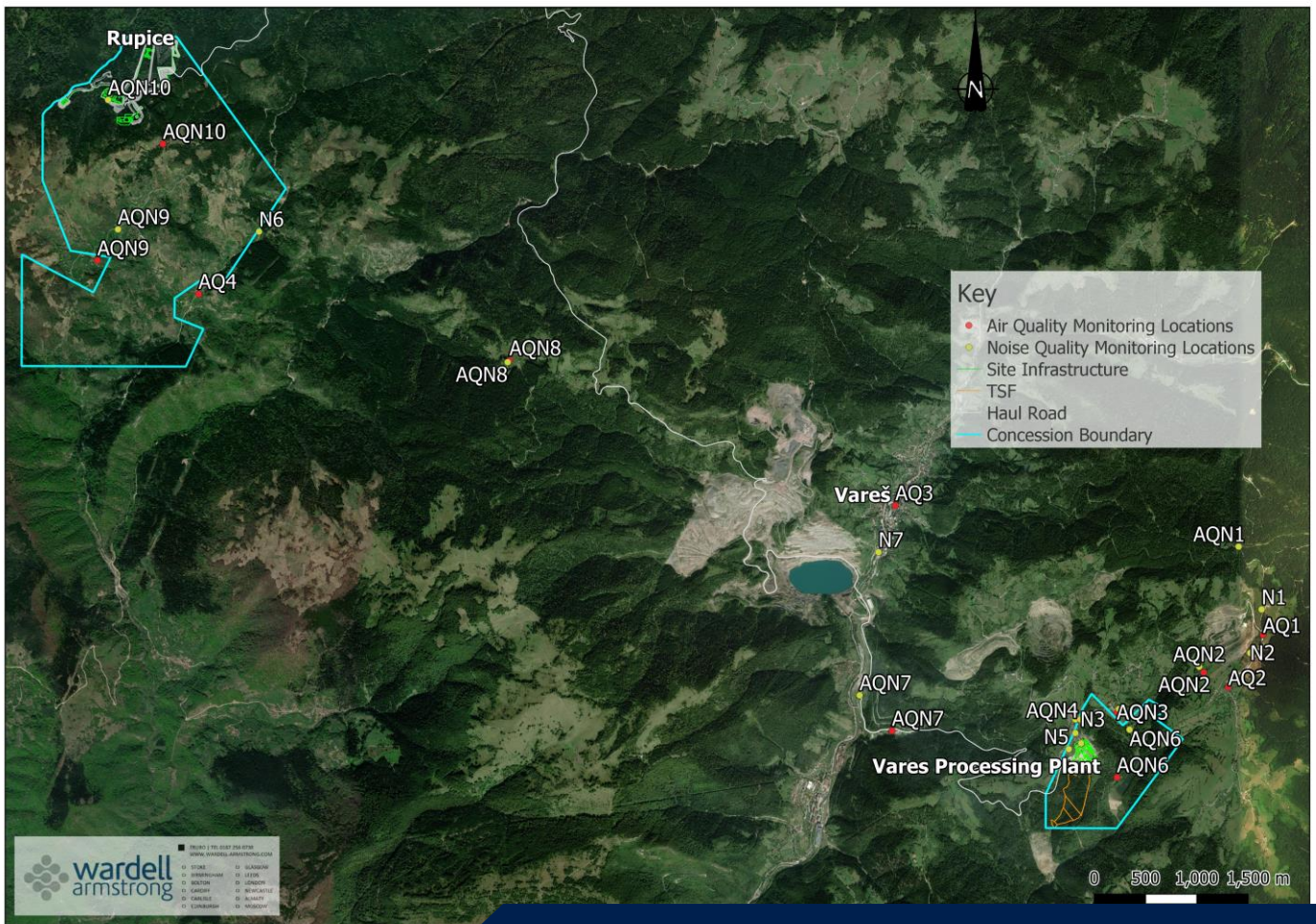
Noise modelling has been undertaken to determine the potential noise arising from project activities at the closest residential properties. Rupice is in a remote valley with no residential areas close by, therefore the Project will not lead to any significant community noise impacts. At the processing plant the village of Tisovci has been considered carefully and each occupied property has been assessed in modelling.

Several measures have been put in place at the plant site during the project design to ensure noise levels remain below the legal and best practice requirements:

- Installation of noise fencing around the perimeter of the site between the plant and Tisovci;
- Improved buildings fabric at the processing plant to reduce noise emissions; and
- The relocation of the crusher from Tisovci to Rupice to reduce noise impacts.

Several residential properties are located in close proximity to the haul route, such as at Bijelo Borje and Položac. Property owners that may be impacted have or will be contacted by Adriatic Metals and specific mitigation has been discussed, such as the installation of better glazing to reduce internal noise levels.

Vibration impacts resulting from the Project are not anticipated to be significant. The relatively low number of vehicles and speed limits on the road will unlikely cause significant vibrations. Vibration and noise will both be monitored during construction and operation, to ensure levels remain below the legal requirements of BiH.



Air Quality and Noise Monitoring Locations

Soils and Land use

Present State of Soil

Soil sampling was undertaken by Eastern Mining and the Sarajevo Institute for Agropedology at the Rupice mine, in and around the area of the Vares Processing Plant, and along the haul road. Soils were generally found to have high levels of organic matter, and nutrient content typical for forest soils. Almost all soil samples tested for heavy metals, including within the Vares Processing Plant and in the surrounding area, exceeded current BiH guidelines for one or more parameter, and soils along the haul road also showed elevated metals. These elevations are due to both the past processing activities at the plant site and throughout the area, leading to contamination, and high background levels attributable to the metals natually present in the region.

What are the potential impacts on soils?

To prepare the sites for construction and mine development, soils will need to be removed and stored in a suitable way. Top soils of good quality will be used at the end of mine life to recover the disturbed areas for rehabilitation, particularly at Rupice and in the area of the Tailings Storage Facility.

Undisturbed soils adjacent to the Project area may also be impacted through the deposition of dry and wet materials originating from the mine such as dust, which may potentially cause contamination and/or changes in soil properties, such as soil acidity.

The potential impacts of all project stages (construction, operational and closure) include the following:

- disturbance and removal of soils;
- changes in soil quality during storage;
- change in soil chemistry and quality through soil contamination resulting from accidental spills or discharges;
- loss of soil through wind and water erosion, as well as inappropriate storage and handling; and
- effects of displaced soil on adjacent land, flora, fauna and water environment (e.g. due to contamination with elements present in naturally high concentrations in the soil).

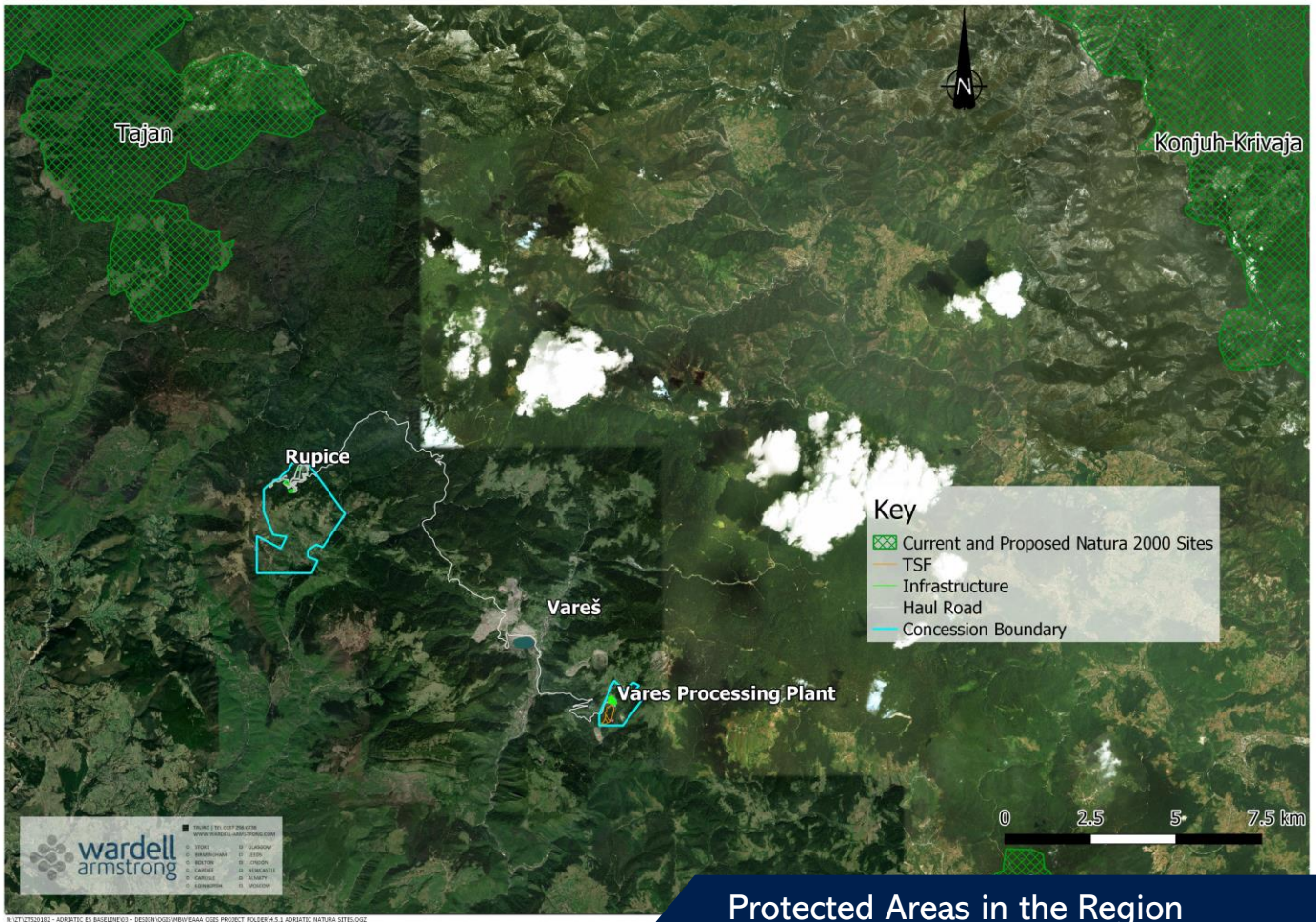
A Soil, Contaminated Land and Erosion Control Management Plan has been developed for the Project. This plan outlines measures to ensure soils disturbance is minimised and the storage of soils is done in a way that maintains the quality for closure whilst reducing potential risk of erosion.

Biodiversity

Habitats and species of plants and animals have been mapped across the area by the Zenica Institute throughout 2020 and 2021. The surveys were undertaken across several seasons to ensure all species were accounted for. The results of the surveys have been assessed in accordance with Bosnian legislation, EU law and international bodies, such as the International Union for Conservation of Nature (IUCN) to determine any sensitive or important species / habitats.

Protected areas

The Vares Project does not directly lie within or adjacent to any protected areas. The closest area to the Rupice mine site is the Tajan Natural Monument which is approximately 6km to the north of the concession boundary. The closest protected site to the Vares Processing Plant is Zvijezda Mountain, the most sensitive parts of which are 3km distant from the project site and protected by a buffer zone. The undulating topography of the area means that these sites will not be impacted by the Project.



Protected Areas in the Region

Important habitats

Several habitats have been identified in the Project area that may be directly or indirectly impacted by Project activities. Habitats have been assessed in line with the standards of the European Bank for Reconstruction and Development (EBRD). This includes identifying “Priority Biodiversity Features” and “Critical Habitat”. Habitats identified in the area are described below.

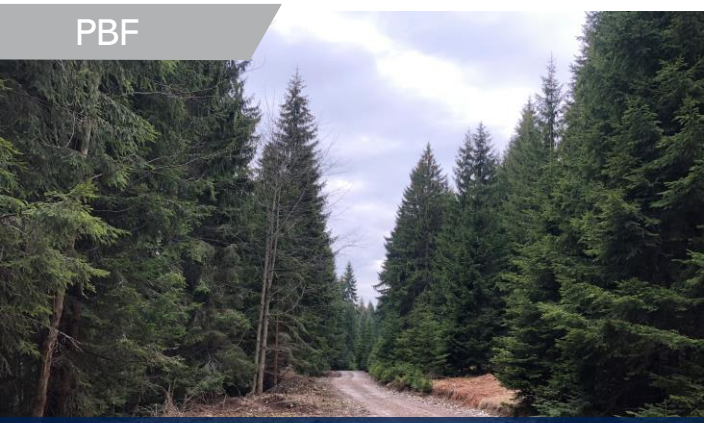
Priority Biodiversity Feature (PBF):

- Threatened Habitats
- Vulnerable Species
- significant biodiversity features identified by a broad set of stakeholders or governments
- ecological structure and functions needed to maintain the viability of priority biodiversity features, as described above.

Critical Habitat (CH):

- High Threatened or unique ecosystems
- Habitats of significant importance to endangered or critically endangered species
- Habitats of significant importance to endemic or geographically restricted species
- Habitats supporting globally significant migratory or congregatory species
- Areas associated with key evolutionary processes.

PBF



Acidophilic spruce forests to be impacted by development of Rupice, the planned haul road and the Tailings Storage Facility

PBF & CH

Alpine rivers and their ligneous vegetation and mountainous water courses, to be impacted by the planned haul road

PBF

Mountain hay meadows, impacted by the planned haul road

PBF

Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels, impacted by the haul road

Timber clearance for the Rupice mine and haul road will result in the removal of approximately 30 ha of coniferous forestry, an additional 33ha will be impacted along the haul route, and 17ha within the Tailings Storage Facility. This habitat is categorised as a degraded priority biodiversity feature habitat.

The planned haul road will also impact on 3ha of mountain hay meadows, through a small section near Položac. Construction of and movement of trucks along the haul route has the potential to indirectly impact the tall herb vegetation and water courses in the region without proper management, such as from dust emissions and soils erosion.

Important Animals

Several species of amphibian are present in water courses in the project area that are protected under EU law, including the yellow bellied toad, greek frog, green toad and agile frog. The presence of these species causes the identified areas to be classified as critical habitat. The Zagarski stream, to be impacted by 1km of the planned haul road, contains some of these species and will be directly impacted by road construction. Adriatic Metals have committed to translocating the amphibian species to newly installed ponds, as well as to remediate and manage an appropriate stretch of degraded river as an offset to impacting the Zagarski Stream.

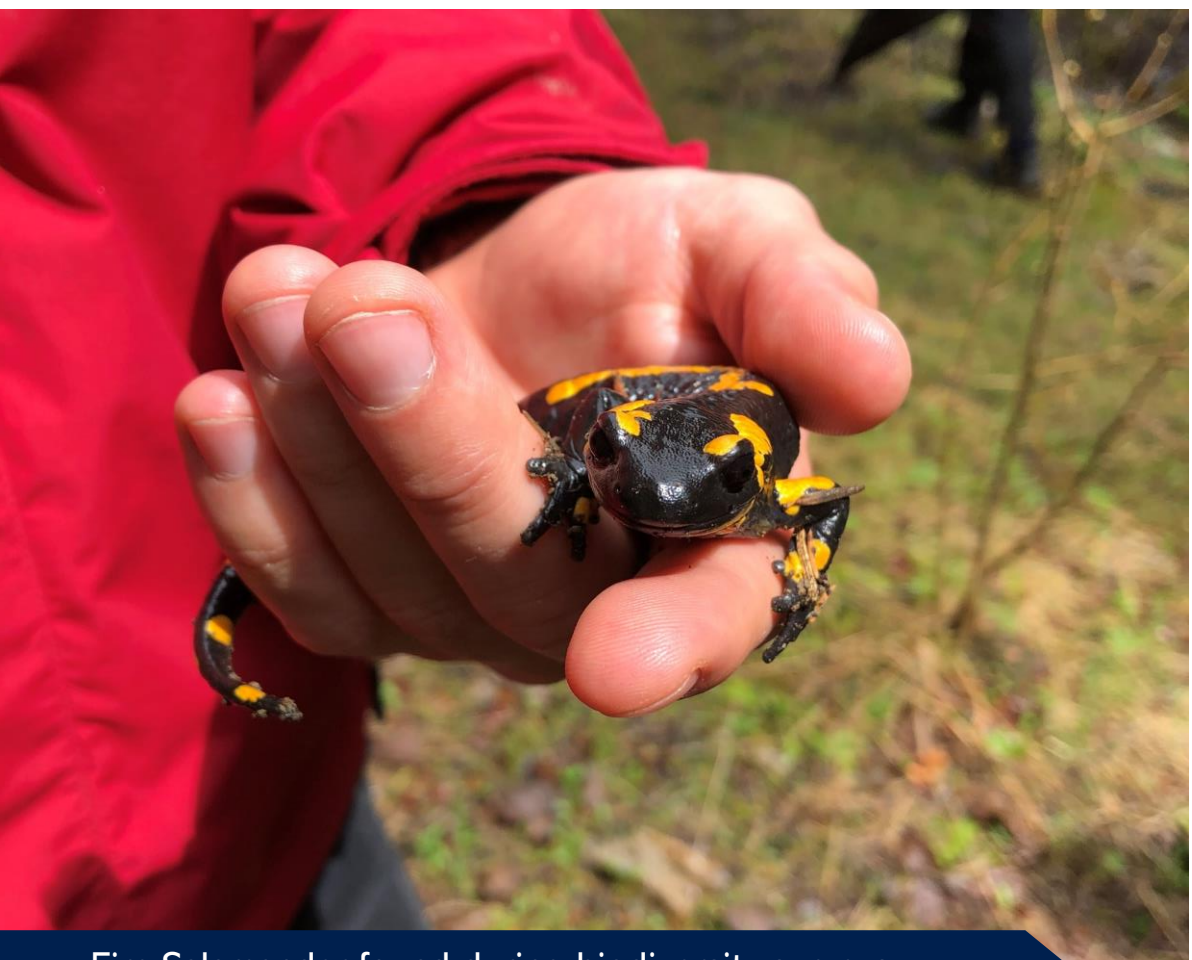
Yellow Bellied Toad

The Mala River, downstream of the Tailings Storage Facility at the Processing Plant has a population of White Clawed Crayfish, a species protected by Bosnian law, IUCN, and EU law. The Project will not directly impact the Mala River, and measures have been put in place to ensure sediments and discharges from the process plant and tailings storage facility do not reach the river or impact water quality.

Several large mammals are found in the general project area including Brown bear, Grey wolf, Eurasian Lynx and European wildcat. These do not have denning habitats that will be impacted by the Project though their presence will continue to be monitored to ensure there is no impact.

To avoid, mitigate and offset the impacts to Biodiversity caused by the Vares Project a Biodiversity Action Plan has been developed and will be implemented by Eastern Mining. The key measures put in place throughout the project design and within the biodiversity action plan are summarised below.

- The haul road has been rerouted to avoid critical habitat close to Donja Borovica. Instead, the road traverses through the forested area to the north, using existing forestry tracks where possible.
- The loss of habitat along the Zagarski stream will result in frogs and toads being relocated to newly established ponds, overseen by a Bosnian biodiversity specialist. An additional section of degraded stream elsewhere will be identified and improved by Adriatic Metals.
- Adriatic Metals / Eastern Mining are in discussion with the Vares Forestry Commission and other regulatory bodies to establish an area of degraded woodland and an area of meadow habitat that can be managed by the Project team to improve its status and to offset the habitats to be impacted by Project activities.
- Monitoring of all biodiversity aspects and the Biodiversity Action plan will be undertaken regularly to ensure all aspects are fully implemented and are effective.



Fire Salamander found during biodiversity surveys

Surface and Ground water

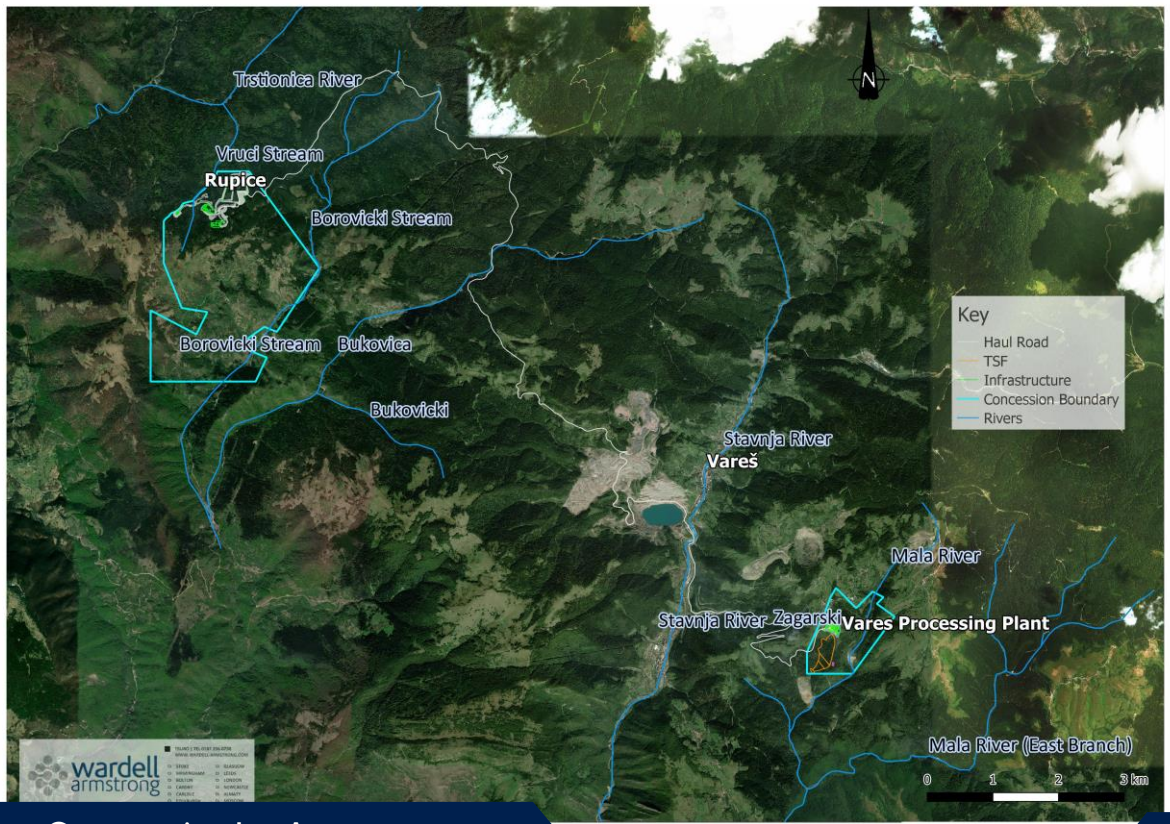
Water resources include surface water in rivers, streams, wetlands, lakes and reservoirs; and groundwater in aquifers. The Rupice mine is located on the western slope of Kiprovac Ridge and the catchment is mainly drained by the Borovički stream, which is a tributary of the Bukovica River. The wider catchment of the mine is also drained by the Vrući Potok towards the Trstionica Basin in the northeast.

At Vares Processing Plant, the closest river is the Mala River, located to the east. The Zagarski stream is located in a small valley to the west of the plant site and follows the same path that the haul road plans to take. Both the Zagarski Stream and the Mala River drain into the Stavinja River, south of Vares.

Monitoring for water quality, flows and water levels of the streams, rivers and groundwater has been undertaken over a 12 month period, and the results are presented in the ESIA. The Mala River, east of the Process Plant, is heavily compromised due to the previous mining of Veovaca. The river is culverted in two places and has slight degraded water quality.

The Vrući Potok has occasional poor water quality with a high level of suspended soils due to ongoing forestry works in the area leading to erosion.

There is no shallow groundwater present underlying the Vares Processing Plant. This was confirmed by several boreholes which were drilled on site, none of which intersected water throughout their entire depth of drilling (40m).



At Rupice, groundwater is known to be present at the same depths and geological formations that will be targeted by the underground mine (approximately 200m below ground level). This is far below the elevation of the local streams and springs and the deep groundwater is separated from surface activities and mine disturbance by impermeable (confining) layers.

Water encountered by mining will either be pumped out during or before the operations, as required. The water is intended to be reused in the underground mining activities, if higher than expected inflows occur the excess water will be treated above ground. The groundwater here has a high content of several elements and metals, including arsenic, iron, lead, zinc, selenium, mercury, cadmium and thallium, likely due to the underlying metal rich geology. Computer modelling is being undertaken to confirm the rates of water in flow into the mine during different stages of mining. The modelling is able to provide an accurate prediction of groundwater level changes which are expected to be localised only at the site of mining with no effect on local springs and wells used in the region, as such none of the local population or river ecology will be affected.

Sanitary Protection Zones

Approximately 8km south of Rupice, on the Bukovica River, is a water abstraction point, which supplies water for approximately 40,000 inhabitants of Kakanj city. Surrounding the abstraction point is a series of Sanitary Protection Zones which constrain certain potentially contaminative activities. These protection zones are currently being determined by Kakanj Municipality into law. It is expected that Rupice will fall into Zone 4, the lowest level of protection. Should this be the case Project activities can continue as long as additional protection measures are in place.

The ESIA assesses the potential impact to the Sanitary Protection Zone, including to Zone 3, which is treated as highly sensitive. Studies have shown that the project will not impact on the sanitary protection zone and the associated water resources.

Existing Water Supply

The source of water supply to the population of Vares and neighbouring Vares Majdan is from several springs and streams on the slopes of the mountains Zvijezda and Perun. The main source of water for public supply to the central urban zone of Vares is the Očevje spring in the Krivaja river basin, as well as smaller sources that include Selište, Semizova Ponikva, Gašina stijena, Sedrenik, Brlog, Bukov Potok and Glavica I and II. The source of water to Vares Majdan is from Jarčića - Saški potok, Perun, Ćamil stream, Trifkovića stream, Planiničko vrelo and Prnjavor. The individual yield from these streams is low, however collectively the supply is significantly greater than demand resulting in surplus water within the mains water supply.

The water supply is managed by JKP Vares, which distributes water to 76% of the population in the rural and urban settlements within the wider area of influence of the project. The remaining 24% of outlying settlements, farms and houses are supplied by local springs and pipelines, managed by local communities. The project is not anticipated to impact the existing water supply.

Water Management

Several measures have been implemented into the Project design to ensure adverse impacts to surface and groundwater are avoided.

At Rupice, the surface infrastructure including the mine entrances and waste and ore stock piles, will eventually drain through an engineered channel and pond system. This system is designed to filter suspended sediments in the water, ensuring that this does not end up in the Vrući Potok. The overall site perimeter will also have drainage and barriers installed to contain any water that has interacted with Project activities and is therefore potentially contaminated. This system also means that any water that has fallen on the surrounding hillsides will not come into contact with the operational area.

Any water that may come into contact with the waste rock and ore stockpiles will be collected in a small dam and will be treated before it is released into the environment (Vrući Potok). These facilities will also have a lining installed, to ensure no contamination to the surrounding area.

The Vares Processing Plant has been designed to be a zero discharge facility, meaning that the activities will not be required to release any water, in normal operations, into the environment. Should discharge be required water would be treated and tested to ensure it is of sufficient quality.

A Water and Waste Water Management Plan has been developed for the Project which states there will be monitoring of all potentially impacted surface water and ground water areas. This includes monitoring of the water quality in springs and wells used by the community to ensure there are no impacts.

Geochemistry

Present Status and Understanding

A study has been undertaken to help define the potential for acid generation and/or metal leaching from the rocks excavated and exposed during the project.

The study also included VPP and the Tailings Storage Facility (TSF) to understand potential geochemical impacts from waste material.

Results of various testing have shown the ore material and the mineralised envelope around the ore are potentially acid generating and that this lower pH is likely to increase leaching of metals. This may occur wherever such rock is exposed - within the mine workings; on ore stockpiles; in the tailings storage facility; and, where underground development occurs within this material and within temporary waste rock dumps. Conversely, the remaining host rock units are predominantly carbonate-rich with high neutralising capacity and alkaline effluent. These materials naturally buffer potential localised acid production but even in alkaline conditions, can still show some, though reduced metal leaching.

Given the prevalence of dolomite and other carbonate rock in the area, together with the limited- and spatially understood occurrence of potentially acid generating (PAG) material, it is unlikely that ARD will be a significant risk for the Project and can be managed.

All mine waste and low-grade ore stockpiles will incorporate measures in their design, construction and operation to:

- Prevent or minimise the generation of ARD;
- Continue geochemical characterisation of ore and waste rocks;
- Control any metal leachate generation;
- Ensure geochemical stability;
- Reduce surface water ingress and, where possible, reduce oxygen/air contact;
- Control surface water seeping into, and runoff from, waste dumps and low-grade stockpiles; and
- Prevent movement of metal leachate or ARD to surface water, groundwater and soils.

With appropriate mitigation measures in place, the effect of acid rock drainage and metal leaching on soil and water resources is considered unlikely. The Surface Mineral Waste Disposal Plan and Water & Waste Water Management Plan provide a framework for constant monitoring to assess effectiveness of mitigations thereby reducing further any risk for adverse impacts on soils and water from ARD and metal leaching.

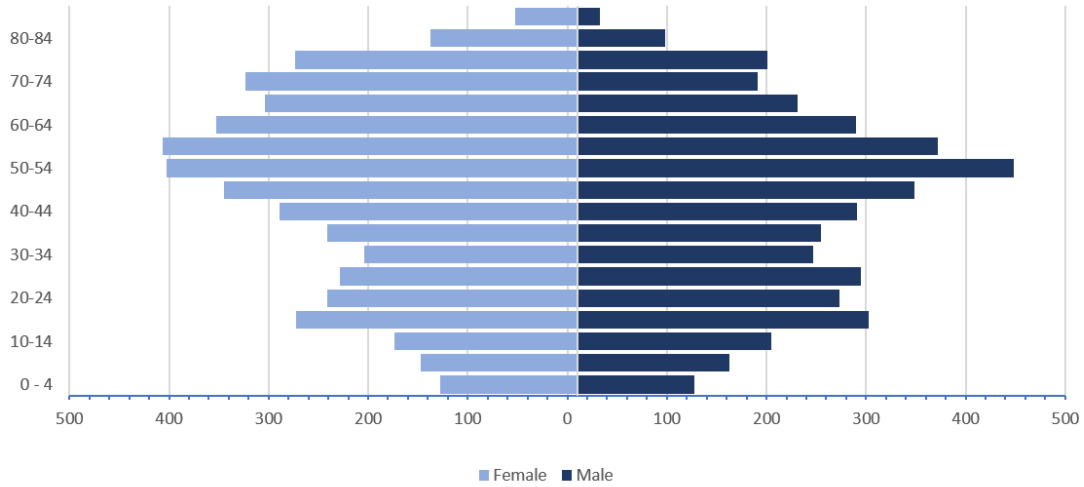
Community Impacts

Communities, Demographics and Livelihoods

Vares Municipality is rural by nature with scattered settlements across the landscape. Vares town is the only urban centre in the region and hosts all the key services such as the police station, municipality buildings, health centre and high school. Adriatic Metals have an established an Information Centre in Vares, providing a central place for community members to gain information or raise concerns and queries with Eastern Mining / Adriatic Metals.

For the ESIA meetings were held with several individuals representing organisations and communities active across the region. Household surveys were also undertaken in the communities closest to the Project (Daštansko, Višnjići, Pržići, Tisovci, Brezik, Pogar, Položac, Semizova Ponikva, Osredak and Borovica). These surveys were kept anonymous but the results were used in the ESIA to help build a picture of the current status and characteristics of the region.

The population of Vares Municipality has significantly depleted since the Bosnian War and closure of major industry in the region, dropping from 22,203 in 1991 to 8,892 in 2013 (a decrease of ~60%) and recent estimates suggest the current population is approximately 5,000. Many properties remain vacant today, and 21 of 85 settlements in Vares Municipality are uninhabited.



The Vares Municipality and adjacent villages in Kakanj Municipality have a predominantly elderly population, with many of the younger people leaving the region in search of jobs and opportunities, those remaining relying largely on pensions or finance from relatives living elsewhere. The GDP of Vares Municipality is below the national average at $3,590.13, employment is low at 22.3%, with a high unemployment rate of 47.7% (2017).

There are no settlements in immediate proximity to the Rupice mine site, however, settlements in the wider area of the mine include Gornja Borovica and Donja Borovica, which are the two closest settlements and located due south of the mine; Osredak, a single farmstead; Pogar, located amongst alpine meadows on the neighbouring range of hills; and Semizova Ponikva, Položac, and Vares and Vares Majdan. East of the main town, and in closer proximity to the Processing Plant are Tisovci, Pržići, Brezik, Daštansko and Višnjići.

At the end of 2019 there were 54,307 people registered as unemployed in the Zenica-Doboj Canton. The covid-19 pandemic has caused this number to rise in 2020, peaking at 58,624 in August. Since the 2013 census, unemployment has risen by approximately 58% in Zenica-Doboj Canton, a trend that is mirrored in Vares. As of October 2020, there was a total of 943 unemployed people of working age in Vares.

The Project is anticipated to be a catalyst for people moving to Vares searching for direct and indirect economic opportunities.

What are the potential impacts on communities?

Employment and Livelihoods

The development of the Vares Project will result, and has already resulted in, employment opportunities throughout the development, construction, operations and closure periods. Whilst construction and haulage operations will be undertaken by contractors, Adriatic Metals have committed to ensuring these contractors are local and employ a large proportion of local people. During the operation phase a total of 320 jobs is envisioned across the operation of Rupice, the VPP and administrative roles.

In support of the mine there are likely to be several indirect economic opportunities that arise for local companies and service providers. Adriatic Metals / Eastern Mining are again committed to ensuring that their supply chain remains as local as possible and have put procedures in place to assist local companies in developing to meet the needs of the Project.

As well as suppliers directly linked to the supply chain for the Project, the expanding population and spending capacity of community members will provide opportunity for other business to grow or develop. Shops, cafes, restaurants and bars will likely have a larger customer base, providing greater indirect economic opportunities.

Overall, the Project will provide opportunities for local unemployed residents and has the potential to bring young families into a rural region where houses are increasingly uninhabited. This is seen as one of the most positive aspects relating to the revival of development of the Vares mining industry.

At the end of the mine life, after 14 years, there is will be a period where direct economic opportunities associated with the Project will phase out. Adriatic Metals / Eastern Mining have developed a training programme to develop employees and provide specific training, making skill sets transferable to other companies or industries, and have set aside budget for implementing this.

Economics

The construction and operational phase of the Project will have a positive impact on the national economy through payments of value added tax on construction supplies, including: materials and equipment, fuel, food stuffs, and advisory services and through construction workforce income tax contributions. Project royalties and taxes will be paid according to BiH legislation, at the state and cantonal level, and then distributed to the municipality level.

The Adriatic Foundation has been established to support and promote local sustainable socio-economic development, with a particular focus on the communities associated with Adriatic's operations. The Foundation is a consultation body that channels social investment in an effective and responsible manner in order to leave lasting positive legacies. It supports programmes and projects that have long-term development impact, particularly in the areas of education, environmental protection, and healthcare.

Land Acquisition

Land Acquisition is required for the development of Rupice Infrastructure, the haul road and the TSF. Adriatic Metals are committed to aligning with BiH/FBiH law as well as applicable international best practice standards in regard to land acquisition. At present, six plots of land have been identified as requiring acquisition in the first instance for Rupice. A single plot will require for acquisition for the TSF in the first phase, this is municipality owned. An additional 5 plots of land will be required at a later stage of development. The haul route will be encapsulated within the municipal spatial plan, therefore land acquisition for this will be the responsibility of the municipality. No residential properties will require acquisition for all Project aspects.

A Land Acquisition, Compensation and Livelihood Restoration Plan has been developed in accordance with BiH legislation and international requirements. So far, Full Replacement Cost has been achieved for all parcels that have been acquired through land valuations undertaken by certified valuers from Sarajevo.

Community Health, Safety and Human Rights

Present Conditions and Facilities

The ESIA looks at the existing human rights and community health setting in the region and assesses potential impacts that the project might have on these.

In response to local concerns regarding health impacts, Adriatic Metals / Easter Mining commissioned a health impact assessment which was carried out by the Zenica Institute. This assessment presents the current status of health in Vares and assesses risks that may arise from the Project.

Within the Zenica Doboj Canton the leading diseases are heart and blood vessel diseases (51%), followed by malignant diseases (22%) and respiratory diseases (6%). Cardiovascular diseases most often include heart failure, acute heart attack and stroke. Malignant diseases most often occur as lung malignancy, gastric malignancy, liver malignancy, and breast malignancy. Although Vares has one of the highest numbers of malignant disease cases, it is in line with cases across the Zenica-Doboj Canton.

There is currently one health centre in Vares. The project is expected to cause the population of Vares to increase significantly, and there is a risk that the health centre might become overwhelmed due to this. Adriatic Metals / Eastern Mining are in the process of planning for a new health centre to be constructed in Vares and are in discussion with a private health care provider. The intent is that all employees will have private health cover, as well as their adult spouse/partner and dependencies. The clinic will add to the current facility in Vares, and all services will be available to the community as required.

Environmental Emissions

Human health impacts from environmental pollution are assessed throughout all the specific topics, specifically air quality and the water studies. With the mitigation and monitoring put in place combined with the modern mining techniques to be deployed there aren't expected to be any impacts to human health from project emissions. Ongoing monitoring will ensure that all emissions are within the standards laid out by BiH legislation, EU legislation and the standards of the World Health Organisation. Should any monitoring record levels above these limits, then Adriatic Metals / Eastern Mining will review and assess the source of emission to ensure the problem is fixed.

Traffic and Transport

The ESIA assess the impacts to the existing road network that may arise from the Project. Traffic counts were undertaken at key junctions and assessment of the capacity of the junction was undertaken. The Project related vehicles are not expected to overload the road network, especially once the new haul road has been developed.

The haul road will be used predominantly by mining and forestry vehicles, however it is also accessible to the community, if required. In total there will be approximately 4 mine trucks per hour using the road. Additional traffic linked to the mining activities and from an increased population will increase the risk of road traffic collisions. Mining vehicle drivers will undergo specific training to ensure they maintain the speed limit of the road and community members are encouraged to report cases of poor driving to Eastern Mining, if it involves their vehicles. All road users should take care, especially during busier periods.

To further reduce the risk of road traffic collisions there will be a shuttle bus that collects all employees of the Project from a car park located between Vares and Vares Majdan. The bus will take employees to the mine or process plant site and will reduce the number of vehicles on the road.

A traffic management plan has been developed for the Project which outlines specific measures to reduce the risk of road traffic collisions.

Integration into the Local Community

As the population of Vares increases, both from those returning to the area and those in search of economic opportunities, there are certain changes that will arise. Whilst beneficial economic impacts are expected, there may be some cases of clashes between the existing population and those new to the area.

Overall, an increased population means greater chances of infectious diseases spreading. These might include diseases such as COVID-19, respiratory diseases and sexually transmitted diseases. Further impacts from an increased population and the improved economic setting means people will generally have more money to spend on recreational activities, including on alcohol. It is possible that any increased alcohol consumption could result in an increased crime rate including violence, assault and domestic assault or gender based violence.

Adriatic Metals / Eastern Mining have developed a code-of-conduct which all employees must adhere to. This code of conduct contains specific measures to prohibit violent or culturally inappropriate behaviour. Any incidents of violence carried out by employees should be reported to the company, who will investigate and take the necessary actions.

Saturday Market in Vares

Archaeology and Cultural Heritage

Cultural Heritage

The people of Vares municipality and the surrounding area have strong ties to the land and area within which they live, with many residents having been born in the region. The proximity and experiences of the Bosnian war have further enhanced peoples ties to the region, and has played a large role in the current status of the area.

Religion plays a key part in the day-to-day life of those in Vares and communities can generally be classed according to their prominent religion, based on the presence of religious buildings in remote villages. The three main ethnicities in the region, Bosniaks, Croats and Serbs, are closely aligned with religious beliefs; Islam, Catholic and Orthodox, respectively.

Religious festivals such as the Way of the Cross, which takes place on Good Friday and on the Feast of the Transfiguration, as well as the Mass for the Homeland (a prayer procession to Bobovac) are prominent events in the region. The haul route has been purposefully designed to avoid crossing the pilgrimage routes.

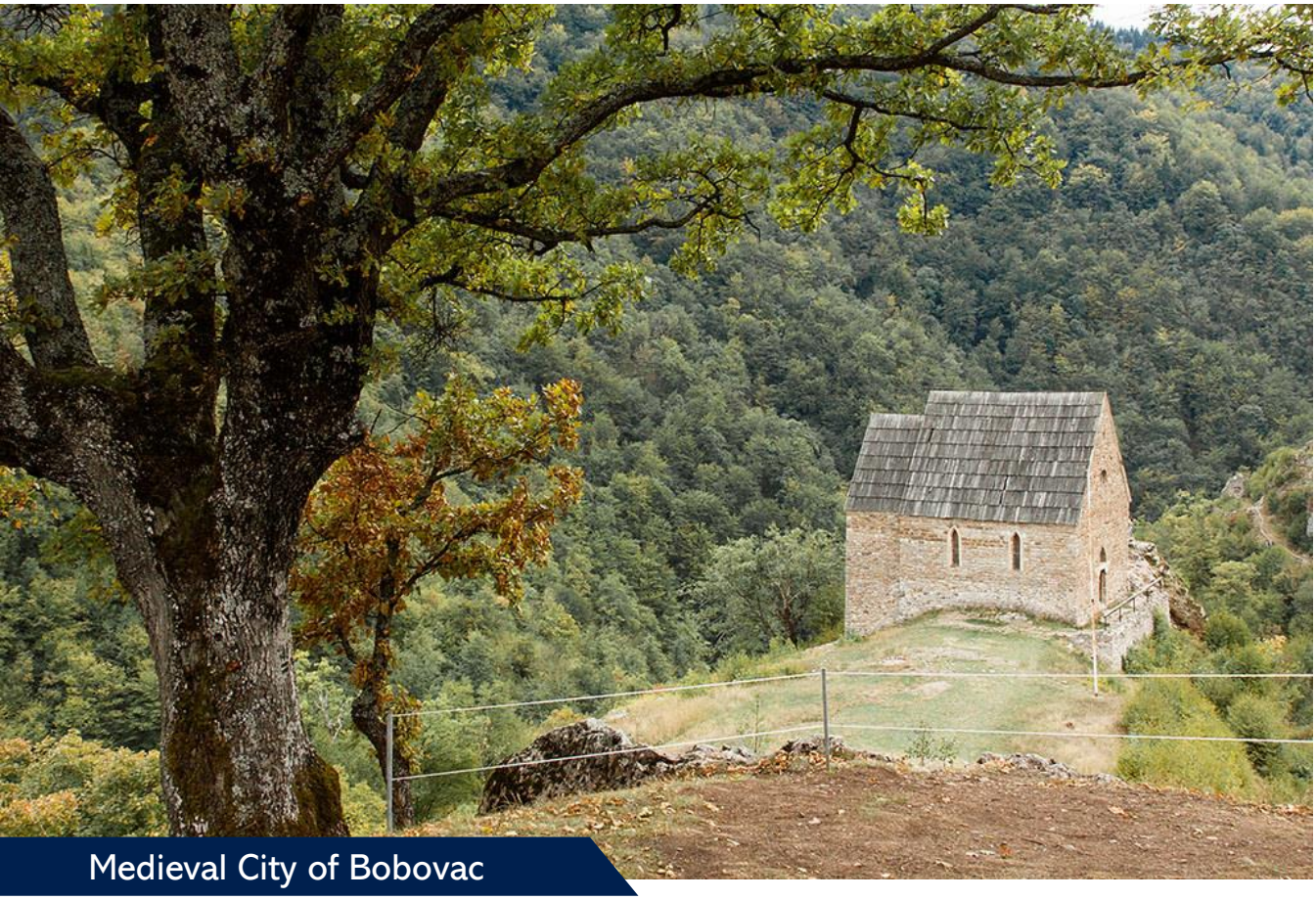
Mining remains an integral part of the culture and history across much of the wider Vares region, including Breza, Kakanj and Tuzla. Vares Municipality Day, August 16th, which commemorates the opening of the first blast furnace in Vares in 1891, is still celebrated today.

Mining Memorial Vares

The Bosnian National Museum in Sarajevo and the University of Sarajevo have worked to review the archaeology and cultural heritage of the Project area. Several sites of importance are located across the region, including in the cemeteries at Donja Borovica, Brezik and Višnjići. The work carried out looked at published information and locations protected under Bosnian law and by international organisations. Field studies were undertaken which involved trenches dug at locations where archaeological finds may occurr. There were no signs of archaeological finds in any of the field studies.

The most prominent cultural heritage site in Vares municipality is the fortified medieval city of Bobovac, located approximately 6.5km from Rupice. Bobovac was constructed during the reign of Bosnian Ban (ruler) Stjepan II Kotromanić as the medieval royal palace in the early 14th century, and was referred to in writing as the capital of Bosnia. The site will not be impacted by the development of the Vares Project.

The Project is not expected to impact on any known or unknown archaeological sites. However, a Chance Finds Procedure, has been developed. This lays out a plan of action should any potential archaeological finds be discovered during the life of the Project ensuring that the relevant level of protection is provided immediately and the relevant authorities are informed.



Medieval City of Bobovac

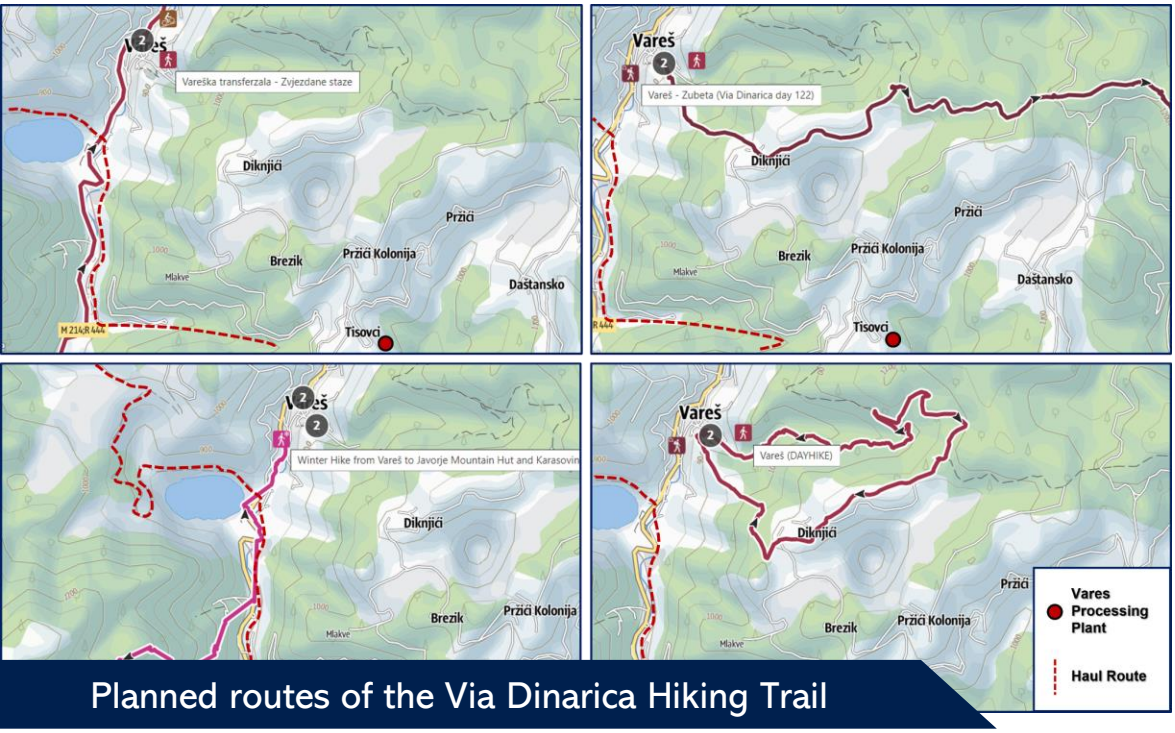
Ecosystem Services

"The benefits that people get from the natural environment, often without having to pay for them"

Across Vares Municipality the community and visitors partake in several activities that utilise the natural resources and land in the region. The ESIA looks at all of these activities and through the household surveys that were carried out and through several meetings with organisations in Vares, the impacts to these activities are prioritised. The key activities are summarised in the table below.

Activity	Description	Potential Impact
Agriculture and Farming	About 40% of the population stated that they partake in some form of farming activities. This might be keeping livestock or growing fruit and vegetables. Very few people sell their produce or rely on it as a sole source of income.	No land currently used for agriculture and farming will be directly impacted by the planned project activities. Dust emissions could settle on land used, however, as discussed in the air quality sections, any impacts from this will be managed and mitigated throughout the mine life.
Bee Keeping	There are a small number of bee keepers in the area who produce honey predominantly for their own consumption.	Bee keepers are located at a distance far enough away from the Project that impacts are not expected.
Hunting	Recreational hunting is undertaken across the region in accordance with BiH law. The Vares hunting society are in charge of managing these activities.	Hunting was previously undertaken on the site where Rupice will be developed. Access to this area will be restricted so hunters will need to visit other areas.
Fishing	A small number of people in Vares enjoy fishing in the numerous rivers in the region. There are also a few trout farms present which rely on fresh running water located next to the Stavinja River and the Bukovica River.	With management measures in place the Project is not expected to have any impact on water ways in the region. The source Studenac (Bukovica) water supply is deemed to have sufficient capacity to cope with the demands of the Project and therefore impact to the adjacent trout farm is not expected.

Activity	Description	Potential Impact
Use of Freshwater	Water resources in the region are used to meet the utility needs of some of the population, particularly around Borovica. Wells and springs are used as drinking water and the Borovici River is used to flush sanitary effluent and waste water away.	Modelling has been done and shows that there are no predicted impacts to the springs and wells in the region. Monitoring of these will carry on throughout the mine life. The Project will abstract water from the Bukovica, meaning abstraction from the Borovici will be minimal and the current level of flow will remain.
Foraging	Community members are understood to partake in foraging for herbs, berries, mushrooms, timber and medicinal plants. Activities occur across the Zvijezda mountain, though away from the Project area.	The Project isn't expected to impact on areas that are used for foraging activities.
Outdoor Activities	Hiking and mountain biking are popular activities in the region for locals and tourists. A new international hiking route (the Via Dinarica trail) is planned to pass through Vares.	Hiking routes used are not planned to be impacted by the Project. Some visual impacts might be experienced where the process plant is in clear sight. The plant site will be painted green to blend with the surrounding landscape minimising the visual impact.



Planned routes of the Via Dinarica Hiking Trail

Cumulative Impact Assessment

Cumulative impacts occur when environmental and social impacts of the Project interact with effects from other sources, which can be natural processes, projects, or other activities in the area resulting in an incremental and combined effect which may magnify an impact.

The cumulative impact assessment for the Project considers the combined impacts that may result from the Project in combination with other proposed and existing industrial projects in the region. Other projects and activities considered includes ongoing forestry, the Olovo mine, the Breza coal mine, the extension of the Vares railway and the aggregate quarry located in Vares.

The key considerations for cumulative impact relate to resource utilisation, e.g. water and electricity as well as human resources; noise; biodiversity and the natural environment; and atmospheric emissions and the resulting effects to ambient air quality from pollution and the potential knock-on effects to human health.

The assessment has not identified or has not been made aware of any other projects in the region that will either contribute to additional environmental and social impacts, nor conflict with the Project.

Ongoing Forestry Activities close to Rupice

Environmental and Social Management

Adriatic Metals / Eastern Mining are committed to achieving the highest standards of environmental and social integrity with regard to the Vares Project. The ESIA is one aspect of achieving this, and forms part of a wider Environmental and Social Management System (ESMS).

The ESMS is currently being developed and will comprise of:

- An overarching suite of Environmental and Social policies;
- An Environmental and Social Management System Framework;
- An Environmental and Social Management Plan;
- The Environmental and Social Impact Assessment (ESIA);
- Local environmental permitting requirements;
- Topic specific management plans such as for air quality, noise and water;
- Procedures to implement specific aspects of the management plans, such as environmental monitoring procedures.

The ESMS will be implemented by the Adriatic Metals environmental and social team which comprises of a manager, a social co-ordinator and several support staff. A key part of implementation is the contractual conditions relating to providers of goods and services to the project, including construction and mining contracts. Each contractor will be required to prepare site specific documentation showing how they will address the actions relevant to their activities.

All personnel working at site will be required to undergo a site E&S induction process and attend additional specific training and refresher sessions as required. The Eastern Mining E&S team will be responsible for monitoring the E&S performance of contractors against agreed methods/procedures. The ESMS will remain under regular periodic review and will be updated as the Project progresses from construction into operation and then closure. The functioning of the ESMS will be overseen by the corporate environmental, social and governance committee who meet quarterly to review and assess the current status of all activities.

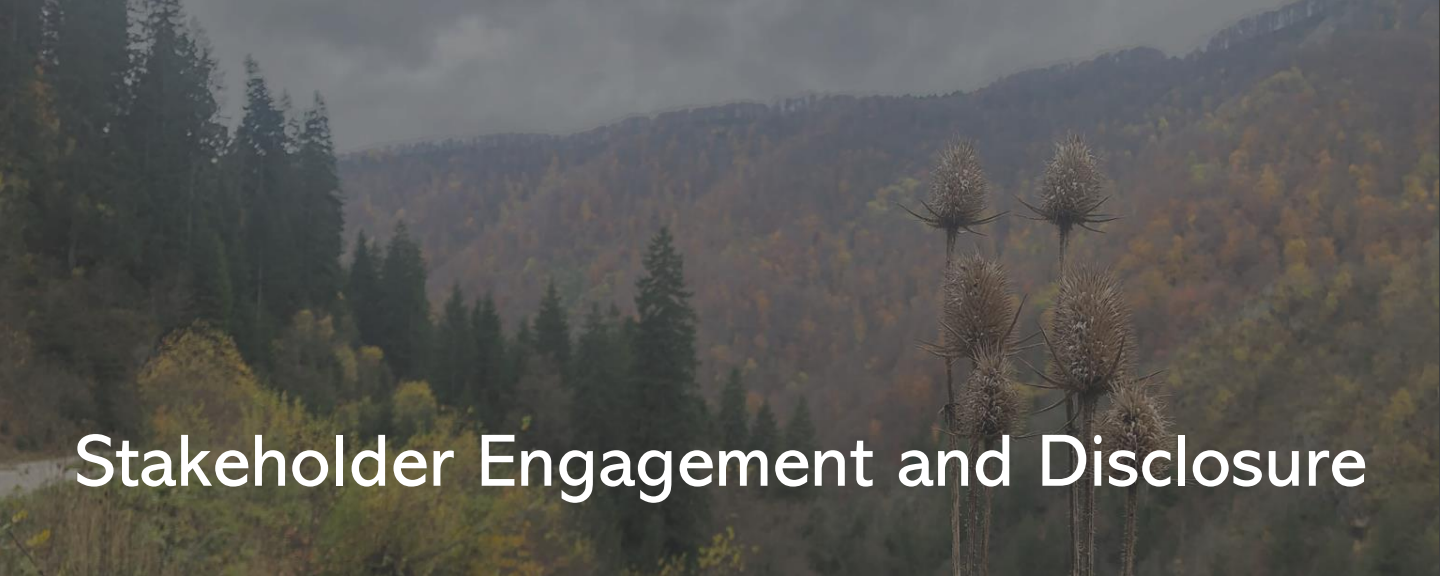
Mine Closure

At this stage Adriatic Metals have developed a Conceptual Mine Rehabilitation and Closure Plan which provides a brief overview of what will happen at the end of mine life. As the project progresses towards the end of its operational period, this plan will be further developed into a full Mine Rehabilitation and Closure Plan.

It is currently planned that at the end of mine life all infrastructure at Rupice will be removed and the land will be restored to forestry through a combination of planting and natural regeneration. The haul route will be permanently maintained by Vares Municipality and will be utilised by forestry trucks and community members.

At Vares Processing Plant it is currently planned that all mine related equipment and infrastructure will be removed. Some buildings may remain allowing the site to be used for light industrial purposes. The specific use of the site, as well as the closure of Rupice, will be defined at a later stage and there will be opportunity for stakeholders to have a say in the final enduse.

A programme of environmental monitoring will continue after mining, to ensure any potential pollution is identified and managed. Adriatic Metals have allowed in their budget for costs associated with mine closure, monitoring and training for staff. At the end of mine life, Adriatic Metals are committed to ensuring a sustainable future for Vares and all those involved in the Project.



Stakeholder Engagement and Disclosure

Stakeholder Engagement

Stakeholder Engagement refers to the methods that Adriatic Metals use to interact with the local community and other stakeholders. Engagement has many aims: to share Project related information, obtain information and opinions from the local people, allow the community to relay their concerns to the company, and to allow local people to input into the design and decision making process.

Adriatic Metals have developed a Stakeholder Engagement Plan, which is available in Bosnian online as well as the Vares Information Centre, Vares Library and the Processing Plant Administrative building. The Stakeholder Engagement Plan details the way in which Adriatic Metals / Eastern Mining plan and are already communicating and interacting with people in the region and other stakeholders. Some of the main activities includes:

- Through the Vares Information Centre, open week days from 8:00 until 16:00 and available for anybody to walk in with no appointment required.
- Installation of Information boards at Tisovci, Daštansko, Pržići and Gornja Borovica – there are updated regularly with the latest Project Information.
- Public Liaison Committee, a committee comprising of 29 volunteer members representing all sectors of the community in Vares, as well as representatives from Kakanj.
- Project leaflets are disseminated to households closest to the Project on a regular basis.
- Interviews and announcements via Radio Bobovac.

Vares Information Centre

ESIA Disclosure

Following the publication of the draft ESIA, the Environmental and Social Management Plans and this Non-technical Summary, the Project has entered a 60-day period of disclosure, in accordance with the EBRD requirements.

This period gives community members, and others, an opportunity to review the work undertaken by Adriatic Metals / Eastern Mining to date, to ask any questions or raise any concerns. Several methods are in place to relay the message and findings of the ESIA that people should look out for, which include:

- Radio Bobovac Interviews with key personnel involved in the work;
- Social Media Posts (Facebook and Instagram) where specialists have been interviewed about the work they have carried out;
- Newsletters to be distributed in communities closest to the Projects.

Open House Public Meeting

All Community members and interested parties are invited to join an open house event on 07 December 2021. To be held from 14:00-18:00 at Vares Town Hall. ESIA experts will be available to answer your questions or to listen and respond to your concerns. Transport will be available on the day from villages located close to the Project, details of which will be shared via community leaders and public notice boards closer to the time of the event.

A second event will take place in Sarajevo for government and agency officials.

What happens next?

During and after the 60-day disclosure period all feedback from the community and others will be taken into account and where relevant will be reflected in the final ESIA. After this period the ESIA will be finalised and published for the duration of the Project on the EBRD and Adriatic Metals / Eastern Mining website.

The management, mitigation and monitoring programmes laid out in the ESIA and management plans will be implemented from the initiation of works on site. These will be continuously reviewed throughout the life of mine.

Stakeholder Engagement activities will continue throughout the mine life and will aim to continuously update the community on the operations of the Project. Local people are encouraged to engage with the activities and to let the company know of any concerns or queries related to the mine.

Please direct any queries related to this document, or any other work carried out by Adriatic Metals / Eastern Mining via email to infocentar@adriaticmetals.com, visit the Vares Information Centre for more information or engage with Adriatic Metals / Eastern Mining via social media.

You can also submit feedback at www.adriaticmetals.com/sustainability/ESIA

Thank you for reading and we look forward to receiving your feedback.