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**ENVIRONMENTAL IMPACT ASSESMENT SUPLEMENT
(GAP ANALYSIS)
OF KOKTASZHAL PORPHYRITIC COPPER MINE DEVELOPMENT,
KAZAKHSTAN**



Prepared for European Bank for
Reconstruction and Development

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1 INTRODUCTION TO THE PROJECT

The European Bank for Reconstruction and Development (EBRD) is considering providing up to €100 million to AP for the development of the Koktaszhal Porphyritic Copper mine in Kazakhstan. The loan will be used to refinance debts taken to develop the mine to date, which is more than 90 % completed. The project consists of the Koktaszhal open pit mine, ore processing (including crushing and an ore floatation/concentrator plant) and required infrastructure including the water supply system and associated social infrastructure.

The main site operations are divided into three distinct units; the mine, the onsite transportation and primary crushing, secondary crushing and processing (floatation). The mine operations include blasting and excavation in the open pit. The open pit will have a total depth of 300m and will have a life of approximately 20 years. An underground mine system may be developed later. It is estimated that approximately 50 m³/h of water will be pumped from the open pit. The well-known German based company Takrif is employed for the mine excavation work. A notable aspect of this project is the use of an articulated conveyor system (1.2km in length) to transfer all excavated material, including overburden, waste rock, oxide ore, sulfide ore and intermediate ore (mineralized material but not destined for current processing). This conveyor system is equipped with primary crushers and will transfer non-ore material to the designated stockpile area and ore to the processing plant. The processing plant has been designed and constructed by a large international company METSO (<http://www.metso.com>) will include typical floatation where the ore will be mixed with water and additives with the non-mineralized waste settling to the bottom of the cell, and the concentrated mineralized material being removed from the top of the cell. The concentrate will be dewatered before shipping offsite and the waste rock/water mixture (tailings) will be dewatered to approximately 15-20% water by weight before being discarded as a paste in the disposal area. Nelson concentrators will be used to separate the gold bearing material from the remainder of the concentrate. The gold and copper-silver concentrate will be shipped from the site by trucks along tarmac road to a railway terminal planned to be built at Taldinka (Burkity rail station) 90km from the site.

The refinery plant annual capacity is 4 million tons of oxide ore and 3 million tons of sulfide ore. Water supply for the processing is brought via a 15km underground pipeline from the nearby saline Saumalkol Lake. A backup water supply, the 0.6Mm³ capacity Karasu River berm and a pipeline to the lake, will be built. If needed, this system will be used to avoid possible impacts associated with water extraction from the Saumalkol Lake, if such are identified as part of the monitoring. Extensive hydrology studies have been completed as part of defining the water supply for the site. These studies have been completed by TsentrMonitoring LLP (Kazakhstan).

As mentioned above, construction of the facilities for the mine are over 90 % completed. Plans are to begin commissioning all site operations in December 2014. Production of concentrate from the site is scheduled to start in March 2015. The railway terminal will be completed by this time.

The detailed design entitled Koktaszhal Mine Development Project with the local EIA (OVOS) have been completed and are to be submitted to the State technical and environmental Expertise to obtain the technical and environmental approvals for the operation. These documents were prepared by PSI Engineering LLP with the help of Kazgiprovodkhoz LLP, METSO, Alageum Electric and ASUEP LLP. The feasibility study (TEO of Construction and Operation of Koktaszhal Mining Infrastructure at Koktaszhal Coper Ore Deposit in Kargalinsk District of Karaganda Region, Kazmekhanobr, 2010) with the preliminary EIA was approved by Nura-Sarysuy Department of Ecology on 16.08.20110. Approval of construction has been obtained from the Regional Cultural Heritage Conservation Centre subject to conducting a non-intrusive archaeological survey in Spring 2015 (which the Company has planned and will implement).

The design decisions for the facility were based on the following baseline assessments:

- Initial study of analogies and confirmative analysis of 6 boreholes to determine acceptance of 40° pit slopes;
- Bathymetrical and hydrological survey of the Saumalkol Lake
- Seven measurements of the lake level since 2010, in late Spring after high water and in late Autumn;
- Long term (since 1933) climatic data from a meteorological station 92km southwest of the site;
- Study of available long term hydrological monitoring data from the rivers in the area to draw analogy on hydrology of the Karasu River;
- Two new 70m deep wells test results;
- Chemical analyses of oxide and sulfide ore, off-balance ore, waste rock and paste tailings;
- Physical and chemical properties of flocculants and explosives alternatives;
- Topographical survey of the affected area including the HVL 220kV corridor with 1350 poles and turning and road crossing towers and the planned railway station area.

The hydrogeological study to be completed in mid-November has been implemented to assess potential potable water supply for the site.

As mentioned above, EBRD assigned this project as a Category A, thus requiring the preparation and disclosure of an environmental and social impact assessment (ESIA). Numerous environmental related studies have been completed for the site to date, as outlined above, including the local EIA/OVOS. These documents address the majority of the environmental and social items required by EBRD for financing, and the purpose of this document is to acknowledge major portions of work completed to date, and to identify areas where supplemental information or data is required. This project is being reviewed in accordance with the EBRD Environmental and Social Policy 2008 as the project was initiated before the 2014 policy was applicable.

2 ISSUES FOR CONSIDERATION AND ASSESSMENTS PROPOSED

As presented above, the project has been compared to the detailed requirements of the EBRD Environmental and Social Policy, 2008. The purpose of this comparison is to verify the extent to which the studies completed to date satisfy EBRD requirements, and to identify those areas where additional work may be required. The detailed review of this process is set forth in Appendix 1. The most significant gaps identified are discussed below. An assessment matrix was drafted to map the project impact aspects vs. EHS and social sensitivities and constraints to the development. The results of this assessment are provided in Table 1. This table indicates issues classified as having high, moderate or low significance. It should be stressed that items that are not applicable or that have been addressed in full by work completed to date are not highlighted in this table. Issues that had insufficient information to evaluate the significance in full have been noted in the table. No issues of critical significance were identified. For the sake of clarity, in this instance, critical significance is defined as an issue that could be found to cause an unacceptable risk or could result in a non-compliance with EBRD Environmental and Social Policy. Therefore, while there are issues that have been identified for action, the project is in general compliance with EBRD requirements, and implementation of the action items presented in the ESAP will address the identified potential non-conformances.

The local EIA (OVOS) produced by PSI Engineering LLP according to Kazakhstan requirements was compared to EBRD requirements to evaluate the scope and to identify possible gaps. Identified gaps were classified based on severity from I to III, with I being the most significant gap. The results of this process are summarized below by category of severity:

Class I. Most significant – for important environmental and social issues directly associated with the project or associated issues which have the potential to significantly risk the viability of the project. The issues identified as Class I are as follows:

1. Water ecology (PR6);

- 2. Process design and the application of BAT (PR1);
- 3. Groundwater (PR6);
- 4. Compliance with RoK requirements in EHS and emergency response (PR1);
- 5. EHS and ER management (PR2);

Class II. Moderate significance – for important environmental and social issues directly associated with the project but where there are less significant issues than identified for Level I assessments or in relation to potentially significant issues associated with infrastructure development. Indicative assessments are also to be undertaken where there is no information and / or data available to undertake detailed assessment at the present time. The issues identified as Class II are as follows:

- Terrestrial ecology (PR6)
- Waste generation (PR3)
- Cultural heritage (PR8)
- Socio-economic conditions (PR4)

Class III. Low significance for issues which are directly associated with the project but have a low risk of impact or potentially important environmental and social issues when commonly used mitigation and management measures are or can be applied; or for associated that are not expected to have significant environmental and/or socio-economic issues. The issues identified as Class III are as follows:

- Traffic and transport (PR4)

Table 1 Scoping matrix with interactions significance class indicated. n-non significant impact, + = positive impact

Impact objects Impact sources	Water ecology	Groundwater	Air quality	Geology geo-morphology	Soil	Terrestrial ecology	Noise	Landscape and visual	EHS and ER management	Local economy	Regional econ.	National econ.	Utilities housing infrastructure	Land use	Cultural	Compliance PR,BAT,RoK
Construction																
HVL 220kV			n							+	+	+	+	n	n	
Berm and LVL	I												+		II	I
Pipeline						n								n		
Crushers and conveyors			n	n					I							
Plant								n	I							
Rail terminal			n							+	+	+	+		n	
Worker camps		II							I	II/+				n		
Transport							n	n					+			
Fire /explosion		n	n						I							
Operation																
Quarrying		I		n						+	+	+	+		n	
Refining	I									+	+	+	+			
Ore and tailings sighting		I		n	I										n	I
Waste disposal		II			II								+			n
Transport							n	n	n	+			+		III	
Housing estate										+			+	II	+	
Fire /explosion									n				n			

These items are discussed below.

3 DISCUSSION OF THE MAIN GAPS IDENTIFIED AS CLASS I ITEMS

3.1 WATER ECOLOGY

3.1.1 Background

The issues related to water supply, water use at the site, water efficiency and recycling are discussed in several of the available documents, including the local EIA/OVOS and the specific hydrology reports. The site design incorporates numerous features which can be considered good international practice in relation to water management. This includes the use of paste technology for the tailings. On most mining projects, the main use of water is for processing and the main water losses are due to water content of the disposal of tailings. The overall volume of tailings generated is significant (several million tons per year) and these typically contain around 30% and up to 60% water by weight. To minimise water losses through tailings disposal the site has selected the more expensive option of paste technology for the tailings disposal, reducing water content to around 25-28% and thus water use by around 50% (assuming average tailings water content of 40-60%). The use of paste technology is considered Best Available Technology, and this illustrates the project commitment to conservation of resources.

The ore refining part of the process requires 255 640m³ of water to start, and then <1,800m³ for daily replenishment. High effectiveness of tailing paste dehydration and the reuse of the quarry water (i.e, reuse of the groundwater removed from the open pit) promotes resource efficiency and significantly reduces water demand.

Technical water for site use will be provided via a 15.5km underground pipeline from the nearby saline Saumalkol Lake. This resource has a sufficient volume and replenishment rate (up to 2 million m³ per year) for the planned extraction (which is equivalent to approximately 660,000 m³ per year, or of the order of 30% of that flowing into the Saumalkol Lake). In addition to this, the nearby Karasu River experiences significant flow every spring during the snow melt and run off period. There are backup plans that provide for extraction of a portion of this melt water to be diverted to the lake to help replenish that taken for site technical water. The ultimate discharge of the Karasu River is Karasor Lake, and it should be noted that the portion of flow to be diverted to the Saumalkol represents less than 5% of the total flow into the lake, and therefore the volumes of this planned diversion are not considered significant in terms of downstream users.

3.1.2 Key Issues

The Karasu River melt water retention berm (which is already installed onsite) eliminates high water flush in spring for an unknown length downstream. The plants reproductive cycle and distribution of some animals and plants may depend on such high water events. The presence of the retention berm may impact the river flood plain as this may cease to be inundated with floodwater that supplies water and nutrients for plants. This could result in a change in plant composition. Another possible issue related to the retention berm is the hydrology (i.e. volume of water discharge) downstream, as the presence of this feature will limit the volumes allowed downstream. To eliminate such impacts it is proposed that the company review plans and provide for a system that will maintain minimum flow in the river throughout the year. This could include the provision of an overflow or gated system to allow continuous flow; or through a permeable berm design. It is understood that the latter solution above is being planned by the Project as it was evident during the visit to the site that the current design allows for flow through beneath the berm at a rate at or near natural flow rates during periods of average and low flow (as evidenced by the minimal amounts of water ponding upstream at the time of the site visit).

The occurrence of the years when thaw water input into the rivers falls to 0-10mm of effective precipitation (precipitation that enters the rivers) increased over the last 80 years from once in 16-29 years to once in 5 years. This increase coupled with the increase in precipitation and effective precipitation in between years. This correlates to other observations throughout the Earth that is attributed to changing climate.

Interviews with the local farmers, fishermen and hunters indicated that the saline Saumalkol Lake does not contain fish, but is important for waterfowl (mainly ducks). This is supported by information presented on the Birdlife International web page for Karasor Lake located 32km to the west. The water balance studies (see box below) showed high variation in water input, temperature and salinity which could impact the invertebrates diversity. It is also reasonable to assume that Invertebrates quantity will vary between species or in total amount from a maximum in spring (as the 4 water streams entering the lake are likely to bring plankton) to a minimum in winter (when the surface of the lake freezes). The total biomass is likely to undertake similar changes and overall is considered to be low because the incoming streams are short and their catchment area is relatively small (see box).

Despite fairly large catchment area (116km²) water flows to the lake along 4 streams only for 6 days in spring. It was calculated that at 33mm effective precipitation about 3.6Mm³ enters the lake over this short period. The calculated total volume in the lake water can naturally vary from 2.3 to 15Mm³ and NaCl salinity from 6 to 22mg/L. The sharp high water drop is smoothed by inflow of springs and groundwater. It was calculated that over 85 days the lake may accommodate 2Mm³ of groundwater inflow. After adding precipitation (297mm) and extracting evaporation from the 6.47km² lake surface (726mm), the net annual input into the lake was taken to be 1.3Mm³.

3.1.3 EIA Gap

No information is available on the lake invertebrates presence and their composition, numbers and biomass changes with the annual change in water salinity, depth, temperature and lake bottom area.

3.1.4 Proposed Assessment

The following work has been proposed to address the gaps identified:

1. Conduct hydrobiological survey of the Karasu River above and below the water retention berm Investigate invertebrates in the Saumalkol Lake water and sediment;
2. Identify the berm and water exchange and obstruction impact and develop mitigation measures (if required).
3. Survey the lake and river waterfowl.

3.2 PROCESS DESIGN AND THE APPLICATION OF BAT

3.2.1 Background

The main items required by EU legislation (Directive 2006/21/EC on the management of waste from extractives industries) pertinent to this job relate to tailings management and plans for closure and decommissioning.

3.2.2 Key Issues

Based on the review of the documentation prepared for the project to date, we conclude that the body of work completed to date does not include closure and decommissioning provisions as required by EBRD. Closure and decommissioning is not planned at the end of the set operation period because following operations will continue to mine the ore body that is anticipated to extend to a considerable depth and is thought likely to significantly extend the life of mine. Given such uncertainty about the life of mine, which would also significantly impact the requirements for closure, it is reasonable to defer the detailed engineering and main costs, provided that financial provisions for closure are adequate and according to RoK requirements are accrued over the life of the mine. However, a conceptual plan should be completed in the near term.

The main parts of the operation and the planned management system (e.g. process controls, materials, resources and energy use, waste management and impact monitoring) comply with BAT. However, remaining uncertainties about the impact of the off-balance ore, waste rock and paste tailings siting do not allow to categorise it as BAT compliant solution.

About 38Mt of off-balance ore with copper grade <0.3% will be mined and stockpiled on the slope next to the waste rock without waterproof coating and drainage collection and treatment. Exposure of sulfide off-balance ore to intermittent wetting and drying has the potential to generate sulfuric acid that reduces leachate pH and significantly increases the leaching rate of the metals which reactivity is higher than Pb (Mg, Al, Mn, Zn, Cr, Cd, Co, Ni). Further, the upper deposits of Oxide ore off-balance ore (containing <10% of copper in oxide form) is to be stockpiled in 2-3 years after the start of the extraction on top of the oxide off-balance ore. Oxidising of Al_2O_3 present in the ore at over 18% can further affect water pH.

The same issue with leaching may arise for the waste rock stockpiles that are to be placed next to off-balance ore without waterproof coating.

The paste tailing is not planned to be lined with insulating materials (to prevent downward migration) since the pasted tails are expected to release very little moisture (containing only 15-20% water by weight). The technology is provided by Thrane Teknikk Ltd. Technical information provided by this company states that: "With normal operation of the plant and use of common approved chemicals in the production, no harmful chemicals should leak into the environment" the tailings facility will not produce dust, since the paste retains its coherence on drying (ie, forms a crust) and wetting despite desiccation cracks that form on the surface when it dries.

3.2.3 Design Gap

No off-balance ore and waste rock leaching tests were conducted to define leaching potential of this material. The tailing paste water extract chemical composition analysis show the effect of a onetime wetting event and do not represent the possible outcome of multiple wetting and drying. It is possible that formation of sulfuric acid will not only release the mentioned metals into solution but also destroy the rock at a much higher rate than naturally occurs by increasing the metals-water contact area.

Chemical composition of tailing paste is not known.

It is also not known how crystallisation of the salt that remains in the paste will affect the paste resistance to leaching and physical destruction by wind, water and sand.

No form of closure plan or funding mechanism has completed or envisaged.

3.2.4 Proposed Assessment

It is recommended that detailed tests on off-balance ore, waste rock and tailings to assess leaching potential and associated pH are undertaken. Further, it is suggested to install a shallow groundwater monitoring network in the vicinity of the disposal areas (if groundwater is present within 20 m of the ground surface), collect baseline information and conduct regular monitoring once off-balance ore, waste rock and tailings are placed to the disposal areas.

Test results on a similar tailing paste (produced with the same refining technology and similar reagents) will also be obtained from the technology developer Thrane Teknikk Ltd.

Long term multiple wetting and drying laboratory tests will be conducted on the mine sulfuric off-balance ore, waste rock and paste to study sulfuric acid formation and if present, its effect on the rock and leachate pH and metals concentration.

It is recommended that the Project develop initial conceptual closure plans within 2 years of commencing operations and update these plans on a regular basis. The detail included within these plans should be commensurate with the status of mine development. Similarly, the Project should develop and update funding mechanisms appropriate to these plans.

3.3 GROUNDWATER

3.3.1 Background

Hydrogeological modelling studies indicate that after year four of the mine life, up to 50m³/h of groundwater is anticipated to flow into the open pit. This water will need to be removed to allow the pit excavation to continue. This removal of water will form a cone of depression of the groundwater level in and around the pit.

3.3.2 Key Issues

Groundwater level around the quarry will be depressed by pumping. Sulfide off-balance ore, waste rock and paste tailings will start to be placed on unprotected ground in 2-3 years after the start of the operation. Intermittent wetting and drying may generate sulfuric acid that reduces leachate pH and significantly increases the leaching rate of the metals. This is described further in Section 3.2.1 par. 3-5.

3.3.3 EIA Gap

Impact on groundwater level and quality caused by this pumping and other site operations is not addressed and should be addressed as part of ongoing groundwater monitoring of site operations..

3.3.4 Proposed Assessment

Permanent and temporary springs around the mine, the Saumalkol Lake and Karasu River will be inventoried and monitored. Groundwater monitoring plan will be prepared, approved with the environmental protection authorities and groundwater wells installed to identify the baseline conditions and monitor impact from the mine activities: quarry water pumping, off-balance ore, waste rock and paste tailings stocking, the Saumalkol Lake water obstruction and the Karasu River water retention at the berm. The quality and level of the public well water at Ayyr village will also be monitored. EBRD will review and approve this water monitoring plan.

Sampling and analysis in the accredited laboratory will be conducted at least quarterly for the expected to be leached metals: Mg, Al, Mn, Zn, Cr³⁺, Cr⁶⁺, Cd, Co, Ni. Results will be checked against the baseline concentrations, the RoK maximum permitted limits for domestic water and the Dutch Target and Intervention Values.

A contingency plan will be developed to mitigate impact on the groundwater if it is noted. Site operations will rely on avoidance/prevention in the first instance and therefore it is not anticipated that this contingency plan will be required.

3.4 COMPLIANCE WITH RoK REQUIREMENTS IN EHS AND EMERGENCY RESPONSE

3.4.1 Background

The relevant Environmental and Social Policy Performance Requirements for this project are 1-4, 6, 8 and 10. The relevant PR's are compared to the Kazakhstan legal requirements in Section 6. PR 5 is not applicable to the project because no land acquisition, involuntary resettlement and economic displacement are required on this project PR7 is not relevant because the project does not affect indigenous people.

The AP environmental performance is controlled by the regional department of MEWR and the regional prosecution office. However, having been included by the Ministry of Industry and New Technologies in the Kazakhstan Industrialisation Roadmap, the project benefits from the simplified permitting and grace period for compliance. Below is the description of the compliance that the project is to achieve by the start of the operation:

1. Responsibility for all compliance issues of the project lies on AP. AP shall check licenses and emission permits of contractors and suppliers before signing the contracts.

2. EIA is required to include all project stages and components, acquired land and the immediate surroundings air, flora, fauna, surface and groundwater, social settings and archaeology. Assessment of cumulative impact and impact along the supply routes is not required. Some components may be reviewed separately from the EIA if their construction schedule substantially differs from the main development timeline (e.g. HVL 220kV)
3. A positive conclusion of the State Environmental Expertise (SEE) of the Ministry of Environment and Water Resources (MEWR) on the EIA shall be obtained before operation starts. Prior EIA approvals by other regulatory authorities (e.g. SES, ES) are required.
4. After the SEE positive conclusion is obtained and before the operation starts, an Emission Permit shall be obtained. The application for the permit shall include a maximum permitted emission project and an operational environmental control plan. The Emission Permit is to include the emissions made during construction.
5. Construction permits for each project component shall be obtained from the State Technical Expertise by the detailed design contractor;

3.4.2 Key Issues

The company is running a fast track schedule and, while having preliminary approval for the Project from the Government, not all the required permits and approvals are currently in place. The mine infrastructure construction started without the Emission Permit for construction which is given after the EIA is approved by the State Environmental Expertise (SEE) of the region. The mine operations design is currently being reviewed by the concerned regulatory authorities. The EIA is being finalized and therefore has not received full government approval.

Meanwhile the Company is working within the permit given for exploration that reportedly allows it to run test ore extraction. The Exploration Contract is valid until 2018.

The water supply system and refinery plant construction was also started without approval of the detailed designs that have not been prepared yet. For the plant the construction contractor uses the equipment manufacturers working drawings.

3.4.3 EIA Gap

The existing EIA documentation does not review the detailed design of the refinery plant and water supply system because they have not been prepared, although the general presence of these facilities is envisioned in the overall EIA. The water supply system detailed design was specifically requested by the Nura-Saury Basin Water Resources Management Inspection in the approval of the water supply feasibility study. The mine development project that normally would accompany EIA approval, has not been approved.

3.4.4 Proposed Assessment

EBRD requirements include the need to obtain and operate in accordance with all relevant permits. This issue must be resolved and it is suggested that the company should:

- Prepare a permitting and approval plan for EBRD review and inclusion as part of the ESAP for the project.
- Prepare detailed design of the refinery plant and water supply system including the pipelines, the pipeline berm, the berm and its components.
- Prepare the Karasu River and Saumalkol Lake passports with the water bodies hydrogeological and topographical assessments including high water period.

3.5 EHS AND ER MANAGEMENT

3.5.1 Background

Open pit mining can potentially generate significant environmental health and safety impacts during construction, normal operation and as a result of emergencies. These impacts can in large be mitigated by a good design and equipment. Many elements of this project have included excellent design, including the use of the articulated conveyor system, the plan to mine without use of large internal combustion haul trucks and the use of paste technology for tailings. It will be important to manage environmental issues through the completion of construction and throughout the operation period.

3.5.2 Key Issues

AP is still a fledgling company and is developing its management arrangements for the mine. The legislation does not hold the Company responsible for the contractor HS performance and their actions or impacts on site. This and the lack of an established HS and ER structure leads to practical absence of control over the contractors HS performance and emergency preparedness.

3.5.3 EIA Gap

EBRD PRs require the company to take responsibility for contractor activities.

3.5.4 Proposed Assessment

Risks and hazards will be identified and emergency prevention and response plan will be developed covering identified risks. The potential risks are likely to include the Karasu River berm breakage, oil/diesel spills and heating failure in extreme cold. A plan for contractor control will be developed (in accordance with the provisions of the ESAP) and implemented at all company operations as part of operations.

4 DISCUSSION OF MODERATE GAPS IDENTIFIED AS CLASS II ITEMS

4.1 TERRESTRIAL ECOLOGY (SOIL, PLANTS, ANIMALS)

4.1.1 Background

The environmental setting of the site is described in the existing EIA documentation. Dark brown soil and herbs vegetation relates to the cereal steppe zone with rare solonets soil in depressions with shallow groundwater covered with saltworts. Meadow soil and vegetation forms at locations where spring water surfaces. Trees and shrubs can survive arid climate along the seasonal streams and at the spring shows

Terrestrial wildlife can be separated into burrow dwellers (gerbil, souslik, hare), large herbivores (roedeer, moose), predators (wolf, fox, corsac) and birds (black grouse, willow grouse, partridge). None of these species are in the Red List, considered endangered, or particularly vulnerable to human impact. Hunting is not popular among the locals occupied with domestic livestock. Apart from the rodents and predators that are evenly distributed throughout the area, other animals tend to concentrate in the tree and shrub lines.

4.1.2 Key Issues

The area around the site is used by the abovementioned wildlife which daily migrations may be affected by intensification of traffic along the 10km road between Terekty village and the mine. Physical presence of human activities at elevated area may have already displaced larger animals and birds from the adjacent tree and shrub thickets.

4.1.3 EIA Gap

Site specific ecological baseline data are limited and must be augmented to fully understand temporal variations.

4.1.4 Proposed Assessment

Plants, soil and wildlife will be surveyed around the mine to augment the current understanding around the plant and the associated infrastructure including the Saumalkol Lake and Karasu River. This work will include assessment of the spatial and seasonal sensitivities and constraints to the project activities that will be considered to minimise impact.

In order to characterise the impacts on each feature, the following parameters will be addressed:

- Define a targeting soil sampling programme. Include soil sample from land that will be disturbed by project infrastructure, operational facilities and support facilities. Sample to depths of 0.2 – 0.5m and 0.5m – 1m depth. Characterise soils in terms of both structure and chemical constituents. Define and map regions of soil-types within the project area
- Carry out flora and fauna field survey in early spring, once the majority of the snow within the Project area has melted; and late summer before the temperature drops. Provide;
 - maps marking out identified habitat types
 - Listing of findings based in literature (desktop survey)
 - listing of survey findings in the field
 - identification of Red List species and critical habitats
 - photographs of identified specimens, as appropriate

4.2 WASTE MANAGEMENT

4.2.1 Background

The worker camps, canteen and office generate sewage, food and domestic waste. Construction activities produce package waste. Food and timber waste is utilised by locals). Garages accumulate oiled cloths that are burned in the school coal boiler house. Waste oil is stored to be applied to the planned air strip during its construction. Oil filters and luminescent lamps are disposed with domestic waste.

4.2.2 Key Issues

The area around the site is extremely isolated and there are no proper disposal facilities for the wastes generated by the project. Both sewage from the septic tanks and unsorted hazardous and non-hazardous waste is deposited in the facility at the Terekty village dump - a 120x90m pit excavated 420m east of the village and 100m from a spring originated stream that runs into Buyrlyozek River. Neither the surface water nor groundwater downstream of the dump is used for human consumption. The dump is typical for this region and is approved by the authorities and operated by local officials.

The licensed sewage treatment facilities in Egindybulak 35km south of Terekty have not been operational for several years.

4.2.3 EIA Gap

EIA does not address waste disposal beyond the request to sign contracts with a waste remover.

4.2.4 Proposed Assessment

The Company will explore options for safe treatment and disposal of its waste and develop procedures for segregated collection and utilization or disposal of hazardous waste. A waste management plan will need to be prepared for operations as outlined in the ESAP

4.3 CULTURAL HERITAGE

4.3.1 Background

A cultural heritage screening during the EBRD ESDD identified 17 graveyards near the mine site and the Karasu river. One of them is the modern (dates back to the 20th century) Karamola graveyard is located on the first erosion terrace 250m east of the Karasu River channel and 400m NE of the meltwater retention berm. The grave is not listed in local administrative records as a cultural heritage object.

The cultural heritage screening also identified a 17-18th century cemetery situated within 12m of the mine access road at Azimbek Farm. The Company recognizes the need to protect this 220x50m cemetery from harm, and therefore has fenced it. The cemetery is not on the list of the protected cultural heritage objects but the locals believe that Kazakh-Dzungar war warriors are buried in it.

4.3.2 Key Issues

While still to be confirmed, the retention water held behind the berm may impact the location of Karamola grave.

In the event that such sites as Dzungar cemetery are present within the footprint of the proposed project, excavation works, if not managed properly, could cause the destruction of important historical artefacts. Alternatively, appropriately managed excavation and the uncovering of previously unknown artefact could have a very positive impact.

4.3.3 EIA Gap

Cultural heritage is not covered by the original EIA, although the company has conducted a screening of such items. As the construction of the site is over 90 % completed, it is not possible to address this item prior to construction. It should be noted that based on discussions with site personnel, no objects of significance in terms of cultural heritage were encountered during construction onsite. A chance finds procedure will be developed and implemented for future phases of the project.

4.3.4 Proposed Assessment

A licensed company will be contracted to conduct an archaeological survey of the land that can be potentially disturbed by any future phase of the project and this document will be reviewed and approved by government agencies with pertinent responsibility. Further, if it is concluded that Karamola grave to be impacted, the company will develop and implement a culturally sensitive and appropriate grave relocation plan in accordance with RoK legislation prior to any disruption.

The plan will ensure that all efforts are made to locate the origin of the grave and possible relatives. All efforts will be made to relocate the grave with the approval of relatives, and in a manner consistent with local cultural and religious beliefs.

The company will be working with the local community to identify other possible upgrades or protection measures for the 17-18th century cemetery.

In order to ensure that no archaeological and cultural heritage sites are damaged/lost during any future construction or excavation works, a chance finds procedure will be developed and implemented. If any objects of significance are found during earthwork, a qualified archaeologist will be called in to investigate the find before continuing earthwork.

Table 2 Terekty socio-economic data on 1.10.2014

Population	1005
Women	508
Men	497
Families	261
Retired	99
Economically active population	385
Disabled 1-2/3 category/children	21/16/13
Employed	219
Self-employed	112
Unemployed >/< 30 years old	2/7
Employed by the State	
School	60
Council	6
Medical room	6
Library	2

4.4 SOCIO-ECONOMIC CONDITIONS

4.4.1 Background

Sharykty Rural Area has 4 villages Terekty, Shykytkol, Kyzylshemes and Ayyr with 1005 inhabitants (01.10.2014 data). Elderly Council is engaged in making decisions on the par with the area councilor. There are no conflicts between locals and the project workers.

4.4.1.1 Terekty

During the time period 1999-2009 the population of Terekty was reduced by 50% from 1,231 to 639. Development of the mine has halted this decline and instigated the increase in population. Villagers are returning to their abandoned houses or are building new houses on their land plots. House prices raised from no value to €3000-4000 and rent shot to €85-130 per month.

Out of 219 employed in Terekty Village, 105 people work directly on the project. Nine people listed as unemployed are actually engaged in livestock management.

To date the company has renovated and equipped the secondary school classes and upgraded the sewage system for the school canteen that feeds 52 children of 0-4 grade for free. In exchange for this the local administration provided the company space to construct a worker accommodation. Plans are to establish a boarding school for Ayyr secondary school pupils when the workers move to the new housing estate.

AP also plans to introduce a daily bus service to Karaganda. In the absence of public transport and given the poor road condition, taxi cost is relatively high for local conditions (€0.85-1.27 to Egendybulak, €3 to Kargalinsk and €13 to Karaganda).

As the local water distribution system is not working, the company currently transports water to each house on request. With appearance of the high voltage electricity line from Ekibastuz, local power cuts (once a frequent event) are now nonexistent. AP also has provided garbage collection bins to each house and regularly removes it to stop traditional disposal of garbage to the streets. AP also tackles another problem by cleaning the roads from snow. The majority of village buildings are heated with coal while the project related buildings are electricity heated.

Each house has satellite TV and some houses can afford wireless phones. Mobile phone connection is available at a hill next to the village.

A poorly equipped and maintained medical room in the village is staffed by two nurses. An ambulance is available but petrol has to be provided by whoever needs transportation to the regional center hospital.

The nearest fire brigade is in Egindybulak 40 min away. Besides this unacceptable response time, the village also does not have ability to provide sufficient firewater to make firefighting effective.

A Muslim imam provides support to religious people and for customary celebrations. The social life has been revamped with the project development. Since development of the mine, children do not leave the village after finishing school and young couples and families have started to arrive to the village.

4.4.1.2 Ayir

Out of 81 residents, there are 11 pensioners and 18 children. Seven of the children are driven by their parents to Egindibulak boarding school. AP is considering arrangement of boarding facilities in the Tekerty school to shorten the travel distance (1 hour drive each way). Other children attend the village primary school. A nurse occupies a room in the primary school.

One family receives social help that enabled it to open a saddle making workshop. On the 190th anniversary of the Kargalinsk town, the family sold 11 horse whips and 3 fragmented glass pictures for a total income of €430.

Official shops are not present in this village. The houses that perform the shop function do not register as enterprises to avoid taxation. Others try to buy in bulk when travel to the district centre. Poor access road condition is a huge problem.

All residents that were interviewed complained about clouds of black dust from the mine after blasting. They also expressed dissatisfaction with the project information disclosure.

4.4.1.3 Houses Inside the New AP Worker Housing Estate

Two households did not want to change their houses to the new houses built by AP and remained among the new worker housing estate. The company ensured that both houses have 0.15ha of land they are entitled by law and a separate access. All their ancillary structures and the water well were retained for their use.

The first four-roomed house constructed 14 years ago is occupied by 3 adults and a child. Five inhabitants of the second older house live in 4 rooms totaling to 100-120m². The household woman works for the AP contractor Melisa as a warehouse manager. Her three sons work for other AP contractors and pasture livestock on the adjacent hills. Another half of the house is leased to Melisa.

Based on interviews conducted, both families are satisfied with their position and welcome the housing estate neighborhood that did not change their lives.

4.4.2 Key Issues

As the project is expected to generate little negative impact and variety of benefits mainly for the local population, the key issue is to ensure that the benefits are fairly shared by the community.

Potential Impact of national and international labour in-migration (Increase pressure on resources; housing/utilities, pathologies and crime) is not considered an issue due to the Company policy to employ the existing and returning local labour and provide sufficient housing and infrastructure for them.

4.4.3 EIA Gap

No formal socio-economic in field data collection and assessment has been undertaken.

4.4.4 Proposed Assessment

Social baseline collection will be conducted to include (but not be limited to) economic, infrastructure, demographic, land tenure, education, health and administrative data on the identified project stakeholders. The Company then will analyse impact and manage the project benefits for its fair distribution among the project stakeholders. Given the comments from the residents of Ayyr, improved methods of community interaction and disclosure of information will be implemented by the company as part of the Stakeholder Engagement Plan.

5 DISCUSSION OF LOW SIGNIFICANCE GAPS (CLASS III ITEMS): TRANSPORT

The project will use the following roads: Mine – Terekty=10km; Terekty-rail terminal=91km; Karasy water berm – Terekty=25km. The 7.55km road Ayyr-Terekty will be used only to drive a van to and from an air strip planned to be built north of the village. The 1.7km of two Terekty streets will be used to access the worker housing estate.

The dead end tarmac road from the Burkity rail terminal is used by the local population to access Egyndibulak, Terekty, Ayyr, Aynabulak and Ayrık villages (48 and 83km NE from Egindybulak respectively). The traffic is very low.

During construction occasional heavy articulated vehicles were bringing equipment and metal structures from the rail station at Karagayly 15km further SE from the planned Burkity rail terminal. When the operation starts, traffic will intensify. Some heavy trucks will bring consumables to the mine.

Six trucks will transport concentrate barrels to the rail terminal. Each concentrate hauling truck will carry 20 tons in the truck and 10 tons in the trailer applying 6t road pressure to the road and one bridge that are designed for 8t per wheel pair. With the daily concentrate output of 274t, nine return hauls will be conducted each day which will not create impact for the following reasons. First, the trucks will travel during the day time with 30min time intervals. The trucks will not come closer than 60m to the one nearest to the road cottage and 110m to the Terekty school entry. No one has to cross the roads in their daily routine. All routes will have hard surface. The road to Ayyr and a 35km part of Terekty-rail terminal road to Egindybulak will be repaired and laid with tarmac. Other roads will also be repaired and maintained. Finally, the Company will develop the Traffic Management Plan to minimise risk of accidents on the road.

Light vehicles from the worker housing estate to the mine will pass 16 houses and a bar along Akhmetov Street and Kazbek Bi Street houses. Out of 18 Kazbek Bi Street houses only two are 60m from the used Abay Street. Others are at a larger distance.

As traffic baseline has not been collected and the project traffic impact has not been assessed in the EIA, the Company will conduct such assessment and disclose the results via the stakeholder engagement mechanism before the operation starts.

traffic can cause issues related to community safety and safety of site workers, and therefore a traffic management plan will be developed for operations. While this TMP will address all operations, it will focus on safety of heavy transportation vehicles movements through communities and other built up areas

6 SUMMARY OF COMPLIANCE WITH EBRD ES POLICY

As the key requirement of the EBRD ES Policy is to comply with the national legislation, the relevant RoK requirements are also shown. Noncompliance is shown in red.

PR	Acti-vity	PR Requiements	RoK Regulating Document	Relevant Requirements	Compliance Status
1	Environmental Appraisal	<p>The required ESIA shall meet PR10, any requirements or national EIA law and other relevant laws and ratified by RoK conventions.</p> <p>Board of Directors is mandated to take into account comments and opinions expressed by consultees, and the way these issues are addressed by sponsors, when considering whether to approve a project.</p>	<p>Environmental Code Art.35-44; 69</p> <p>Instruction on Conducting of EIA. №68-p 28.02.2004</p> <p>Underground Resources Law A.75 par.3</p>	<p>EIA is required to include all project stages and components, acquired land and the immediate surroundings air, flora, fauna, surface and groundwater, social settings and archaeology. Assessment of cumulative impact and impact along the supply routes is not required. Some components may be reviewed separately from the EIA if their construction schedule substantially differs from the main development timeline (e.g. HVL 220kV)</p> <p>A positive conclusion of the State Environmental Expertise (SEE) of the Ministry of Environment and Water Resources (MEWR) on the EIA shall be obtained before <u>operation</u> starts. Prior EIA approvals by other regulatory authorities (e.g. SES, ES) are required.</p> <p>After the SEE positive concussion is obtained and before the operation starts, an Emission Permit shall be obtained. The application for the permit shall include a maximum permitted emission project and an operational environmental control plan. The Emission Permit is to include the emissions made during construction.</p> <p>Construction permits for each project component shall be obtained from the State Technical Expertise by the detailed design contractor;</p> <p>Responsibility for compliance lies on the land allocation deed owner. AP shall check licenses and emission permits of contractors and suppliers before signing the contracts.</p>	<p>No EHS IMS</p> <p>Mine development projects have not been approved by regulatory authorities</p> <p>Local EIA misses site specific ecological and social baseline data</p> <p>Analogy data from other rivers used for backup water supply substantiation</p> <p>No data on off-balance ore, waste rock and tailing paste composition, paste leachate</p> <p>EBRD/RoK compliance expected before operation starts.</p> <p>Compliant on HVL220kV which EIA has been approved</p> <p>Mine infrastructure construction conducted with a special permit given to the project for being included in the Kazakhstan Industrialisation Roadmap.</p> <p>Underground Resources Law permits cons-truction inside the allocated geological lot</p>

PR	Acti-vity	PR Requiriements	RoK Regulating Document	Relevant Requirements	Compliance Status
1	Environmental Control	<p>Put in place processes to ensure that all emissions, discharges and wastes are inventoried and monitored on an on-going basis. Report project-related releases of pollutants to EBRD.</p> <p>Apply appropriate and cost-effective pollution prevention and control technologies and techniques to avoid or minimise adverse impacts on human health and the environment.</p> <p>The environmental monitoring shall include:</p> <ul style="list-style-type: none"> • Annual review reports on the implementation of ESAPs; • Sites visits to determine whether the client is implementing the ESAP and complying with the environmental and social covenants; • Periodic monitoring by independent specialists or representatives of the local communities; • Retain qualified and experienced specialists to perform periodic monitoring functions /audits throughout the life of the Bank's involvement with the project. Document monitoring results. • Emissions and discharges and wastes inventory and monitoring • Emissions and discharges and wastes inventory and monitoring. 	Environmental Code Art.128-134	Prepare, obtain approval, implement and report on the implementation of the Operational Environmental Control that includes results of surface, groundwater, soil and air monitoring.	Full compliance expected

PR	Acti-vity	PR Requiriements	RoK Regulating Document	Relevant Requirements	Compliance Status
2	Occupational Health and Safety	<p>Provide the workers with a safe and healthy work environment, taking into account inherent risks in its particular sector and specific classes of hazards in the client's work areas, including physical, chemical, biological, and radiological hazards.</p> <p>Take steps to prevent accidents, injury, and disease arising from, associated with, or occurring in the course of work by:</p> <ul style="list-style-type: none"> identifying and minimizing, so far as reasonably practicable, the causes of potential hazards to workers; provision of preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances; provision of appropriate equipment to minimize risks, and requiring and enforcing its use; training of workers, and provision of appropriate incentives for them to use and comply with health and safety procedures and protective equipment; documentation and reporting of occupational accidents, diseases and incidents; and emergency prevention, preparedness and response arrangements. <p>Comply with relevant EU OHAS requirements and, where such requirements do not exist, relevant IFC OHAS guidelines.</p> <p>Maintain an OHAS management system appropriate to the size and nature of its business and in line with good international practice</p> <p>The accommodation shall be appropriate for its location and be clean, safe and, at a minimum, meet the basic needs of workers.</p>	<p>SNiP 1.03-05-2001 «Occupational Health and Safety during the construction»</p> <p>Act on "Occupational Health and Safety" №528-2 from 28.02.2004</p>	<p>Working place conditions shall comply with all sanitary epidemiological requirements.</p> <ul style="list-style-type: none"> regularly inspect the process to eliminate or reduce risks; Provide information, instruct and examine knowledge of OHAS; Provide safe working conditions, special clothes, PPE, first aid and disinfection. Employee has right to stop work if the above is not provided with to cost to himself; When work has aspect of hazard, compensate with additional pay; Provide 0.5L of milk daily to the workers involved in hazardous operations; Perform certification of working conditions on operational facilities if the operation mode changes or at least once every 5years if it remains the same; Investigate accidents and analyze accidents, incapacitation records; Obtain insurance for damage to workers health; Conduct medical examinations once a year; and Prevent escalation of accidental situation 	<p>Contractors EHS performance is not managed adequately</p> <p>Sanitary conditions are not adequate</p> <p>No safe use and management of hazardous substances and materials during construction</p> <p>No worker medical assessment before shifts. No medical emergency rescue provisions from site</p> <p>Some workers do not use PPE (hard hats, boots, welder suits) where needed. PPE often uncomfortable, poorly protects from cold and wind and supplied with delays</p> <p>Not all required safety briefings conducted and contractors' briefings not controlled.</p> <p>Safety training is not conducted and contractors training not controlled.</p> <p>Road safety is not maintained</p> <p>Vehicles parking is not arranged</p> <p>No workers representatives, no collective or individual contracts</p> <p>No internal grievance mechanism, legally obliged grievance procedures not disclosed and not used</p> <p>EBRD/ Kazakhstan full compliance expected at the start of the operation</p>

PR	Acti-vity	PR Requiriements	RoK Regulating Document	Relevant Requirements	Compliance Status
2	Noise	<p>Establish and maintain a sound worker-management relationship; Promote the fair treatment, non-discrimination and equal opportunity of workers;</p> <p>Comply with any collective agreements, national labour and employment laws, and the fundamental principles and key regulatory standards embodied in the relative International Labour Organization (ILO) conventions that are central to this relationship (##29 Forced Labour; 87 Freedom of Association and Protection of the Right to Organize; 98 the Right to Organize and Collective Bargaining; 100 Equal Remuneration; 105 the Abolition of Forced Labour; 111 Discrimination (Employment and Occupation); 122 Employment Policy; 129 Labour Inspection (Agriculture); 135 Workers' Representatives; 138 Minimum Age (of Employment); 148 Working Environment (Air Pollution, Noise and Vibration); 155 Occupational Safety and Health; 182 the Worst Forms of Child Labour);</p> <p>Protect worker health through promoting safe and healthy working conditions.</p>	<p>SanPiN № 168 from 25.01.2012</p> <p>WHO Guidelines for Community Noise</p>	<p>Maximum allowed noise level is 80dB for rooms with permanent work places and 55 dB for territories adjacent to residential housing;</p> <p>Outdoor living areas for serious annoyance (daytime or evening) 55dB $L_{Aeq,16hour}$ or for moderate annoyance 50dB $L_{Aeq,16hour}$. Dwelling, indoors, 35dB $L_{Aeq,16hour}$ for speech intelligibility. Inside bedrooms,, sleep disturbance, night-time, 30dB $L_{Aeq,8hour}$ Or 45dB $L_{Amax,fast}$. Outside bedrooms, windows open (outdoor value) 45dB $L_{Aeq,8hour}$ or 60dB $L_{Amax,fast}$.</p>	Full compliance expected
3	Pollution prevention and abatement	<p>Avoid or minimize adverse impacts on air, soil, water, vegetation and fauna and other natural resources in use by the affected communities.</p> <p>Put in place processes to ensure that all emissions, discharges and wastes are inventoried and monitored on an on-going basis. Report project-related releases of pollutants to EBRD.</p> <p>Apply appropriate and cost-effective pollution prevention and control technologies and techniques to avoid or minimise adverse impacts on human health and the environment.</p>	<p>Hygienic Standard 2.1.6.695-98 RK 3.02.036.99. SNiP 4.01-02-2001, art.10.20</p> <p>Water Code #481-II Art.125,126 Article 103 p. 2 of the Water Code of the RoK № 481-II</p>	<p>Air pollutants concentration at the sanitary protection zone boundary shall not exceed MPCs for residential areas.</p> <p>The zone shall be 50 m from each side of the water intake. It is not allowed to place sources of pollution (waste pits, cleaning facilities etc.) and buildings, which obstruct access in an emergency.</p> <p>Process water shall be recirculated.</p> <p>Water protection zones and belts do not apply to the project water bodies</p> <p>Mandatory environmental insurance shall be arranged for environmentally-hazardous modes of operation determined by the competent authority.</p>	<p>EBRD partial compliance. No provision for monitoring impact from off-balance ore, waste rock, paste tailings</p> <p>Oil drums and diesel tank placed on the ground. Minor spills not cleaned</p> <p>Camp and work place sewage disposed in the ground</p> <p>Vehicles are washed in the stream at the sand washer</p> <p>Kazakhstan full compliance expected at start of operation</p>

PR	Acti- -vity	PR Requiriements	RoK Regulating Document	Relevant Requirements	Compliance Status
3	Reduction of waste quantity and its impact	Reuse, recycle or recover waste, or use it as a source of energy where waste generation cannot be avoided but has been minimised; Treat, destroy, and dispose of it in an environmentally sound manner where waste cannot be recovered or reused; Explore commercially reasonable alternatives for its environmentally sound disposal considering the limitations applicable to its transboundary movement if the generated waste is considered hazardous; Use contractors that are reputable and legitimate enterprises licensed by the relevant regulatory agencies when waste disposal is conducted by third parties.	Technical Regulation №1232 from 14.12.2007 Articles 283-297 of the Environmental Code of the RoK	AP is responsible for safe handling of the waste that is generated during the project and the waste that is located at allocated to it land. AP may transfer responsibility for waste to other entity via an agreement of sale, trade, granting, or other type of deal. AP shall record type, volume, and origin of generated waste, regularly report this information to the regional department of the Ministry of Environmental Protection and retain the records for 5 years. Waste shall be disposed at an engineered for 25 year expected load landfill and managed safely. Inert waste can be buried without neutralization. Utilization and recycling should be considered prior to disposal.	EBRD partial compliance: Hazardous waste is not managed. No waste documentation or waste reduction plan. Minor oil spills at the office area
3	GHGs missi- on reduction	Project-related greenhouse gases (GHG) emissions shall be reported, no limits are set but the reduction in a manner appropriate to the nature and scale of project operations and impacts is requested	Environmental Code Art. 94.1-94.12, 310-314	Greenhouse gas emissions passport shall be prepared. Once approved by the MEWR regional department, the stated in it annual CO ₂ emission volume applied as the limit. There is no need to purchase GHG emission quotes that apply when the annual CO ₂ emission exceeds 20 000m ³ .	No approved by the MEWR regional department greenhouse gas passports. EBRD/RoK full compliance expected after operation starts

PR	Acti-vity	PR Requiriements	RoK Regulating Document	Relevant Requirements	Compliance Status
2,3,4	Community health, safety and security Emergency preparedness and response	<p>Be prepared to respond to process upset, accidental, and emergency situations in a manner appropriate to the operational risks and the need to prevent their potential negative consequences;</p> <p>Identify major-accident hazards;</p> <p>Take all measures necessary to prevent major accidents and to limit their consequences for humans and the environment. Such measures must be identified in a major-accident prevention/emergency preparedness policy;</p> <p>Assist and collaborate with the community and the local government agencies in their preparations to respond effectively to emergency situations;</p> <p>demonstrate capacity to respond to reasonably predictable incidents, either directly or indirectly (e.g., with the assistance of emergency responders, third party contracted responders, insurance);</p> <p>Document its emergency preparedness and response activities, resources, and responsibilities;</p> <p>Disclose appropriate information in the ESAP or other relevant document to affected communities and relevant government agencies;</p> <p>Inform potentially affected communities of significant hazards and summarise response plans in a culturally appropriate manner;</p> <p>Exercise prevention and response plans on a schedule appropriate to the sector and risk associated with the project, but at least on an annual basis;</p> <p>Update local authorities and communities regularly as plans change or have to be tested;</p> <p>Maintain close communication with appropriate emergency responders, authorities, media, and the local community to inform them about the situation and what is being done to respond to it and to prevent future incidents.</p>	Fire Safety Act from 22 November, 1996 № 48-I	Develop a firefighting plan.	<p>Impact of blasting dust on Ayyr village (4km away) during frequently occurring south (17%) and southwest (31%) winds not assessed.</p> <p>Hazards and risks not identified. Fire prevention and response plans not developed</p> <p>Fire engines are too far to enable adequate response</p> <p>No firefighting equipment at work and living sites</p> <p>Full compliance expected before operation starts</p>

PR	Acti-vity	PR Requiriements	RoK Regulating Document	Relevant Requirements	Compliance Status
6	Biodiversity conservation	<p>Follow requirements of the following conventions:</p> <ul style="list-style-type: none"> • Convention on Wetlands of International Importance Especially as Waterfowl Habitat • Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) • Convention on the Conservation of Migratory Species of Wild Animals • Convention on the Protection of the Black Sea Against Pollution • Council Directive 92/43/EEC May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora, as amended • Council Directive 79/409/EEC April 1979 on the Conservation of Birds • Council Directive 2004/35/EC April 2004 on Environmental Liability • Council Directive 85/337/EEC 27 June 1985 as amended by Directive 97/11/EC of 3 March 1997 on Environmental Impact • Council Directive 2001/42/EC June 2001 on Strategic Environmental Assessment 	Conventions related governmental orders	The same conventions apply as having been ratified by the RoK.	<p>EIA environmental control measures do not include ecological monitoring</p> <p>Full compliance expected before operation starts</p>
6	Sustainable use of natural resources	<p>Due diligence should include consideration of the nature, extent, duration, and intensity of potential impacts, assess the probability of impact occurring and determine the significance of those impacts.</p> <p>Identify measures to avoid, minimise or mitigate potentially adverse impacts and, where appropriate and as a last resort, propose compensatory measures, such as biodiversity offsets, to achieve no net loss or a net gain of the affected biodiversity. Minimise any further degradation or conversion of modified habitats.</p> <p>Identify opportunities to enhance habitats, protect and conserve biodiversity or encourage sustainable harvesting/management of the area in question. This might include foraging, bee keeping, bird watching etc.</p>	Concept of rational management of natural resources. #1003 25.09.2013	Land rating and suitability for designated use has to be retained. It can be downgraded only with the approval of the Government of RoK of the land evaluation report. Agricultural land zoning is used to protect valuable land from destruction. Zoning to be based on degree of degradation and contamination.	<p>Measures and targets for water and other resources use reduction are not. Established</p> <p>Full compliance expected before start of operation</p>

PR	Acti-vity	PR Requiriements	RoK Regulating Document	Relevant Requirements	Compliance Status
8	Cultural heritage	<p>At an early stage of the environmental and social appraisal, the client shall identify if any cultural heritage is likely to be affected by the project, and assess the likelihood of any chance finds.</p> <p>The client is responsible for locating and designing a project so as to avoid significant damage to cultural heritage preferably at the early stages of the project design.</p> <p>Where impacts cannot be avoided, the client shall undertake studies required to assess potential impacts and the required changes in design. The scope of these studies will be agreed with EBRD.</p> <p>The assessment and mitigation of impacts on cultural heritage will be conducted in accordance with relevant national/local laws. Internationally accepted good practice includes, but is not limited to: archaeological or paleontological field survey, laboratory examination of found objects, exhibitions featuring new finds, and documentation.</p> <p>Based on the results of the assessments the client shall develop appropriate mitigation measures to reduce and mitigate any adverse impacts on the cultural heritage, which might be included in the ESAP or in a specific Cultural Heritage Management Plan.</p> <p>The client has to consult with the affected communities to identify cultural heritage of importance, and to incorporate and to incorporate into the client's decision-making process the views of the affected communities. The client shall also provide the information to affected communities on the scope, location, duration of a project, and any activities that might involve impacts on cultural heritage.</p> <p>Where a project may significantly damage cultural heritage the client shall not proceed unless it: (i) enters into a good faith negotiation with the affected communities; and (ii) documents their informed participation and the successful outcome of the negotiation.</p> <p>Where a project proposes to use the cultural resources for commercial purposes, the client will inform affected communities of: (i) their rights under national law; (ii) the scope and nature of the proposed commercial development; and (iii) the potential consequences of such development.</p>	<p>Historical and cultural heritage protection and usage, 02.07.1992</p>	<p>Every kind of archeological object or structure, which is directly related with the nation's history, development of the society and government; unique nature objects, that correspond to rare geological formations as well as the cultural compositions, which have historical and cultural value, refer to the cultural heritage of the RoK</p> <p>The cultural heritage objects fall under the governmental protection in case they are recognized to be the cultural monuments by the governmental structure, independently from their type and property status.</p> <p>The cultural monuments are protected by the legislation of the Republic of Kazakhstan (the above stated law) and have the specific legal regime of their usage.</p>	<p>Archaeological survey of the affected area has not been conducted</p> <p>Full compliance expected before start of operation</p>

PR	Acti- -vity	PR Requiriements	RoK Regulating Document	Relevant Requirements	Compliance Status
10	Stakeholder Engagement	<p>Identify individuals and groups that may be differentially or disproportionately affected by the project because of their disadvantaged or vulnerable status;</p> <p>Begin consultations early in the environmental and social appraisal process;</p> <p>Provide on-going information and access to ESIA to identified stakeholders throughout the life of the project.</p> <p>Stakeholder engagement shall be free of manipulation, interference, coercion, and intimidation, and conducted on the basis of understandable and accessible information, in a culturally appropriate format;</p> <p>Develop separate SEP for the Company staff</p> <p>Stakeholders should be able to provide comments and recommendations on the draft Stakeholder Engagement Plan;</p> <p>Disclose a non-technical summary in the Kazakh and Russian languages and in accessible and culturally appropriate manner,</p> <p>Tailor the needs of any disadvantaged or vulnerable groups;</p> <p>Publish regular reports to their external stakeholders on their environmental and social performance;</p> <p>Establish a grievance mechanism, inform the affected communities and ensure that the mechanism addresses concerns promptly and transparently, in a culturally appropriate manner, and is readily accessible to all stakeholders;</p>	<p>Public Hearings Rules”№ 135-nfrom 7.05.2007</p> <p>Environmental Code Chapter 21</p> <p>Rules on access to environmental information regarding the processes of EIA and decision making of planned economic activity” № 233-nfrom 25.07.2007</p> <p>The order of consideration of appeals from individuals and legal entities” №820 from 25.08.2006</p>	<p>Stakeholder consultation is required only at the design stage of the project</p> <ul style="list-style-type: none"> • Involve targeted public groups, which rights and interests may be <u>directly</u> affected by the project; • Make sure public opinion at the EIA stage is taken into account through public hearings, collection of comments and suggestions and questionnaires of population; • Ensure awareness and participation of stakeholders in EIA process. Stakeholders shall be notified beforehand and allowed to participate in decision making process at an early stage of project planning. • Notify stakeholders publicly (through advertisements in newspapers, television, Internet or other sources of media) or individually (invitation of representatives of public organizations, government agencies, experts and specialists on the project); • Provide stakeholders access to all EIA materials. Any individual, regardless of his Kazakhstan residence or accommodation on the territory of the Republic of Kazakhstan, or legal person is entitled to request environmental information. A request shall be answered within 30 days. • Submit results of public hearings (minutes of meeting with the list of participants) with EIA materials to the SEE. All interested parties shall have an opportunity to express their opinion during the State Environmental Review. 	<p>Stakeholders not identified. Engagement plans not prepared, no regular stakeholder engagement.</p> <p>EBRD/ Kazakhstan full compliance expected after obtainment of the SEE positive conclusion on EIA and SEP implementation</p>

PR	Acti-vity	PR Requiriements	RoK Regulating Document	Relevant Requirements	Compliance Status
10	Ongoing impact awareness and control by the public	<p>Public has right to be informed on the state of environment around them</p> <p>Appropriate for the project scale and meaningful disclosure instruments shall be used</p> <p>Affected parties must fully understand potential impacts from the project as early as possible.</p> <p>Disclose in local language project purpose, nature, scale and duration; risks and impacts, mitigating measures, benefits and consultation process;</p> <p>Produce periodic reports on the ESAP implementation progress, changes in impacts and grievances handling. Report frequency shall be relevant to the public concern but at least annually.</p> <p>Disclose relevant project-related information to enable the affected communities and relevant government agencies to understand these risks and potential impacts;</p> <p>Consult with affected communities and relevant government agencies about the proposed measures before they are finalized and take their concerns and comments into account.</p> <p>Review the measures regularly;</p> <p>Engage the affected communities and agencies on an ongoing basis, informing them on the status of implementation of plans and commitments, results, and discussing with them any material changes needed to the plans, in advance of changes.</p> <p>Report on the risks, potential impacts and benefits of the project and implementation of any action plans on a regular basis (e.g., annually) to the EBRD and, as part of its reporting to stakeholders in accordance with PR 10, to the affected communities.</p>	Instruction on EIA process №204-п 28.06.2007	<p>Public may apply to court to limit, suspend and terminate both construction and operation that have negative impact on the environment and health.</p> <p>Limits can be applied to:</p> <ul style="list-style-type: none"> Emissions into the environment (with regard to volume and types of pollutants, including hazardous to life and health); Level of certain types of impact (noise, vibration, thermal, electromagnetic, radiation, etc.); Use and handling of hazardous materials, structures and equipment; Use of technologies and production methods that endanger the environment and human health; <p>There are two ways to suspend or terminate the activities:</p> <ul style="list-style-type: none"> Court suspension or prohibition; Suspension, revocation of licenses and permits in the area of environment and natural resources use by the regulating bodies that issued the licenses and permits. 	EBRD/ Kazakhstan full compliance after implementation of Stakeholder Engagement Plan