

REPUBLIC OF BULGARIA
MINISTRY OF ENVIRONMENT AND WATER

OBOC-68
20 September 2021

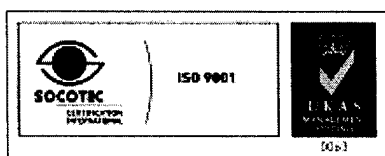
Subject: *Environmental Impact Assessment procedure in a transboundary context for the project for the project "Exploitation of Pb, Zn and Cu ore from the bearings "PODVIROVI" and "POPOVICA" in the area of Karamanitsa near Bosilegrad" - additional information on potential environmental impacts from activities in potentially affected areas.*

Dear Ms Minister,

In connection with the stated by letter № EIA-68 / 26.08.2021 of the Ministry of Environment and Water (MoEW) willingness of the Republic of Bulgaria to participate in the transboundary EIA procedure for the new project of Bosil -metal, Bosilegrad, we provide you with additional information on the possible potential impact on the environment of the activities in the potentially affected areas, according to the opinions of Bulgarian institutions, as follows:

According to the provided notification, the location of the planned mining and processing complex is in close proximity to the village of Karamanitsa, Bosilegrad Municipality and near the border point between the Republic of Bulgaria, the Republic of Serbia and the Republic of Northern Macedonia.

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The underground exploitation of deposits "Podvirovi" and "Popovitsa" is envisaged to be performed using drilling and blasting, ore is processed into a flotation mill and remnants of operations to be disposed of in the tailings pond, which is located in the riverbed of the Karamanichka River, which is also a recipient of flotation wastewater. The Karamanichka River is a tributary of the Golema River and which flows into Dragovishtitsa River, which is a cross-border river with the Republic of Bulgaria. Karamanichka River is expected to pass through the tunnel near the tailings pond to avoid direct contact with the tailings pond.

According to the submitted documentation, the potential negative impact on surface waters has been assessed, which is related to the following:

- Discharge of untreated or insufficiently treated wastewater originating from the drainage from the operating areas;*
- Pollution by precipitation and leaching of pollutants from ancillary mining activities;*
- Potential contamination of the soil and surface water from sewage sludge from the ore crushing process (crushing and grinding);*
- Irregular operation or malfunctions of the biodisk for domestic sewage treatment;*
- In the event of an accident: damage to piping systems, damage to the tailings pond or, in the worst case, destruction of the flotation tailings pond wall can lead to tailings leakage from the tailings pond and cause a significant transboundary chemical accident that can be permanently deteriorate of the condition of the water - underground and surface water on the territory of Bulgaria;*

The presented information does not consider the impact on groundwater, not only from pollution, but also from the planned drilling and blasting works and possible transboundary impact.

No information is provided about possible emissions in surface water, sediment impact of rivers cumulative impacts on surface and groundwater from the activities and existing impacts, including from existing mine Grot, options for realization of the project are not considered.

In connection with the above said and given the volume of operations and geographical features of the area, which provides activities, estimated operating for over 13 years, and the fact that it is located within the transboundary river basin with the Republic of Bulgaria we consider, that a significant negative impact on the waters on Bulgarian territory can be expected at the stage of development, operation and after the end of operation of the mining and processing complex. The expected emissions from the activity are related to potential pollution with priority substances, specific pollutants and other substances of surface waters, as well as potential impact on groundwater, which could affect the condition of water bodies Dragovishtitsa River and Struma River on Bulgarian territory and of the groundwater bodies

in the region, which are also used for drinking and household water supply of the population in these valleys.

It is necessary to assess the impact on groundwater, on river sediments and the cumulative effect on surface and groundwater, to consider alternatives for implementation and to envisage measures to reduce the impact on surface and groundwater, including to reduce the risk of pollution from emergency situations, to provide for constant monitoring of the Karamanichka River after the tailings pond, as well as down the river and the Dragovishtitsa River before the border with the Republic of Bulgaria. It is necessary to envisage appropriate measures to reduce the negative impact on the environment in the Dragovishtitsa river basin, respectively the condition of water bodies in the Bulgarian part of the Struma river basin and to coordinate with the provisions of the River Basin Management Plan of the West Aegean region for maintaining good water status in this area.

On Bulgarian territory, the Dragovishtitsa River is determined as a transboundary surface water body BG4ST700R019, Dragovishtitsa River from the Bulgarian-Serbian border to its confluence with the Struma River.

Due to the proximity of the investment proposal to the Bulgarian state border and the direct hydraulic connection with the transboundary surface water body BG4ST700R019, Dragovishtitsa River from the Bulgarian-Serbian border to the confluence with the Struma River, the following potential impacts on surface waters, groundwater and water protection areas have been identified on the territory of the Republic of Bulgaria:

I. Possible potential impacts on surface waters:

The process of carrying out the mining and ore beneficiation activities during the implementation of the Project is related to the following impacts on the surface waters of the Dragovishtitsa River on the territory of the Republic of Bulgaria:

- the formation of untreated or insufficiently treated wastewater draining from the excavations in the operating mine areas, contaminated with undissolved substances and sludges rich in Pb, Zn, Cu and other metals from the extracted polymetallic ores, which are discharged into surface water bodies in the region of the investment proposal;*
- formation and discharge of polluted site waters with fuels and lubricants from auxiliary and supporting activities;*
- formation and discharge of domestic water from industrial sites - in the absence of built or non-operating WWTP;*

- *possible valley pollution and leakage of large amounts of sludge and wastewater with very high concentrations of Pb, Zn, Cu and other metals from the flotation tailings in the Karamanitsa River in case of damage to pipeline systems or destruction of the flotation tailings wall will lead to a chemical accident with large areas scale and consequences, and an eco-disaster of a transboundary nature;*
- *Similar risks of accidents related to valley pollution and leakage of sludge and wastewater from the flotation tailings can also occur in natural phenomena such as:*
 - *intensive snowmelt, passage of high waters and torrential floods, during which the tailings can overflow;*
 - *earthquakes in which the walls of the tailings can be destroyed;*
 - *erosion and demolition activities in the area of the tailings pond;*
- *when crossing high waters in the area of Karamanitsa and Golema rivers, which flow into Dragovishtitsa river, the sediments deposited in these rivers, with high content of Pb, Zn, Cu and other metals from the extracted and processed polymetallic ores, can be transported downstream and cross into the waters of the Dragovishtitsa River on the territory of the Republic of Bulgaria;*
- **Secondary pollution** - *through diffuse transboundary transport of pollutants in the air and subsequent deposition in the soil and surface waters in the Dragovishtitsa river basin on the territory of the Republic of Bulgaria - dust, NO_x, CO, SO₂ gases, other gaseous products after blasting, volatile organic compounds, polyaromatic hydrocarbons - PAH, polychlorinated biphenyls - PCB. Evidence for the existence of such diffuse transfer of pollutants are the isolated single cases of presence of such substances during the control monitoring by West Aegean River Basin Directorate of specific pollutants and priority substances in water matrix at point BG4ST06789MS200, Dragovishtitsa river at the border (above the village of Dolno Uino). In different periods of measurement single presence of the following substances were found - chloroalkanes C10-C13, polychlorinated biphenyls PCB 28, PCB 52, PCB 118, PCB 180, polyaromatic hydrocarbons - naphthalene, benzo(a)pyrene, phenanthrene, pyrene.*

II. Possible potential impacts on groundwater:

At the nearest to the area of the investment proposal "Exploitation of Pb, Zn and Cu ore from the bearings"PODVIROVI"and "POPOVICA" in the area of Karamanitsa near Bosilegrad" there are the groundwater bodies BG4G00000QN006, Porovi vodi in the Quaternary-Neogene-Kyustendil and BG4G001PtPz125, Puknatinni vodi in Vlahino-Ograzhden-Maleshevo-Osogovo metamorphites. No studies have been conducted to establish the transboundary nature of groundwater bodies between the Republic of Serbia and the Republic

of Bulgaria, i.e. at present, no direct impact of the investment proposal on the groundwater status in the Republic of Bulgaria can be proved.

At the same time there is a risk of secondary groundwater pollution in the terrace of the river Dragovishtitsa, on the territory of the Republic of Bulgaria:

- In the presence of incoming and transported pollutants (Pb, Zn, Cu and other metals from the extracted and processed polymetallic ore from the activities of the Project) across the border in the surface waters of Dragovishtitsa River, through the existing direct hydraulic connection between surface water body BG4ST700R019, Dragovishtitsa river from the Bulgarian-Serbian border to the confluence with the Struma River and groundwater body BG4G00000QN006, Porovi vodi in the Quaternary-Neogene-Kyustendil, these pollutants will enter the groundwater – i.e. a process of chemical intrusion into the groundwater will take place;
- by diffuse transboundary transport of pollutants in the air and subsequent deposition in the soil - dust, gases NO_x, CO, SO₂, other gaseous products after blasting activities, volatile organic compounds, polyaromatic hydrocarbons - PAH, polychlorinated biphenyls - RSV. These pollutants through the precipitation will enter directly into the groundwater of the groundwater body BG4G00000QN006, Porovi vodi in the Quaternary-Neogene-Kyustendil.

It should be noted that groundwater in the terrace of the river Dragovishtitsa provides water supply for drinking and household purposes to the population of the villages Gorno Uyno, Dragovishtitsa, Goranovtsi and Stensko in Kyustendil municipality, Kyustendil district, which has the highest priority for water abstraction.

III. Possible potential impacts on water protection zones:

Surface water body BG4ST700R019, Dragovishtitsa River from the Bulgarian-Serbian border to the confluence with the Struma River, which is affected by the investment proposal, falls into the following water protection zones, within the meaning of Art. 119a of the current Water Act of the Republic of Bulgaria:

- Water protection zone BG0000294 Karshalevo, protected zone under the Habitats Directive and under the Water Act - Art. 119a, item 5;
- Water protection zone BG0000295 Dolni Koriten, protected zone under the Habitats Directive and under the Water Act - Art. 119a, item 5;

The groundwater bodies BG4G00000QN006, Porovi vodi in the Quaternary-Neogene-Kyustendil and BG4G001PtPz125, Puknatinni waters in the Vlahino-Ograzhden-Maleshevo-Osogovo metamorphites are defined as water protection zones for drinking and domestic

water supply WPZ DDW – Art. 119a, item 1 of the Water Act, according to Section 3 of the RBMP of the West Aegean Region 2016-2021.

Conclusions: The implementation of the investment proposal "Exploitation of Pb, Zn and Cu ore from the bearings "PODVIROVI " and "POPOVICA "in the area of Karamanitsa near Bosilegrad" on the territory of the Republic of Serbia will have a **significant negative impact** on:

- transboundary surface water body BG4ST700R019, Dragovishtitsa River from the Bulgarian-Serbian border to the confluence with the Struma River, expressed in increasing concentrations of specific pollutants and priority substances such as Zn, Cu, Pb and other metals from mined and processed polymetallic ores and volatile organic compounds, polyaromatic hydrocarbons - PAH, polychlorinated biphenyls - PCB, as a result of the activities of the Project. The listed pollutants and groups of substances have a proven ecotoxicological effect on aquatic ecosystems and exceeding the established EQS for them will worsen the condition of the surface water body and leads to failure to achieve environmental objectives for "good" ecological and "good" chemical status. Potential volley pollution and leakage of large amounts of sludge and wastewater with very high concentrations of Pb, Zn, Cu and other metals from the flotation tailings pond in the Karamanitasche River led to a transboundary eco-catastrophe in the Dragovishtitsa River catchment with significant negative consequences, including for the territory Republic of Bulgaria;
- groundwater bodies BG4G00000QN006, Porovi void waters in the Quaternary-Neogene-Kyustendil and BG4G001PtPz125, Puknatinni vodi in Vlahino-Ograzhden-Maleshev-Osogovo metamorphites, expressed in the implementation of chemical intrusion of Pb, Zn, and other from the surface waters of the river Dragovishtitsa. This will lead to deterioration of groundwater bodies and failure to achieve environmental objectives for "good" chemical status;
- the possible deterioration of the surface and groundwater on the territory of the Republic of Bulgaria will limit the current rights of water users in the region - for drinking and domestic water supply of settlements along the Dragovishtitsa River, for irrigation of agricultural land and other water abstraction purposes.
- the water quality in the water protection zones for WWTP will be deteriorated: BG4DGW001PtPz125 and BG4DGW00000QN006 - determined under the meaning of art. 119a, item 1 of the Water Act, as well as of the protected areas under the Habitats Directive BG0000294 Karshalevo and BG0000295 Dolni Koriten - determined under the meaning of art. 119a, item 5 of the Water Act. The negative impact will lead to a deterioration of the conservation status of the respective WPZs.

In conclusion: All the above mentioned possible potential impacts on the waters in transboundary aspect (including for the territory of the Republic of Bulgaria) should be considered and taken into account within the EIA procedure of the Project "Exploitation of Pb, Zn and Cu ore from the bearings "PODVIROVI" and "POPOVICA" in the area of Karamanitsa near Bosilegrad".

I take this opportunity to express my highest consideration and readiness for fruitful cooperation.

Your sincerely,

Asen Lichev

Minister of Environment and Water