



Helping restore a clear-running stream



Up: Where the waters from Abrudel stream flow into the Arieș River

Insert: Acidic waters at the exit from a mine gallery in Roșia Montană

In the 2,000 years which have elapsed since the time Roșia Montană was mined by the Romans, poor mining practices have polluted the soil and surface waters of the area with heavy metals and their compounds.

Every second, 20 liters of highly acidic waters flow from the galleries of RoșiaMin mine (see insert photo) into Roșia streams, which in turn pour tens of kilometers downstream into the Abrud river and on to the Arieș river. The effect: within a few months, anything made of metal in this water rusts so badly it becomes pockmarked with holes.

Exposure of the rock with sulphur content to oxygen and water generates acidic waters. In this way, a weak sulphuric acid solution forms, which then dissolves the heavy metals from the rock. In time, this sulphuric solution reaches the underground and ultimately surface waters, polluting the hydrologic system.

The main source of the historic environmental pollution is acidic water. The acidity from the sulphur containing rocks in contact with water and oxygen (resulting from old mining, both above and below ground) has polluted the Roșia and Abrud streams so badly that **for several kilometers downstream, flora and fauna are almost completely absent in these rivers.**

According to the reports of the Romanian National Water Authority in the past 10 years, **the water quality in the Arieș River Basin has been described as “degraded”.**

If nothing is done, this acid rock drainage (ARD) could continue at Roșia Montană for hundreds of years as it has for several thousand, as exposed rock in old waste stockpiles, as well as in old underground tunnels, continue to interact with water and oxygen in the air.

As the Roșia Montană Project goes ahead, it will use the best available technologies, both to collect and treat current pollution at its source, as well as to remove the sources of forming acid waters in the project area.

WATERS NEED A LEADER AS WELL

4 key elements will be considered in water management:

- collection and treatment of polluted waters;
- managing surface runoffs;
- eliminating the source of acid rock drainage;
- re-using water as economically as possible.



Photo: The Pilot Station for Acid Mine Drainage Treatment in Roșia Montana, built by RMGC in 2011, tests the best methods to clean the red waters in the area

THERE WAS A MINE HERE. THE WATER WILL NOT LET YOU FORGET.

THIS IS WHY IT IS CALLED “ROȘIA” (RED)

In the Roșia Montană area, the “red” of the rivers reflects the high levels of acidity and other pollutants in the water.

The waters contain pollutants above the legal limits: an average of 96.3 times for Zinc, 73.6 times for Iron, 5.2 times for Arsen and 1.3 times for Cadmium.

There are technological solutions for acidic water treatment which are safe, but also very expensive.

The Roșia Montană Project will stop heavy metal leaching into the hydrologic system.

- **Cetate Dam** will help by collecting the acid rock drainage from the Roșia Valley Basin, which will then be pumped into a treatment plant. There, the acidic water will be treated until it meets Romanian water quality standards. Part of the clean water

will be used as industrial water for the Project, while the remaining water will be released back into the river to help restore the water system and promote the regeneration of the flora and fauna.

- **The Tailings Management Facility in Corna valley** will serve mainly to contain treated tailings. The dam is thus designed to capture acidic runoffs from the Tailings Management Facility.
- Clean surface waters (i.e. rainfall) will be deviated around the project site through a series of weepers and then discharged in the drainage area downstream the Project.



Photo: Fish live in good conditions in the water filtered by the Pilot Station

2 YEARS TO CLEAN WATER

Water quality in both the Roșia and Corna streams and the Abrud and Arieș rivers will improve significantly once the mining project's integrated water management measures are in place.

This should be achieved within the first 2 years (Construction Phase) of the Project.

Highly acidic waters will no longer pour into the local streams, and they will have a chance to recover and meet Romanian water quality standards.

WHAT MEANS A HEALTHY STREAM

Some of the water purged at the quality standards imposed by the Romanian legislation will be discharged in Roșia and Corna streams, in order to maintain their ecologic overflow (the level required for a healthy stream) and to improve the quality of the water outside the Project site. The clean water input will help the deposits on the bottom of the river to cleanse the existing heavy metal contamination, which will lead to the revival of the aquatic life on these river sections.

FOR FURTHER INFORMATION

Get informed:

In order to ensure that you receive clear and transparent information, RMGC invites all those who have an interest in the project to register as a stakeholder – to inform yourselves, to make up your own minds, to discuss aspects related to the project.

You do not have to register as a stakeholder to obtain information, but it does enable us to keep you informed directly of project progress, and upcoming events.

Contact:

Info Center
RMGC, 321A Piața St., Roșia Montană,
Alba County, Romania

Phone: (+4) 0258.806.726
Fax: (+4) 0258.806.725

Email: infocenter@rmgc.ro

Website: www.rmgc.ro