

MANAILA COPPER MINE, ROMANIA SUCCESSFUL Cu-Zn SEPARATION



Manaila Mine. Source: www.vastresourcesplc.com

PROJECT DESCRIPTION



[Vast Resources PLC](http://www.vastresourcesplc.com)'s wholly owned Manaila polymetallic mine is situated in Suceava County, northern Romania. Economic mineralisation is comprised of copper, lead, zinc, gold and silver.

Ore is mined from the Manaila open pit and trucked to the processing plant located in the town of Iacobeni. The plant consists of crushing, ball milling, flotation and concentrate filtration circuits. Manaila historically produced a single copper concentrate with gold credits.

Vast were unable to effectively separate the chalcopryrite and sphalerite at Manaila and therefore only producing a single copper concentrate which contained significant levels of zinc metal. This meant that the mine was incurring significant basket price penalties.

MINXCON INVOLVEMENT

Minxcon was mandated by Vast to assist in reviewing the plant and processing methods with focus on optimising the current process and then investigating the processing changes required to separate the chalcopryrite and sphalerite.

Minxcon was able to depress the sphalerite during initial batch flotation tests conducted onsite. These tests helped guide the full metallurgical testwork conducted by an independent laboratory. The early testwork indicated that metal ions were present to a significant degree which were activating the sphalerite resulting in zinc reporting to the copper concentrate which in turn increases sales price penalties. The deactivation of these ions as well as the depression of sphalerite were successfully demonstrated in the laboratory. The results were also verified with further batch flotation tests by Minxcon during subsequent site visits. Minxcon devised a flowsheet and managed the retrofitting of the existing flotation circuit to best mimic the laboratory testwork regime.

The changes to the flowsheet and reagent dosing regime successfully depressed the sphalerite, resulting in a significant reduction in zinc reporting to the copper concentrate. Furthermore, focus was then given to ensuring that the copper concentrate grade is kept above 20%. Manaila with the help of Minxcon, moved quickly to modify the circuit further in order to include a zinc flotation circuit. In late 2016, Vast reported a total sale of 200 tonnes of zinc concentrate with grades in excess of 30%.

Minxcon is continuing to assist management at Manaila with the emphasis on improving production efficiencies further by optimising the plant operation and reagent dosing as well as implementing short interval control systems. The plant team have bought into the control strategy and are contributing to the overall success of the project. The focus remains on safeguarding the production of a 20% copper concentrate with attention shifting towards producing a 45% zinc concentrate more consistently.