

STRIPPING AND ELECTROWINNING OPTIMIZATION IN GOLD AND SILVER PROCESS

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ABSTRACT

Since the commissioning of the CIL Processing Plant in 2017, Zenit Madencilik has been carrying out surveys in the stripping and electrowinning unit in order to increase the overall Au-Ag recovery, stripping and electrowinning efficiency and reduce the operating cost. For this purpose, the optimization studies on the stripping and electrowinning unit were commenced in 2019, and the outcomes were evaluated after the adequate database was generated.

Since the commissioning of the stripping and electrowinning unit, data collection was started. The barren and pregnant solution samples were collected hourly from the heat exchanger, stripping column and electrowinning cells. During the stripping stage the loaded and barren carbon were sampled and analyzed for Au and Ag.

According to the data collected between 2017-2019, the operating time of the stripping unit was longer and the electrowinning efficiency was lower. Therefore, it was decided that the optimization in the stripping and electrowinning was essential.

The parameters such as operating time, solution flow rate, caustic and cyanide concentrations, stripping vessel pressure and temperature, distance between anode-cathode plates in the electrowinning cells and the cleaning period of the heat exchanger were investigated individually. In consequence, the operating time for stripping was reduced by approximately 33% and the stripping efficiency was increased by 3%.

Key words: *Elution, Stripping, Electrowinning, Optimization, Au-Ag Recovery.*