



The tailings ponds from the Fundu Moldovei mine field (Suceava County, Romania). A preliminary study

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Abstract

The aim of this study is the comparative characterization of the waste from the Dealul Negru and Pârâul Cailor tailings ponds, located in the perimeter of the Fundu Moldovei mine field. The study focuses on identifying the mechanisms that may remove and transport the detritus from the waste deposit towards the surrounding, inhabited area. The common mechanism of environmental pollution is the removal of tailings from the slopes of both tailings ponds, during heavy rain episodes. The tailings pond of Dealul Negru is more exposed to wind, which lead to a quicker dehydration of the waste and appearance of secondary salts. The presence of the latter is suggested by the higher contents of major elements (Fe, Al, K) and strong correlation between them. The secondary salts (hydrated sulfates) increase the risk of environmental pollution by their high capacity for being removed and transported by wind. The tailings pond from Pârâul Cailor runs a smaller risk of air-borne pollution, as the waste deposit is protected against the wind by the surrounding heights. In that case, however, the main way of removal and transport of waste outside the tailings pond is the temporary stream that occurs during heavy rains.

Keywords: mine tailings; grain-size analysis, soluble fraction, geochemistry; correlation coefficients, pollution mechanisms.
