

Mining site remediation: a case study

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Introduction

The main objective of this work was to evaluate the efficiency of a remediation project in a mining area (Valdarcas Mine, Portugal). This mine was exploited for W in an ore deposit abundant phyrrotite and pyrite. As a consequence, there was strong contamination by acid mine drainage (AMD). The mine was abandoned in the eighties and the remediation project occurred around 2006. The present study was focused in two aspects: i) the effectiveness of the landscape rehabilitation; and ii) the evolution of the properties of the aquatic habitat. The methodology used for the assessment of the remediation performance included: monitoring of the mining effluent; comparison of physicochemical and hydrochemical parameters as well as the secondary mineralogy and acidophilic alga in the aquatic habitat, and analysing the evolution of vegetation cover. These issues were compared for different time periods: before the remediation, during remediation, and nowadays.

Results and discussion

During the first 10 years of abandonment, geochemical and mineralogical evolution of the mining wastes played an important role in the attenuation of the impact [1]. The results highlight the success of the revegetation, by colonization by native species [2]. However, AMD indicators suggest that the aquatic habitat did not improve conveniently. This study provides data for future adaptation needs.

[1] Valente (2004). *ISBN 1500917877*; [2] Abreu et al. (2016). *Geotemas*, 266.