

STABILITY STUDY OF SOME IRON MINING SLOPES THROUGH SLOPE/W (R)

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A characterization work was developed in one of Brazilian most important iron mines – Casa de Pedra Mine, from Companhia Siderúrgica Nacional (CSN) mining company - in order to evaluate the main slope stability conditioning factors and to provide confident data to analyze its mining slopes stability, both operational and final. The stability analyses were developed in the Slope/W software, emphasizing the security/economy ratio. Initially a geological-geotechnical and structural mapping and a geomechanical description of 32 boreholes allow the identification of several different rock mass classes. A comprehensive laboratory test campaign was done to determine strength parameters for each rock mass class. The two mining pits were divided into 5 structural compartments and 11 geological sections were analyzed in Slope/W at three different underground water conditions – dry, partially saturated and completely saturated. In general, results show that Casa de Pedra Mine does not have problems related to general slope failures. The main geotechnical problems are the erosion and the occurrence of some small failures involving two or three benches.