

GEOSTATISTICAL EVALUATION OF MINERAL RESOURCES OF THE CAJATI MINE, STATE OF SÃO PAULO, BRAZIL

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This paper presents the results of geostatistical evaluation of Cajati Mine's mineral resources. The Cajati Mine located in the Vale do Ribeira, southwestern São Paulo, is inserted in the Jacupiranga Ultramafic Carbonatite Complex, a classical Brazilian occurrence of alkaline rocks. Since the 40's apatite has been exploited by Empresa Serrana de Mineração as the major ore mineral. Originally only in altered carbonatite. Exploitation of fresh rock started with the exhaustion of the residual ore. Since the beginning of exploratory activities, the existence of other carbonatitic bodies in the region was known, but they had never been studied in detail. With the advance of mining and the increase of the mining ratio, the study of these small bodies became necessary and the reevaluation of mineral resources in the new area obligatory. Through statistical analysis based on exploration data base, it was possible to determine the distribution of ore grades as well as the proportion of ore above the cut-off grade. Following this, a variogram model was found, which has been used to estimate grades in the mining blocks. Additionally, a three-dimensional model of the ore body was constructed based on exploration data and field observations. Finally, this reevaluation of the mineral resources of Cajati Mine will be very important to plan mining activities over the next few years.