

Developing Bauxite Projects – Planning for Quality Product

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Abstract

The development of bauxite projects is focused primarily on such important aspects as in-country available infrastructure, logistics, mineral processing, or deposit geology. These disciplines play an important role by having significant impact on project economic viability, technical feasibility or the capacity to raise funds for project development. Nevertheless, when all these important aspects are finally determined, the project still needs to deliver a quality and profit-generating product, therefore a study should be undertaken to incorporate appropriate mine planning techniques to determine the product quality range. It should define the bauxite product quality achieved from the deposit over the Life of Mine period and how this aligns with the project's strategic objectives in terms of project minimum mine life or head grades. Some fundamental factors, known as Mining Modifying Factors, will influence the production profile and should be appropriately incorporated into the study at an early stage. These modifying factors include mining dilution and recovery, processing recovery, cash costs, and their effect on the economic value of a mining block. They are inherently linked to the deposit characteristics, the mining method to be applied, in situ grades, strip ratio, and other technical or economic characteristics influencing the quality of the final product.

Keywords: Bauxite quality; bauxite mining; mine planning; production planning; losses and dilution, margin ranking.