

Block Cave Mine Geometallurgy and Environmental Cost in Green Mining Strategy: A Case Study of Analysis Using a System Dynamic Approach

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Abstract:

An orebody containing large volume of pyrites can generate acid mine drainage (AMD) upon rock-mineral exposures due to the excavation. It goes through an oxidation process and without an in-place system enables pyrites to be properly handled could then create risk of environmental quality degradation. Many mines in today's operation implement the recovery in area of mill-processing by including treatment process for ores containing pyrites along with its generated acid at the mill facilities prior to release the tailing or wastewater. Activities extended into establishing the sedimentation pond for the tailing deposit area enable mine operator properly controlling and measure the pH of waters along with any introduced environmental risk-hazard. All of those happens in consideration the solution after the fact which could contain more risk for mining operation following its less time given for mine to react and/or potentially having more impact due to later spending cost extra for penalties upon failing to manage the acid until the discontinuation of mine operation whenever reading result indicates beyond the acceptable level of tolerance. An effective of mining operation engineering in today's industry not only consider the way of mine can be producing the large amount of tonnage in the good grade of metal but also in the zero harm of environmental were called green mineral exploitation. Green mineral exploitation on earth can be achieved through the performing of proper-robust engineering design at all stage activities. This robust engineering design will reduce and eliminate the negative impact since the presentation of pyrites in the orebody to surrounding mine environment while reduces consequences on area of commercials-cost. The underground mine method facing the challenge on its way of achieving ore extraction in effective and in efficient manners. The method is something that cannot be avoided when the location of orebody dictates the operator to do so which simply