

APPLICATION OF ECONOMETRIC TECHNIQUE FOR ENSURING SLOPE STABILITY IN AN OPEN PIT MINE: A CASE STUDY¹

Pradeep Kumar², and Agota Horel

Abstract: Researchers have been striving to apply state-of-the Art techniques for ensuring the Stability of Pit Slopes and negating mass movement in open pit mines. In the current work, we study the applicability of Econometric tools, based on geotechnical engineering parameters and compressive strength of the rock, for ensuring the Pit Slope Stability. The Open Pit Coal mine is located in the foothills of the Himalayas, in the north-eastern corner of India and marked by its strategic proximity to China and Myanmar. The Coal horizons are soft and friable and do not require blasting while the overburden has compressive strength ranging from 80 -120 kg/cm². The Gross Calorific Value of coal ranges from 7600 to 8200 kcal/kg and the tertiary coal deposit lies in an area of very high precipitation.

In the current work, an attempt is made to study the geotechnical engineering parameters, taking into account the internal angle of friction, cohesion, and the applicability of an Econometric tool, and using this, arrive at a final slope boundary that is stable, and come forth with an optimum pit slope angle of the mine, so that it negates mass movement, and ensures sustainable reclamation. We examine the efficacy of the applicability of Econometric technique for freezing the final Pit Slope, particularly, in such conditions where strata are weak and friable.

Additional Key Words: Slope Stability, Econometric tool, Mass Movement, Sustainable Reclamation

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² Pradeep Kumar Senior Manager, Central Mine Planning & Design Institute, Ranchi, India; Agota Horel, Dept. of Civil & Environmental Engineering. UAF, Fairbanks, AK