

ABSTRACT

PT. Singlurus Pratama (SGP) is one of the private coal mining company located in Samboja, Kutai Kartanegara reGENCY, East Kalimantan Province. PT. Singlurus Pratama mining sites divided into several blocks, there is Sungai Merdeka, Mutiara, and Argosari. Along with the increasing production of PT. Singlurus Pratama there will be opening Margomulyo block.

Before Margomulyo block can be producties, the geotechnical investigation should be conducted to ensure the physical and mechanical of the material. From the geotechnical investigation can be determined the optimal and secure slope geometry. By achieving the best recommendation, the failure of the slope can be minimalized and the productivity can be achieved. Based on consideration of the topography and geology as well as the adjusting coal seam mining plans that exist, then the drilling for geotechnical data collection conducted on a seven point drill hole that is the GT-MG-16, MG-GT-17, GT-MG-18, MG-GT-19, GT-MG-20, MG-GT-21, GT-MG-22.

Obtained from drilling of the rock sample then tested in the laboratory to determine the physical properties and mechanical properties. The data obtained from laboratory testing can then be used as input data to the calculation of slope geometry on block Margomulyo. Modeling slopes using limit equilibrium methods.

Analyzed of single slope at a height 10 m and angle of 50° , 60° , 70° . The results of the analysis of single slope recommended height of 10 m and a 60° angle at half-saturated conditions, because the angle of 70° slope in critical condition.

Analyzed of highwall slope at a height 70m and angle of 40° , 45° , 50° . The results of the analysis of highwall slope at height 70 m and slope angle of 50° in critical condition and landslides, so height of 70 m and a 45° angle at half-saturated conditions is recommended. In the highwall slope factor was also added vibration caused from blasting process. From the analysis of the vibration of 0,05 g slope in a safe condition, vibration 0,07 g slope in critical condition and on a slope 0,09 vibration in landslide conditions, so the recommended maximum vibration on the highwall slope is 0,05 g.