

ABSTRAK

PT. Karya Sumber Alam Perkasa merupakan perusahaan yang melakukan kegiatan penambangan untuk mendapatkan batu Granit yang berada di Desa Pandan Sembuat, Kecamatan Tayan Hulu, Kabupaten Sanggau, Provinsi Kalimantan Barat. Penelitian dilakukan di *pit 2* PT. Karya Sumber Alam Perkasa karena kondisi di *pit 2* yang sedang dilakukan kegiatan penambangan terbilang curam, tanah (*top soil* dan *overburden*) pernah mengalami longsor, dan ada aliran air yang mengalir di beberapa titik pada lereng. Tujuan penelitian adalah mengkaji kelas massa batuan, potensi tipe longsor, dan potensi kestabilan lereng.

Kajian teknis kestabilan lereng dilakukan menggunakan metode *Slope Mass Rating* (SMR) di mana dipengaruhi oleh kekuatan massa batuan berdasarkan perhitungan RMR (*Rock Mass Rating*) dan analisis potensi tipe longsor berdasarkan proyeksi stereografis dengan bantuan *software Rocscience Dips 7.016*. Pengambilan data lereng dan bidang-bidang diskontinu dilakukan dengan observasi dan pengukuran langsung di lapangan. Pengambilan data sifat mekanik batuan dilakukan pengujian di laboratorium.

Hasil dari penelitian ini adalah bobot massa batuan berdasarkan klasifikasi RMR yaitu sebesar 78 dan nilai SMR yaitu sebesar 78 masuk ke dalam kelas II, besar sudut kemiringan lereng (ψ_i) sebesar 78° , besar sudut geser dalam (ϕ) sebesar 40° , dan kemiringan bidang gelincir (ψ_p) sebesar 19° . Hasil proyeksi stereografis menunjukkan lereng *pit 2* bentuknya cenderung seperti longsor guling namun setelah dianalisis tidak terjadi kelongsoran karena tidak memenuhi syarat-syarat kelongsoran. Hasil perhitungan faktor keamanan adalah 2,458. Potensi kestabilan lereng berdasarkan metode SMR dan perhitungan faktor keamanan menunjukkan bahwa lereng di *pit 2* dapat diasumsikan aman atau stabil, namun ada probabilitas kelongsoran beberapa blok sebesar 20%.

Kata kunci: Kekar, Metode SMR, Stabilitas Lereng

ABSTRACT

PT. Karya Sumber Alam Perkasa is a company that carries out mining activities to obtain granite located in Pandan Sembuat Village, Tayan Hulu District, Sanggau Regency, West Kalimantan Province. The research was conducted in Pit 2 PT. Karya Sumber Alam Perkasa because the condition in Pit 2 where mining activities are being carried out are quite steep, the soil (top soil and overburden) has experienced landslides, and there are streams of water flowing at several points on the slopes. The purpose of this research are to study rock mass class, the potential of landslide types, and the potential of slope stability.

The technical study of slope stability was carried out using the Slope Mass Rating (SMR) method which was influenced by the strength of the rock mass based on calculation of RMR (Rock Mass Rating) and an analysis of the potential type of landslide based on stereographic projections wusing Rocscience Dips 7.016 software. Slope and discontinuous fields were collected by direct observation and measurement in the field. The mechanical properties of rock were collected by testing in the laboratory.

The result of this study are the weight of rock mass based on the RMR classification is 78 and the SMR value is 78 belongs to class II, the slope face angle is (ψ_f) 78° , the friction angle (ϕ) is 40° , and the dip of the sliding plane (ψ_p) is 19° . The stereographic projection show that the slope of pit 2 tends to be like a toppling failure but after analysis there is no failure because it doesn't qualify the toppling failure requirements. The result of the calculation of safety factor is 2,458. The potential for slope stability based on SMR method and the safety factor shows that the slope in pit 2 can be assumed to be safe or stable, but there is a 20% probability of sliding in some blocks.

Keywords : Joint, Slope Stability, SMR Method