

**GEOLOGY AND ANALYSIS OF SLOPE STABILITY
RECOMMENDATIONS FOR OPEN PIT MINE PT. INDOMINCO MANDIRI
SUKA RAHMAT AREA, TELUK PANDAN DISTRICT, EAST KUTAI
REGENCY, EAST KALIMANTAN PROVINCE**

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ABSTRACT

Location of the study are included in the area of mining business licenses PT. Indominco Mandiri, Suka Rahmat area, Teluk Pandan district, East Kutai Regency, East Kalimantan Province. Geographically the area carefully situations located at coordinates 539505 mE - 544505 mE and 14000 mN - 19000 mN UTM zone 50N datum, WGS 84 in.

Gemorphology research area is divided into the original form of the original form of structural, then divided into landform of homocline hills (S21) and homocline valley (S22). Drainage pattern that developed in the region, namely directional trellis carefully situations, an alteration of the basic pattern of trellis because of the influence of the structure of the folds. Regional carefully situations in the wing folds Runtu syncline.

Stratigraphy area carefully situations divided into four units, sequence of lithologies of the oldest is the unit of sandstones Pulaubalang Formation (Early Miocene - Middle Miocene), the unit of claystone Balikpapan Formation (Middle Miocene - Late Miocene), the unit of limestone - clastic Balikpapan Formation (Late Miocene), and unit alluvial deposits (Holocene). Coal carrier layer is at Pulaubalang sandstone unit and claystone unit Balikpapan.

The geological structure is evolving right horizontal trending fault Northeast - Southwest. And stocky with general direction Northwest - Southeast.

Based on the analysis and calculation methods Slope Mass Rating (SMR) safety factor with Bishop simplified method, it is recommended that an open pit mine slope with a slope angle of the slope overall (overall slope) 60 °. Recommended slope on a single slope (single slope) has a width of 4 meters level with a slope of 9.5 meters height and angle of each single slope of 70 °. The target of the coal seam to be mined that seam C7 in Balikpapan claystone unit.

Lithological slope is dominated by clay meterial, it is necessary to do the analysis of clay minerals in this clay. The goal is to determine the type of clay minerals contained in the slope, because at a certain clay minerals would affect the stability of the slopes of the mine. Geological drilling technique needs to be done at another location that has a target coal seam together to get results more representative slope geometry.

Keywords: Pulaubalang Formation, Balikpapan Formation, geomorphology, stratigraphy, structural geology, rock mass rating, slope mass rating, slope stability