

ABSTRACT

Oil and gas industry in East Kalimantan use pipes as distribution channels. Those Pipeline run along the coast, from senipah to Bontang. Those pipeline has a very high capacity of more than 3.000 million standard cubic feet per day. That is the reason the pipeline maintenances are required. One of them is landslide area remediation or area, that are indicated instable. It is necessary to analyse the slope by simulating the possible conditions such as decreased shear strength, increased volume of weight and earthquake effect.

Slope stability analysis performed with help SLOPE/W program from GEOSTUDIO. This study aims to determine the safety factor (FS) of slope without reinforcement and after the bored pile reinforcement are installed. The bored pile reinforcement analysis used Slope Stability and Anti Slide Pile program from GEO5. The used conditions to simulate the slope are peak shear strength, residual shear strength, weight of volume in wet condition, weight of volume in saturated condition and earthquake coefficient of 0,08g. The bored pile reinforcement has diameter of 0,8 m and the pile spacing is 1,2 m.

Based on the result of the research, the slope without reinforcement with peak shear strength parameter is in stable condition and the slope with residual shear strength parameter is in unstable condition ($SF < 1$). The increased weight of volume (saturated) and earthquake result a decreased factor of safety. Critical factor of safety (minimum) is on condition 8 with factor of safety 0,661. This number indicate, that the slope is unstable or a landslide is occurred. The bored pile placed 10 m and 20 m from the toe of the slope and has a length of 15 m. The used longitudinal rebar are 30 pieces for pile 1 and 26 pieces for pile 2 with diameter of 32 mm and the used transverse rebar has diameter of 13 mm and fitted with a distance of 200 mm for both piles. The slope is in stable condition, after the bored piles are installed ($FS > 1,5$).

Keywords : *slope stability, bored pile, SLOPE/W.*