ABSTRACT

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Consolidation is the process of water coming out of the pores of the soil which causes changes in soil volume (compression). This consolidation analysis process uses the vacuum consolidation method where analysis needs to be carried out to analyze how much land subsidence occurs as an initial step before the Kamal Reservoir project is built in connection with the flood control program in Jakarta, especially North Jakarta, by the DKI Jakarta Provincial Government. Based on the results of the soil research carried out, the characteristics of the soil type are soft clay with a hard soil depth of 26.50 - 40.50 meters. The consolidation analysis carried out at 2 bore hole points was calculated as a whole using geotechnical software and using the vacuum consolidation method load assumption and assisted by the installation of a SSP type retaining wall at the beginning of the embankment work as deep as 15 meters and the unembedded part as long as 2 meters. The results of the analysis of each bore hole vary because each borehole analyzed has different soil characteristics. Based on the calculation of the consolidation analysis on borehole 6 without using the vacuum consolidation method, which is 25.6 cm for 4637 days and compared to using the vacuum consolidation method on borehole 6, the settlement value is 36.9 cm for 96.5 days. For the results of the analysis calculation obtained on borehole 5 without using the vacuum consolidation method, which is 24.9 cm for 4524 days and compared to using the vacuum consolidation method, the settlement value is 34.7 cm for 96.5 days, so the results obtained in this analysis are very effective to accelerate the start of the project. The total cost used in the planning of this retaining wall includes 11% VAT, which is Rp. 33,912,661,218.00.
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Keywords: Consolidation analysis, Land subsidence, Geotechnical application, SSP wall, Cost budget plan, Kamal reservoir.