ABSTRACT

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Bendungan Logung terletak di Dukuh Slalang, Desa Tanjungrejo, Kecamatan Jekulo dan Dukuh Sintru, Desa Kandangmas, Kecamatan Dawe. Bendungan Logung memiliki daerah luas genangan sebesar 144,06 ha dan tampungan normal sebesar 20.150.000 m^3. Dengan adanya analisis lereng dan rembesan untuk mengetahui keamanan yang didapatkan oleh bendungan agar bisa mencari kondisi lapangan dangan hasil analisis yang mendekati agar bisa memberikan penanganan pada bendungan dengan menggunakan program plaxsis dan geostudio.

Analisis dilakuakan dengan sampel yang diambil dari lokasi bendungan, pengujian berupa tanah liat (zona 1), pasir (zona 2), Random (zona 4), menunjukan hasil yang mengidikasikan bahwa tanah sebagai bahan analisa memenuhi persyaratan bendungan. Data analisis didapat dari hasil pengujian fisik material di laboratorium (Data primer) pengujian yang dilakukan adalah kadar air, berat jenis, analisa saringan, uji sifat tanah, uji proctor, *insitu permeability*, *field density, triaxial UU , direct shear*. Sedangkan data analisis pengujian mekanical didapat dari hasil spesifikasi bendungan logung yang dilakuan pengujian oleh konsultan perencana di laboratorium (Data sekunder). Data-data parameter tanah yang digunakan pada program PLAXIS 8.6 dan Geostudio 2007: kohesi, *c*; sudut geser dalam tanah, φ; sudut kemiringan lereng, α; dan berat volume tanah, γ; modulus elastisitas, *E*; koefisien permeabilitas, *k*; dan poisson ratio, υ.

Dari data parameter tanah dapat di temukan nialai kohesi (*c)* = 0,457, gaya geser (φ) = 15° 02’ 38”,sudut kemiringan lereng (α) = 1:30 hulu, 1:35 hilir dan berat volum tanah (γ) = 32,56 dari data PLAXIS di dapat nilai deformasi = 26,46 m; active pore pressures = -927,61 m; tegangan efektif tanah -2,70x10^{-3} kN/m^2; keamanan lereng hilir = 1,26 dan rembesan = 46,41x10^{-3}. Dari program geostudio di dapat nilai faktor keamanan lereng hulu = 1,41, keamanan lereng hilir = 1,23 dan rembesan = 63,30x 10^{-3}. Analisa keamanan stabilitas lereng bendungan terhadap beban normal aman, untuk keamanan rembesan disarankan dengan grouting atau injeksi semen pada tanah di bawah pondasi sepanjang bendungan.

Kata kunci : Analisis, Faktor Keamanan, Plaxis dan Geostudio

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ABSTRACT

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Logung Dam is located in Dukuh Slalang, Tanjungrejo Village, Jekulo District and Dukuh Sintru, Kandangmas Village, Dawe District. Logung Dam has a large area of inundation of 144.06 ha and a normal catch of 20,150,000 m^3. With the analysis of slope and seepage to determine the security obtained by the dam in order to find the field conditions with the results of the analysis approaching to be able to provide handling on the dam by using plaxsis and geostudio program.The analysis was carried out with samples taken from the location of the dam, testing of clays (zone 1), sand (zone 2), Random (zone 4), showing results indicating that the soil as an analysis material fulfilled the dam requirements. The data obtained from the results of physical testing of laboratory materials (Primary data) testing is done water content, specific gravity, filter analysis, soil properties test, proctor test, insitu permeability, field density, triaxial Act, direct shear. While the data analysis of mechanical testing obtained from the specification of dam logung do testing by consultant planner in the laboratory (secondary data). Soil parameter data used in PLAXIS 8.6 and Geostudio 2007 programs: cohesion, c; Sliding angle in soil, φ; Slope angle, α; And weight of soil volume, γ; Modulus of elasticity, E; Coefficient of permeability, k; And poisson ratio, υ.From soil parameters data can be found value cohesion (c) = 0.457, shear force (φ) = 15^{8} 02 '38 ", slope angle (α) = 1:30 upstream, 1:35 downstream and soil weight (γ) = 32.56 from PLAXIS data in can deformation value = 26.46 m; Active pore pressures = -927.61 m; Ground-effective voltage -2.70x10^{-3} kN / m2; Downhill slope safety = 1.26 and seepage = 46,41x10^{-3}. From the geostudio program in the value of upstream slope safety factor = 1.41, downhill slope security = 1.23 and seepage = 63.30x 10^{-3}. The safety analysis of the stability of the dam slope against normal loads is safe, for the safety of seepage it is advisable to grouting or injection of cement on the ground beneath the foundation along the dam.

Keywords: Analysis, Security Factor, Plaxis and Geostudio

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