ABSTRAK

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Bendungan Randugunting terletak di Desa Gaplokan dan Desa Kalinanas Kecamatan Japah Kabupaten Blora Provinsi Jawa Tengah. Daerah genangan Bendungan Randugunting ini mencapai luas sekitar 187,19 Ha dengan elevasi muka air normal 94,27 m dan elevasi muka air banjir 96,5 m. Dengan melakukan analisa stabilitas lereng dan rembesan pada bendungan bertujuan agar kontruksi bendungan aman terhadap longsor. Bentuk ketidakstabilan yang dianalisa adalah 3 kondisi pada beban normal yaitu *after construction*, *rapid drown*, dan *stady state*.

Analisa dilakukan dengan data sekunder yang didapat dari proyek pembangunan bendungan. Data yang diperoleh berupa Data Geoteknik (tanah random, lempung, filter halus, filter kasar, *riprap* dan *rocktoe*), Data Hidrologi (elevasi muka air banjir dan normal) dan Data *Detail Engineering Desain* (gambar potongan dan detail bendungan). Data-data parameter tanah yang akan digunakan dalam program *Plaxis 8.6* dan *Geostudio 2018 R2* yaitu; kohesi (c) = 18 kN/m^2 sudut geser tanah (φ) = 34º, sudut kemiringan lereng (α) = 1:2,75 hulu; 1:2,75 hilir, berat volume tanah (γ) = 18,88 kN/m^3, modulus elastisitas (E) = 40000 kN/m^2, koefisien permeabilitas (k) = 0,5457 cm/s dan poisson ratio (v) = 0,3.

Dari program *Plaxis 8.6* didapatkan nilai faktor keamanan di hilir bendungan pada kondisi *steady state* = 2,17, *after contruction* = 1,33, *rapid drawdown* = 1,75. Dari program *Geostudio 2018 R2* didapatkan nilai faktor keamanan pada kondisi *steady state* = 2,36, *after contruction* = 2,5, *rapid drawdown* = 2,35 dan rembesan = 0,10751 m3/hari. Analisa keamanan stabilitas lereng dan rembesan bendungan terhadap beban normal semuanya aman.

Kata Kunci : Analisa, Faktor Keamanan, *Plaxis* dan *Geostudio*

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ABSTRACT

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Randugunting Dam is located in Gaplokan Village and Kalinanas Village, Japah District, Blora Regency, Central Java Province. The inundation area of the Randugunting Dam reaches an area of about 187.19 Ha with a normal water level elevation of 94.27m and a flood water level elevation of 96.5m. By analyzing slope stability and seepage on the dam, it is intended that the dam construction is safe against landslides. The forms of instability analyzed are 3 conditions under normal load, namely after construction, rapid drowning, and stady state.

The analysis was carried out with secondary data obtained from the dam construction project. The data obtained in the form of Geotechnical Data, Hydrological Data and Detailed Engineering Design. The soil parameter data that will be used in the Plaxis 8.6 and Geostudio 2018 R2 programs are; cohesion $(c) = 18 \ kN/m^2$ soil shear angle $(\varphi) = 34$; slope angle $(\alpha) = 1{:}2.75$ upstream; 1:2.75 downstream, soil volume weight $(\gamma) = 18.88 \ kN/m^3$, modulus of elasticity $(E) = 40000 \ kN/m^2$, coefficient of permeability $(k) = 0.5457 \ cm/s$ and poisson ratio $(v) = 0.3$.

From the Plaxis 8.6 program, the value of the safety factor downstream of the dam at steady state = 2.17, after construction = 1.33, rapid drawdown = 1.75. From the Geostudio 2018 R2 program, the safety factor value at steady state = 2.36, after construction = 2.5, rapid drawdown = 2.35 and seepage = 0.10751 m3/day. Safety analysis of slope stability and dam seepage against normal loads are all safe.

Key Sentence: Analysis, Safety Factors, Plaxis and Geostudio.

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