

Bendungan Bagong merupakan bendungan yang akan dibangun di Trenggalek, Jawa Timur untuk membendung Sungai Bagong. Tujuannya yaitu untuk mencegah terjadinya banjir di daerah hilir, selain itu direncanakan sebagai penyuplai ketersediaan air baku, untuk mengairi lahan dan menghasilkan listrik sehingga dapat meningkatkan status sosial ekonomi masyarakat Kabupaten Trenggalek. Maka dari itu diperlukan penyelidikan geologi teknik permukaan dan bawah permukaan. Aspek yang digunakan sebagai data meliputi aspek batuan dan tanah, aspek geomorfologi, aspek struktur geologi, dan aspek air tanah. Metode penelitian dilakukan dengan pemetaan geologi teknik skala 1:12.500 dan analisis kualitas massa batuan GSI (*Geological Strength Index*), analisis tingkat pelapukan batuan, pengujian sifat keteknikan batuan dan tanah serta penentuan daya dukung batuan pondasi dan sudut pemotongan lereng yang aman.

Karakteristik geologi teknik daerah penelitian berdasarkan tingkat pelapukan terdiri atas 5 satuan yaitu satuan breksi andesit lapuk sangat tinggi, breksi andesit lapuk tinggi, lava andesit lapuk rendah, batugamping lapuk sangat tinggi, dan batugamping lapuk rendah. Berdasarkan kualitas massa batuan *Geological Strength Index* (GSI) permukaan daerah penelitian memiliki batuan dengan kualitas sangat buruk, buruk, dan baik. Kualitas massa batuan bawah permukaan *Rock Mass Rating* (RMR) area terowongan terdiri dari kelas *poor* (IV), *fair* (III), dan *good* (I). Daya dukung batuan pondasi berdasarkan nilai RMR di daerah penelitian dominan  $<30 \text{ T/m}^2$  -  $135 \text{ T/m}^2$  dengan sudut pemotongan lereng yang aman berkisar antara  $< 40\text{-}45^\circ$ .

**Kata kunci:** Bendungan Bagong, karakteristik geologi teknik, *Geological Strength Index*, *Rock Mass Rating*. tingkat pelapukan batuan, daya dukung batuan pondasi, sudut pemotongan lereng yang aman.

## ABSTRACT

Bagong Dam is a dam that will be built in Trenggalek, East Java to stem the Bagong River. The goal is to prevent flooding in the downstream area, it is planned as a source of water to irrigate land and generate electricity so as to improve the socio-economic status of the people of Trenggalek Regency. Therefore, surface and subsurface engineering geological investigations are required. The aspects used as data include rock and soil aspects, geomorphological aspects, geological structural aspects, and groundwater aspects. The research method was carried out with technical geological mapping at a scale of 1: 12,500 and analysis of the rock mass quality of GSI (Geological Strength Index), analysis of the level of rock weathering, testing of rock and soil engineering properties and determining the bearing capacity and safe cut slope of rock foundation.

The engineering geological characteristics of the research area based on the level of weathering consist of 5 units, namely very high weathered andesite breccia, high weathered andesite breccia, low weathered andesite lava, very high weathered limestone, and low weathered limestone. Based on the rock mass quality of the Geological Strength Index (GSI), the surface of the study area has rocks with very poor, poor and good quality. The quality of the subsurface rock mass of the Rock Mass Rating (RMR) of the tunnel area consists of classes poor (IV), fair (III), and good (I). The bearing capacity of the foundation rock based on the value of RMR in the dominant research area  $<30 \text{ T / m}^2 - 135 \text{ T / m}^2$  with a safe cut slope ranges from  $<40-45^\circ$ .

**Keywords:** Bagong Dam, engineering geological characteristics, Geological Strength Index, Rock Mass Rating. level of rock weathering, bearing capacity of foundation rocks, safe cut slope.