ABSTRAK

GEOLOGI, DAN ZONASI RAWAN BENCANA LONGSOR

DAERAH DONORATI, KECAMATAN KALIGESING,

KABUPATEN PURWOREJO, PROVINSI JAWA TENGAH

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Daerah penelitian secara administratif terletak di Desa Donorati dan sekitarnya, Kecamatan Kaligesing, Kabupaten Purworejo, Provinsi Jawa Tengah. Berdasarkan koordinat sistem *Universal Transfer Mercator* (UTM) WGS84 Zona 49S daerah penelitian berada pada koordinat 394440-400440mE dan 9147393-9152393 mS dengan luasan daerah pemetaan yaitu 30 km^2.

Berdasarkan dokumen Kajian Risiko Bencana (KRB) Provinsi Jawa Tengah Tahun 2016 – 2020 menunjukkan bahwa daerah Kabupaten Purworejo masuk dalam Kelas Tinggi dengan urutan keenam daerah paling rawan bencana longsor. Daerah penelitian berada di daerah Kaligesing dan termasuk dalam wilayah dengan risiko cukup tinggi. Perlu dilakukan analisis zonasi rawan bencana longsor dan analisis stabilitas lereng sebagai mitigasi bencana longsor.

Metode penelitian yang dilakukan berupa studi pustaka, pemetaan geologi permukaan, pengamatan dan pengukuran struktur geologi, pengambilan data sampel tanah *undisturb*, pengambilan sampel batuan, analisis petrografi, analisis stereografis, analisis zonasi rawan bencana longsor, dan analisis kestabilan lereng.

Gemorfologi di daerah penelitian berdasarkan aspek-aspek geomorfologi, maka dapat dibagi menjadi 6 bentuk lahan, yaitu Perbukitan Vulkanik Terdenudasi (V1), Bukit Intrusi (V2), Perbukitan Terdenudasi Kuat (D1), Tubuh Sungai (F1), Dataran Aluvial (F2) dan Limpah Banjir (F3).

Stratigrafi daerah penelitian termasuk dalam Formasi Kaligesing , yang terdiri dari 4 satuan batuan, dari tua ke muda : Satuan lava andesit Kaligesing, Satuan breksi vulkanik Kaligesing, Satuan intrusi andesit dan endapan Aluvial.. Struktur geologi yang berkembang pada daerah penelitian dijumpai 1 sesar, yaitu sesar kiri naik Gunungwangi berarah relatif barat laut-tenggara dengan nama *Reverse Left Slip Fault*.

Berdasarkan analisis zonasi rawan bencana longsor secara deterministik, daerah penelitian dibagi menjadi tiga zona, yaitu rendah, sedang dan tinggi. Berdasar pada Permen PU No.2 Tahun 2007 daerah telitian termasuk ke dalam Zona Tipe B yang jika ingin dilakukan pengembangan lahan untuk kepentingan warga maka perlu dilakukan analisis geotek dan analisis kestabilan lereng. Dari hasil analisis kestabilan lereng menggunakan metode Morgenstern-Price dan pengelompokan nilai FK berdasarkan klasifikasi Bowles (1989), dari 9 lereng terdapat 8 lereng yang harus di redesain atau ditambah penguat, berupa metode Dinding Penahan dan Teras Bangku.

Kata Kunci: Geologi, Longsor, Faktor Keamanan, Kestabilan Lereng, Zonasi Rawan Bencana

ABSTRACT

GEOLOGY, AND LANDSLIDE PROMISE ZONING OF THE DONORATI REGION, KALIGESING DISTRICT, PURWOREJO DISTRICT, CENTRAL JAVA PROVINCE

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The research area is administratively located in Donorati Village and its surroundings, Kaligesing District, Purworejo Regency, Central Java Province. Based on the WGS84 Universal Transfer Mercator (UTM) system coordinates, Zone 49S, the research area is at coordinates 394440-400440mE and 9147393-9152393 mS with a mapping area of 30 km^2.

Based on the Central Java Province Disaster Risk Study (KRB) document for 2016 – 2020, it shows that the Purworejo Regency area is included in the High Class with the sixth area most prone to landslides. The research area is in the Kaligesing area and is included in an area with quite high risk. It is necessary to carry out landslide prone zoning analysis and slope stability analysis as landslide disaster mitigation.

The research methods used include literature study, surface geological mapping, observation and measurement of geological structures, data collection on undisturbed soil samples, rock sampling, petrographic analysis, stereographic analysis, landslide prone zoning analysis, and slope stability analysis.

Gemorphology in the research area is based on geomorphological aspects, it can be divided into 6 landforms, namely Denuded Volcanic Hills (V1), Intrusive Hills (V2), Strongly Denuded Hills (D1), River Bodies (F1), Alluvial Plains (F2) and Flood Overflow (F3).

The stratigraphy of the research area is included in the Kaligesing Formation, which consists of 4 rock units, from old to young: Kaligesing andesite lava unit, Kaligesing volcanic breccia unit, andesite intrusion unit and alluvial deposits. The geological structure that developed in the research area found 1 fault, namely The left ascending fault in Gunungwangi is trending relatively northwest-southeast with the name Reverse Left Slip Fault.

Based on a deterministic landslide prone zoning analysis, the research area is divided into three zones, namely low, medium and high. Based on Minister of Public Works Regulation No. 2 of 2007, the research area is included in the Type B Zone, where if land development is to be carried out for the benefit of residents, geotechnical analysis and slope stability analysis need to be carried out. From the results of the slope stability analysis using the Morgenstern-Price method and grouping of FK values based on the Bowles (1989) classification, of the 9 slopes there are 8 slopes that must be redesigned or reinforced, in the form of the Retaining Wall and Bench Terrace methods.

Kata Kunci : Kaligesing Formation, Geology, Lomgsor, Safety Factors, Slope Stability, Disaster Prone Zoning