

GEOLOGI DAN STUDI ALTERASI MINERALISASI DAERAH
GUNUNG LONDENG DAN SEKITARNYA KECAMATAN
KARANGBOLONG, KABUPATEN KEBBUMEN, PROVINSI JAWA
TENGAH

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ABSTRAK

Daerah penelitian terletak di sekitar gunung Londeng dengan koordinat 9.140.000 mN – 9.145.000 mN, dan 327.000 mE – 331.000 mE di daerah Desa Banjarharjo, Kecamatan Karangbolong, Kabupaten Kebumen, Jawa Tengah. Penelitian bertujuan untuk mengetahui kondisi geologi dan alterasi mineralisasi daerah penelitian. Metodologi penelitian didasarkan pada pemetaan detail di lapangan dengan menentukan: geomorfologi berupa citra SRTM dan peta topografi dengan skala 1:25.000, struktur geologi, vulkanostratigrafi, menentukan jenis batuan secara makroskopis maupun mikroskopis dengan analisis petrografi. Analisis AAS, mineralgrafi dan analisis XRD untuk mengetahui alterasi mineralisasi daerah penelitian. Berdasarkan hasil penelitian satuan geomorfologi daerah penelitian dapat dibedakan menjadi lima, yakni; Satuan Dataran Aluvial, Satuan Perbukitan Karst, Satuan Perbukitan Intrusi, Satuan Perbukitan Aliran Lava, dan Satuan Perbukitan Denudasional dimana pola aliran sungainya multibasinal, dan subdendrik. Struktur geologi yang ditemukan di daerah pemetaan merupakan sesar perkiraan. Stratigrafi daerah penelitian dapat dibagi menjadi lima satuan tidak resmi, dari tua ke muda, yaitu Satuan breksi vulkanik, Satuan lava andesit, Satuan intrusi andesit, Satuan batugamping, Satuan endapan aluvial, Satuan-satuan batuan di daerah penelitian terbentuk kala Oligosen sampai holosen. Zona alterasi yang terbentuk di daerah penelitian berupa Zona Klorit-Epidot-Kalsit-Albit, Zona Kuarsa-Monmorilonit-Kaolinit dan Zona Kuarsa. Proses alterasi ini dikontrol oleh struktur sesar mendatar. Urat kuarsa yang terbentuk memiliki arah dominan barat laut-tenggara (N245°E-N270°E) dengan tekstur berupa massif. Temperatur pembentukan mineral berkisar antara 120°-300°C merupakan ciri endapan epitermal. Kehadiran tekstur urat kuarsa menunjukkan bahwa daerah penelitian memiliki logam dasar dan logam mulia. Mineral bijih yang dijumpai pada daerah penelitian berupa kalkopirit, pirit, sfalerit, hematit, perak dan emas. Berdasarkan hasil analisis geokimia didapatkan kadar Au >0,06-5.54 ppm, Ag >8-286 ppm, Pb >12-192 ppm, Zn 40-607 ppm, Cu 15-76 ppm.

Kata kunci: Gunung Londeng, alterasi, endapan epitermal, mineral bijih

GEOLOGY AND ALTERATION MINERALIZATION STUDIES IN LONDENG
MOUNTAIN AND VICINITY AREA, KARANGBOLONG DISTRICT, KEBUMEN
REGENCY, CENTRAL JAVA PROVINCE

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ABSTRACT

The study area is located around Mount Londeng with coordinates of 9,140,000 mN - 9,145,000 mN, and 327,000 mE - 331,000 mE in area of Banjaraharjo Village, Karangbolong District, Kebumen Regency, Central Java. The study aims to determine the geological conditions and alteration mineralization of the study area. The research methodology is based on detailed mapping in the field by determining: geomorphology in the form of SRTM images and topographic maps with a scale of 1 : 25,000, geological structure, vulcanostratigraphy determining the type of rock macroscopically and microscopically with petrographic analysis. AAS analysis, mineralgraphy and XRD analysis to determine alteration mineralization of the study area. Based on the results of research geomorphology unit of research area can be divided into five, namely; Aluvial Plain Unit, Karst Hill Unit, Intrusion Hills Unit, Lava Lava Flow Unit, and Denudasional Rolling Hills which have multibasinal, and subdendric. The geological structure found in the mapping area is a horizontal fault. Stratigraphy of the research area can be divided into five unofficial units, from old to young, namely volcanic breccia unit, andesite lava unit, andesite intrusion unit, limestone unit, alluvial deposit unit. The rock units in the study area are formed during Oligocene to holocene. Alteration zones that are formed in the study area are Chlorite-Epidote-Calcite-Albite Zones, Morphonite-Kaolinite Quartz Zones and Quartz Zones. This alteration process is controlled by a horizontal fault structure. The quartz vein formed has a dominant northwest-southeast direction (N245°E-N270°E) with a massive texture. Mineral formation temperature ranging from 120° -300°C is characteristic of epithermal deposits. The presence of quartz vein texture suggests that the study area has base metals and precious metals. Ore minerals found in the study area were chalcopryrite, pyrite, sphalerite, hematite, silver and gold. Based on the results of geochemical analysis, Au levels were > 0.06-5.54 ppm, Ag > 8-286 ppm, Pb > 12-192 ppm, Zn 40-607 ppm, Cu 15-76 ppm.

Keywords: Londeng Mountain, alteration, epithermal deposits, ore minerals