SARI

Geologi Dan Kontrol Struktur Terhadap Alterasi dan Mineralisasi Daerah Gunung Jati Dan Sekitarnya, Kecamatan Pagedongan, Kabupaten Banjarnegara, Jawa Tengah

Kondisi geologi Indonesia memiliki potensi untuk terus dikembangkannya penelitian terkait eksplorasi mineral ekonomis yang berkaitan dengan endapan epitermal. Terdapat beberapa intrusi dan gejala alterasi di lapangan yang terletak di Kecamatan Pagedongan. Hal ini menjadikan daerah Gentansari dan sekitarnya layak untuk dikaji bagaimana kondisi geologi, karakteristik alterasi dan kontrol struktur geologi terhadap alterasi dan mineralisasi. Melalui pemetaan geologi berluasan 30 km^2 menghasilkan urutan batuan dari tertua ke termuda berupa Satuan Sekis Mika, Satuan Lempung Hitam, Satuan Breksi Laharik, Satuan Piroklastik dan Satuan Intrusi Diorit. Terdapat struktur geologi berupa sesar naik berarah Barat Daya – Timur Laut (Sesar Naik Lebakwangi), sesar mendatar kiri berarah Barat Daya – Timur Laut (Sesar mendatar kiri lebakwangi-kebutuhduwur dan Majalengka), dan sesar mendatar kanan (Sesar Mendatar Kanan Gentansari-Kebutuhduwur, Majalengka, dan Pagedongan). Melalui analisis paleostress menggunakan data kekar gerus, menghasilkan arah dan umur relative setiap fase struktur yang terbentuk untuk dikorelasikan dengan proses alterasi sehingga diketahui struktur pre-mineralisasi, syn-mineralisasi dan post-mineralisasi. Berdasarkan pengamatan di lapangan dan analisis laboratorium berupa analisis petrografi, s*canning electron microscope* (SEM), dan *X-Ray Difraction* (XRD) menghasilkan penentuan zona alterasi hidrotermal berdasarkan himpunan mineralnya, berupa Zona Kuarsa±Aktinolit±Smektit+Biotit+Kaolinit (zona potasik), Zona Kuarsa-Klorit-Monmorilonit±Epidot+Aktinolit+Kalsit (zona propilitik), Zona Kuarsa-Sesirit±Kalsit±Biotit±Klorit+Illit (zona filik) dan Zona Kuarsa-Illit±Kaolinit+Smektit (zona argilik). Analisis mineragrafi dan X-ray Fluorescence (XRF) menunjukan keberadaan mineral bijih dan unsur logam yang didominasi berupa Cu-Au. Berdasarkan karakter endapan yang ditemukan, daerah penelitian termasuk kedalam jenis endapan sulfidasi tinggi bertipe porfiri.

Kata kunci: Pagedongan, Epitermal, Sulfidasi Tinggi, Porfiri, Struktur Geologi

ABSTRACT

Geology And Structural Control Of Alteration and Mineralization in Gunung Jati and Its Surrounding, Pagedongan District, Banjarnegara Regency, Central Java

Indonesia's geological conditions have the potential to continue to develop research related to economic mineral exploration related to epithermal deposits. There are several intrusions and symptoms of alteration in the field which is located in Pagedongan District. This makes the Gentansari area and its surroundings feasible to study the geological conditions, alteration characteristics and control of the geological structure on alteration and mineralization. Through geological mapping covering an area of 30 km2, the rock sequences from oldest to youngest are Mica Schist Units, Black Clay Units, Laharic Breccia Units, Pyroclastic Units and Diorite Intrusion Units. There are geological structures in the form of an ascending fault trending Southwest - Northeast (Lebakwangi Rising Fault), a leftward fault trending Southwest - Northeast (Lebakwangi-kebutuhduwur left horizontal fault and Majalengka), and a right horizontal fault (Gentansari-Kebutuhduwur Right Horizontal Fault, Majalengka, and Pagedongan). Through paleostress analysis using burr joint data, the direction and relative age of each structural phase formed are correlated with the alteration process so that the pre-mineralization, syn-mineralization and post-mineralization structures are known. Based on field observations and laboratory analysis in the form of petrographic analysis, scanning electron microscope (SEM), and X-Ray Diffraction (XRD) results in the determination of hydrothermal alteration zones based on their mineral assemblages, in the form of Quartz±Actinolite±Smectite+Biotite+Kaolinite Zone (potassic zone) , Quartz-Chlorite-Monmorillonite±Epidote+Actinolite+Calcite Zone (propylitic zone), Quartz-Sericite±Calcite±Biotite±Chlorite+Illit Zonee (phylic zone) and Quartz-Illite±Kaolinite+Smectite Zone (argillic zone). Mineragraphic analysis and X-ray Fluorescence (XRF) showed the presence of ore minerals and metal elements, which were dominated by Cu-Au. Based on the character of the deposits found, the study area belongs to the type of high sulfidation porphyry deposits.

***Keywords**: Pagedongan, Ephitermal, High-sulfidation, porphyri, structure geology*