

# Identifikasi Zona Mineralisasi Emas Menggunakan Metode Resistivitas dan Induced Polarization Konfigurasi Dipole-Dipole di Desa Kertajaya, Kecamatan Simpenan, Kabupaten Sukabumi = Identification of Gold Mineralization Zone Using Resistivity and Induced Polarization Methods Dipole-Dipole Configuration in Kertajaya Village, Simpenan Subdistrict, Sukabumi District

Dhimas Aristya Pratama, author

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## Abstrak

Indonesia terletak pada pertemuan tiga lempeng litosfer yang menyebabkan munculnya jajaran busur magmatik. Busur magmatik tersebut membuat Indonesia kaya akan potensi mineral, seperti mineral emas. Salah satu busur magmatik yang melintasi Indonesia berada pada wilayah pulau Jawa adalah busur Sunda-Banda. Busur tersebut mempunyai potensi mineral bijih tipe endapan epitermal. Oleh karena itu, perlu dilakukan survei geofisika agar dapat mengetahui zona mineralisasi emas. Zona mineralisasi emas tersebut diidentifikasi menggunakan metode resistivitas dan induced polarization konfigurasi Dipole-Dipole dengan menggunakan 81 elektroda dan jarak spasi 5m. Proses akuisisi data dilakukan sebanyak 3 lintasan, yaitu lintasan BDG-02, BDG-03, dan BDG-04 dengan orientasi dari arah Utara ke Selatan. Pemodelan 2D dilakukan dengan menggunakan software 2D untuk memperoleh penampang dengan nilai resistivitas dan chargeability yang sebenarnya. Selanjutnya dilakukan pengolahan pemodelan 3D menggunakan software 3D untuk mengidentifikasi kemenerusan zona mineralisasi emas. Pada daerah penelitian nilai resistivitas dan chargeability memiliki rentang nilai berkisar antara 1 – 6787 m dan 0 – 888 msec. Zona mineralisasi emas di daerah penelitian memiliki nilai resistivitas 3 – 1483 m dan nilai chargeability 164 msec. Korelasi penampang 2D resistivitas dan induced polarization ditemukan bahwa pengendapan mineralisasi emas berada pada batuan breksti tuf dan andesit. Berdasarkan hasil penampang 3D, kemenerusan zona mineralisasi emas terdapat pada lintasan BDG-03 dan BDG-04 di kedalaman  $\pm 25$ m yang berarah Barat Daya-Timur Laut, sedangkan pada lintasan BDG 02 zona mineralisasi emas tidak berkelanjutan melainkan berbentuk spot yang berada di kedalaman  $\pm 70$ m. Zona mineralisasi pada setiap lintasan diperkirakan dikontrol oleh struktur yang berorientasi Barat Daya-Timur Laut.

.....Indonesia is located at the confluence of three lithospheric plates that cause the emergence of a series of magmatic arcs. These magmatic arcs make Indonesia rich in mineral potential, such as gold minerals. One of the magmatic arcs that crosses Indonesia in the Java island region is the Sunda-Banda arc. The arc has the potential for epithermal deposit-type ore minerals. Therefore, it is necessary to conduct a geophysical survey in order to determine the gold mineralization zone. The gold mineralization zone was identified using the resistivity method and induced polarization Dipole-Dipole configuration using 81 electrodes and 5m spacing. The data acquisition process was carried out as many as 3 passes, namely the BDG-02, BDG-03, and BDG-04 passes with orientation from north to south. 2D modeling was carried out using 2D software to obtain cross sections with actual resistivity and chargeability values. Furthermore, 3D modeling processing was carried out using 3D software to identify the continuity of the gold mineralization zone. In the study area the resistivity and chargeability values have a range of values ranging from 1 - 6787 m and 0 - 888 msec. The gold mineralization zone in the study area has a resistivity value of 3 - 1483 m and a chargeability

value of 164 msec. The correlation of 2D resistivity and induced polarization cross sections found that the deposition of gold mineralization is in tuff and andesite breccia rocks. Based on the 3D cross-section results, the continuity of the gold mineralization zone is found in the BDG-03 and BDG-04 trajectories at a depth of  $\pm 25\text{m}$  in the Southwest-Northeast direction, while in the BDG-02 trajectory the gold mineralization zone is not continuous but in the form of a spot located at a depth of  $\pm 70\text{m}$ . The mineralized zones on each traverse are thought to be controlled by a Southwest-Northeast oriented structure.