

ABSTRAK

IDENTIFIKASI KEBERADAAN MINERAL GRAFIT MENGUNAKAN METODE GEOLISTRIK *INDUCED POLARIZATION (IP)* DI DAERAH TAMBOLI, KABUPATEN KOLAKA, SULAWESI TENGGARA

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Indonesia merupakan salah satu negara yang kaya akan sumberdaya mineral sehingga banyak dilakukan studi hingga kegiatan eksplorasi untuk memenuhi kebutuhan masyarakat. Salah satu penelitian yang telah dilakukan ialah mengidentifikasi keberadaan mineral grafit menggunakan metode induksi polarisasi di daerah Tamboli, Kecamatan Samaturu, Kabupaten Kolaka, Sulawesi Tenggara.

Metode induksi polarisasi merupakan salah satu metode geolistrik yang dapat mendeteksi adanya mineral logam dibawah permukaan bumi. Metode ini dapat mendeteksi adanya polarisasi yang terjadi pada permukaan mineral logam ketika arus listrik diinjeksikan ke dalam bumi. Teknik pengukuran yang digunakan ialah kawasan *Time-Domain* yang bertujuan untuk melihat perubahan beda potensial saat arus injeksi dimatikan. Mineral grafit merupakan salah satu alotrop karbon. Grafit dapat terbentuk pada lingkungan batuan metamorf. Penelitian dilakukan pada daerah Tamboli, Kabupaten Kolaka, Sulawesi Tenggara dengan menggunakan konfigurasi dipole-dipole sebanyak 14 lintasan, dengan arah lintasan barat laut-tenggara. Panjang lintasan masing-masing 160 m dengan spasi pengukuran 5 meter dan faktor pengali kedalaman (n) 4.

Berdasarkan hasil penelitian bahwa mineral logam (mineral konduktif) pada daerah telitian memiliki nilai *chargeability* >100 msec. Sedangkan nilai *resistivity* 20-100 ohm.m berupa batuan metasedimen; 100-500 berupa batuan filit; 500-5000 berupa batuan sekis, dan >5000 ohm.m berupa batuan gneiss. Persebaran mineral konduktif dominan pada batuan metasedimen dan batuan filit, dan sedikit pada batuan sekis. Mineral konduktif tersebar secara acak pada seluruh lintasan membentuk spot-spot.

Kata Kunci : metode geolistrik, induksi polarisasi, dipole-dipole, *time-domain*, *resistivity*, *chargeability*, mineral grafit, batuan metamorf.

ABSTRACT

IDENTIFICATION OF MINERAL GRAPHITE USING GEOELECTRICAL INDUCED POLARIZATION (IP) METHOD AT TAMBOLI, KOLAKA DISTRICT, SOUTH EAST SULAWESI

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Indonesia is a country which is rich in mineral resources so that many study do, to start the exploration activities and fulfill the needs of the community. One of the research that has been done is to identify the presence of mineral graphite using induced polarization method in the area Tamboli, Samaturu Sub-District, Kolaka District, Southeast Sulawesi.

Method of induced polarization geoelectric method is one that can detect the presence of metallic minerals below the surface of the earth. This method can detect the polarization that occurs on the surface of metallic minerals when an electric current is injected into the earth. Measurement technique used was the Time-Domain area which aims to see the change in potential difference when the injection current is turned off. Mineral graphite is one of the allotropes of carbon. Graphite can be formed in metamorphic rocks environment. The study was conducted in the area Tamboli, Kolaka, Southeast Sulawesi using dipole-dipole configuration as many as 14 tracks, with the direction of northwest-southeast measurement. The tracks length about 160 m each, with a space measuring 5 meters and the depth a multiplier factor (n) 4.

Based on the research that metallic minerals (conductive minerals) on the area, have a chargeability values more than 100 msec. While the resistivity value in the form of rock metasediment 20-100 ohm.m ; 100-500 ohm.m phyllite form of rock ; 500-5000 form of rock schist, and more than 5000 ohm.m value of gneiss. The distribution of dominant conductive minerals found on metasediment, phyllite, and a little on the schist. Conductive minerals are randomly distributed on the entire the track shaping a spots at the measured area.

Keywords: geoelectric method, induced polarization, dipole-dipole, time-domain, resistivity, chargeability, mineral graphite, metamorphic rocks.