

## INTISARI

### IDENTIFIKASI PROFIL DEPOSIT NIKEL LATERIT BERDASARKAN ANALISIS ERT DAN DATA BOR LAPANGAN “VDM” AREA PT. VALE INDONESIA, TBK

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Penambangan nikel menjadi sektor industri penting mengingat banyaknya penggunaan bahan tersebut. Sebagai upaya pemenuhan kebutuhan nikel, berbagai cara dilakukan termasuk eksplorasi. Eksplorasi nikel di Indonesia banyak dilakukan di Sulawesi Selatan, salah satunya di lapangan “VDM” area PT. Vale Indonesia, Tbk yang menjadi daerah fokus penelitian. Penelitian ini merupakan salah satu tahapan eksplorasi nikel, yaitu survei geofisika. Survei geofisika metode geolistrik *mapping* atau *electrical resistivity tomography* (ERT) dilakukan dengan konfigurasi gradien. Penelitian ini bertujuan mengetahui karakteristik profil deposit nikel laterit berdasarkan analisis sifat resistivitas.

Inversi 2D dalam *software* RES2DINV digunakan untuk mengubah resistivitas semu menjadi resistivitas sesungguhnya. Resistivitas sesungguhnya dimodelkan secara 2D. Penampang 2D kemudian dikorelasi dengan data bor menggunakan *software* ArcGis kemudian diinterpretasi.

Hasil interpretasi yang didapatkan berupa tiga profil deposit yaitu limonit, saprolit, dan batuan dasar. Limonit memiliki kedalaman 0 – 10 m dengan nilai resistivitas 201 – 350 Ohm.m. Saprolit memiliki kedalaman 16 – 30 m dengan nilai resistivitas 101 – 200 Ohm.m. Batuan dasar terletak pada kedalaman >21 m dengan nilai resistivitas 101 sampai >801 Ohm.m. Variasi nilai resistivitas dipengaruhi oleh berbagai hal, contohnya kandungan mineral dan faktor kedalaman ketiga zona ini dikontrol oleh intensitas pelapukan tanahnya.

**Kata kunci :** eksplorasi, tambang, geolistrik, *electrical resistivity tomography*, nikel laterit, resistivitas.

## ABSTRACT

### IDENTIFICATION OF NICKEL LATERITE DEPOSIT BASED ON ERT AND BOREHOLE DATA ANALYSIS “VDM” FIELD AREA OF PT. VALE INDONESIA, TBK

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Nickel mining become an important industry sector considering the number of nickel use. As an effort to the fulfillment of a need nickel, much nickel exploration in Indonesia is done in Sulawesi Selatan, one of them placed in “VDM” field, area of PT. Vale Indonesia, Tbk which become of area focus of studies. This study is one of the stages of nickel exploration, that is geophysical survey. Geophysical survey used is geoelectrical mapping or electrical resistivity tomography (ERT) with gradient configuration. This study is conducted to understand the profile of nickel laterite deposits based on resistivity analysis.

It use 2D inversion using RES2DINV to turn apparent resistivity into true resistivity. The inversion results is a 2D cross sections. Then, the 2D cross section correlated with borehole data using ArcGis, so it can be interpreted.

The interpretation results are three profiles of nickel laterite deposit, those are limonite, saprolite, and bedrock. The average of depth of limonites are about 0 – 11 m with resistivity value is 201 – 350 Oh.m, while Saprolite has average of depth 16 – 30 m with resistivity value is 101 – 200 Ohm.m. Bedrock has average of depth more than 21 m with resistivity value is 101 upto >801 Ohm.m. The presences of various resistivity value affected by the mineral composition and intensity of weathering affect the profile's depth.

**Keywords : exploration, mining, geoelectricity, electrical resistivity tomography, nickel laterite, resistivity.**