Karakteristik Endapan Nikel Laterit Berdasarkan Analisis Mineralogi dan Geokimia di Daerah Ganda-Ganda, Kabupaten Morowali Utara, Provinsi Sulawesi Tengah = Characteristics of Nickel Laterite Deposit Based on Mineralogical and Geochemical Analysis in Ganda-Ganda Area, North Morowali Regency, Central Sulawesi Province

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Abstrak

Daerah penelitian secara administratif berada di daerah Ganda-Ganda, Kecamatan Petasia, Kabupaten Morowali Utara, Provinsi Sulawesi Tengah. Pelapukan batuan ultramafik menghasilkan endapan laterit dengan karakteristik yang berbeda disetiap daerah. Penelitian ini bertujuan untuk mengetahui karakteristik mineralogi dan geokimia endapan nikel laterit dan batuan dasar, serta derajat laterisasi dan distribusinya pada daerah penelitian. Data yang digunakan merupakan data lapangan dari 6 profil laterit berupa 39 sampel batuan dan tanah, serta data assay dari analisis XRF (X-Ray Fluorescence) dan XRD (X-Ray Diffraction). Profil laterit pada daerah penelitian terdiri dari limonit dengan kadar Ni 0,2 – 0,47%, serta saprolit 0,23 – 0,89% (termasuk sampel bedrock). Sampel bedrock yang merupakan bongkah batuan disekitar lapisan saprolit secara mineralogi dianggap mewakili batuan dasar di bawah permukaan, memiliki kadar Ni 0,56 – 0,89% dan diinterpretasikan merupakan rocky saprolite. Nikel pada limonit secara dominan berasosiasi dengan mineral goetit dan gibsit, sementara pada saprolit berasosiasi dengan mineral serpentin (lizardit dan antigorit), talk, olivin (forsterit dan fayalit), dan piroksen (enstatit). Derajat laterisasi pada daerah penelitian menunjukkan limonit mengalami moderate – strongly lateritized, saprolit kaolinitized – strongly laterized dan Index of laterization (IOL) berkorelasi positif dengan hubungan korelasi kuat terhadap Fe pada limonit, saprolit, dan bedrock, sementara berkorelasi negatif terhadap Ni dengan hubungan lemah pada sampel bedrock.
.....The research area is administratively located in Ganda-Ganda, Petasia District, North Morowali Regency, Central Sulawesi Province. Weathering of ultramafic rocks produces laterite deposits with different characteristics in each area. This study aims to determine the mineralogical and geochemical characteristics of nickel laterite deposits and bedrock, as well as the degree of laterization and its distribution in the research area. The data used include field data from 6 laterite profiles consisting of 39 rock and soil samples, as well as assay data from XRF (X-Ray Fluorescence) and XRD (X-Ray Diffraction) analyses. The laterite profiles in the study area consist of limonite with Ni content of 0.2 – 0.47%, and saprolite with Ni content of 0.23 – 0.89% (including bedrock samples). The bedrock samples, which are rock fragments around the saprolite layer, are mineralogically considered to represent the bedrock beneath the surface, with Ni content of 0.56 – 0.89% and are interpreted as rocky saprolite. Nickel in limonite is predominantly associated with the minerals goethite and gibbsite, while in saprolite it is associated with

serpentine minerals (lizardite and antigorite), talc, olivine (forsterite and fayalite), and pyroxene (enstatite). The degree of laterization in the study area shows that limonite is moderately to strongly lateritized, saprolite is kaolinitized to strongly laterized, and the Index of Laterization (IOL) positively correlates with Fe in limonite, saprolite, and bedrock, while it negatively correlates with Ni with a weak correlation in bedrock samples.