

SARI

Secara regional, daerah penelitian berada pada Sabuk Ophiolit Sulawesi Timur, khususnya pada Kompleks Ultramafik (Ku) yang tersusun atas persebaran batuan beku mafik – ultramafik. Tersingkapnya batuan ultramafik, menyebabkan daerah penelitian memiliki kandungan unsur yang bernilai ekonomis seperti nikel dan kobalt. Daerah Ungkaya dan Sekitarnya, Morowali, Sulawesi Tengah merupakan salah satu daerah yang memiliki batuan beku ultramafik berjenis dunit dan lherzolit. Proses pelapukan pada batuan beku ultramafik ini akan menghasilkan profil endapan nikel–kobalt laterit. Dari proses tersebut akan menghasilkan karakteristik baik dari segi geokimia dan mineralogi dari profil endapan nikel–kobalt laterit. Dengan menggunakan beberapa metode seperti analisis *X-Ray Fluorescence* (XRF) untuk mengetahui kadar geokimia pada endapan nikel - kobalt laterit, analisis Petrografi, analisis *X-Ray Diffraction* (XRD), dan analisis *Scanning Electron Microscope* (SEM) digunakan sebagai mengidentifikasi karakteristik mineral pada endapan nikel - kobalt laterit daerah penelitian.

Berdasarkan hasil analisis didapatkan himpunan mineral pada zona batuan dasar, dengan jenis batuan dasar yaitu dunit dan lherzolit terserpentinisasi. Pada zona saprolit terdapat dominasi mineral sekunder seperti serpentin, klinoklor. Sedangkan pada zona limonit didominasi mineral seperti goetit, hematit, dan maghemit. Sedangkan terkait karakteristik kadar geokimia seperti SiO₂, MgO, dan CaO meningkat ke arah bawah profil karena memiliki sifat mobilitas dan kelarutan yang tinggi, dan kadar Fe, Al₂O₃, Mn, dan Co menurun ke arah bawah profil karena memiliki sifat kelarutan dan mobilitas rendah, sedangkan Ni yang memiliki sifat kelarutan dan mobilitas terbatas meningkat hingga zona saprolit. Berdasarkan analisis geokimia dan mineralogi didapatkan mineral pembawa unsur ekonomis seperti nikel dan kobalt adalah serpentin dan goetit.

Kata Kunci : Sulawesi Tengah, Batuan Ultramafik, Mineralogi, Geokimia, Nikel Laterit

ABSTRACT

Regionally, the study area is located in the East Sulawesi Ophiolite Belt, especially in the Ultramafic Complex (Ku) which is composed of mafic - ultramafic igneous rocks. The exposure of ultramafic rocks causes the study area to contain economically valuable elements such as nickel and cobalt. The Ungkaya and surrounding area, Morowali, Central Sulawesi is one of the areas that has ultramafic igneous rocks of the dunite and lherzolite types. The weathering process in these ultramafic igneous rocks will produce laterite nickel-cobalt deposit profiles. The process will produce characteristics both in terms of geochemistry and mineralogy of the laterite nickel-cobalt deposit profile. By using several methods such as X-Ray Fluorescence (XRF) analysis to determine the geochemical content of nickel-cobalt laterite deposits, Petrographic analysis, X-Ray Diffraction (XRD) analysis, and Scanning Electron Microscope (SEM) analysis are used to identify mineral characteristics in nickel-cobalt laterite deposits in the study area.

Based on the results of the analysis, a set of minerals was obtained in the bedrock zone, with bedrock types namely dunite and serpentinized lherzolite. In the saprolite zone there is a dominance of secondary minerals such as serpentine, clinochlor. While the limonite zone is dominated by minerals such as goethite, hematite and maghemite. While related to the characteristics of geochemical levels such as SiO₂, MgO, and CaO increase towards the bottom of the profile because they have high mobility and solubility properties, and Fe, Al₂O₃, Mn, and Co levels depleted towards the bottom of the profile because they have low solubility and mobility properties, while Ni which has limited solubility and mobility properties increases to the saprolite zone. Based on geochemical and mineralogical analysis, it was found that the minerals bearing economic elements such as nickel and cobalt are serpentine and goethite.

Keywords : Central Sulawesi, Ultramafik Rock, Mineralogy, Geochemistry, Nickel Laterite