

SARI

Daerah Ungkaya, Wita Ponda, Morowali, Sulawesi Tengah terdiri dari batuan ultrabasa yang berumur Jura. Batuan ultrabasa adalah batuan yang mengandung mineral bijih seperti kromit, mineral oksida, dan mineral sulfida. Pelapukan batuan beku ultrabasa menghasilkan suatu proses yang dikenal sebagai "laterisasi". Nikel laterit adalah mineral logam yang dihasilkan oleh proses pelapukan kimia batuan ultrabasa, menghasilkan pengayaan sisa dan sekunder unsur nikel, besi, mangan, dan kobalt. Kobalt adalah unsur logam utama yang dibutuhkan untuk produksi baterai lithium-ion di industri kendaraan listrik, kobalt ditemukan berasosiasi dengan endapan nikel laterit. Penelitian ini bertujuan untuk mengetahui karakteristik mineral pembawa kobalt dan mengetahui kelimpahan unsur kobalt pada zona laterit di daerah penelitian. Metode yang digunakan berupa analisis petrografi, analisis XRF (*X-Ray Fluorescence*), analisis μ XRF (*Micro X-Ray Fluorescence*), analisis AMICS (*Advanced Mineral Identification and Characterization System*) dan analisis SEM (*Scanning Electron Microscope*). Hasil penelitian menunjukkan bahwa kobalt dibawa oleh mineral olivine, antigorite, lizardite dan augite pada zona bedrock, mineral antigorite dan goethite pada zona saprolite dan mineral maghemite dan hematite pada zona limonite. Kelimpahan kobalt sendiri semakin meningkat seiring dengan adanya kenaikan profil laterite.

Kata kunci : Nikel Laterite, Nikel-Kobalt, Kobalt, Mikro-XRF, AMICS, Morowali.



ABSTRACT

The Ungkaya area, Wita Ponda, Morowali, Central Sulawesi is formed of ultrabasic rocks of Jurassic age. Ultrabasic rocks that contain ore minerals such as chromite, oxide minerals, and sulfide minerals. Weathering of ultrabasic igneous rocks results in a process known as "laterization". Nickel laterites are metallic minerals produced by the chemical weathering of ultrabasic rocks, resulting in residual and secondary enrichment of nickel, iron, manganese, and cobalt. Cobalt is the main metal element that needed for the production of lithium-ion batteries in the electric vehicle industry, cobalt is found associated with nickel laterite deposits. This study has the purpose of knowing the characteristics of cobalt-bearing minerals and determining the distribution of cobalt elements in the laterite zone in the area of study. The methods used are petrographic analysis, XRF (X-Ray Fluorescence) analysis, μ XRF (Micro X-Ray Fluorescence) analysis, AMICS (Advanced Mineral Identification and Characterization System) analysis and SEM (Scanning Electron Microscope) analysis. The results show that cobalt is carried by olivine, antigorite, lizardite and augite minerals in the bedrock zone, antigorite and goethite minerals in the saprolite zone and maghemite and hematite minerals in the limonite zone. The abundance of cobalt itself increases as the laterite profile increases.

Keyword : Nickel Laterite, Nickel-Cobalt, Cobalt, Micro-XRF, AMICS, Morowali.

