

ABSTRAK

HUBUNGAN PROSES LATERITISASI TERHADAP DISTRIBUSI DAN KONSENTRASI KADAR NI PADA ENDAPAN NIKEL LATERIT DAERAH PAKA INDAH, OHEO, KONAWA UTARA, SULAWESI TENGGARA

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Endapan nikel laterit terbentuk melalui proses lateritisasi yang kompleks dan bersifat heterogen, sehingga distribusi dan kadar nikel (Ni) sering kali tidak berkembang secara merata meskipun berada dalam satu satuan batuan ultramafik yang sama, kondisi ini mendorong dilakukannya penelitian untuk memahami keterkaitan antara proses lateritisasi dengan pola distribusi dan pengayaan Ni secara lebih rinci. Penelitian ini bertujuan untuk menjelaskan kondisi geologi daerah penelitian serta menganalisis hubungan proses lateritisasi terhadap distribusi dan kadar nikel (Ni) pada endapan nikel laterit di Daerah Paka Indah, Kabupaten Konawe Utara. Metode penelitian meliputi pemetaan geologi dan laterit, analisis data pengeboran dan assay geokimia, serta integrasi data litologi dan geokimia untuk mengidentifikasi karakteristik horizon laterit dan variasi kadar Ni. Hasil penelitian menunjukkan bahwa pengayaan Ni secara vertikal umumnya berkembang pada saprolit bagian atas, sedangkan secara lateral kadar Ni yang relatif lebih baik cenderung berkembang pada zona bertopografi landai, namun distribusinya bersifat tidak kontinu dan terlokalisasi (*spotting*). Analisis geokimia menunjukkan fluktuasi MgO dan SiO₂ yang mengindikasikan intensitas pelindian kimia yang tidak seragam, sejalan dengan pengaruh drainase lateral dan variasi topografi terhadap efektivitas proses lateritisasi. Berdasarkan hasil tersebut dapat disimpulkan bahwa distribusi dan konsentrasi kadar nikel di daerah penelitian tidak hanya dikontrol oleh ketebalan horizon laterit, tetapi terutama oleh intensitas proses lateritisasi dalam mengintegrasikan pelapukan fisika, pelapukan kimia, topografi dan kondisi drainase lateral.

Kata kunci: *drainase lateral, lateritisasi, nikel laterit, saprolit, ultramafik*

ABSTRACT

RELATIONSHIP BETWEEN THE LATERITIZATION PROCESS AND THE DISTRIBUTION AND CONCENTRATION OF NI LEVELS IN LATERITE NICKEL DEPOSITS IN THE PAKA INDAH AREA, OHEO, NORTH KONAWE, SOUTHEAST SULAWESI

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Laterite nickel deposits are formed through a complex and heterogeneous lateritization process, so that the distribution and content of nickel (Ni) often do not develop evenly even though they are in the same ultramafic rock unit, this condition encourages research to understand the relationship between the lateritization process and the distribution pattern and enrichment of Ni in more detail. This study aims to explain the geological conditions of the study area and analyze the relationship of the influence of the lateritization process on the distribution and content of nickel (Ni) in laterite nickel deposits in the Paka Indah Area, North Konawe Regency. The research methods include geological and laterite mapping, analysis of drilling data and geochemical assays, and integration of lithological and geochemical data to identify the characteristics of laterite horizons and variations in Ni content. The results show that vertical Ni enrichment generally develops in the upper saprolite, while laterally relatively better Ni content tends to develop in gently sloping topographic zones, but the distribution is discontinuous and localized (spotting). Geochemical analysis shows fluctuations in MgO and SiO₂ indicating non-uniform chemical leaching intensity, in line with the influence of lateral drainage and topographic variations on the effectiveness of the lateritization process. Based on these results, it can be concluded that the distribution and concentration of nickel content in the study area are not only controlled by the thickness of the laterite horizon, but mainly by the intensity of the lateritization process in integrating physical weathering, chemical weathering, topography and lateral drainage conditions.

Keywords: lateral drainage, lateritization, nickel laterite, saprolite, ultramafic