

## RINGKASAN

Salah satu proses geologi pembentukan bijih nikel adalah laterisasi. Studi tentang genesa endapan mineral penting untuk mengembangkan model geologi. Penentuan domain geologi nikel laterit menjadi masalah penting dalam estimasi kadar bijih nikel karena berkaitan dengan aspek pembentukan endapan laterit, data geokimia, dan hasil uji statistik. Tujuan penelitian ini adalah (a) menentukan zone limonit, saprolit dan bedrock pada nikel laterit (b) Menghitung volume nikel laterit dengan menggunakan datamine studio RM. Metodologi terdiri dari studi pustaka tentang proses laterisasi; identifikasi data berdasarkan analisis geokimia; analisis statistik berdasarkan histogram, scatter plot, ternary diagram; dan penentuan domain geologi untuk nikel laterit. Algoritma penelitian ini digunakan untuk membuat 3 (tiga) domain geologi nikel laterit yaitu *Zone* limonit, *Zone* saprolit dan *Zone* batuan dasar. Hasil penelitian ini menunjukkan bahwa domain geologi berdekatan dengan batas mineralisasi. Hasil volume zone nikel laterit berdasarkan domain geologi yaitu : *zone* limonit 27.806.700 m<sup>3</sup>, *zone* saprolit 30.076.496 m<sup>3</sup> dan *zone* bedrock 33.412.339 m<sup>3</sup>

## SUMMARY

Laterization is one of the geological process of nickel ore formation. The mineral deposits genesis is important for the development of geological models. The development of geological domain in the laterite nickel ore deposits is determined through several aspects such as deposit boundary formation, geochemical data, and statistical test result. The objectives of this study are (a) determine the zone of limonite, saprolite and bedrock on nickel laterite (b) Calculate the volume on each laterite nickel layer by using datamine studio RM. The methodology consists of a literature study on the laterization process; identification of data based on geochemical analysis; statistical analysis based on histograms, scatter plots, ternary charts; and determination of the geological domain for nickel laterite. This research algorithm is used to create 3 (three) geological domains of nickel laterite, namely limonite zone, saprolite zone and bedrock zone. The result of this study shown that geological domain is adjacent with mineralization boundary. Henceforth, nickel grade estimation could be done through the characteristics of laterite nickel ore deposits. The results of volume zone nickel laterite are based on geological domains namely: limonite zone 27,806,700 m<sup>3</sup>, saprolite zone 30,076,496 m<sup>3</sup> and bedrock zone 33,412,339 m<sup>3</sup>.

