SARI

Estimasi sumberdaya skarn logam dasar Blok A Ruwai dapat menggunakan metode geostatistik seperti *kriging*. Pada umunya data kadar sumberdaya bijih skarn logam dasar mempunyai nilai koefisien variansi (CV) lebih dari 0,5 memperlihatkan variabilitas data yang tinggi. Metode *kriging* liniear kurang memberikan hasil yang memuaskan oleh karena itu diperlukan metode *kriging* non-linear. Oleh karena itu dipilih metode *ordinary kriging* yang merupakan salah satu dari metode kriging linier dan metode *median indicator kriging* yang merupakan salah satu dari metode *kriging* non-linier. Tujuan penelitian ini menganalisis hasil estimasi sumberdaya skarn logam dasar dengan metode *ordinary kriging* dan metode *median indicator kriging* dan menganalisis metode estimasi sumberdaya berdasarkan kadar Pb-Zn yang paling reliable berdasarkan parameter *cross validation*, *probability* plot dan visualisasi data. Dimana keakuratan tersebut diperoleh dari selisih nilai kadar dari komposit (*raw data*) dengan hasil taksiran didalam model blok. Penelitian ini memakai *software* Micromine 2020 dengan metodologi yang meliputi pengumpulan data bor *assay, collar, survey*, dan litologi. Kemudian interpretasi geologi, konstruksi model blok, analisis statistik dan geostatistik, estimasi sumberdaya skarn logam dasar, dan pemilihan metode yang paling reliable.

Nilai koefisien variansi komposit (*raw data*) skarn logam dasar Blok A Ruwai adalah 0,49. Hasil *crossvalidation* dari estimsi sumberdaya skran logam dasar Blok A Ruwai menunjukkan metode *ordinary* kriging dan *median indicator kriging* berturut-turut dengan nilai *root mean square error* (RMSE) 0,40; 0,20 dimana nilai RMSE metode *median indicator kriging* mendekati 0, nilai koefisien korelasi (r) dan determinasi (r^2) berturut-turut 0,8 dan 0,7; 0,9 dan 0,8 dimana nilai r dan r^2 metode *median indicator kriging* mendekai nilai 1, metode *ordinary kriging* memiliki kurva probabilitas dan visualisasi sayatan yang cenderung menjauhi data komposit *(raw data)* sedangkan metode *median indicator kriging* memiliki kurva probabilitas kumulatif dan visualisasi sayatan yang cenderung mendekati data komposit.

Berdasarkan parameter validasi yaitu nilai *root mean square error* (RMSE), *scatter plot*, kurva probabilitas kumulatif, dan visualisasi sayatan 2 dimensi. Karena distribusi kadar tidak menentu (*erractic*) dan nilai koefisien variansi yan tinggi sehingga metode *median indicator kriging* merupakan metode yang paling reliable atau dapat diandalkan karena hasil estimasi mendekati data komposit (*raw data*). sebaran bijih skarn logam dasar Blok A Ruwai dengan metode *ordinary kriging* dan metode *median indicator kriging* memiliki kecenderungan berarah N69,59^o E dan N69,16^o E. Kondisi tersebut karena dipengaruhi aspek kontrol geologi yang terdapat di lokasi penelitian berupa kontak antara batuan sedimen berada dibagian utara dengan batuan vulkanik berada dibagian selatan.

Kata kunci: Skarn logam dasar, *ordinary kriging*, *median indicator kriging*.

ABSTRACT

Resource estimation of base metal skarn in Block A Ruwai can be done using geostatistical methods such as kriging. In general, base metal skarn ore resource grade data has a coefficient of variance (CV) value of more than 0.5, indicating high data variability. Linear kriging method does not give satisfactory results, therefore a non-linear kriging method is needed. Therefore, the ordinary kriging method is the linear kriging methods and the median indicator kriging method is the non-linear kriging methods are used. The purpose of this study is to analyze the results of base metal skarn resource estimation using ordinary kriging method and median indicator kriging method and analyze the most reliable resource estimation method by parameters cross validation, probability plot and data visualization. Where the accuracy is obtained from the difference in grade values from the composite (raw data) with the estimated results in the block model. This research uses Micromine 2020 software with a methodology that includes collecting assay, collar, survey and lithology drill data. Then geological interpretation, block model construction, statistical and geostatistical analysis, base metal skarn resource estimation, and selection of the most reliable method.

The composite coefficient of variance (raw data) of the Block A Ruwai base metal skarn is 0.49. The crossvalidation results of the resource estimation of the Block A Ruwai base metal skarn show the ordinary kriging and median indicator kriging methods with root mean square error (RMSE) values of 0.40; 0.20 where the RMSE value of the median indicator kriging method is close to 0, the correlation coefficient (r) and determination (r^2) values are 0.8 and 0.7, respectively; 0.9 and 0.8 where the r and r^2 values of the median indicator kriging method approach the value of 1, the ordinary kriging method has a probability curve and visualization of incisions that tend to move away from the composite data (raw data) while the median indicator kriging method has a cumulative probability curve and visualization of incisions that tend to approach the composite data.

Based on validation parameters, namely the root mean square error (RMSE) value, scatter plot, cumulative probability curve, and 2-dimensional incision visualization. Because the distribution of levels is erratic (erractic) and the coefficient of variance is high, the median indicator kriging method is the most reliable method because the estimation results are close to the composite data (raw data). the distribution of Block A Ruwai base metal skarn ore with the ordinary kriging method and the median indicator kriging method has a trend towards N69.59^o E and N69.16^o E. This condition is because it is influenced by aspects of geological control at the research site in the form of contact between sedimentary rocks in the north and volcanic rocks in the south.

Keyword: Base metal skarn, ordinary kriging, median indicator kriging