

ABSTRAK

PERBANDINGAN PERHITUNGAN *VOLUME* *STOCKPILE* BATUBARA MENGGUNAKAN PERANGKAT LUNAK *SURPAC*, *MINESCAPE*, *TERRAMODEL*, *CYCLONE*, DAN *AUTOCAD CIVIL 3D* DENGAN DATA TONASE

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Stockpile batubara merupakan tempat penyimpanan sementara batubara. Batubara yang setelah dieksploitasi, kemudian ditimbang dan disimpan di *stockpile* yang selanjutnya akan dibawa menuju ke konsumen yang dimana menentukan pendapatan. Sehingga diperlukan *monitoring* secara periodik sebagai kontrol dari manajemen *stockpile*, salah satunya yaitu *monitoring* perhitungan *volume*. Dalam perhitungan *volume* dengan perangkat lunak tentunya ada selisih dengan *volume* asli sehingga diperlukan keakuratan serta kedetailan perhitungan *volume stockpile*.

Dalam penelitian ini akan dilakukan perbandingan perhitungan *volume stockpile* batubara dari perangkat lunak *Surpac*, *Minescape*, *Terramodel*, *Cyclone*, dan *Autocad Civil 3D*. Hasil perhitungan *volume* beberapa perangkat lunak tersebut dilakukan analisis perbedaan dengan data timbangan tonase berdasarkan standar ASTM (*American Society for Testing and Material*) dan pengujian secara statistik uji t dua sampel berpasangan.

Hasil penelitian ini menunjukkan bahwa perangkat lunak *Surpac* memiliki presentase perbedaan dengan timbangan tonase sebesar 0,38453%, *Cyclone* sebesar 0,38579, *Autocad Civil 3D* dan *Terramodel* sebesar 0.38583% dan *Minescape* sebesar 0,85605%. Berdasarkan presentase perbedaan dan uji t dua sampel berpasangan, perhitungan *volume* menggunakan perangkat lunak *Surpac* memiliki perbedaan yang paling kecil dengan timbangan tonase batubara, sehingga dinilai paling efektif untuk perhitungan *volume stockpile* batubara.

Kata Kunci: *Volume Stockpile*, *Autocad Civil 3D*, *Surpac*, *Cyclone*, *Terramodel*, *Minescape*.

ABSTRACT

COMPARISON OF COAL STOCKPILE VOLUME CALCULATIONS USING SURPAC, MINESCAPE, TERRAMODEL, AND AUTOCAD CIVIL 3D SOFTWARE WITH TONNAGE DATA

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Coal stockpile is a temporary storage place for coal. After exploitation, the coal is weighed and stored in a stockpile which will then be brought to the consumer, which determines income. So that periodic monitoring is needed as a control for stockpile management, one of which is monitoring volume calculations. In calculating the volume with the software, of course there is a difference with the original volume, so accuracy and detail in the calculation of the stockpile volume is required.

In this research, a comparison of the calculation of coal stockpile volume will be carried out using Surpac, Minescape, Terramodel, Cyclone, and Autocad Civil 3D software. The results of calculating the volume of some of the software were analyzed for differences with tonnage scale data based on ASTM (American Society for Testing and Material) standards and statistical testing of the t-test of two paired samples.

The results of this research indicate that the Surpac software has a percentage difference with tonnage scales of 0.38453%, Cyclone of 0.38579%, Autocad Civil 3D and Terramodel of 0.38583% and Minescape of 0.85605%. Based on the percentage difference and t-test of two paired samples, volume calculations using Surpac software have the smallest differences from coal tonnage scales, so they are considered the most effective for calculating coal stockpile volume.

Keywords: *Stockpile Volume, Autocad Civil3D, Surpac, Cyclone, Terramodel, Minescape.*