ABSTRAK

PERBANDINGAN ESTIMASI SUMBERDAYA BATUBARA MENGGUNAKAN METODE *NEAREST NEIGHBOR POINT*, *INVERSE DISTANCE WEIGHTING*, DAN *KRIGING* BERDASARKAN DATA *WELL LOGGING* PADA DAERAH MUARA BUNGO, SUMATERA SELATAN

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Penelitian dilakukan di wilayah Muara Bungo yang terletak di Cekungan Sumatera Selatan. Secara fisiografis Cekungan Sumatra Selatan merupakan cekungan tersier. Penelitian berada pada formasi *Upper Palembang* dimana pada formasi ini terdapat sumber daya batubara yang berbentuk melensa diantara selingan lapisan batupasir dan batulempung.

Untuk mengetahui nilai ketebalan lapisan batubara dapat menggunakan metode *well logging* meliputi metode *log gamma ray* dan *log* densitas. Nilai ketebalan lapisan batubara berguna untuk melakukan perhitungan cadangan lapisan batubara. Beberapa metode dapat digunakan untuk mengetahui nilai cadangan lapisan batubara salah satunya adalah metode *nearest neighbor point*, metode *inverse distance weighting*, dan metode *kriging.*

Berdasarkan hasil dari penelitian didapatkan ketebalan berkisar antara 5,598 meter – 10,263 meter, dengan hasil perhitungan cadangan batubara pada metode *nearest neighbor point* didapatkan volume batubara sebesar 458.240 m^3, dengan tonase sebesar 960.929,28 ton, volume overburden sebesar 3.735.200 m^3, dan nilai stripping ratio sebesar 1 : 3,887. Pada metode *inverse distance weighting* didapatkan volume batubara sebesar 460.660 m^3, dengan volume tonase sebesar 967.386 ton, overburden sebesar 3.826.800 m^3, dan nilai stripping ratio sebesar 1 : 3,955. Sedangkan pada metode *kriging* didapatkan volume batubara sebesar 446.760 m^3, dengan tonase sebesar 967.386 ton, volume overburden sebesar 3.908.600 m^3, dan nilai stripping ratio sebesar 1 : 4,166.

Kata Kunci : *Batubara, Geostatistik, Inverse Distance Weighting, Kriging, Nearest Neighbor Point, Well Logging*

ABSTRACT

COMPARISON OF COAL RESOURCE ESTIMATION USING NEAREST NEIGHBOR POINT, INVERSE DISTANCE WEIGHTING, AND KRIGING METHOD BASED ON WELL LOGGING DATA IN MUARA BUNGO REGION, SOUTH SUMATERA

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The study was conducted in the Muara Bungo region located in the South Sumatra Basin. Physiographically the South Sumatra Basin is a tertiary basin. The research is in the Upper Palembang Formation where in this formation there are coal resources in the form of a melensa between the intervening layers of sandstone and claystone.

To find out the thickness value of coal seams, it can use the well logging method including gamma ray log and density log methods. The value of the thickness of the coal seam is useful for calculating coal seam reserves. Several methods can be used to determine the value of coal seam reserves, one of which is the nearest neighbor point method, the inverse distance weighting method, and the kriging method.

Based on the results of the study it was found that thickness ranged from 5,598 meters to 10,263 meters, with the calculation of coal reserves in the nearest neighbor point method, the coal volume was 458.240 m^3, with tonnage of 960.929,28 ton, overburden amounting to 3.735.200 m^3, and the stripping ratio value of 1 : 3,887. In the inverse distance weighting method, the coal volume is 460.660 m^3, with tonnage of 967.386 ton, overburden of 3.826.800 m^3, and a stripping ratio of 1 : 3,955. Whereas in the kriging method, coal volume was 446.760 m^3, with tonnage of 967.386 ton, overburden of 3.908.600 m^3, and the stripping ratio value is 1 : 4,166.

Keywords *: Coal, Geostatistics, Inverse Distance Weighting, Kriging, Nearest Neighbor Point, Well Logging*