SARI

MODEL GEOMETRI DAN PERHITUNGAN SUMBERDAYA BATUBARA FORMASI WARUKIN, TEWEH TENGAH, BARITO UTARA, KALIMANTAN TENGAH

Oleh
Pramudya Wicaksana
NIM: 111210046
(Program Studi Sarjana Teknik Geologi)

Lokasi penelitian terletak di IUP PT Unggul Nusantara, Kecamatan Teweh Tengah, Kabupaten Barito Utara, Provinsi Kalimantan Tengah dan secara fisiografi termasuk ke dalam Cekungan Barito. Lokasi penelitian merupakan area prospek tambang batubara dengan formasi pembawa lapisan batubara yaitu Formasi Warukin yang berumur Miosen Tengah hingga Miosen Akhir dengan litologi berupa batulempung, batulempung karbonan, batupasir, dan batubara. Penelitian ini difokuskan pada Formasi Warukin yang sedang dieksplorasi. Tujuan dari penelitian ini adalah untuk mengetahui keadaan geologi bawah permukaan daerah penelitian, serta memperhitungkan sumberdaya batubara yang ekonomis untuk ditambang. Metode yang digunakan dalam penelitian ini adalah metode deskriptif dan metode analitik dengan mengintegrasikan data lapangan dan uji laboratorium. Lingkungan pengendapan daerah penelitian yaitu *transitional lower delta plain* dengan asosiasi fasies berupa *swamp, leeve, crevasse splay,* dan *interdistributary channel*. Metode yang digunakan untuk melakukan perhitungan sumberdaya batubara pada daerah penelitian yaitu dengan menggunakan metode *circular* sesuai dengan radius SNI 5015:2011 serta dengan metode *cross section* lapisan batubara yang dihitung terdiri dari *seam* A9, A12, A14, A15, A17, A18, A19, A20, A23, dan A24. Sehingga didapat nilai perhitungan sumberdaya dengan metode circular di daerah penelitian sebesar 2.329.185 ton batubara (Terukur), 5.797.895 ton batubara (Tertunjuk), 9.523.599 ton batubara (Tereka) dengan total keseluruhan sumberdaya pada daerah penelitian sebesar 17.650.679 ton. Dengan kualitas batubara rata rata berdasarkan pembobotan nilai tonase, yaitu *Insitu Density* 1,26 ton/m^3, *Total moisture* (ad) 32,85%, *Inherent Moisture* (ad) 17,49%, *Volatile Matter* (ad) 39,53%, Ash (ad) 7,39%, *Fixed Carbon* (ad) 35,59%, Total Sulfur (ad) 0,26%, dan *Calorific value* (ar) 4185 Kcal/kg, serta dengan metode penampang (*cross section*) didapatkan sumberdaya dengan total 17.562.251 ton.

Kata kunci: batubara, geometri, sumberdaya, Teweh Tengah.

ABSTRACT

GEOMETRIC MODEL AND CALCULATION OF COAL RESOURCES IN THE WARUKIN FORMATION, CENTRAL TEWEH, NORTH BARITO, CENTRAL KALIMANTAN

By
Pramudya Wicaksana
NIM: 111210046
(*Geological Engineering Undergraduated Program*)

The research location is located in the IUP PT Unggul Nusantara, Teweh Tengah Subdistrict, Barito Utara Regency, Central Kalimantan Province, and physiographically belongs to the Barito Basin. The research site is a coal mining prospect area with the Warukin Formation as the coal-bearing formation, dating from the Middle Miocene to Late Miocene periods, with lithology consisting of claystone, carbonaceous claystone, sandstone, and coal. This study focuses on the Warukin Formation, which is currently under exploration. The objective of this study is to determine the subsurface geological conditions of the study area and to estimate the economically viable coal resources for mining. The methods used in this study are descriptive and analytical methods by integrating field data and laboratory tests. The depositional environment of the study area is a transitional lower delta plain with facies associations of swamp, levee, crevasse splay, and interdistributary channel. The method used to calculate coal resources in the study area was the circular method in accordance with the radius specified in SNI 5015:2011, as well as the cross-section method for coal layers, which were calculated to consist of seams A9, A12, A14, A15, A17, A18, A19, A20, A23, and A24. Thus, the calculated coal resources using the circular method in the study area amounted to 2,329,185 tons of coal (measured), 5,797,895 tons of coal (indicated), and 9,523,599 tons of coal (presumed), with a total of 17,650,679 tons of coal resources in the study area. The average coal quality based on tonnage weighting is as follows: In-situ Density 1.26 tons/m³, Total Moisture (ad) 32.85%, Inherent Moisture (ad) 17.49%, Volatile Matter (ad) 39.53%, Ash (ad) 7.39%, Fixed Carbon (ad) 35.59%, Total Sulfur (ad) 0.26%, and Calorific Value (ar) 4,185 kcal/kg, and using the cross-section method, the total resource was determined to be 17,562,251 tons.

***Keywords**: coal, geometry, resource, Teweh Tengah.*