

INTISARI

Subyek penelitian adalah seam batubara T-100 dan T-200 yang terdapat pada Formasi Warukin di daerah Tutupan Kabupaten Tabalong Propinsi Kalimantan Selatan. Penelitian ini bertujuan untuk mengetahui pengaruh posisi stratigrafi terhadap mutu batubara Formasi Warukin.

Hipotesis yang diajukan adalah : (1) posisi stratigrafi batubara berpengaruh terhadap kandungan karbon; (2) makin tinggi kandungan karbon makin rendah kandungan abu sehingga energi panas kontak langsung akan semakin tinggi; (3) makin tinggi kandungan karbon maka *heat capacity* makin rendah.

Penelitian dilakukan dengan cara pengamatan lapangan dan analisis laboratorium. Pengamatan lapangan meliputi pengamatan morfologi, litologi, pengukuran penampang stratigrafi dan pengambilan contoh batubara. Analisis laboratorium yang dilakukan adalah analisis proksimat. Selanjutnya dilakukan *plotting* hasil analisis proksimat batubara terhadap kedalaman/posisi stratigrafi.

Hasil *plotting* analisis proksimat terhadap kedalaman seam batubara T-100 dan T-200, dimana secara stratigrafi posisi seam batubara T-100 relatif lebih tua dibandingkan dengan T-200 adalah : *Inherent moisture*, *total moisture*, *ash*, dan *total sulfur* pada seam batubara T-100 lebih kecil dibandingkan dengan seam batubara T-200. *Volatile matter*, *fixed carbon*, dan *calorific value* seam batubara T-100 lebih besar dibandingkan dengan T-200. Disimpulkan semakin besar *overburden pressure* maka *inherent moisture*, *total moisture*, *ash*, dan *total sulfur* semakin kecil, sedangkan *volatile matter*, *fixed carbon*, dan *calorific value* semakin besar.

Penambahan *Volatile Matter* yang sejalan dengan kedalaman seam batubara merupakan suatu keanehan. Hal itu disebabkan oleh masuknya *extraneous mineral matter* yang berasal dari batuan disekelilingnya kedalam batubara. Dengan media air tanah, *extraneous mineral matter* masuk melalui kekar-kekar yang terdapat pada batubara. Kemungkinan lain adalah akibat adanya (1) proses oksidasi batubara pada fase regresi (2) aliran fluida (3) aktivitas vulkanik.

Ketebalan *overburden pressure* dengan *gradient geothermal* 1.95° F/100 ft hanya menghasilkan tekanan sebesar 369 atm dan suhu 99° F belum mencapai persyaratan bagi pembentukan batubara yang seharusnya tekanan sebesar 500 atm dan suhu 212° F. Meskipun suhu dan tekanan belum mencapai tingkat yang diperlukan bagi pembentukan batubara, terdapat faktor lain yang juga menentukan bagi proses pembatubaraan yaitu waktu dan faktor-faktor geologi lainnya. Faktor-faktor geologi tersebut diantaranya aktivitas vulkanik, *groundwater flow*, *thermal conductivity*, *dewatering orogenic*, pengaruh sesar dan transgresi - regresi. Tidak cukup alasan adanya pengaruh peluruhan radioaktif terhadap pematangan batubara

Kata kunci: Posisi Stratigrafi dan Mutu Batubara.

ABSTRACT

The subjects of this research were T-100 and T-200 coal seam in the Tutupan area, Tabalong Regency, South Kalimantan Province. The position of T-100 coal seam is stratigraphically older than that of T-200 coal seam. The aim of the research is intended to explain about the control of stratigraphy against the increasing quality of the Warukin Formation coal.

The hypothesis put forward is : (1) the position of coal stratigraphy has the influence against the carbon content; (2) the higher the carbon content the lower of the ash content so that the calorific value will immediately be higher; (3) the higher the carbon contents the lower the heat capacity.

Research methods are field observation and laboratory analysis. Field observation includes morphology observation, lithology, measuring sections and the taking of coal samples. Laboratory analysis which is done is proximate analysis.

The plotting results of depth versus physical properties of the T-100 and T-200 coal seam are as the following: the inherent moisture, total moisture, ash, and total sulfur of T-100 coal seam are lower than those of T-200 coal seam. The volatile matter, fixed carbon, and calorific value of T-100 coal seam are higher than those of T-200 coal seam. Therefore, it can be concluded that the higher the overburden pressure the lower the inherent moisture, total moisture, ash and total sulfur are. In opposite, the higher the overburden pressures the higher the volatile matter, fixed carbon, and calorific value.

Increasing volatile matter, which is proportional, the deep of the coal seam are anomaly. It is caused by the extraneous mineral matter penetrate to the coal. By the medium ground water, extraneous mineral matter enters the fracture. Another possibility is the result of (1) the process of oxidation of coal at the regression phase, (2) the fluids flow, (3) volcano activity.

The thickness of overburden with gradient geothermal of 1.95° F/100 ft brings about pressure 369 atm and temperature of 99° F. It has not reached the precondition of the coalification. Although temperature and pressure have not reached the level which is necessary for the forming of coal, there are other factors the decide for the process of coalification. That is time and other geological factor. Those geological factors are among other volcanic activity, ground water flow, thermal conductivity, dewatering orogenic, fault influence and transgression - regret ion. There is not enough reason for the influence of radioactivity decay to the thermal maturation of coal.

Key Word: Stratigraphy, position, coal, and quality