

Studi Diagenesis Formasi Jatiluhur di Sungai Cibeet, Kecamatan Cariu, Kabupaten Bogor, Jawa Barat = Diagenesis Study of Jatiluhur Formation at Cibeet River, Cariu District, Bogor Regency, West Java

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Abstrak

Penelitian ini merupakan langkah awal yang terbilang baru di Formasi Jatiluhur, Sungai Cibeet untuk menganalisis proses diagenesis, mengidentifikasi fitur diagenesis dan sejarahnya. Daerah penelitian tersusun oleh batuan silisiklastik berupa batupasir, batulanau, batulempung, terdapat pula batuan bersifat karbonatan. Sebanyak sepuluh sampel dilakukan analisis petrografi untuk menentukan karakterisasi tekstur dan mineralogi batuan. Selain analisis petrografi, analisis SEM dan XRD sebanyak masing-masing tiga sampel dapat digunakan untuk studi diagenesis. Beberapa proses diagenesis seperti kompaksi, sementasi, disolusi, dan penggantian mineral dapat memengaruhi keterbentukan batuan Formasi Jatiluhur. Proses kompaksi menghasilkan kontak antarbutir berupa point, long, concavo-convex, dan sutured serta semen yang ditemukan berupa semen kalsit dan mineral lempung seperti albit, illit, kaolinit, dan smektit. Mineral kuarsa, mika, dan feldspar mengalami penggantian. Proses-proses diagenesis tersebut mengakibatkan perubahan porositas dari batuan. Tipe-tipe porositas didominasi oleh tipe intergranular dan intrapartikel dengan persentase antara 5-30%. Sejarah diagenesis pada daerah penelitian diawali oleh tahap eogenesis, mesogenesis, dan telogenesis. Dengan adanya pelaksanaan studi diagenesis, maka kualitas reservoir (misalnya) dapat ditentukan. Penelitian ini menunjukkan bahwa proses diagenesis mengakibatkan adanya heterogenitas batuan Formasi Jatiluhur di sekitar aliran Sungai Cibeet.

.....This research is a relatively new to conduct in the Jatiluhur Formation, especially Cibeet River that aimed to analyse the diagenesis process and identify diagenesis features and its history. The research area is composed of siliciclastic rocks in the form of sandstone, siltstone, and claystone but there are also carbonate rocks. A total of ten samples were subjected to petrographic analysis to determine the characterisation of rock textures and mineralogy. In addition to petrographic analysis, SEM and XRD analysis of three samples each are used for diagenesis studies. Several diagenesis processes such as compaction, cementation, dissolution, and mineral replacement affected the rock formation of the Jatiluhur Formation. The compaction process produced contact between grains in the form of point, long, concavo-convex, and sutured contacts as well as cement found in the form of calcite cement and clay minerals such as albite, illite, kaolinite, and smectite. Quartz, mica, and feldspar minerals underwent mineral replacement. These diagenesis processes resulted in changes in the rock porosity. The types of porosity are dominated by intergranular and intraparticle types with the percentage between 5-30%. The history of diagenesis in the research area began with the stages of eogenesis, mesogenesis, and telogenesis. With the implementation of a diagenesis study, the quality of the reservoir (for example) can be defined. This study shows that the diagenesis process resulted in the heterogeneity of the Jatiluhur Formation rocks around the Cibeet River streams.