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Studi Fasies dan Diagenesis Batugamping pada Formasi Paciran, Kabupaten Lamongan, Jawa Timur = Study of Facies and Diagenesis of Limestone in Paciran Formation, Lamongan District, East Java

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Abstrak

Penelitian dilakukan pada Formasi Paciran yang berada di daerah Lamongan, Jawa Timur. Formasi Paciran ini tersusun atas batu gamping yang merupakan salah satu bahan baku dalam pembuatan semen. Tujuan dilakukannya penelitian ini yaitu menjelaskan mikrofasies, zona lingkungan pengendapan batugamping, tahapan, proses dan lingkungan diagenesis yang terjadi pada batugamping pada Formasi Paciran, Jawa Timur. Metode penelitian yang digunakan yaitu dengan pengamatan lapangan melalui pemetaan dan pembutan log stratigrafi (makroskopis) dan pengamatan laboratorium melalui analisis petrografi (mikroskopis). Dari hasil pengamatan secara makroskopis dan mikroskopis ditemukan sebanyak enam jenis fasies, yaitu Coral Framestone, Foraminifera Grainstone, Bivalvia Rudstone, Larger Foraminifera Rudstone, Larger Foraminifera Floatstone, dan Coral Floatstone. Fasies-fasies tersebut diendapkan pada lingkungan Platform Margin Reefs. Kemudian, untuk proses diagenesis yang berlangsung yaitu mikritisasi, sementasi, kompaksi, pelarutan, dan penggantian. Proses diagenesis ini terjadi dalam tiga tahapan diagenesis, yaitu eogenesis, mesogenesis, dan telogenesis . Kemudian, melalui proses dan tahapan tersebut menghasilkan fitur diagenesis yang dapat menentukan lingkungan diagenesis batugamping daerah penelitian yaitu zona marine phreatic, zona mixing, zona burial, zona meteoric phreatic dan zona meteoric vadose. Selain itu, berdasarkan fitur diagenesis batugamping di daerah penelitian, terdapat beberapa titik berpotensi sebagai akuifer, yaitu S1.5, S3.2, S5.1, S10, S12, S13, S16, S17, S20, S21, S22, dan S23.

.....Research was carried out on the Paciran Formation in the Lamongan area, East Java. The Paciran Formation is composed of limestone which is one of the raw materials for making cement. The aim of this research is to explain the microfacies, environmental zones of limestone deposition, stages, processes and diagenetic environments that occur in limestone in the Paciran Formation, East Java. The research methods used are field observations through mapping and making stratigraphic logs (macroscopic) and laboratory observations through petrographic analysis (microscopic). From the results of macroscopic and microscopic observations, six types of facies were found, namely Coral Framestone, Foraminifera Grainstone, Bivalvia Rudstone, Larger Foraminifera Rudstone, Larger Foraminifera Floatstone, and Coral Floatstone. These facies are deposited in the Platform Margin Reefs environment. Then, the diagenesis processes that take place are micritization, cementation, compaction, dissolution and replacement. This diagenesis process occurs in three stages of diagenesis, namely eogenesis, mesogenesis, and telogenesis. Then, through these processes and stages, diagenetic features are produced that can determine the limestone diagenetic environment in the research area, namely the marine phreatic zone, mixing zone, burial zone, meteoric phreatic and meteoric vadose. In addition, based on the diagenesis features of limestone in the research area, there are several points that have the potential to be aquifers, namely S1.5, S3.2, S5.1, S10, S12, S13, S16, S17, S20, S21, S22, and S23.