

SARI

Geologi dan Paleogeografi Daerah Galuh Timur dan Sekitarnya, Kecamatan Tonjong, Kabupaten Brebes, Jawa Tengah

Daerah penelitian berada di Desa Galuh Timur dan sekitarnya, Kecamatan Tonjong, Kabupaten Brebes, Jawa Tengah. Tujuan penelitian yaitu untuk menentukan geomorfologi, tatanan stratigrafi, struktur geologi, lithofasies, asosiasi fasies, dan sejarah geologi pada daerah penelitian. Metode penelitian yaitu dengan cara studi pustaka, pemetaan geologi, analisis studio, dan analisis laboratorium. Analisis studio berupa analisis satuan geomorfologi, analisis stratigrafi, dan analisis struktur geologi. Analisis laboratorium berupa analisis petrografi dan analisis biostratigrafi. Geomorfologi daerah penelitian terbagi menjadi tiga satuan morfologi, antara lain Satuan Lembah Homoklin Wadasgumantung, Satuan Punggungan Sinklin Galuh Timur, dan Satuan Lembah Antiklin Kalinusu. Stratigrafi pada daerah penelitian dengan urutan dari yang berumur tua hingga yang berumur muda yaitu Satuan Batulempung, Satuan Batupasir Silang Siur, Satuan Batupasir – Konglomerat Kerikil, dan Satuan Batupasir – Konglomerat Kerakal. Struktur geologi daerah penelitian berupa Sinklin Gandu dan Antiklin Kalinusu. Penentuan paleogeografi daerah penelitian menggunakan pendekatan deskriptif batuan dengan cara membagi lithofasies sesuai dengan karakteristiknya. Lithofasies pada penelitian terdiri dari Batulempung (Fm), Batupasir laminasi (Sh), Batupasir swaley (Ssc), Batupasir *planar cross bed* (Sp), Batupasir *through cross bed* (St), Batupasir *scours* (Ss), Batupasir *low angle bed* (Sl), Konglomerat *planar cross bed* (Gp), dan Konglomerat *clastic supported* (Gcs). Kumpulan lithofasies dapat membentuk suatu asosiasi fasies. Asosiasi fasies pada daerah penelitian terdiri dari *offshore*, *shoreface*, *beach*, dan *braided channel fluvial*. Asosiasi *offshore* memiliki ciri lithofasies Fm dan Sh yang tersusun sebagian besar oleh lithofasies Fm. Asosiasi *shoreface* memiliki ciri lithofasies Sh, Sp, St, dan Ssc yang terdapat struktur *swaley cross stratification*. Asosiasi *beach* memiliki ciri lithofasies Sh, Sp, Gp, dan Gcs. Asosiasi *braided channel fluvial* memiliki elemen arsitektur *channel* dengan ciri lithofasies Sp, Ss, Sl, dan Gp, serta pengendapan sedimen yang relatif kasar. Paleogeografi menunjukkan bahwa pengendapan asosiasi *offshore* terjadi pada Pliosen Tengah, selanjutnya asosiasi *shoreface* pada Pliosen Akhir, kemudian asosiasi *beach* pada Pleistosen Awal, dan diikuti asosiasi *braided channel fluvial* pada Pleistosen Akhir. Data arus purba menunjukkan bahwa sumber sedimen pada berasal dari daerah tinggian pada bagian barat daerah penelitian. Batas asosiasi fasies berdasarkan pada korelasi fasies. Korelasi fasies menunjukkan bahwa pola pengendapan pada daerah penelitian terjadi secara progradasi.

Kata kunci : *geomorfologi, stratigrafi, lithofasies, asosiasi fasies, paleogeografi*

ABSTRACT

Geology And Paleogeography of Galuh Timur Area and Surroundings, Tonjong Sub-District, Brebes District, Central Java

The research area is located at the village of Galuh Timur and surroundings, Tonjong Sub-District, Brebes District, Central Java. The purpose of this research were to determine the geomorphology, stratigraphy, geological structure, lithofacies, facies associations, and geological history in the study area. The research methods are literature study, geological mapping, studio analysis, and laboratory analysis. Studio analysis consists of geomorphological unit analysis, stratigraphy analysis, and geological structure analysis. Laboratory analysis consists of petrography analysis and biostratigraphy analysis. The geomorphology of the research area are divided into three morphological units, consists of the Wadasgumantung Homocline Valley Unit, the East Galuh Synchronous Ridge Unit, and the Kalinusu Anticline Valley Unit. The stratigraphy in the research area from the oldest to youngest, namely Claystone Unit, Cross Bed Sandstone Unit, Sandstone - Granules Conglomerate Unit, and Sandstone - Pebble Conglomerate Unit. The geological structures of the research area are Gandu Syncline and Kalinusu Anticline. Paleogeographic determination of the research area uses a rock descriptive approach by dividing the lithofacies according to their characteristics. The lithofacies in the study consisted of laystone (Fm), laminated sandstone (Sh), swaley sandstone (Ssc), cross bed planar sandstone (Sp), cross bed sandstone (St), scours sandstone (Ss), low angle bed sandstone (Sl), planar cross bed conglomerates (Gp), and clastic supported conglomerates (Gcs). Set of lithofacies can form a facies association. The facies association in the research area consists of offshore, shoreface, beach and braided fluvial channels. The offshore association has the characteristics of Fm and Sh lithofacies, which are composed mostly of Fm lithofacies. Shoreface association has the characteristics of Sh, Sp, St, and Ssc lithofacies which have a swaley cross stratification structure. The beach association has the characteristics of the Sh, Sp, Gp, and Gcs lithofacies. The fluvial braided channel association has a channel architectural element with the characteristics of Sp, Ss, Sl, and Gp lithofacies, as well as relatively coarse sediment deposition. Paleogeography shows that deposition of offshore associations occurred in the Middle Pliocene, then shoreface associations in the Late Pliocene, then beach associations in the Early Pleistocene, and followed by braided fluvial channels in the Late Pleistocene. Paleocurrents indicate that the sediment source originates from the highlands in the western part of the study area. The facies association boundary is based on facies correlation. Facies correlation shows that the depositional pattern in the study area is progression.

Keywords : geomorphology, stratigraphy, lithofacies, facies associoation, paleogeography