

ABSTRAK

Lapangan MGX merupakan salah satu lapangan minyak dan gas yang berlokasi di wilayah operasional Pertamina Hulu Kalimantan Timur yang termasuk ke dalam Cekungan *Lower Kutai*. Lapangan ini sudah mulai beroperasi sejak tahun 1972 yang memiliki umur Miosen akhir. Lapangan MGX berada di sisi utara delta mahakam yang mana bertepatan di wilayah *offshore*. sampai saat ini lapangan MGX masih berada dalam kondisi aktif produksi. Penelitian ini berfokus pada penentuan fasies, lingkungan pengendapan dan sikuen stratigrafi yang ada di lapangan “MGX” Cekungan Kutai, dimana bertujuan mengidentifikasi litologi penyusun, lingkungan pengendapan, asosiasi fasies, dan sikuen stratigrafi yang dapat ditinjau melalui data well log, mudlog, dan well report pada daerah penelitian. Hal ini dapat digunakan untuk pengembangan lebih lanjut bagi perusahaan dan wawasan bagi para pembaca. Penelitian ini menggunakan data sekunder dengan metode penelitian analisis litologi, litofasies, dan elektrofases yang di validasi dengan data *mudlog* dan *wellreport*, sehingga hasil yang pengerjaan maksimal dengan dapat menghasilkan korelasi stratigrafi, korelasi struktur serta peta paleogeografi.

Berdasarkan hasil analisis yang dilakukan dari empat sumur, daerah penelitian disusun atas beberapa litologi, antara lain batupasir, batulanau, batulempung, sisipan batugamping, serta *coalchip*. Hal ini di buktikan dengan nilai-nilai log yang berada pada *wirelinelog*, *mudlog*, *well report*, serta stratigrafi lapangan. Ditemukan tiga jenis elektrofases yaitu *funnel*, *bell*, dan *cylindrical* yang mana membentuk beberapa fasies yang berkembang di lapangan yaitu *distributary channel*, *distributary mouthbar*, dan *interdistributary bay*. Dengan itu, dapat diketahui bahwa lingkungan pengendapan lapangan penelitian yaitu *lower delta plain-delta front*. System tract yang didapatkan di lapangan antara lain, *maximum flooding surface*, *sequence boundary*, dan *transgressive system tract*, dengan tiga kali perulangan serta menghasilkan tiga sikuen, HST,LST,TST. Dalam peta paleogeografi yang memiliki arah pengendapan *north west-south east* terbentuk HST 1 dengan fasies *interdistributary bay*, HST 2 dengan fasies *interdistributary bay*, HST 3 dengan fasies *distributary mouthbar*, LST 1 dengan fasies *distributary channel*, LST 2 dengan fasies *distributary channel*, LST 3 dengan fasies *distributary mouth bar*, TST 1 dengan fasies *interdistributary bay*, TST 2 dengan fasies *interdistributary bay*, dan TST 3 dengan fasies *interdistributary bay*.

Kata Kunci : Cekungan Kutai, Fasies , Lapangan MGX, Lingkungan Pengendapan

ABSTRACT

MGX Field is one of the oil and gas fields located in the operational area of Pertamina Hulu East Kalimantan which is included in the Lower Kutai Basin. This field has been operating since 1972 which has a late Miocene age. The MGX field is located on the north side of the Mahakam delta which coincides with the offshore area. Until now, the MGX field is still in active production conditions. This study focuses on determining the facies, depositional environment and stratigraphic sequence in the "MGX" field in the Kutai Basin, which aims to identify the constituent lithology, depositional environment, facies associations, and stratigraphic sequences that can be reviewed through well log, mudlog, and well report data in the research area. This can be used for further development for the company and insight for readers. This study uses secondary data with lithology, lithofacies, and electrofacies analysis research methods that are validated with mudlog and wellreport data, so that the results of the work are maximized by being able to produce stratigraphic correlations, structural correlations and paleographic maps.

Based on the results of the analysis conducted from four wells, the research area is composed of several lithologies, including sandstone, siltstone, claystone, limestone inserts, and coalchip. This is proven by the log values found in the wireline log, mudlog, well report, and field stratigraphy. Three types of electrofacies were found, namely funnel, bell, and cylindrical, which formed several facies that developed in the field, namely distributary channel, distributary mouthbar, and interdistributary bay. With that, it can be seen that the depositional environment of the research field is the lower delta plain-delta front. The system tract obtained in the field include maximum flooding surface, sequence boundary, and transgressive system tract, with three repetitions and producing three sequences, HST, LST, TST. In the paleographic map that has a north west-south east depositional direction, HST 1 is formed with interdistributary bay facies, HST 2 with interdistributary bay facies, HST 3 with distributary mouthbar facies, LST 1 with distributary channel facies, LST 2 with distributary channel facies, LST 3 with distributary mouth bar facies, TST 1 with interdistributary bay facies, TST 2 with interdistributary bay facies, and TST 3 with interdistributary bay facies.

Keyword : *Depositional Environment, Facies, Kutai Basin, MGX Field*