

**GEOLOGY AND SEQUENCE STRATIGRAPHY STUDY
OF MAHAKAM DELTA, BALIKPAPAN FORMATION,
MINGGIRAN FIELD, KUTAI BASIN,
EAST KALIMANTAN**

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ABSTRACT

Minggiran field is one of the oil and gas field owned by PT. Vico Indonesia, which is \pm 5.8 km northeast of the city of Samarinda, East Kalimantan, Indonesia. The research focused on Balikpapan Formation which belong to the Kutai Basin. Overall research data is owned by PT. Vico Indonesia. Sequence stratigraphic studies with this approach is integration of data wireline logs, core, and Biostratigraphy data as the main data as well as data dip meter logs as support .

The data biostratigraphy showed that Balikpapan Formation age is Middle Miocene, the depositional environment in the form of biostratigraphy data is Marginal Marine (Lower Delta-Delta Plain Front), Marginal Marine Inner Shelf (Delta Front), and Middle Shelf (prodelta). From the data analysis of core (core) is obtained in the form of sandstone lithology constituent; bright gray, dark gray-black, very fine sand (1 / 16-1 / 8) - very coarse sand (1-2); silica cement, claystone (<1/256); dark gray, silica cement, siltstone (1 / 256-1 / 16); dark gray, silica cement, and coal, black oil sheen. From the data analysis of rock core (core), there are also several sedimentary structures are evolving, parallel lamination, cross lamination, wavy lamination, flaser, lenticular, mud drapes, coal clast, and bioturbation. The deposition facies that develop in the form of tidal channel, levee, interdistributary bay, flood plain, crevasse splay and swamp in the lower delta plain. Wireline log data, core data integrated with rock (core), obtained in the form of tidal channel facies sedimentation, levee, interdistributary bay, flood plain, crevasse splay and swamp in the lower delta plain. Distributary mouth bar at the Delta front, and prodelta, the entire system belong to the delta deposition system.

Based on the results obtained four stratigraphic sequence analysis package constituent Balikpapan Formation depositional sequence, the sequence 1, sequence 2, sequence 3 and sequence 4, each sequence is bounded by Sequence Boundary (SB - 1 , SB - 2 and SB - 3 SB - 4) and composed of several units of the systems tract LST, TST, and HST.

Keywords : Minggiran Field, Balikpapan Formation, Kutai Basin, Sequence Stratigraphy.