

SARI

Lapangan “X” merupakan salah satu lapangan eksplorasi PT Saka Energy Indonesia yang terletak di wilayah *South Mahakam* dan secara fisiografi masuk pada Cekungan Kutai Bagian Bawah, Kalimantan Timur. Pada wilayah tersebut secara umum terbagi menjadi dua fase pengendapan yaitu regresi dan transgresi yang berlangsung selama Miosen Awal sampai Miosen Akhir sehingga berimplikasi pada terbentuknya berbagai jenis reservoir. Permasalahan pada penelitian ini terkait dengan adanya keberagaman reservoir yang dapat memberikan tingkat risiko yang berbeda sehingga perlu dilakukan penilaian risiko pada reservoir untuk mengetahui urutan tingkat risikonya. Metode penelitian dilakukan dengan menganalisis fasies dan petrofisika reservoir kemudian dari analisis tersebut digunakan sebagai acuan penentuan parameter dalam penilaian risiko reservoir. Penilaian risiko pada reservoir mengacu pada metode *Otis & Schnidermann* (1997) dengan menambahkan beberapa parameter lain. Penelitian ini menggunakan data yang diambil dari 10 sumur eksplorasi dan data sekunder dari peneliti terdahulu. Asosiasi fasies yang dijumpai pada daerah penelitian meliputi *marsh, mouth bar, channel fill, crevasse splay, prodelta, core reef, back reef* dan *shoreface*. Berdasarkan analisis petrofisika, pada daerah penelitian terdapat 9 reservoir dengan karakteristik dan properti yang beragam. Parameter yang dapat dijadikan referensi tambahan untuk penilaian risiko reservoir meliputi *net to gross*, saturasi air, kandungan lempung, kedalaman reservoir dan *deliverability* reservoir. Mengacu pada nilai probabilitas keberhasilan, reservoir pada daerah penelitian memiliki tingkat risiko mulai dari *low risk* sampai *high risk*. Pada daerah penelitian secara umum reservoir batuan silisiklastik (batupasir) memiliki tingkat risiko lebih rendah daripada reservoir karbonat (batugamping).

Kata kunci : fasies, petrofisika, penilaian risiko, reservoir, *South Mahakam*

ABSTRACT

This study was applied at "X" field which is one of the oil and gas fields that belongs to PT Saka Energy Indonesia that located in the area of South Mahakam and based on physiography that's belong to Lower Kutai Basin, East Kalimantan. In general the South Mahakam area divided into two regional stratigraphic trend that is regression and transgression during Early Miocene to Late Miocene. That trends resulted in "X" field formed some reservoir that have various types. It implies of reservoirs in this area going to have different levels of risk so it necessary to doing risk assessment in purpose to determine risk level each reservoir The method that used in this research is analysis of facies and petrophysic and then that analysis was used as reference to determine the parameters in the risk assessment for reservoir. The method for risk assessment in this study using the Otis & Scnidermann (1997) methods by adding another parameters. This study using 10 well data exploration and secondary data by the other or previous research. By the analysis results, there are nine facies association such as marsh, mouth bar, distributary channel fill, crevasse splay, prodelta, core reef, back reef and shoreface. Based on petrophysical analysis in the area of research has nine reservoirs that has different characteristic and properties. The additional parameters that can be used as reference in the risk assessment of this research is : net to gross, water saturation, clay volume, reservoirs depth and deliverability. Based on the value of probability succession, it shows that reservoir at the study area has a risk level ranging from very high risk to low risk. In general, sandstone reservoir on the research area has a lower level of risk than the carbonates reservoir.

Keywords : facies, petrophysical, risk assessment, reservoir, South Mahakam