Seismic interpretation and reservoir static model: a case Study in block mfk, Riau province, Indonesia

ABSTRACT

MFK Block was located between Kampar and Rokan Hulu, Riau Province and 135 from Pekanbaru City, Indonesia. There are 33 wells in Field X, MFK Block with 27 active wells. This field has an area of about 79.65 km² that located in Central Sumatra Basin. The field was discovered in 1976 and began to be produced in January 1979. Our research is focused on AK reservoir intervals, which is also part of Bekasap formation. The main aims of this study are to interpret field structure model, determine the distribution of reservoir properties, develop static reservoir model for field as a reference for field performance enhancement, estimate oil reserves in the field reservoir, and the prospect of hydrocarbons in the AK reservoir. The available data are 2D seismic data, mudlog descriptions, well log data, and perforation data. The methods used in this study are stratigraphic sequences, electrofacies analysis, geological structure analysis, static reservoir modelling, and estimation of hydrocarbon reserve volumes. Based on mudlog and electrofacies analysis, the study interval was arranged into 2 lithofacies units, namely sand channel and sand bar. The depostion environment of Bekasap Formation is estuarine environments. The interval of the study has an association of fasies moving northeast to southwest. Based on the results of property reservoir analysis, facies that have good reservoir quality is sand channel facies. Based on the static modeling method approach, the estimated stock tank oil initially in place (STOIIP) for AK reservoir interval is 728 MBBL.