

INTISARI

PERHITUNGAN KETIDAKPASTIAN VOLUMETRIK CADANGAN HIDROKARBON MENGGUNAKAN ANALISIS PETROFISIKA DAN INTERPRETASI SEISMIK PADA FORMASI BERAI MUDA DI LAPANGAN “ALAN” CEKUNGAN MAKASSAR SELATAN

Dicka Alan Koespinadi
11/316724/PA/13852

Perhitungan cadangan hidrokarbon dapat diketahui melalui analisis petrofisika dan interpretasi seismik. Analisis petrofisika digunakan untuk mendapatkan nilai volume serpih, porositas, saturasi air, dan permeabilitas. Interpretasi seismik digunakan untuk mendapatkan volume total batuan reservoir. Parameter-parameter tersebut digunakan untuk menghitung besar cadangan hidrokarbon pada Lapangan “ALAN” yang terletak di Cekungan Makassar Selatan.

Dari hasil analisis petrofisika pada tiga sumur pada reservoir Formasi Berai Muda di Lapangan “ALAN”, nilai volume serpih rata-rata sebesar 5,49 persen, porositas rata-rata sebesar 12,79 persen, saturasi air rata-rata sebesar 32,73 persen, dan permeabilitas rata-rata sebesar 8,5 mD diperoleh. Volume total batuan reservoir sebesar 740.821.370 m³ dari pemodelan data *checkshot*, 811.151.017 m³ dari pemodelan data *marker*, dan 703.780.301 m³ dari pemodelan data kecepatan interval didapatkan dari hasil interpretasi seismik. Volume cadangan gas 1P sebesar 61 BCF, 2P sebesar 219 BCF, dan 3P sebesar 550 BCF dihasilkan melalui hasil analisis ketidakpastian.

Kata Kunci : analisis ketidakpastian, cadangan gas, interpretasi seismik, petrofisika

ABSTRACT

HYDROCARBON RESERVES VOLUMETRIC UNCERTAINTY CALCULATION USING PETROPHYSICAL ANALYSIS AND SEISMIC INTERPRETATION OF UPPER BERAI FORMATION OF “ALAN” FIELD SOUTH MAKASSAR BASIN

Dicka Alan Koespiandi
11/316724/PA/13852

Hydrocarbon reserves calculation are obtained using petrophysical analysis and seismic interpretation. Petrophysical analysis is used to obtain reservoir properties' value such as shale volume, porosity, water saturation, and permeability. Seismic interpretation is used to obtain gross reservoir volume. Those parameters are used to calculate hydrocarbons reserves of “ALAN” Field located in South Makassar Basin.

Based on petrophysical analysis result of three wells of Upper Berai Formation of “ALAN” Field, average shale volume is 5.49 percent, average porosity is 12.79 percent, average water saturation is 32.73 percent, and average permeability is 8.5 mD are obtained. Gross reservoir volume values for checkshot modelling is 740,821,370 m³, for marker modelling is 811,151,017 m³, and for interval velocity modelling is 703.780.301 m³, are obtained from seismic interpretation result. Gas reserves volume for 1P is 61 BCF, 2P is 219 BCF, and 3P is 550 BCF, are obtained from uncertainty analysis result.

Keywords: uncertainty analysis, gas reserves, seismic interpretation, petrophysics