

RINGKASAN

INTERPRETASI DATA LOG UNTUK PENENTUAN ZONA PROSPEK DAN CADANGAN MINYAK MULA-MULA PADA SUMUR “DF-001” LAPANGAN “NADA”

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Sumur “DF-001” pada Lapangan “NADA” terletak di Provinsi Jambi, termasuk dalam cekungan Sumatra Selatan. Di lapangan “NADA”, sumur ini menembus formasi produktif yaitu Formasi Air Benakat. Potensi prospek yang baik terlihat dari hasil uji tes laju minyak, sehingga penelitian lebih lanjut diperlukan untuk memperkirakan zona potensial hidrokarbon dan jumlah awal cadangan minyak di Sumur “DF-001”.

Penelitian ini dimulai dengan pengelompokan data dan evaluasi ketersediaan data untuk menetapkan zona prospek hidrokarbon. Selanjutnya, dilakukan *input* data ke dalam *simulator*. Langkah selanjutnya adalah analisis kualitatif untuk menentukan kedalaman *top* dan *bottom* lapisan *porous* yang mengandung hidrokarbon. Analisis kuantitatif melibatkan perhitungan volume *shale*, porositas, dan saturasi air. Dilakukan juga penentuan *cut off* untuk memisahkan lapisan produktif dari yang tidak produktif, dilanjutkan dengan *reservoir lumping*, dan terakhir, perhitungan *original oil in place* (OOIP).

Berdasarkan analisis kualitatif dan kuantitatif, ditemukan 10 zona prospek dengan nilai *cut off* V_{sh} sebesar 0.46, *cut off* porositas sebesar 0.1, dan *cut off* S_w sebesar 0.8. Dari nilai-nilai *cut off* ini, didapatkan zona *net pay* untuk Sumur “DF-001” sebesar 115.44 meter. Potensi hidrokarbon mula-mula diperkirakan sebesar 9.2885 MMSTB.

Kata Kunci : zona prospek, analisa petrofisik, *cut off*, hidrokarbon

ABSTRACT

INTERPRETATION OF LOG DATA FOR DETERMINING PROSPECT ZONES AND INITIAL OIL RESERVES IN THE "DF-001" WELL OF THE "NADA" FIELD

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The "DF-001" well in the "NADA" Field is located in Jambi Province, included in the South Sumatra basin. In the "NADA" field, this well penetrates a productive formation, namely the Air Benakat Formation. The potential for good prospects can be seen from the results of the oil rate test, so further research is needed to estimate the potential hydrocarbon zone and the initial amount of oil reserves in the "DF-001" Well.

This research begins with grouping data and evaluating data availability to determine hydrocarbon prospect zones. Next, the data is input into the simulator. The next step is a qualitative analysis to determine the depth of the top and bottom of the porous layer containing hydrocarbons. Quantitative analysis involves calculating shale volume, porosity, and water saturation. Cut off is also determined to separate productive layers from unproductive ones, followed by reservoir lumping, and finally, calculation of original oil in place (OOIP).

Based on qualitative and quantitative analysis, 10 prospect zones were found with the V_{sh} cutoff value was 0.46, the porosity cutoff was 0.1, and the S_w cutoff was 0.8. From these cut off values, the net pay zone for the "DF-001" Well is 115.44 meters. Hydrocarbon potential was initially estimated at 9.2885 MMSTB.

Keywords: prospect zone, petrophysical analysis, cut off, hydrocarbons