ABSTRACT

MENENTUKAN ZONA PROSPEK DANJENIS HIDROKARBON MENGGUNAKAN INTERPRETASI LOG PADA SUMUR "D" LAPANGAN "FM"

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Well D is a hydrocarbon prospect well located in the FM field, which is located in Jambi Province, South Sumatra basin. In well D, there is no petrophysical analysis, therefore exploration is carried out using logging interpretation. For qualitative interpretation using three combinations of wireline logging tools, namely lithology tools, porosity tools, and resistivity tools and there is core analysis data from the South Sumatra Basin that can be used as validation. So this research aims to interpret the logs in the "D" well of the "FM" field in an effort to determine the hydrocarbon prospect zone to describe the type of fluid.

The methodology in this research is carried out with data collection, environmental correction, then data processing using qualitative and quantitative analysis, then cut off analysis and determination of hydrocarbon types. In environmental correction, gamma ray log readings are corrected. Then determine the permeable zone and impermeable zone based on gamma ray log and resistivity log readings. In the quantitative analysis, Vshale, porosity, and Sw are calculated to determine prospect layer candidates. Determination of prospect candidates is based on Sw cut off so that net pay or thickness of prospect layer candidates will be obtained. Determination of fluid type is based on the crosover of neutron log and density log, and validated with data from side wall core and rt data, to identify the presence of gas, oil and water.

Based on the crossplot analysis of vsh vsh vs porosity, the Vshale cut off value is 50%, the porosity cut off is 7%, and based on the fractional flow vs sw analysis, the Sw cut off value is 61%. Based on the results of petrophysical analysis, 1 interest zone was found to be a reservoir candidate, namely layer A with an interval of 642 ft to 1464 ft. Layer A is divided into 7 sublayers namely A-1, A-2, A-3, A-4, A-5, A-6, A-7. Based on the Sw cut off, it is known that there are 7 prospective sublayer candidates in well D. Layer A has a net sand of 140.5 ft. The average value of the petrophysical analysis of well D is Vshale of 27%, porosity of 34%, and water saturation of 42%. While the type of hydrocarbon fluid in well D there are indications of hydrocarbon zones and prospect zones in sublayers A-1, A-2, A-3, A-4, A-5, A-6, A-7.

Keyword: *Vshale, Porositas, Saturasi*