RINGKASAN

INTERPRETASI LOG UNTUK MENENTUKAN ZONA PROSPEK PADA LAPISAN SHALY SAND SUMUR "Y" LAPANGAN "MRP"

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Sumur "Y" pada Lapangan "MRP" terletak di Cekungan Sumatra Selatan dengan formasi Talang akar sebagai target *reservoir*nya. Pada kasus ini, reservoir yang diteliti berupa shaly-sand formation. Pada *shaly-sand formation* perhitungan nilai saturasi air yang dilakukan akan lebih sulit jika dibandingkan dengan yang dilakukan pada clean formation. Hal ini terjadi karena shale yang hadir dalam suatu formasi dapat menyebabkan perubahan pembacaan nilai pada saat dilakukan pengukuran sehingga perlu dilakukan koreksi. Digunakan analisis kualitatif dan kuantitatif untuk menenentukan *top* dan *bottom* zona yang berpotensi prospek pada sumur "Y".

Penelitian ini dilakukan dengan prosedur metodelogi mulai dari, pengumpulan dat a, koreksi data, interpretasi log kualitatif ,interpretasi log kuantitatif ,perhitungan saturasi air ,dan *cut-off* . Analisis kualitatif dilakukan secara *quick look* melalui kombinasi kurva *log lithology tools*, *resistivity tools*, *dan porosity tools* untuk mengetahui letak dari zona prospek. Analisis kuantitatif meliputi perhitungan volume *shale*, porositas, dan saturasi air. *Cut off* dilakukan terhadap tiga parameter, yakni porositas, volume *shale*, dan saturasi air. *Cut off* volume *shale* dan porositas dilakukan Dengan cara plot antara data porositas dan produksi oil serta vshale dan produksi oil berdasarkan letak data test, *Cut off* saturasi air menggunakan crossplot *fractional flow* dengan saturasi air. Hasil *cut off* berupa ketebalan bersih beserta parameter petrofisik lain seperti volume *shale*,porositas, dan saturasi air dari ketebalan bersih tersebut.

Dari analisis secara kualitatif dan kuantitatif pada Sumur "Y" diperoleh dua zona prospek yakni yakni zona P1 dengan interval kedalaman (5446.0-5490 ft), dan zona P2 (5522.0-5563.0 ft). *Cut off* V*shale* sebesar 61%, porositas sebesar 10%, dan saturasi air sebesar 62%. Total kedalaman bersih yang diperoleh dari formasi Gumai sebesar 70 ft.

Kata kunci: Analisis Petrofisik, *Cut off*, *Net pay*, Zona Prospek

ABSTRACT

INTERPRETASI LOG UNTUK MENENTUKAN ZONA PROSPEK PADA LAPISAN SHALY SAND SUMUR "Y" LAPANGAN "MRP"

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The "Y" well in the "MRP" Field is located in the South Sumatra Basin with the Talang Akar formation as its target reservoir. In this case, the reservoir studied is a shaly-sand formation. In shaly-sand formation, the calculation of water saturation values will be more difficult when compared to that carried out in clean formation. This happens because the shale present in a formation can cause changes in the reading value when the measurement is carried out so that corrections need to be made. Qualitative and quantitative analysis are used to determine the top and bottom zones that have potential prospects in the "Y" well.

This study was conducted with methodological procedures starting from data collection, data correction, qualitative log interpretation, quantitative log interpretation, water saturation calculation, and cut-off. Qualitative analysis is carried out using a quick look through a combination of lithology tools log curves, resistivity tools, and porosity tools to determine the location of the prospect zone. Cut off is done on three parameters, namely porosity, shale volume, and water saturation. Cut off shale volume and porosity is done by plotting between porosity data and oil production and vshale and oil production based on the location of the test data, Cut off water saturation using crossplot fractional flow with water saturation. The cut off results are in the form of net thickness along with other petrophysical parameters such as shale volume, porosity, and water saturation from the net thickness.

From the qualitative and quantitative analysis of Well "Y", two prospect zones were obtained, namely zone P1 with a depth interval (5446.0-5490 ft), and zone P2 (5522.0-5563.0 ft). Vshale cut off is 61%, porosity is 10%, and water saturation is 62%. The total net depth obtained from the Talang Akar formation is 70 ft.

Keywords: Petrophysical Analysis, Cut off, Net pay, Prospect Zones