

## RINGKASAN

Sumur RDK-03 adalah sumur yang berada di Lapangan MINERAL yang terletak di cekungan Sumatera Tengah. Sumur ini menembus formasi Bekasap pada kelompok Sihapas. Sumur RDK-03 merupakan sumur eksplorasi yang akan dikembangkan maka perlu dilakukan analisa untuk menentukan lapisan prospek dan cadangan minyak mula-mula. Data yang ada pada Sumur RDK-03 didapatkan dari kegiatan *wireline logging* berupa data *log*, serta data-data pendukung lain berupa data *swab test* produksi, *header log*, analisa air, dan data *core*.

Analisa petrofisik dilakukan untuk menentukan lapisan prospek dan cadangan minyak mula-mula dengan melakukan analisa kualitatif menentukan kedalaman zona prospek dengan melihat pada *chart log* yang ada, selanjutnya analisa kuantitatif dengan menghitung parameter-parameter seperti *volume shale*, porositas, dan saturasi air, kemudian dilakukan analisa *cut off* dan *reservoir lumping* yang digunakan dalam perhitungan cadangan minyak mula-mula Sumur RDK-03.

Hasil dari analisa kualitatif yang dilakukan didapatkan kedalaman lapisan prospek pada *Yellow Zone* (3834 ft – 3879 ft), *Green Zone* (3885 ft – 3893 ft), *Gray Zone* (3904 ft – 3934 ft), *Blue Zone* (3954 ft – 3994 ft), *Orange Zone* (3999 ft – 4017 ft), *Brown Zone* (4026 ft – 4061 ft), dan *Purple Zone* (4067 ft – 4071 ft). Analisa kuantitatif didapatkan parameter-parameter seperti *Vshale*, porositas, dan saturasi air. Untuk nilai *Vshale* rata-rata didapatkan sebesar 31 %, kemudian untuk porositas rata-rata sebesar 21 %, sedangkan untuk saturasi air sebesar 55 %. Analisa *cut off* didapatkan nilai *cut off Vshale* sebesar 57 %, lalu *cut off* porositas sebesar 12 %, dan *cut off* saturasi air sebesar 63 %. Untuk *volume bulk* menggunakan metode *well basis* dan didapatkan nilai sebesar 8206,41 acre-ft, untuk nilai Boi yang ada sebesar 1,15 bbl/STB dihasilkan nilai cadangan minyak mula-mula atau *Original Oil In Place* sebesar 5,71 MMSTB.

Kata kunci: Lapisan Prospek, *Wireline Logging*, *Original Oil In Place*

## ABSTRACT

*The RDK-03 well is a well located in the MINERAL Field which is located in the Central Sumatra basin. This well penetrates the Besap formation in the Sihapas group. The RDK-03 well is an exploratory well that will be developed, so it is necessary to carry out an analysis to determine the prospect layer and initial oil reserves. The data in the RDK-03 well was obtained from wireline logging activities in the form of log data, as well as other supporting data in the form of production swab test data, log headers, water analysis, and core data.*

*Petrophysical analysis is carried out to determine the prospect layer and oil reserves first by conducting a qualitative analysis to determine the depth of the prospect zone by looking at the existing log chart, then quantitative analysis by calculating parameters such as shale volume, porosity, and water saturation, then analyzing cut off and reservoir lumping used in the calculation of the initial oil reserves of the RDK-03 Well.*

*The results of the qualitative analysis carried out obtained the depth of the prospect layer in the Yellow Zone (3834 ft – 3879 ft), Green Zone (3885 ft – 3893 ft), Gray Zone (3904 ft – 3934 ft) , Blue Zone (3954 ft – 3994 ft), Orange Zone (3999 ft – 4017 ft), Brown Zone (4026 ft – 4061 ft), and Purple Zone (4067 ft – 4071 ft). Quantitative analysis obtained parameters such as Vshale, porosity, and water saturation. The average Vshale value is 31%, then the average porosity is 21%, while the water saturation is 55%. The cut-off analysis showed that the Vshale cut-off value was 57%, then the porosity cut-off was 12%, and the water saturation cut-off was 63%. The bulk volume used the well basis method and obtained a value of 8206,41 acre-ft, for an existing Boi value of 1.15 bbl/STB the original oil in place value was 5,71 MMSTB.*

*Keywords: Prospect Layer, Wireline Logging, Original Oil In Place*