

## INTISARI

### ANALISIS PETROFISIKA UNTUK EVALUASI FORMASI DAN PERHITUNGAN VOLUMETRIK CADANGAN HIDROKARBON DI TEMPAT PADA LAPANGAN “ZURICH” FORMASI MAIN-MASSIVE CEKUNGAN JAWA BARAT UTARA

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Lapangan “Zurich” terletak di sub-cekungan Ardjuna, Cekungan Jawa Barat Utara. Lapangan ini dibagi menjadi 5 area (blok) karena hadirnya *seal fault* yang mengisolir satu area dengan area lainnya. Secara kualitatif, semua sumur di Lapangan “Zurich” terindikasi *oil show*, terutama pada top SF 54 dan SF 56B. Perhitungan cadangan volume hidrokarbon dapat diketahui melalui analisis petrofisika dan interpretasi seismik. Melalui analisa petrofisika diperoleh nilai porositas batuan, saturasi air, dan ketebalan reservoir, sedangkan melalui interpretasi seismik diperoleh luas area hidrokarbon.

Analisis multimin telah dilakukan pada enam sumur di Lapangan “Zurich”, SF2, SF2ST, SFA1, SFA3, SFA5, dan SFB9ST. Analisis ini bertujuan untuk menghasilkan nilai properti petrofisika. Hasil dari analisis multimin pada top SF 54 di Blok 1 menunjukkan bahwa ketebalan reservoir rata-rata adalah 43 *feet* dengan porositas efektif rata-rata sebesar 18%, volume serpih rata-rata sebesar 33 % dan saturasi air efektif rata-rata sebesar 50%. Sedangkan, hasil dari analisis multimin pada top SF 56B di Blok 1 menunjukkan bahwa ketebalan reservoir rata-rata adalah 17,86 *feet* dengan porositas efektif rata-rata sebesar 15%, volume serpih rata-rata sebesar 30,5 % dan saturasi air efektif rata-rata sebesar 55%. Berdasarkan analisis dari kedalaman *Oil Water Contact* dan *Lowest Interpreted Oil* pada data seismik dan data sumur diperoleh cadangan STOIIP pada Lapangan “Zurich” sebesar 11,6 MMBO.

Kata kunci: Analisis petrofisika, multimin, volume hidrokarbon, interpretasi seismik

## ABSTRACT

### *PETROPHYSICAL ANALYSIS FOR FORMATION EVALUATION AND HYDROCARBON RESERVE VOLUMETRIC CALCULATION IN PLACE IN “ZURICH” FIELD, MAIN-MASSIVE FORMATION, NORTH WEST JAVA BASIN*

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*“Zurich” field is located in Ardjuna sub-basin, North West Java basin. The field is divided into five sections (blocks) due to presence of sealing fault which isolating one section to another section. Qualitatively, all of the wells in this field indicated the presence of oil shows, especially in the SF 54 Top and SF 56B Top, Main-Massive formation. Hydrocarbon volumetric calculation can be obtained by petrophysical analysis and seismic interpretation. Petrophysical analysis yield rock physics properties such as porosity, shale volume, water saturation, and thickness, whereas seismic interpretation yield area of hydrocarbon zone.*

*Multimineral analysis has been performed on six wells of “Zurich” field, SF2, SF2ST, SFA1, SFA3, SFA5, and SFB9ST. The analysis aims to obtain the value of the petrophysical properties. The result of multi mineral analysis on the SF 54 Top in Blok 1 showed average thickness of reservoir rock is 43 feet with average effective porosity 18%, average shale volume 33 %, and average effective water saturation 50%. Otherwise, the result of quantitative analysis on the SF 56B Top in Blok 1 showed average thickness of reservoir rock is 17.86 feet with average effective porosity 15%, average shale volume 30.5 %, and average water saturation 55%.*

*Based on the analysis of oil water contact and lowest interpreted oil on seismic and well data, obtained Stock-Tank Oil Initially In Place reserves on the “Zurich” field about 11.6MMBO .*

*Key words: Petrophysical analysis, multimin, volume hydrocarbon, seismic Interpretation*