

ABSTRAK

PERHITUNGAN CADANGAN HIDROKARBON MELALUI PEMODELAN STATIK RESERVOIR LAPISAN X, LAPANGAN “VON”, FORMASI CIBULAKAN ATAS, CEKUNGAN JAWA BARAT UTARA

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Cekungan Jawa Barat Utara merupakan salah satu cekungan di Indonesia yang sudah berproduksi, terbagi ke dalam beberapa sub-cekungan, salah satunya sub-cekungan Jatibarang. Pada cekungan ini tersusun atas beberapa formasi, salah satunya Formasi Cibulakan Atas yang dicirikan dengan litologi silisiklastik glaukonitan serta terdapat karbonat yang berkembang. Formasi ini menyimpan cadangan minyak dan gas yang berpotensi sehingga perlu dilakukannya analisis bawah permukaan untuk mengetahui kondisi bawah permukaan serta perhitungan cadangan hidrokarbon melalui pemodelan statis reservoir pada salah satu interval dengan litologi karbonat. Dalam melakukan penelitian ini, metode penelitian yang digunakan terbagi menjadi dua yaitu analisis kualitatif meliputi analisis log sumur dan interpretasi seismik, serta analisis kuantitatif meliputi analisis petrofisika dan pemodelan statis reservoir. Berdasarkan hasil analisis pada data sumur, ditemukan litofasies antara lain *wackestone to floatstone*, *wackestone to packstone*, *grainstone*, *mudstone to wackestone*, dan *shale*, yang terbagi ke dalam beberapa asosiasi fasies meliputi *outer ramp*, *middle ramp*, *inner ramp*, dan *outer ramp deep basin*. Pada interval penelitian, ditemukan beberapa marker stratigrafi meliputi FS 1, FS 2, FS 3, FS 4, FS 5, FS 6, dan SB 1. Reservoir pada interval ini diinterpretasikan diendapkan pada lingkungan *shallow inner-middle sublittoral*. Berdasarkan hasil perhitungan cadangan hidrokarbon, didapatkan nilai *gas in place* sebesar 10,52696 BSCF dan *oil in place* sebesar 23,11 MMSTB.

Kata kunci: cadangan hidrokarbon, Cibulakan Atas, pemodelan statik, reservoir karbonat

ABSTRACT

HYDROCARBON RESERVES CALCULATION THROUGH RESERVOIR STATIC MODELLING OF LAYER X, “VON” FIELD, UPPER CIBULAKAN FORMATION, NORTHWEST JAVA BASIN

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The North West Java Basin is one of Indonesia's productive basins and is divided into several sub-basins, one of which is the Jatibarang Sub-basin. This basin comprises several formations, including the Upper Cibulakan Formation, which is characterized by glauconitic siliciclastic lithology and the development of carbonates. This formation holds potential oil and gas reserves, necessitating subsurface analysis to understand the geological conditions and perform hydrocarbon reserve calculations through static reservoir modeling within a carbonate lithology interval. The research methodology used in this study is divided into two approaches: qualitative analysis, which includes well log analysis and seismic interpretation, and quantitative analysis, which includes petrophysical analysis and static reservoir modeling. Based on the analysis of well data, the identified lithofacies include wackestone to floatstone, wackestone to packstone, grainstone, mudstone to packstone, and shale, which then divided into several facies association including outer ramp, middle ramp, inner ramp, and outer ramp deep basin. The reservoir interval is bounded by FS 1 at the bottom of the reservoir and is also found FS 2, FS3, FS 4, FS 5, FS 6, and SB 1. The reservoir on this interval is interpreted to have been deposited in a shallow inner to middle sublittoral environment. Based on hydrocarbon reserve calculations, the estimated gas in place is 10.52696 BSCF, and the oil in place is 23.11 MMSTB.

Keywords: carbonate reservoir, hydrocarbon reserves, static modelling, Upper Cibulakan