

GEOLOGI DAN PERHITUNGAN *ORIGINAL OIL IN PLACE RESEVOIR*
“SAND G-12”, FORMASI GUMAI, LAPANGAN “GAFA”,
SUB-CEKUNGAN JAMBI, SUMATERA SELATAN

SARI

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Objek penelitian yaitu Lapangan “GAFA” yang merupakan salah satu lapangan eksplorasi milik *PetroChina Jabung Ltd International Company in Indonesia*, termasuk kedalam Sub-Cekungan Jambi, Sumatera Selatan. Analisa yang dilakukan dalam penelitian ini adalah untuk mengetahui keadaan bawah permukaan dengan metode mendistribusi beberapa properti serta menghitung besarnya harga total *Original Oil In Place Reservoir* pada Lapisan *Sand G-12*, Formasi Gumai, Lapangan “GAFA”, dengan menggunakan 10 data log sumur, 3D seismik, dan *mudlog*.

Berdasarkan hasil analisa data log sumur pada Lapisan *Sand G-12* diperoleh litologi berupa *sand* dan *shaly sand* dengan analisa elektrofases bahwa reservoir Lapisan *Sand G-12* merupakan endapan fasies *prodelta*. Korelasi log sumur dan seismik 3D yang didukung dengan geologi regional daerah telitian memberikan interpretasi bahwa struktur yang mengontrol Lapisan *Sand G-12* adalah antiklin dan sesar naik yang berarah relative *Northwest-Southeast* (NW-SE) dan *Northeast-Southwest* (NE-SW) akibat fase kompresi (F3) pada Plio-Plistosen. Hasil distribusi petrofisika porositas dan permeabilitas bernilai besar berbanding lurus dengan nilai *VShale* dan saturasi air yang kecil dapat dikatakan bahwa hidrokarbon didaerah telitian dapat bergerak/mengalir.

Dari hasil perhitungan OOIP yang diperoleh dari 25 realisasi distribusi pemodelan properti berdasarkan perhitungan cadangan awal menggunakan analisa geostatistik dan kemudian di-*ranking* untuk persentil (P10) pada realisasi D-5 didapatkan harga sebesar 187 MSTB, persentil (P50) realisasi C-5 sebesar 202 MSTB, dan persentil (P90) realisasi D-3 sebesar 216 MSTB.

Kata Kunci : Formasi Gumai, Distribusi Pemodelan Properti, Analisa Geostatistik

**GEOLOGY AND ORIGINAL OIL IN PLACE RESERVOIR CALCULATION OF
“SAND G-12”, GUMAI FORMATION, “GAFA” FIELD,
JAMBI SUB-BASIN, SOUTH SUMATERA**

ABSTRACT

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The study object's "GAFA" field that one of exploration field owned by *PetroChina Jabung Ltd International Company in Indonesia* and included into Jambi Sub-basin, South Sumatera. Analysis conducted this study to determine of subsurface situation with using properties distribution method and calculated estimation Original Oil In Place total of reservoir "Sand G-12" layer, Gumai Formation, "GAFA" field, with using 10 well data, seismic 3D, and mud log.

Based on result well log data "Sand G-12" layer the lithology of sand and shaly sand which is electrofacies analysis obtained that it's reservoir form prodelta on the facies depositional. In the correlation well logs and seismic 3D supported with regional geology in the object study to give on interpretation that the geology structural have been controlled anticline and reverse fault with trend Northwest – Southeast and Northeast – Southwest which on compression phase effect of Pliosen – Plistosen ages. Result of petrophysical distribution which is porosity and permeability have been high score analysis directly proportional with Vshale and water saturation are low score analysis could be said that moveable indicated hydrocarbon in the study object area.

The result of Original Oil In Place calculation obtained from 25 realizations modeling properties distribution based on early estimate reserve calculate using geostatistic analysis and that ranking for percentil (P10) realizatioan of D-5 obtained reserve 187 MSTB, percentil (P50) realization of C-5 with reserve 202 MSTB, percentil (P90) realization of D-3 with reserve 216 MSTB.

Keywords : Gumai Formation, Modeling Property of Distribution, Geostatistic of Analysis