

Prediksi penyebaran reservoir dan volume cadangan studi kasus formasi Kampung Baru Kalimantan Timur, zona dangkal lapangan AAA = Reservoir distribution and volume predictions : case study kampung baru formation East Kalimantan shallow zone AAA field

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Abstrak

[Lapangan AAA merupakan salah satu lapangan gas terbesar di Indonesia. Karakteristik reservoir bagian dangkal lapangan ini berupa batuan pasir dengan lingkungan pengendapan fluvio deltaik berupa channel yang tebal dan diisi gas pada formasi Kampung Baru. Untuk pemetaan reservoir dan hidrocarbon di daerah ini, tidak dapat dilakukan dengan metode inversi akustik impedance (AI) karena pada kasus ini AI tidak dapat digunakan untuk memisahkan jenis litologi. Dari hasil analisa sensitivitas didapatkan informasi bahwa log densitas dan log Gamma Ray (GR) dapat digunakan untuk memisahkan lithology dan log Lamda-Rho (LR), VP/VS, Poison's Ratio (PR), Lamda/Mu (L/M) dapat digunakan untuk memisahkan fluida. Metode inversi simultan digunakan untuk menghitung atribut densitas dan LR dari seismik sehingga dapat diketahui sebaran litologi dan fluida pada daerah ini. Untuk selanjutnya hasil inversi tersebut digunakan dalam pemodelan geologi statik untuk menghitung cadangan. Hasil inversi simultan memperlihatkan ada dua daerah prospek yang besar yaitu pada daerah sumur 3A55 atau segmen AA dan daerah sumur 3G51 atau segmen G. Kedua prospek ini berada pada zona antara marker MFB-MF1 tepatnya pada zona A205 pada model statik yang telah di buat. Hasil perhitungan cadangan pada zona ini di dapatkan cadangan sebesar setengah dari total cadangan area yang di pelajari pada penelitian ini.;AAA field is one of the largest gas fields in Indonesia. Reservoir characteristics of the shallow part of this field are sandstone with depositional environment fluvio deltaik with thick channel and the gas filled formation of Kampung Baru. Reservoirs and hydrocarbon mapping in this area, cannot be done with an acoustic impedance inversion method (AI) because of the results of the sensitivity analysis AI cannot separate the existing lithology and fluid. From the results of the sensitivity analysis is also obtained information that the log density and log Gamma Ray (GR) can be used to separate lithology and log Lamda-Rho (LR), VP / VS, Poison's Ratio (PR), Lamda / Mu (L / M) can be used to separate the fluid. Simultaneous inversion method is used to calculate the density and LR attribute that can be known from this attribute the lithology and fluid distribution in this area. Then the result of the seismic attribute was used in geology static model building process for volume calculation purpose. Simultaneous inversion results shows that there are two major areas, namely the prospect area or segment of the 3A55 well areas or segment AA and 3G51 well areas or segment G. Both of these prospects located in the zone between the MFB-MF1 markers exactly on the A205 zone on static models that have been made. The result of calculation of reserves in this zone is half of the total reserves in this studied area, AAA field is one of the largest gas fields in Indonesia. Reservoir characteristics of the shallow part of this field are sandstone with depositional environment fluvio deltaik with thick channel and the gas filled formation of Kampung Baru. Reservoirs and

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