

INTISARI

IDENTIFIKASI PERSEBARAN RESERVOIR BATUPASIR FORMASI TALANGAKAR MENGGUNAKAN INVERSI IMPEDANSI AKUSTIK DAN MULTI ATRIBUT SEISMIK PADA LAPANGAN TULUS CEKUNGAN SUNDA

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Lapangan Tulus merupakan lapangan gas di Cekungan Sunda yang memiliki reservoir berupa batupasir Formasi Talangakar bagian atas. Formasi ini terendapkan dari lingkungan *fluvial-deltaic* yang berumur Oligosen. Untuk mengetahui persebaran reservoir batupasir tersebut maka dilakukan analisis inversi impedansi akustik dan multi atribut seismik. Analisis inversi dilakukan dengan metode berbasis model dan hasilnya digunakan sebagai atribut eksternal dalam analisis multi atribut. Analisis multi atribut bertujuan untuk mengetahui persebaran properti fisik berupa densitas dan porositas efektif. Data yang digunakan dalam penelitian ini berupa data seismik 3D *Post Stack Time Migration* dan lima buah data sumur. Berdasarkan hasil penelitian, didapatkan zona prospek reservoir batupasir pada Lapangan Tulus memiliki rentang nilai impedansi akustik berkisar 5000 (m/s)*(g/cc) hingga 7500 (m/s)*(g/cc), rentang nilai densitas berkisar 2.0 (g/c3) hingga 2.2 (g/c3), dan rentang nilai porositas efektif berkisar 0.23 (v/v) hingga 0.38 (v/v). Berdasarkan sifat fisik batuan hasil analisis inversi dan multi atribut, zona prospek hidrokarbon baru pada horizon GITA A mempunyai dua zona (A1 dan A2) dengan total *gas in place* sebesar 146.24 Bscf serta zona prospek hidrokarbon baru pada horizon GITA B sejumlah empat zona (B1, B2, B3, dan B4) dengan total *gas in place* sebesar 196.67 Bscf.

Kata kunci : Inversi impedansi akustik, Multi atribut seismik, Formasi Talangakar

ABSTRACT

IDENTIFICATION OF SANDSTONE RESERVOIR DISTRIBUTION USING ACOUSTIC IMPEDANCE INVERSION AND SEISMIC MULTI ATTRIBUTE IN TULUS FIELD TALANGAKAR FORMATION SUNDA BASIN

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Tulus field is a gas field in the Sunda Basin that has a reservoir in the form of sandstones of the upper Talangakar Formation. This formation was deposited in a fluvial-deltaic environment of Oligocene. To determine the distribution of the sandstone reservoir, acoustic impedance inversion analysis and multiattribute seismic were conducted. The inversion analysis was conducted using a model-based method and the results were used as external attributes in the multiattribute analysis. Multiattribute analysis aims to determine the distribution of physical properties in the form of density and effective porosity. The data used in this study are 3D seismic data Post Stack Time Migration and five well data. Based on the results of the study, it was found that the sandstone reservoir prospect zone in Tulus Field has acoustic impedance values ranging from 5000 (m/s)*(g/cc) to 7500 (m/s)*(g/cc), density values ranging from 2.0 (g/c³) to 2.2 (g/c³), and effective porosity values ranging from 0.23 (v/v) to 0.38 (v/v). Based on the physical properties of rocks from inversion and multiattribute analyses, the new hydrocarbon prospect zone in the GITA A horizon has two zones (A1 and A2) with total gas in place of 146,24 Bscf and the new hydrocarbon prospect zone in the GITA B horizon has four zones (B1, B2, B3, and B4) with total gas in place of 196,67 Bscf.

Keywords : Acoustic impedance inversion, Multiattribute seismic, Talangakar Formation