ABSTRAK

IDENTIFIKASI *CHANNEL* MENGGUNAKAN DEKOMPOSISI SPEKTRAL DAN ATRIBUT SEISMIK BERDASARKAN METODE *RGB BLENDING* (STUDI KASUS: CEKUNGAN BROWSE, BARATLAUT AUSTRALIA)

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Cekungan Browse adalah salah satu cekungan penghasil hidrokarbon yang terletak di Baratlaut Austalia yang hingga saat ini masih dilakukan eksplorasi dan eksploitasi. *Channel* merupakan sistem yang menarik dikembangkan di cekungan browse, namun untuk mendapatkan sebaran *channel* di cekungan browse cukup menantang. Pada penelitian ini, dekomposisi spektral dan atribut seismik berdasarkan metode *RGB blending* telah berhasil mengidentifikasi distribusi *channel* cekungan browse. *Software* yang digunakan adalah Paleoscan. Pengolahan dilakukan secara kualitatif dan kuantitatif. Pengolahan data diawali dengan dilakukannya *input* data seismik *default* ke dekomposisi spektral maupun seismik atribut. Peta *RGB blending* dekomposisi spektral diekstrasi dari 8 Hz sebagai frekuensi rendah, 17 Hz sebagai frekuensi menengah, dan 28 Hz sebagai frekuensi tinggi. Sedangkan untuk atribut seismik digunakan RMS amplitudo, *envelope, dan sweetness*. Dilakukan analisis *RGB blending* untuk mendapatkan pencitraan distribusi *channel* yang lebih baik dari dekomposisi spektral dan atribut seismik. Dari proses penelitian dan pebuatan konsep model yang dilakukan, didapati kenampakan *channel* pada peta *time slice* menjelaskan pesebaran *channel* cekungan browse diprediksi dari arah barat menuju arau timurlaut yang mana ini diperkuat dari data hasil ekstrak atribut RMS amplitudo, atribut *envelope* dan atribut *sweetness* dengan dekomposisi spektral rentang frekuensi 8 Hz – 28 Hz.

Kata Kunci: Cekungan Browse, *Channel*, Dekomposisi Spektral, Atribut Seismik, *RGB blending*

ABSTRACT

CHANNEL IDENTIFICATION USING SPECTRAL DECOMPOSITION AND SEISMIC ATTRIBUTES BASED ON THE RGB BLENDING METHOD (CASE STUDY: BROWSE BASIN, NORTHWEST AUSTRALIA)

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The Browse Basin is one of the hydrocarbon producing basins located in northwest Australia which is currently still being explored and exploited. Channels are an interesting system developed in the browse basin, but getting channel distribution in the browse basin is quite challenging. In this research, spectral decomposition and seismic attributes based on the RGB blending method have succeeded in identifying the distribution of browse basin channels. The software used is Paleoscan. Processing is carried out qualitatively and quantitatively. Data processing begins by inputting the default seismic data into spectral decomposition and seismic attributes. The RGB blending map of spectral decomposition is extracted from 8 Hz as low frequency, 17 Hz as medium frequency, and 28 Hz as high frequency. Meanwhile, for seismic attributes, RMS amplitude, envelope and sweetness are used. RGB blending analysis was carried out to obtain better channel distribution imaging from spectral decomposition and seismic attributes. From the research process and creation of the model concept carried out, it was found that the channel appearance on the time slice map explains the distribution of the browse basin channel which is predicted from the west to the north-east direction, which is strengthened from the data extracted from the RMS amplitude attribute, envelope attribute and sweetness attribute with range spectral decomposition frequency 8 Hz 28 Hz.

Keywords: Browse Basin, Channel, Spectral Decomposition , Seismic Attributes, RGB blending.