

## INTISARI

### **ANALISIS ATRIBUT SEISMIC DAN INVERSI SEISMIC *ACOUSTIC IMPEDANCE* UNTUK KARAKTERISASI RESERVOIR KARBONAT DI LAPANGAN “X” CEKUNGAN JAWA BARAT UTARA**

Abdul Hakim Prima Yuniarto  
15/392166/PPA/05038

Penelitian dengan data 2D seismik dan sumur yang digunakan pada metode analisis inversi seismik *acoustic impedance* (AI) dan analisis atribut seismik telah dilakukan di Lapangan “X” Cekungan Jawa Barat Utara. Penelitian ini bertujuan untuk memperoleh pola persebaran impedansi akustik pada reservoir karbonat dan menentukan zona prospek hidrokarbon pada daerah penelitian. Pola persebaran nilai impedansi akustik diperoleh dari proses inversi AI yang dilakukan pada 15 lintasan seismik 2D *post-stack* dan 2 sumur. Sedangkan identifikasi zona prospek hidrokarbon dilakukan dengan mengintegrasikan 4 peta yaitu peta *slice acoustic impedance*, peta *slice* atribut RMS amplitudo, peta *slice* atribut *envelope* dan peta *slice* atribut frekuensi sesaat. Berdasarkan hasil dari inversi seismik *acoustic impedance* diperoleh zona target reservoir pada Formasi Cibulakan Atas yaitu karbonat memiliki nilai AI tinggi dengan *range* sebesar 42.500-52.500 (ft/s)(g/cc). *Sandstone* memiliki nilai AI sedang dengan *range* sebesar 34.000-42.500 (ft/s)(g/cc) dan *shale* memiliki nilai AI rendah dengan *range* sebesar 21.000-34.000 (ft/s)(g/cc) yang berpotensi menjadi batuan tudung (seal). Sedangkan berdasarkan hasil dari analisis atribut seismik diperoleh zona prospek hidrokarbon berada pada sebelah timur laut dari lokasi sumur UGM-2 di lapangan “X” daerah penelitian.

Kata kunci: inversi seismik, *acoustic impedance*, atribut seismik, karbonat, karakterisasi reservoir, formasi cibulakan atas, cekungan jawa barat utara

## **ABSTRACT**

### **ANALYSIS OF SEISMIC ATTRIBUTES AND ACOUSTIC IMPEDANCE SEISMIC INVERSION FOR CHARACTERIZATION OF CARBONATE RESERVOIRS IN THE "X" FIELD NORTH WEST JAVA BASIN**

Abdul Hakim Prima Yuniarto  
15/392166/PPA/05038

*Research with 2D seismic and well data which used on acoustic impedance (AI) inversion and seismic attribute analysis method have been done in "X" Field at North West Java Basin. The objective of this research is to obtain the distribution pattern of acoustic impedance in the carbonate reservoir and to determine the hydrocarbon prospect zone in the research area. Distribution pattern of acoustic impedance value obtained from acoustic impedance inversion process which do on 15 2D post-stack seismic lines and 2 wells. While the identification of the hydrocarbon prospect zone is done by integrating 4 maps of the acoustic impedance slice map, the amplitude RMS attribute slice map, the envelope attribute slice map and the instantaneous frequency attribute slice map. Based on the result of acoustic impedance seismic inversion obtained the carbonate reservoir target zone on Upper Cibulakan Formation has a high AI value with range 42.500-52.500 (ft/s)(g/cc). Sandstone has a moderate AI value with range 34.000-42.500 (ft/s)(g/cc) and shale has a low AI value with range 21.000-34.000 (ft/s)(g/cc) which has potential to become a cap rock (seal). Meanwhile, based on the result of seismic attribute analysis obtained the hydrocarbon prospect zone is located in the northeast of UGM-2 well at the "X" Field of research area.*

*Keywords: seismic inversion, acoustic impedance, seismic attribute, carbonate, reservoir characterization, upper cibulakan formation, north west java basin*