

ABSTRACT

FLUID CONTENT ANALYZE TO DETERMINE THE CHARACTERISTICS OF THE RESERVOIR WITH THE INTEGRATION OF FLUID REPLACEMENT MODELING (FRM), AVO ATTRIBUTE AND ACOUSTIC IMPEDANCE INVERSION ON CISUBUH FORMATION, OFFSHORE NORTH WEST JAVA BASIN

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The reflection seismic method is a geophysical method used to analyze seismic waves for identifying reservoir characteristics, reservoir distribution, and analyzing reservoir fluid types. One of the indicators of hydrocarbon is indicated by the presence of a bright spot on the seismic cross-section. The content of fluid contained in the bright spot does not always indicate as the presence of gas but also contained brine. FRM (Fluid Replacement Modelling) is a reservoir fluid model types based on the data from well by substituting fluid types such as gas, oil, and brine. The integration of the gradient curves based on the synthetic seismic (FRM) and seismic reflection from the data measurement shows the detail of fluid contained in the bright spot. This is proven in seismic line 11056 targets 1 and 4 which shows the fluid content in the form of gas with AVO classification class 1, while those on targets 2, 3, 5, and 6 show the fluid content in form of brine. Class 1 AVO has a positive intercept (+) and a negative gradient (-) which shows a high impedance value, these are influenced by the presence of shale that fills the pores in sandstones. The distribution of porosity could be known in detail by showing a high impedance value on the acoustic impedance cross-section. The “Excellent” field is in the Cisubuh Formation which has a lithology in the form of sandstone and shale. That field has been proven as a gas content based on the Drill Steam Test (DST) on targets 1 and 4.

Key Words: *Amplitude Versus Offset, Fluid Replacement Modelling, Accoustic Impedance Inversion, High Impedance Reservoir.*