# Reservoir Characterization of 34-2 Sandstone Interval at Talang Akar Formation, Asri Basin

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## ABSTRACT

The understanding of reservoir characterization of core data through lithofacies, facies association analysis inline with petrophysical properties which acquired from laboratory measurement may aid to explain the problems occurred in the 34-2 sandstone interval. Based on core data analysis five reservoirs lithofacies and five other non-reservoirs lithofacies were found. Seismic methods are also used to discriminate reservoir through AVO analysis which showed phase reversal at around far angle of 30°.

The integration of core data and seismic analysis conclude that 34-2 sandstone interval consists of two facies associations, namely; fluvial-estuary and barrier bar sandstones which deposited in different time. Barrier bar facies association was deposited during transgressive phase with trend relatively west-east. The incised valley was formed and partly eroded barrier bar facies association due to sea level drop and deposited fluvial channel facies at the base then transgressive phase filled estuary channel deposit.

Further works were implemented to quantify reservoir quality of 34-2 sandstone interval through reservoir rock type evaluation. Rock Type is identified based on pore throat size through Windland R35 approach, which constrained by facies associations and controlled by lithofacies. Four RT are identified as (1) RT1 consist of St as very coarse-coarse through cross bedding sandstone and Sp as coarse-medium through planar bedding sandstone, (2) RT2 consist of Sh as medum-fine horizontal lamination sandstone (3) RT3 consist of Sf as fine-very fine flaser sandstone, and (4) RT4 consist of Sb as fine-coarse bioturbated sandstone. The reservoir quality series from good to poor are RT1, RT2, RT4, and RT3. 3D Reservoir characterization is done through modeling of facies, RT, porosity that controlled by RT, and permeability that controlled by RT and porosity. Barrier bar sandstone deposit is consist of four RT i.e; RT1, RT2, RT3, and RT4 meanwhile fluvial-estuary channel sandstone deposit is consist of three RT i.e; RT1, RT2, and RT3.