

Gas While Drilling (GWD) Classification in Betara Complex; An Effective Approachment to Optimize Future Candidate of Gumai Reservoir

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Abstract : Gumai Formation which acts as regional seal for Talang Akar Formation becomes one of the most prolific reservoir in South Sumatra Basin and the primary exploration target in this area. Marine conditions were eventually established during the continuation of transgression sequence leads an open marine facies deposition in Early Miocene. Marine clastic deposits where calcareous shales, claystone and siltstones interbedded with fine-grained calcareous and glauconitic sandstones are the domination of lithology which targeted as the hydrocarbon reservoir. All this time, the main objective of PetroChina's exploration and production in Betara area is only from Lower Talang Akar Formation. Successful testing in some exploration wells which flowed gas & condensate from Gumai Formation, opened the opportunity to optimize new reservoir objective in Betara area. Limitation of conventional wireline logs data in Gumai interval is generating technical challenge in term of geological approach. A utilization of Gas While Drilling indicator initiated with the objective to determine the next Gumai reservoir candidate which capable to increase Jabung hydrocarbon discoveries. This paper describes how Gas While Drilling indicator is processed to generate potential and non-potential zone by cut-off analysis. Validation which performed by correlation and comparison with well logs, Drill Stem Test (DST), and Reservoir Performance Monitor (RPM) data succeed to observe Gumai reservoir in Betara Complex. After we integrated all of data, we are able to generate a Betara Complex potential map and overlaid with reservoir characterization distribution as a part of risk assessment in term of potential zone presence. Mud log utilization and geophysical data information successfully covered the geological challenges in this study.

Keywords : Gumai, gas while drilling, classification, reservoir, potential

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