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Reconstruction last appearance fossil for carbonate reservoirs surrounding wrench fault zone of RMKS, Sakala Sub Basin East Java Basin, Indonesia

Mill Sartika Indah¹, M.Natsir¹, Fahyani Suwidianto¹, Bambang Parikesit² and Darwin Kadar³

¹Pertamina Upstream Technology Center, Indonesia

²Pertamina Hulu Energi ONWJ, Indonesia

³PT. LAPI ITB, Indonesia

Wrench fault zone of RMKS Time is one of the biggest fault zones which connected with distribution of the reservoir, trapping and migration success element for exploration oil and gas. Key factors during reconstruction of the biomarkers for Eocene-Pliocene Chronostratigraphy for carbonate reservoirs found within oil and gas fields near the regional RMKS fault zone. The timeline used within this research was represented by first appearance/last appearance fossil data such as planktonic foraminifera, benthic foraminifera, calcareous nano-fossils as well as pollens which are great time indicators as they are widely distributed and are found in shorter existence periods. Planktonic foraminifera and calcareous nano-fossils float freely in the water at a certain depth and have cosmopolitan distribution in which many of the species have a shorter period of existence, hence acting as excellent indicators for correlation. 13 correlation frameworks and 6 paleo environment maps within the interval of lower Oligocene – middle Miocene had been produced and is explained within this paper. Correlation of the northern part of West Java Basin comprises of 35 onshore wells, starting from TNG-1 in the west until AJW-1 in the east. Ten offshore wells were also used within the correlation and are located within Arjuna sub basin. Correlation was completed in mid-2013 and resulted in 11 trajectory paths and 4 depositional environment maps. Report regarding correlation of this basin is available at UTC. The correlation framework indicates a prominent thickening of sediments at a certain interval within several wells, such as well Arosbaya-1, Banyubang-1, Belimbing-1, Caluk-A, and Jepon-A. This is due to the continued activity of the fault as sedimentation progressed. The distinctive thick sediment, especially the claystone, will be important as both a source rock and seal for hydrocarbons. The correlation framework also indicates an unconformity within several wells of the project. It is found regionally within the area and is located between the Miocene Prupuh Member and Oligocene Upper Kujung Formation. The correlation framework shows a lateral distribution of limestones which consists of the middle Eocene – early Oligocene Ngimbang Formation/CD units, upper Oligocene Kujung formation, lower Miocene Prupuh member, N4 – N7, lower Miocene N8 – N10 Rancak member, middle – upper Miocene Bulu member, N12 – N15 and upper Miocene – Pliocene Paciran limestone member. This regional correlation framework may be used as a local reference within a field scale and systematic numbering of specific layers as potential hydrocarbons (management assets) within the whole area of the basin also as a control and reference for sequence boundaries and maximum flooding surfaces in exploration wells if regional correlation based on sequence stratigraphy/seismic stratigraphy is needed to be done. The maps are used to understand potential reservoirs through sedimentary grain sizes in which hydrocarbons accumulate, where is the carbonated reservoirs distributed and produce the great speculative potential area mapping and commercial value prospective resources.

Biography

Mill Sartika Indah has 12 experiences in Geologist Exploration for PT. Pertamina Persero (Present), Talisman Canadian Ltd and Halliburton Services Well logging. She has completed her Bachelor's Degree in Geologist from Gadjah Mada University and Master's in Geophysical Engineering from University of Indonesia.

mill.indah@pertamina.com

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