

New Insight on Tectonic of Central Java, Indonesia and Its Petroleum Implications

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Central Java, in the middle part of the Java Island, Indonesia, shows a conspicuous reentrants or indentation of its coastlines compared to those of western and eastern Java. This indentation is considered to express a wrench segmentation. Two major Paleogene strike-slip faults with opposing trends and slips are responsible for the indentation. The faults are called (1) the Muria-Kebumen Fault, left-lateral, trending southwest-northeast; and (2) the Pamanukan-Cilacap Fault, right-lateral, trending northwest-southeast.

The two faults caused significant geologic changes in Central Java. The faults caused : indentations of northern and southern coastlines, subsidence of North Central Java, uplift of the Serayu Range and exposure of the pre-Tertiary Luk Ulo melange complex, disappearance of the Southern Mountains of Java in southern Central Java due to subsidence, and northward shifting of the Quaternary volcanic arc in Central Java.

This new tectonic insight of Central Java gives reasoning why basins in Central Java are different with its counterparts in western and eastern Java and presenting where to look for possible petroleum possibilities in this area.