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CHRONOLOGY AND INTENSITY OF BARITO UPLIFTS, SOUTHEAST KALIMANTAN: A GEOCHEMICAL CONSTRAINT AND WINDOWS OF OPPORTUNITY

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ABSTRACT

Structural history of the Barito Basin during the Tertiary was marked by a great contrast in style. Extensional deformation was the prevailing style during the Paleogene. Regional uplift and compressional deformation reactivated old extensional structures starting in the Miocene and continuous up to the present time resulting in positive structures typifying the area today.

Examination of burial history curves of exploration wells in the basin reveals that there were five uplift events during the Tertiary : middle Eocene, early to middle Oligocene, late Oligocene to early Miocene (Oligo-Miocene), middle Miocene, and late Miocene to Pleistocene. The first two uplift episodes interrupted the prevailing Paleogene extensional deformation. The late Miocene to Pleistocene uplift was the major uplift event in the basin, consisting of about 1,200 meters of uplift. The Oligo - Miocene uplift was relatively minor, raising the basin about 50 meters.

Barito uplifts were closely associated with coeval structure-forming compressional deformation that resulted in structural traps. The late Miocene to Pleistocene uplift was a major event within which main generation of hydrocarbon, migration, trap formation and trap destruction took place. The current search for oil is concentrated analysis of this event. However, the early to middle Oligocene uplift might provide Paleogene structural traps which have been excluded from exploration consideration. Accurate understanding of chronology and intensity of basin uplifts can guide exploration effort as well as uncover new prospect possibilities.

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