

Petroleum System in the Central and Eastern part of the Mehsana Block, Cambay Basin, Gujarat, India.

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The Cambay Shale-Kalol (!) petroleum system in the eastern and central part of Mehsana block of Cambay basin contains fifteen oil and gas fields with 272.50 MMt in-place hydrocarbon reserve. The Tertiary sediments containing source, reservoir, seal and overburden rocks were deposited in a rift-setting. The Cambay Shale and dominantly arenaceous Kalol Formation form the main source and reservoir rocks respectively. Whereas, the Tarapur Shale forms the regional seal. However, thinner transgressive shales act as local seals in Kadi and Kalol Formations. The process of generation-migration-accumulation took place in Middle Miocene to Recent time, the critical moment being 7.0 Ma. Hydrocarbon expelled from the pods of active source rock has been calculated to be 550.27 MMt. A comparison of hydrocarbon generated to hydrocarbon in-place shows 49.5% efficiency for the system.