

Gondwana Sediments and Their Hydrocarbon Prospectivity in Dhansiri Valley- Assam&Assam Arakan Basin - India

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Dhansiri valley is a part of Assam and Assam-Arakan basin, which is an established petroleum province situated in the northeastern part of India. The major oil production of the basin is from Assam shelf which falls between two orogenic belts i.e. Himalaya in the north and Schuppen belt in southeast. A major E-W lineament (Jorhat Fault) divides Assam shelf into two parts; northern part is known as Brahmaputra valley (North Assam shelf) and southern part Dhansiri valley (South Assam Shelf).

The Precambrian basement forms base for the sedimentary rock, basal sand stone derived from the granitic basement forms the first sedimentary sequence over which Gondwana sediments (early Permian to Early cretaceous) have been deposited. These are uncomfortably covered by the Mikir trap which is also a interface between Tertiary and Pre-Tertiary sediments. The significant commercial oil and gas production in Dhansiri Valley are from Tertiary as well as Pre-Tertiary reservoirs. In Tertiary it is mostly from sandy layers within Bokobil (Miocene), Kopili & Sylhet Formations (Eocene) whereas in Pre-Tertiary the production is from Basal Sandstone and fractured Basement.

Although there had been hydrocarbon shows from Gondwana drilled section in few of the wells but gas bearing sand encountered in Gondwana section from East Lakhiwari well no-1 has generated lot of hope and interest for Gondwana hydrocarbon exploration in Dhansiri valley. In the study area, the Gondwana sediments are restricted in pre-existing graben and chasing these in grabens can be rewarding to meet gas requirement of the area.