Petroleum System Modelling of Assam Shelf (Northern part) and Naga-Schuppen belt in Assam & Assam Arakan Basin, India

H. J. Singh, Harvir Singh, S. K. Chakrabarti, M. S. Akhtar, S. Pahari, and R. K. Singh
pgk2007@gmail.com

Conclusion Preliminary analysis of the results of the simulation for the Geleki – Disang Thrust section suggests that at least four zones of oil generation i.e. Early Oil, Main Oil, Wet Gas and Dry Gas generating zones may be present in the sub-thrust part of the Schuppen. Besides, significant early oil generation is also indicated in the Nazira Low and the Gaurisagar Low south east of Panidihing within the Paleogene section. The foredeep sediments younger than Barail Gp. (Oligocene) are dominantly immature in character both within the thrust belt and in the foreland. Overall Transformation ratios are very high towards the east of the Disang Thrust. Several accumulations of wet gas and are indicated within the Tipams. Analysis of migration vectors for oil and gas suggests hydrocarbons have migrated from mainly the sub-thrust part of the Schuppen Belt and to a subordinate extent from the Nazira and Gaurisagar lows updip towards the foreland. Fault breakouts to surface are indicated in the Schuppen Belt, and this substantiates the observed oil seepages recorded by numerous authors within the Naga Imbricate Thrust Belt. 3D modeling corroborated the hydrocarbon generation and migration model as envisaged from 2D model in Geleki area (North Assam Shelf) The present work also substantiate the view-point that the main locale for the generation of hydrocarbons is within the subthrust part of the Schuppen Belt from where it has migrated up-dip towards the north-west to form the prolific oil fields of the Assam Shelf. Similar structures, if present below the sub-thrust, are likely to form significant accumulations.