# Analysis of Lows and their Implications for Additional Oil & Gas with in Mumbai High Field

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Mumbai High structure, formed on the western Indian shelf, situated in an average water depth of 75m. The field comprises of heterogeneous, thin multilayered carbonate reservoirs having variations in porosity and permeability. The principal reservoir is L-III carbonate sequence. However, apart from L-III, additional reservoirs like sand stone, basal clastics and basement rocks are also present in the field.

The three sets of major fault trends control the giant structure, which are NNW-SSE, the Dharwar trend, ENE-WSW, the Narmada trend, and NE-SW, the Aravalli trend as evident from the G&G studies. Most of the faults are parallel to sub-parallel to the main trends, were generated from the basement level with the exception of some of the faults restricted to shallower levels that do not penetrate to deeper levels indicating the neo tectonic activity. Three distinct lows, not so deep in nature, developed over the entire structure along the major trends during the fault activity. The size of the lows further decipher these are due to minor undulations or adjustments taken place during the up-liftment. These lows are important targets in the light of Hydrocarbon accumulation point of view.

Most part of Mumbai High has been probed through drilling for different layers, and some of the drilling taken place in the rising flanks of the lows also proved success. Thus, so far drilling has provided good understanding about the quality of facies in the lows. Hence, detailed analysis of the lows namely, southern, western and central is attempted using the Relative acoustic impedance (RAI) and porosity volumes and structure maps as these can address the heterogeneity and porosity distribution along with structural aspect. In this paper, we attempt to establish the role of rising flanks in looking for additional oil by establishing relation between the rising flanks and heterogeneous carbonate facies thereby identifying prospective locales.