

**Greenfield in a Brown field  
— a method to look for untapped potentials**

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The *Betty* field, within the prolific petroleum-bearing Baram Delta province, has been in production for more than 15 years. The prospective sequence is of Late Miocene age, fluviomarine inner-neritic environment. Static and Dynamic modeling have indicated that there could be more oil in place than initially assessed. Recent drilling

campaign on a slightly deeper satellite structure some 11 km east of the field yielded observable differences in hydrocarbon-water contacts apparently within the same sequence as that in the main *Betty* field. These observations suggest the possibility of stratigraphy trapping mechanism present in this geological setting.

The successes of a couple of wells at the eastern satellite of the main field prompted efforts to investigate the prospectivity and connectivity of the intermediate area between the main producing field and its eastern satellite structure.

Seismic data interpretation efforts commenced in tandem with fundamental reservoir characterization study. The reservoir characterization study was conducted using a Constrained Sparse-spike inversion technique incorporating available well information and the full fold stack seismic data to yield an acoustic impedance data volume.

Well curves calibration of the volume data value range identified a number of connected geo-bodies which are potentially hydrocarbon bearing along the flank of the *Betty* structure. These geo-bodies are not reached by any of the existing wells in the main field or the satellite structure to its east. The presence and shapes of these identified geo-bodies lend credence to the model of stratigraphic play in this deltaic environment. Following this phase of prospect identification further detail reservoir characterization work by means of multiple independent parameter interactions (such as  $V_p/V_s$  responses) would be necessary to increase the possibility of success and compute definitive volumetrics.