

### 3D Seismic Structural Interpretation of Carito Field, Venezuela

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The Carito field is located in the North Monagas trend, Eastern Venezuela. Hydrocarbon production is obtained from late Cretaceous to early Miocene sandstones. The aim of this work was to understand the general structural mechanism that created the Carito field in order to improve the pre-existing interpretation, as well as its implications in the reservoir characterization. The structural model was derived from 3-D post stack depth migrated seismic, Petrophysics, Reservoir engineering data, and well log information from 139 wells located within the area of investigation.

The Carito structure is an asymmetric fault bend fold anticline of 284 Km<sup>2</sup> that was produced by the Furrial thrust, whose age is early Miocene. It is laterally limited by structural saddles that are controlled by growth normal faults transverse to The Furrial thrust and contemporaneous with both the deposition of thick overlying shales of the Carapita Formation and the emplacement and the compressional folding of the Furrial thrust. Within the Carito anticline, there are normal faults striking E-W, which were originated by the Furrial folding, cut by NNW-SSE transverse normal faults that were formed concurrently with the saddles. In addition, the crest of the anticline contain imbrications located in the western and northern parts of the Carito field, and were produced by a Pliocene tectonic pulse associated to the Pirital thrust further north. As a result, the Carito field was compartmentalized into 4 different areas, each of which has minor compartments that have great influence in moving of fluids within reservoir.

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