

Shanghai Field, Expanded Upper Yegua Trend, Texas Gulf Coast: Unexpected Reserves Defined By 3-D Seismic

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A 3-D seismic survey resulted in efficient drainage of a previously unrecognized, 80-acre structure. The small downthrown closure/rollover lies on trend with 1980s production from Upper Yegua reservoirs at Shanghai Field, but was unrecognized on the existing dense 2-D grid. Migration of the structure with depth through four producing horizons required a highly directional borehole.

The Upper Yegua deltaic sandstones form a wedge that thickens into the controlling Shanghai Fault. The top of the wedge

(D-1) forms a series of downthrown closures that are transitional to rollover anticlines, with normal southward dip to the south. However, the base of the wedge (E-1) generally dips north into the fault, but is upturned into the main fault in various places, forming a series of "flaps." The D-1 highs overlies the E-1 flaps. Genesis of the structure involves differential movement along the fault plane - differential stickiness - during and after Upper Yegua deposition.