
Regional Scale Seismic Interpretation in the Gulf and Its Implication for the Understanding of the Khuff System

Herman Munsch, Total S.A, Pau, France, phone: +33 (0)5 59 83 41 90, hermann.munsch@total.com, Enzo Insalaco, Structural Geology, sedimentology and Geology Laboratory, Total S.A, Total, Avenue Larribau, Pau, France, and Marc Lescanne, DGEP/SCR/RD/PJ - MGR, TOTAL, CSTJF, Avenue Larribau, Pau, 64018, France.

The Permian-Triassic Khuff Formation is a major reservoir in the Middle East Gulf region and contains some of the world's biggest gas reserves. 130,000 km of 2D seismic (including 96.000 km of the "Persian Carpet" seismic covering most of the Iranian side of the Gulf) have been interpreted in order to:

- Establish a geotectonic framework for the Khuff system and evaluate the impact of pre-Khuff structuration on Khuff depositional patterns.
- Assess the post-depositional tectonic evolution at the plate-scale and evaluate its possible impact on structuration, fracturing, stratigraphic architecture and diagenetic evolution, at the production scale.
- Integrate structural observations and interpretations at the field scale (3D HR seismic, core data and image log data) with plate-scale features (regional scale seismic interpretation), and propose a tectonic calendar.

The hydrocarbon fields, which are located in different tectonic settings (including salt domes, horsts, folds of different ages, and draping over basement highs), display a remarkable coherence in structural features across interpretational scales. Hence there is a coherence from structural features identified on cores and image logs, to those of the 3D HR seismic interpretation, all the way through to structures mapped on the regional seismic at the plate-scale. This coherence of structural interpretations at all observational scales illustrates the importance of a large-scale regional framework to better understand the reservoir-scale structural features, and their possible impact on production.
