# Structural Evolution and Petroleum Systems of the, Hagfa (Marada) Trough; Central Sirte Basin, Libya
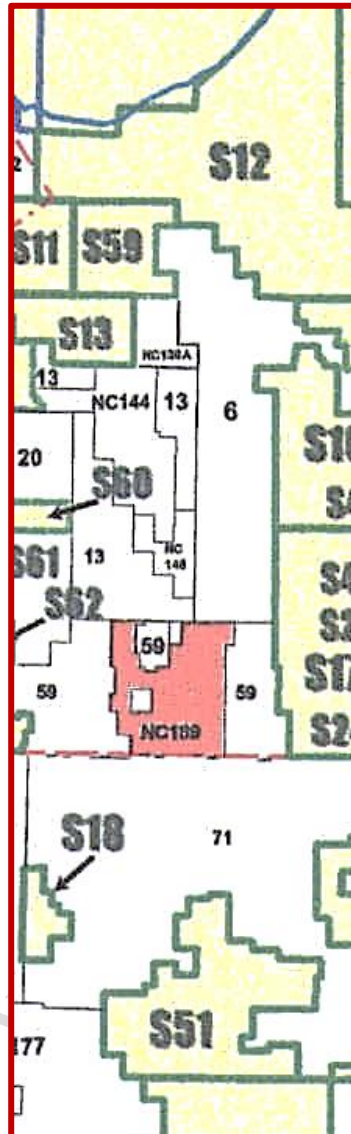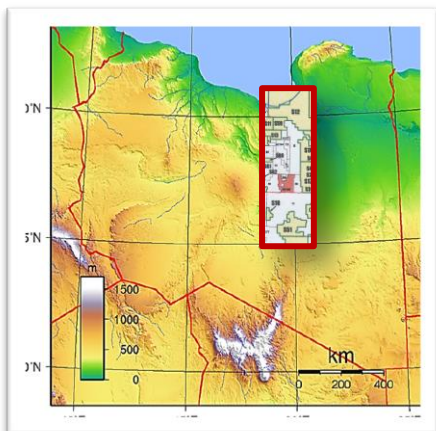
*Target Exploration Report Tar12*

## Summary

**This is a basin modeling of the petroleum systems and prospects generation report of the [Hagfa (Marada) Trough](#) in central Sirte Basin, Libya. The stages of basin evolution are illustrated by a series of paleo-structural maps of the Hagfa Trough and flanking highs. The report identifies the type, richness of the organic matter in the source rock facies, defines the times of source rocks maturation and hydrocarbons generation, and re-traces the paths of their hydrocarbon migrations up to present-day producing fields, discoveries and probable yet to be discovered traps in the delineated anomalies and prospects.**

## The Hagfa (Marada) Trough

The Hagfa Trough  is more than 300 Km long by 30-80 Km wide, NW-SE striking asymmetrical graben bound to the ENE by the Dor Marada-Zelten-Waha High, and to the WSW by the Etel Hinge Zone and the Ora-Beda High. The deeper eastern part of the trough accommodated more than 17,000 feet of post-Paleozoic sediments. The Hagfa Trough is a tectono-stratigraphic twin to the Ajdabia Trough of Sirte Basin where the prolific (4 Billion Bbls OIIP) Upper Palaeocene Intisar reef fairway discovered. Hitherto, exploration efforts failed to find similar prolific reefs in the correlative Zelten Formation in the Hagfa Trough.

## The Study

Space and chronology of source rocks maturation and directions of liquid and gas phases migrations from the source rocks to carrier and reservoir rocks in the Hagfa Trough were modeled in conjunction with the structural evolution of the multiple source, reservoir (including the Zelten A, B and C reservoirs, sealing rocks within and at the flanking highs of the trough. This study is in 19 pages of text and 14 Figures (incorporates 56 Maps, Cross-Sections, Cross-Plots and other illustrations) that delineates several closed structural anomalies and predict their reservoirs poro-permeability systems and hydrocarbon contents within the trough and at the flanking highs of this under explored sub basin of the prolific Sirte Basin of Libya.

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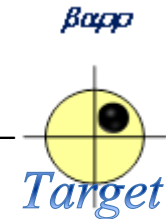
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