

## **Integrated Methodology to Reduce Uncertainties in Selection of Frac Zones in Source Rocks**

*Reda Tawfik,  
Canadian Petrophysical and Geomechanical Services (CANGEO)*

Vertical exploration wells were drilled in the source rocks of the Pre-Cambrian and Upper Cretaceous in order to establish the presence of recoverable light oil in the relatively tight formations, with lithologies ranging from carbonates/dolomites to silts and shales in the Pre-Cambrian and 100% carbonates in Upper Cretaceous. The objective of these wells is data gathering and testing to prove the existence, extent and commerciality of these plays.

The main challenge for this work is the relationship between presence of organic content and rock fracability, whereby the more organic content there is in the source rock, the less possibility to fracture it.

The present work documents the result of using the integration among Geomechanical, Petrophysical, Geochemical, Borehole Geology, Seismic Attributes, Acoustic Anisotropy and different core measurements in both horizontal and vertical directions to select the most suitable zones for hydraulic fracturing to assess the potential for commercial production of unconventional Light Tight Oil (LTO).