

Accepted Manuscript

Paleozoic oil/gas shale reservoirs in southern Tunisia: an overview

Mohamed Soua

PII: S1464-343X(14)00227-1

DOI: <http://dx.doi.org/10.1016/j.jafrearsci.2014.07.009>

Reference: AES 2099

To appear in: *African Earth Sciences*

Received Date: 25 April 2014

Revised Date: 3 July 2014

Accepted Date: 8 July 2014



Please cite this article as: Soua, M., Paleozoic oil/gas shale reservoirs in southern Tunisia: an overview, *African Earth Sciences* (2014), doi: <http://dx.doi.org/10.1016/j.jafrearsci.2014.07.009>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Paleozoic oil/gas shale reservoirs in southern Tunisia: an overview**Mohamed Soua***Entreprise Tunisienne d'Activités Pétrolières, 26 Rue Mohamed Badra, Immeuble Zouila, Montplaisir,**1001, Tunisa**elmohology@yahoo.fr***Abstract**

During these last years, considerable attention has been given to unconventional oil and gas shale in northern Africa where the most productive Paleozoic basins are located (e.g. Berkine, Illizi, Kufra, Murzuk, Tindouf, Ahnet, Oued Mya, Mouydir, etc). In most petroleum systems, which characterize these basins, the Silurian played the main role in hydrocarbon generation with two main 'hot' shale levels distributed in different locations (basins) and their deposition was restricted to the Rhuddanian (Llandovery : early Silurian) and the Ludlow-Pridoli (late Silurian). A third major hot shale level had been identified in the Frasnian (Upper Devonian). Southern Tunisia is characterized by three main Paleozoic sedimentary basins, which are from North to South, the southern Chotts, Jeffara and Berkine Basin. They are separated by a major roughly E-W trending lower Paleozoic structural high, which encompass the Mehrez-Oued Hamous uplift to the West (Algeria) and the Nefusa uplift to the East (Libya), passing by the Touggourt-Talemzane-PGA-Bou Namcha (TTPB) structure close to southern Tunisia. The forementioned major source rocks in southern Tunisia are defined by hot shales with elevated Gamma ray values often exceeding 1400 API (in Hayatt-1 well), deposited in deep water environments during short lived (c. 2 Ma) periods of anoxia. In the course of this review, thickness, distribution and maturity maps have been established for each hot shale level using data for more than 70 wells located in both Tunisia and Algeria. Mineralogical modeling was achieved using Spectral Gamma Ray data (U, Th, K), SopectroLith logs (to acquire data for Fe, Si and Ti) and Elemental capture Spectroscopy (ECS). The latter technique provided data for quartz, pyrite, carbonate, clay and Sulfur. In addition to this, the Gamma Ray (GR), Neutron Porosity (Φ_N), deep Resistivity (R_t) and Bulk Density (ρ_b) logs were used to model bulk mineralogy and lithology. Biostratigraphic and complete

Download English Version:

<https://daneshyari.com/en/article/6443786>

Download Persian Version:

<https://daneshyari.com/article/6443786>

[Daneshyari.com](https://daneshyari.com)