

AN OIL-SOURCE ROCK CORRELATION STUDY FROM THE SOUTH EAST OF CONSTANTINE REGION, NORTHERN ALGERIA

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The present study focuses on the molecular organic geochemistry, especially biological marker distributions of source extracts and as well as a tentative of an oil-source rock correlation in the South East Constantine region (Northern Algeria). The study area is situated in northern Algeria and bounded to the east by the Tunisian border, to the north by the high plains and to the south by the Sahara platform. This area contains several hydrocarbon accumulations, particularly in Djebel Onk, Guerguit El Kihal north and south, Ras Toubm regions.

This paper reports a study of an oil-source correlation involving 50 rock source rocks from Coniacian, Turonian, Cenomanian and Albian source rock and five oils from the south east Constantine region. From the bulk data of source rocks, there are some excellent Turonian to moderate Cenomanian, Albian and Coniacian source rocks.

Based on biological marker distributions, these source rocks appear to be of marine input constituted by a combination of algal and amorphous material (Aziez, 1992). Thus, these data reveal one group of oils, which were probably derived from source rock(s) of marine input and depositional environment. Based on maturity parameters, all these oils are mature but GKN-2 was probably generated at higher maturity than the other oils (Ten haven, 1992, 1993). These oils were probably originated by mature Turonian source rock.

The geochemical modelling shows that expulsion of hydrocarbons (oils) generated by the Turonian source rock in the South-Constantine region, started from Eocene (38–40 My) and continues until the present time.

The whole variations recovered on the nature and maturity of the source rocks as well as the hydrocarbon generation and expulsion, are the results of thermal and geodynamic activities happened in the South-Constantine region.

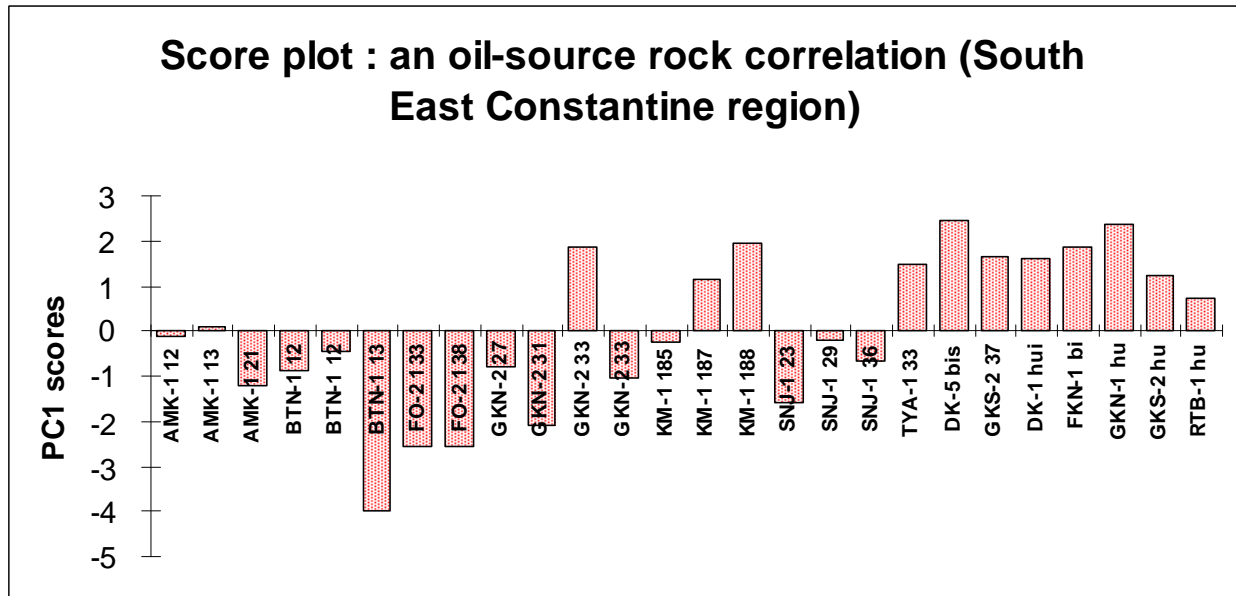


Figure 1. Shows an oil-source rock correlation (south east Constantine region).

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