Determination of Petroleum Potential of the Devonian-Silurian units in the Tethys Realm around the SE Turkey and Eastern Taurus areas

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The interested area is located in the Southeast of Anatolia, which way along the northern margin of the Arabian Plate of the Gondwanaland throughout the Paleozoic. Study area is principal oil-producing area of Turkey and comprises rock units from Cambrian to Miocene. These rock units are divided into two major groups: autochthonous rock units (Paleozoic and Mesozoic), and allochthonous rock units (Late Cretaceous and Early Tertiary). Of Petroleum produced, 70 % is obtained from Mesozoic autochthonous carbonate rocks. On the other hand, in some regions, important hydrocarbon source rock units encountered in the Paleozoic sequences, in some localities, minor oil and gas discoveries have been made in Devonian strata. In addition to well known Mesozoic carbonates, some intervals of Silurian and Devonian carbonates also display both hydrocarbon source rock and reservoir units.

Eastern Taurus region is relatively less studied than the Southeastern Anatolia. On the contrary of well documented studies from some oil companies, oil seeps that were occurred after an earthquake of Adana-Ceyhan in 1977 is determined by oil-source rock correlations as Lower Carboniferous and Upper Permian. However the temperature and depth of petroleum window and burial models reject Tertiary origin. Many investigators concluded that the Eastern Taurus region has promising potential source rocks in the Paleozoic succession. In this study, the origin of the oil seep will be discussed, geochemical analyses, determination of total sulphur content, thin section petrographic determinations and clay mineral analyses will be done on the samples collected from measured sections. Finally, data will be interpreted to get information about depositional conditions of potential hydrocarbon source rock units and thus, source rock potential of rock units will be determined.