

The Types and Characteristics of Source Rocks of Lacustrine Shale Oil in China

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Abstract

The source rocks of lacustrine shale oil in China can be generally divided into 3 different types based on the sedimentary environment and hydrocarbon generation capacity of source rocks. (1) Lamellar organic-rich algae shale, represented by the Chang 7 group of Triassic Yanchang Formation in Ordos Basin, mainly formed in the freshwater and half deep lake - deep lake, and widely distributed in sedimentary basin, the TOC are generally ranged from 5% to 20%, S1 + S2 from 12 mg/g to 75 mg/g; (2) Middle-high organic-rich shale, represented by Paleogene Shahejie Formation in Bohai Gulf Basin, mainly formed in the saline shore- shallow lake, the laminated shale and the dolomitic rocks are alternated, and it is distributed in the gentle bay, the TOC are generally ranged from 2% to 8%, S1 + S2 from 3 mg/g to 21 mg/g; (3) Low organic-rich mudstone, represented by Neogene and Paleogene Ganchaigou formation in Qaidam basin, mainly formed in the saline shore- shallow lake - half deep lake, TOC are generally low than 3%, S1 + S2 from 2mg/g to 5 mg/g.