

Hydrocarbon Accumulation in Three Different Types of Foreland Basins, Central and Western China

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The foreland basins in the central and western China can be divided into three different types, namely superimposed foreland basin (thrust belt), presenile foreland basin (thrust belt) and reformed foreland basin (thrust belt). Because the three kinds of foreland basins are different in the source rock, reservoir rock, caprock, accumulation time of hydrocarbon and the remolding of hydrocarbon reservoir after accumulation, the favorable exploration area in these foreland basins are also different.

The superimposed foreland basins are characterized by two types of source rocks deposited in the early foreland basin and fault-trough lake basin formed between two stages of foreland basin development, and the hydrocarbon in them accumulated in multi-stage, but mainly in late stage. The source rocks in presenile foreland basins were deposited during the foreland basin developing and the hydrocarbon accumulated mainly in early stage.

There is only one kind of source rock in reformed foreland basin, namely the lacustrine source rock deposited in fault-trough lake basin before the development of reformed foreland basin, and hydrocarbon mainly accumulated in late stage. The matching level of thrust belt and center of hydrocarbon-generation and the overlying caprocks always determine the exploration potential in these foreland thrust belts.