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Hydrocarbon resources Prediction in South Yellow Sea Basin Using Indosinian Unconformity

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South Yellow Sea is bounded by Shandong and Jiangsu Province to the west and Korean Peninsula to the East, and by North Yellow Sea to the North, by East China Sea to the South, covering an area of 30.9 million km². Tectonically, it consists of Qianliyan Uplift, Northern Sag, Middle Uplift, Southern Sag, and Wunansha Uplift, totally 5 structural units from north to south.

The hydrocarbon resources exploration in South Yellow Sea has experienced two stages since 1960's. That is the Tertiary exploration stage and the Pre-Tertiary exploration stage. Unfortunately, up to now, none of the two stages have made significant progress.

Jiangsu Oil Field was first found in 1975, and now is mainly in Subei Basin between Shandong Peninsula and Fujian Province, covering an area of 20 million km². After more than 30 years of exploration, two types of depositional system, 2 layers of sand reserves, and 3 layers of oil source rocks were founded in the basin, and 45% of hydrocarbon reserves are proved up to now. In recent years, annual crude oil production reaches 200 million

tons.

Tectonically, Subei Basin and south Yellow Sea Basin are both belong to Subei- South Yellow Sea Basin, which is the main party of lower Yangzi Block. However, comparing to the mature stage of hydrocarbon exploration of Subei Basin, the South Yellow Sea basin is only on a stage of primary exploration with 2D seismic line density of 8×8km, and total exploration well number of 24 (6 from Korean side) on an total area of 20 million km².

Considering of a same basin structure and different degree of exploration, this paper give a hydrocarbon resources prediction in South Yellow Sea Basin using Indosinian unconformity based on the analysis of tectonic, sequence stratigraphy, history of deposition, activity of volcanoes and more.

Key words: South Yellow Sea, Subei Basin, Indosinian Unconformity, Hydrocarbon Prospect, Prediction

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