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**The Discovery and Understanding of Deep Gas in Nanpu Sag, Bohai Bay Basin — Take  
Deep Tight Sandstone Gas Reservoirs in Shahejie Formation as Example**

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Bohai Bay Basin is a rich oil and poor gas basin as is well-known. So far, hundreds of oil fields and only a few gas fields have been found. But the new discovery of natural gas in Nanpu Sag, which located in the north of Bohai Bay Basin, maybe change the saying of poor gas basin.

Industrial gas was found in Nanpu5-xx well while drilling the Paleogene in the Beipu structural belt of Nanpu Sag in 2008. In the well, We test sandstone reservoir (258.2m/50layers) by acid of the long open hole, access to the commercial gas of  $14 \times 10^4 \text{m}^3/\text{d}$ . Hydrocarbon showing of the other wells is also well, and also acquired low yield gas in this structural belt. The main types of gas reservoirs is condensate gas reservoir. The natural gas genetic types is the kerogen-cracking gas. and the primarily types of source rocks is II<sub>1</sub> type. In these wells, the reservoir of natural gas which been drilled mainly is tight sandstone - a kind of unconventional natural gas reservoir. These sandstone reservoir are mainly distributed in 4000-5000m and thickness is about 1.4-10.7 meter, porosity is 3.4-16%, an average of porosity is 9.1%, penetration is  $1.3-9.5 \times 10^{-3} \mu\text{m}^2$ .

In the deep of Nanpu sag, there is rich of sandstone, which is interbedded with mature source rock. Accumulation combination of reservoir-seal is good. In Examples and understanding of exploration in Nanpu Sag shows exploration potential of deep gas in Bohai Bay basin(Fig. 1).

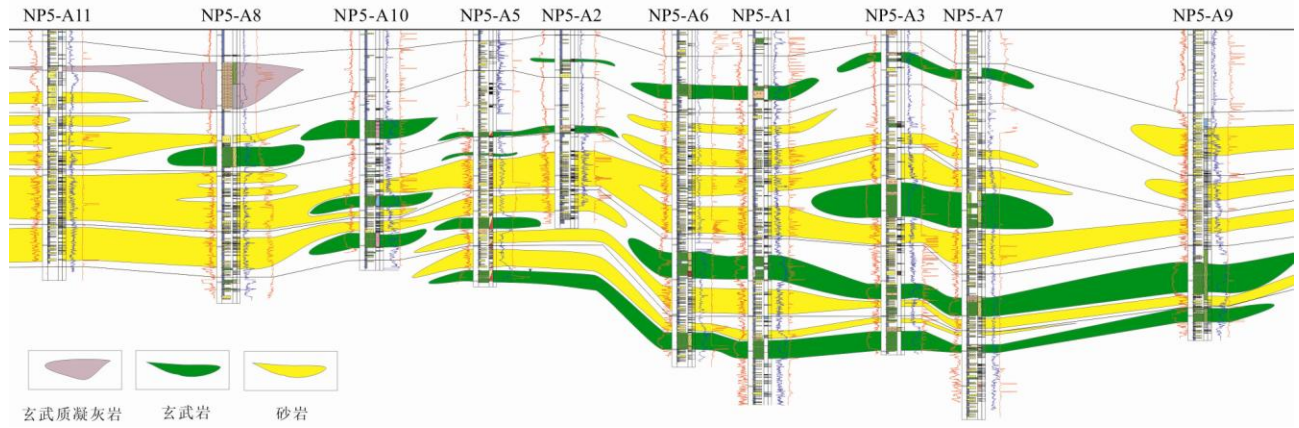


Fig. 1 Deep tight sandstone gas reservoirs in Shahejie Formation