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## Reservoir characterization of typical tight gas in China

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After more than 10 years of tight gas development practice and technical research, China has successfully solved the technical problems of tight gas development, and it has become the most important contributor to China's natural gas production. Due to the strong heterogeneity of the tight gas reservoir, reserves producing degree and recovery rate is low, it needs more fine geological guidance to solve these problems, so the reservoir characterization of tight gas is crucial. This paper takes the Sulige gas field (the largest gas field in china) as a case study, because of its low abundance and strong heterogeneity, it is challenging for large scale commercial development of this field. Therefore, it is necessary to study the basic characteristics of effective reservoir and first of all, looking for sweet spots is currently the priority. Comprehensive geological study confirmed that the reservoirs with coarse grain, high content of quartz are more easily lead to dissolution which is the most constructive diagenesis in Sulige gas field and the dissolved pores are almost the basis of high quality reservoirs. So the sweet spots are located in the coarse grained sand bodies with high content quartz and these sand bodies are mainly distributed in the lower part of the channel deposits and channel bar deposits. Now the answer is obvious, predicting channels especially the main river channels distribution is the key to search for sweet spots. Through seismic and geological study, first set up the typical log and seismic response characteristics of different types of sands, then carry out sedimentary facies, diagenesis, reservoir evaluation study and so on, finally simulate the channel development. On the base of the geological models, we can predict the sweet spots distribution. This technology has been applied in many blocks of Sulige gas field, the proportion of higher effective wells drilled in the past 5 years increased by a big margin.

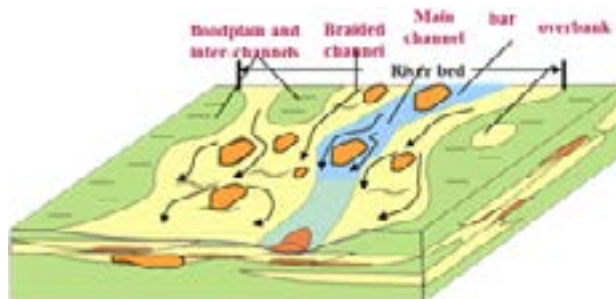


Fig: Sedimentary model of He in Sulige

### Biography

Guo Jianlin has received his BS degree in Petroleum Geology from the China University of Geoscience and his MS and PhD degrees from Research Institute of Petroleum Exploration and Development (RIPED), Beijing, China. From 1998, he has worked in the areas of oil and gas geology, reservoir modeling and engineering. He is currently a Senior Engineer in the Department of Ordos E&P, RIPED, working mainly on gas development.

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