

PANG Shouji, ZHU Youhai, SU Xin, WANG Pingkang and HE Hao, 2013. Relationship between Tectonic Characteristics and Distribution of Gas Hydrate in Permafrost of Qilian Mountain, China. *Acta Geologica Sinica* (English Edition), 87(supp.): 1000.

Relationship between Tectonic Characteristics and Distribution of Gas Hydrate in Permafrost of Qilian Mountain, China

PANG Shouji¹, ZHU Youhai¹, SU Xin², WANG Pingkang¹ and HE Hao²

1 Oil and Gas Survey, China Geological Survey, Beijing 100029, China

2 China University of Geosciences, Beijing 100083, China

As a new potential alternative sources of energy in 21st century, gas hydrate (GH) has been studied wide on gas hydrate occurrence, lithology particle size, porosity, permeability of sediment bearing GH and the relation between gas hydrate reservoir and thickness of permafrost layer in permafrost regions, previously. With further research, scientists have realized the importance of tectonic activities and sedimentation controlling to gas hydrate distribution, recently. However, the research still remained rather weak.

In this article, the effect of tectonic activities and sedimentation on gas hydrate is studied on gas hydrate exploration of Qilian Mountain permafrost in China, based on the systematic and detailed stratum description of five cores bearing gas hydrate, and comprehensive analysis of particle size, fault fracture zone and permafrost properties.

Listed below are several results and acknowledgements which are acquired: (1) With cores analysing, faults and broken zones identifying, three results was obtained: (a) gas hydrate reservoir are principally controlled by regional main faults which are flow conduits for deep gas source; (b) other small faults and broken zones provide fluids partly and storage space for gas hydrate; (c) the source of gas mainly consists of deeper thermogenic gas. (2) Gas hydrate reservoir, found in the permafrost regions of Qilian Mountain, is not only controlled by permafrost thickness, but also related with permafrost lithology, such as particularly coal-bearing and low permeability stratum being beneficial “craprock”.

Key words: gas hydrate, tectonic characteristics, permafrost, Qilian Mountain

* Corresponding author. E-mail: psj0409@163.com