

The enrichment regularity and main controlling factors of hydrocarbon in different types of slope tectonic belt

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Abstract: Going through depression tectonic units of different conditions of reservoir and cap, trap and conducting research, explore the different tectonic units of the difference of neogene hydrocarbon accumulation conditions, summarize its main controlling factors. Research shows that oil and gas in the study area are first along for vertical migration of oil source faults, sand body lateral migration along, but have certain differences in different tectonic unit. The slope zone of slope and HeXiWu tectonic belt vertical migration distance is shorter, fracture of oil and gas mainly ACTS as vertical adjustment. The slope zone of slope and HeXiWu tectonic belt is given priority to with sand body lateral migration, lateral migration distance is longer, strata for oil and gas enrichment is relatively single, oil and gas in zonal distribution.

Keywords: tectonic units; vertical adjustment; HeXiWu tectonic belt.

INTRODUCTION

Hebei central oil-rich sag is refers to the hebei central depression of oil and gas resources, effective exploration and development, oil and gas resource potential is still large RaoYang sag, Ba County sag and gallery sag. Based on control fault depression lake basin tectonic evolution characteristics of sediment accumulation and hydrocarbon enrichment rule, going further to oil-rich sag are divided into the central uplift belt of oil and gas zones structural belt type slope belt and sub-sags belt [1-3]. Based on an slope belt Wenan and HeXiWu fault belt as an example, through analyzing the reservoir geological elements, combined with physical simulation experiment, clarify different types of tectonic belt, the main controlling factors of hydrocarbon accumulation in the reveal of oil and gas enrichment regularity, establish hydrocarbon accumulation pattern, provide theoretical guidance for oil and gas exploration.

The Oil and gas distribution regularity of slope zone

Wen 'an slope and HeXiWu tectonic belt are mainly sand body lateral migration of oil and gas, oil and gas enrichment in fracture density, be late static fracture reservoir. Beam deer in the slope belt mainly on vertical migration of oil and gas, oil and gas main concentration in the dense zone near the boundary faults. To go through the long distance migration of oil and gas to fracture density, reverse faulting barrier formed by fault block reservoir. Plane, oil and gas show "block zoning" the characteristics of distribution, and controlled by the fault effect is obvious [2]. Wen 'an slope enrichment of oil and gas mainly in four nose-like structure belt, HeXiWu struc

tural belt of oil and gas enrichment of oil and gas mainly in the broken base with nuclear department.

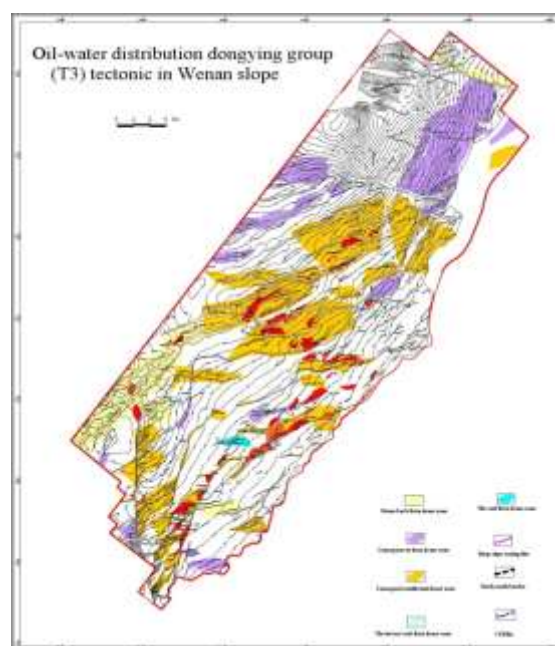


Fig-1: the traps, oil source faults, migration path and the hydrocarbon distribution of Wenan tectonic belt

The regularity anatomy of the typical reservoir in slope zone

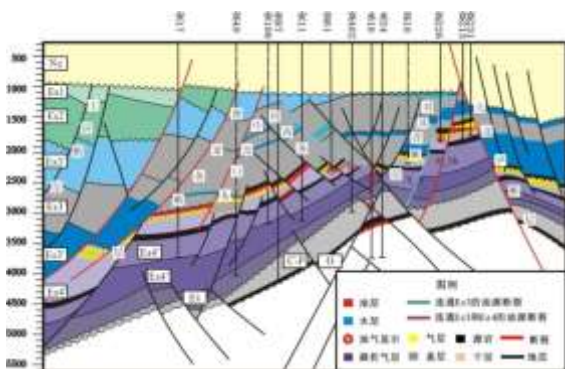


Fig-2: the hydrocarbon distribution of HeXiWu tectonic belt

HeXiWu belt is located in the southwest HeXiWu tectonic belt, west barrier for a controlled by the north east tend to fracture of the buried hill fracture tectonic belt. Lack of structure zone affected by the convex uplift NiuTuo town to dongying group on three section. Fracture development, mainly for almost anything and north east direction of the two groups of faults and the late tectonic movement derived from secondary small faults (figure 2). As shown in figure 11, nearly east-west Ann 17 - Beijing 231 Wells reservoir profile across HeXiWu base belt, west reservoir fine dissection showed that plane, enrichment of oil and gas mainly in base with inclined core subject and broken in tilting fault block [3-5]; Vertical HeXiWu west base with major oil and gas enrichment in ES4s, reservoir types is given priority to with fault nose and fault block. Reservoir fine dissection showed that sand and sand source rock under three part of oil and gas generated by cao home, big north Yin communication source rocks and long-term activities such as fracture adjusted upward supremacy by each set of reservoir, the part in the north west to the consequent fault under the action of the Es3x source rocks and E4s, reservoir under E3Z regional cap rock, the reverse fault [6].

History of an area is broken nose is located in the slope, as a controlled by the north east tend to fracture of the buried hill fracture tectonic belt. As shown in figure 12 [7], almost an east-west section 1 - Sue 74 Wells reservoir area is broken nose, across the history of reservoir fine dissection showed that plane, oil and gas enrichment the fracture density within main ridge, a nearly east-west belt distribution, the distribution is small; History of vertical, khar nose with major oil and gas enrichment in the Ed, Es1, reservoir types is given priority to with fault nose and fault block. Reservoir fine dissection showed that three Ba County subsags generated oil and gas along the sand, sand sandstone member 2 of conducting layer or unconformity long-distance lateral migration towards the high slope area,

were conducting fracture gradually while lateral migration in vertical adjustment to the Ed, Ng.

CONCLUSION

After reservoir fine dissecting found, oil and gas in the study area are all along for vertical migration of oil source faults, sand body lateral migration along, but have certain differences in different tectonic unit. Vertical migration channels: uplift area big LiuQuan tectonic belt and chu tectonic belt is given priority to with vertical migration of oil source faults, vertical migration distance is longer, split horizon is more, oil and gas from Ek, near the oil source faults, a toothbrush longitudinal vein, covered on the plane. An slope zone of slope and HeXiWu tectonic belt vertical migration distance is shorter, main vertical adjustment of the role of oil and gas lateral migration pathway uplift area big LiuQuan tectonic belt and chu tectonic belt is given priority to with short distance lateral migration of sand body, an slope zone of slope and HeXiWu tectonic belt is given priority to with sand body lateral migration, lateral migration distance is longer, the enrichment of oil and gas layer is relatively single, oil and gas in zonal distribution.

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