

The Main Controlling Factors of Hydrocarbon Accumulation in Present Research Situation

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Abstract: In this paper, the current methods of reservoir exploration and theoretical point of view, based on core dates, logging, logging and seismic data, analyzed the structure characteristics and sedimentary system. The integrated use of theories of petroleum geology, sequence stratigraphy, sedimentology and other seismic analysis of hydrocarbon enrichment patterns, and divided by a typical reservoir analysis, the establishment of a major hydrocarbon accumulation mode. The paper discusses the main controlling factor.

Keywords: Characteristics of hydrocarbon accumulation, Accumulation conditions, the main Controlling Factors, Sedimentary characteristics.

INTRODUCTION

Found reservoirs are the ultimate goal of oil and gas exploration, and reservoir is the core of petroleum geology study [1]. Research reservoir formation process, summarize oil-gas reservoir in time and space distribution rule and the main control factors, not only can guide the practice of oil and gas exploration activities directly, but it is also the core issue of petroleum geology theory [2]. Since oil industry produces, the hydrocarbon accumulation mechanism research has always been the core content of petroleum geology.

ACCUMULATION CONDITIONS

Source rocks conditions

Hydrocarbon source rock is rich in organic matter, a large number of generation and discharge of oil and gas hydrocarbon of rock [3]. In the oil and gas accumulation conditions, the hydrocarbon source rock is the most basic conditions, is also the essential conditions of hydrocarbon accumulation, no hydrocarbon source rocks, not the production of oil and gas, so even though the other oil and gas accumulation conditions and how to the right place, right time, it is impossible to form oil and gas reservoirs. Through the development and distribution of hydrocarbon source rocks in the study area, the type of organic matter abundance, organic matter and organic matter maturity, we analyze the research Accumulation conditions and evaluation, help us to better understand the environment of oil and gas in the study area.

Cap rock conditions

Cap rock is refers to the above the reservoir to the packer reservoir and the oil and gas can't up the

protective layer of dissipation. According to the scope of the occurrence and distribution of caprock, the size of the cover layer can be divided into two categories, regional cap rocks and regional cap rocks [4]. Regional caprock distribution range and distribution of continuous, under the condition of without destroying the integrity of the cover, the source rock generated oil and gas can't through the cover, make its gathered in its reservoir formation, regional cap rocks for oil and gas accumulation horizon has an important influence. And local cover only controls the small range of the hydrocarbon accumulation.

Migration conditions

According to the analysis result, the green among rock formation of oil and gas can be gathered in the putaohua reservoir Gu Long Na area, oil and gas migration mechanism can be divided into two categories: (1) the vertical migration of oil and gas, which hydrocarbons are generated from the green among the rocks along the vertical migration of oil source faults to putaohua reservoir; (2) the lateral migration of oil and gas, oil and gas powered by buoyancy, in putaohua oil layer to construct high lateral migration.

Primary migration is the migration of oil and gas from hydrocarbon source rock to reservoir [5], migration is the main form: under the effect of buoyancy of qingshankou formation source rocks along the putaohua reservoir fracture passage upward migration as shown in figure 1.

Primary migration, its migration direction and formation to vertical, is one of the primary migrations

of oil and gas. In vertical migration needs to meet two conditions: (1) hydrocarbon source rock and hydrocarbon generation ability in effective hydrocarbon expulsion range; (2) development forum was black among rocks with the vertical putaohua reservoir oil. Predecessors' research suggests that the study area is in effect within the scope of hydrocarbon expulsion,

putaohua reservoir fracture development, quite a few broken down in qingshankou formation source rocks, and hydrocarbon expulsion stage of resurrection in large-scale oil and gas, can be used as a conducting channel of oil and gas, green among rock formation of oil and gas vertical migration to putaohua reservoir.

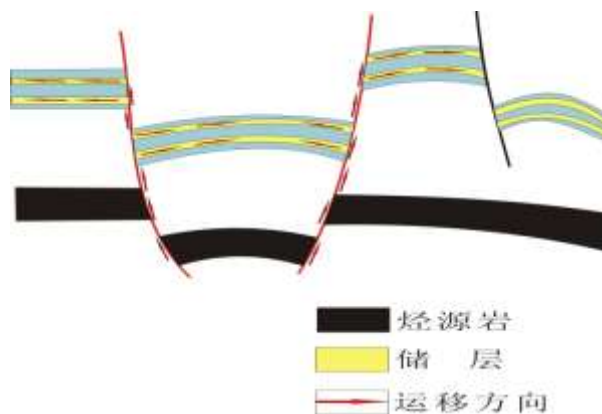


Fig-1: Hydrocarbon primary migration pattern

Trap conditions

Trap is which can stop the oil and gas migration and gathering places, is the foundation of the reservoir formation [6]. Trap depends on the basic characteristics of the reservoir forming conditions; trap type determines the type of reservoir and exploration methods. , therefore, is beneficial to oil and gas accumulation of trap, identify and correct selection of oil and gas exploration is of great significance, is to open the underground reservoirs treasure, find the key to reservoir. This shade condition can be caused by deformation of the formation such as anticline, fault, may also be due to the reservoir along updip direction is covered by the permeable formation unconformity, and along the direction of updip pinchout or reservoir physical property variation and cause [7].

Oil reservoir type

In this study, through to the oil and water in single well and the well profile analysis of spatial relations,

combined with the regional tectonic background and plane distribution sand body, reference oil physical property, composition feature and reservoir physical property, etc., finally determined comprehensively putaohua oil layer of the main reservoir types in the study area.

ACCUMULATION PATTERN

Hydrocarbon accumulation rule is the core content of petroleum geological research, the hydrocarbon generation of source rock oil and gas migration to the appropriate place together to form reservoirs, become a direct target of oil and gas exploration, the target is the trap. This section describes research the main types of reservoir: fault - lithologic reservoir. In oil and water distribution and analysis based on the hydrocarbon accumulation conditions, think purpose layer in the study area belongs to laying on the main reservoir, fault block on delivery, fault and lithology accumulation modeas shown in figure 2.

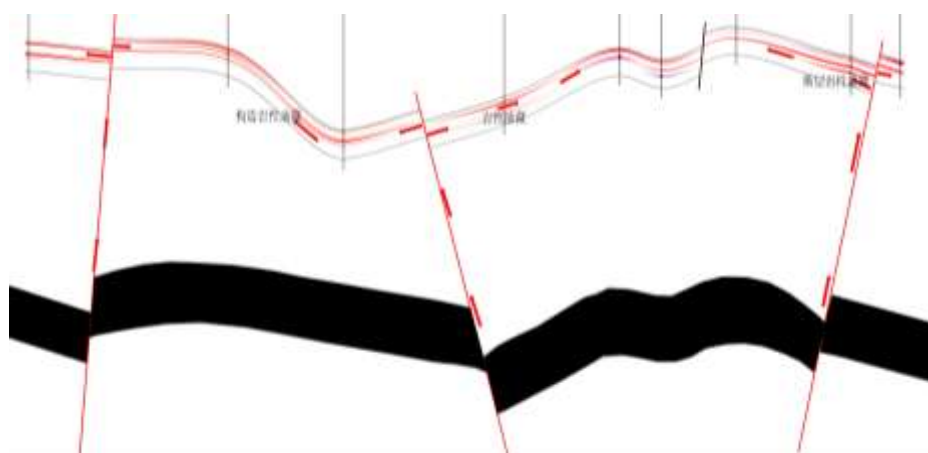


Fig-2: Lying on the store, fault on delivery, fault and lithologic shade accumulation pattern

THE MAIN CONTROLLING FACTORS OF HYDROCARBON ACCUMULATION

According to the theory of hydrocarbon accumulation, oil and gas accumulation conditions mainly including birth, reservoir and cap, circle, transport, six basic elements [8]. But in the process of the formation of oil and gas, due to various areas in tectonic encountered in the process of development of different, the influence of the external and internal cause accumulation elements in the process of hydrocarbon accumulation, the hydrocarbon accumulation contribution degree also each have differences, the contribution of some factors on hydrocarbon accumulation process, is the indispensable factor, others contribution value is less, or can be ignored directly, the degree of contribution to the study area big factor, is conducive to the distribution of hydrocarbon accumulation in the studied area can have a better understanding of, to have important guiding significance to oil and gas exploration.

CONCLUSIONS

(1) Shallow-water delta front subfacies of underwater distributary channel and the main body to form high quality reservoirs for oil and gas enrichment sand sheet.

(2) Oil source faults as conducting system controls vertical migration of oil and gas, the reservoir sand bodies control the lateral migration of oil and gas, small faults for secondary migration of oil and gas migration channel.

(3) Effective trap accumulation, lithologic trap, fault and lithology, development of lithologic trap; Structural trap with nasal structure uplift, fault reverse fault trap and reverse transformation is characterized with favorable oil enrichment.

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