塔中北斜坡致密碳酸盐岩盖层特征及其控油气作用

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Characteristics of tight carbonate cap rock and its control on hydrocarbon accumulation in the north slope of Tazhong uplift

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摘要 塔中北斜坡鹰山组发育大型海相碳酸盐岩凝析气藏,其上部盖层为良里塔格组3-5段的致密碳酸盐岩。在平面上,这套盖层基本上覆盖整个塔中北斜坡;在剖面上,致密灰岩呈块状分布,叠置相连,从而封闭下部鹰山组中的油气。通过对良3～5段致密碳酸盐岩盖层的岩性、厚度以及泥质含量几方面特征的分析,总结它们的分布规律及其与油气的关系,进而探讨影响塔中北斜坡这套致密灰岩盖层封闭性的主要因素。其中重点分析了致密灰岩盖层厚度和泥质含量对油气分布的控制作用,结果显示塔中北斜坡良里塔格组的致密灰岩盖层厚度达到80 m,泥质含量的自然伽马测井响应值达到20API即可以有效的封闭油气,厚度和泥质含量在影响油气封闭性方面具有互补关系。

关键词： 封闭性 盖层 致密碳酸盐岩 良里塔格组 鹰山组 塔中北斜坡

Abstract： Large marine carbonate condensate gas reservoirs occur in the Yingshan Formation in the north slope of Tazhong uplift and their cap rock is tight carbonates in the 3rd-5th member of Lianglitage Formation.The carbonates are distributed widely in the whole north slope of Tazhong uplift,which is massive and is superimposed vertically and connected laterally,sealing the hydrocarbons in the underlying Yingshan Formaiton.Based on analyses of lithology,thickness and clay content of the tight carbonates,we summarized their distribution patterns and relationships with hydrocarbon accumulation and discussed the control of their thickness and clay content on oil/gas distribution.The study shows that the tight carbonate cap rock in the north slope of Tazhong uplift may be efficient seals when its thickness is equal to or more than 80 m and its clay content GR value is over 20 API,Thickness and clay content can complement each other for sealing capacity.

Keywords： sealing capacity cap rock tight carbonate rock Lianglitage Formation Yingshan Formation the north slop of Tazhong uplift

Received 2011-01-20;

Fund:

国家自然科学基金项目(41072102);中国石油塔里木油田"塔中地区奥陶系碳酸盐岩油气成藏关键事件研究"项目。

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