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塔里木盆地塔北地区具有寒武系特征原油的分布及其成因

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摘要:

塔里木盆地塔北地区油气资源十分丰富,油气成因复杂。海相原油主要来自于寒武系或奥陶系烃源岩,或者二者混源。其中,对混源油定性研究多、定量研究少。随着勘探的深入和精细,需要定量回答油气的混源比例。本文根据不同端元油的人工混源配比实验,发现生物标志化合物具有随混源比例变化的特征,建立了混源比例与生标参数之间的关系式,并对塔北地区混源油中寒武系原油比例做了定量计算,进而研究了其分布规律与成因机制。研究认为,塔北地区原油主要来自于中、上奥陶统烃源岩,寒武系烃源岩有少量贡献。从空间分布上来看,具有从西到东、从浅至深,混源油中寒武系烃源岩来源的原油比例具有逐渐增高的特点,高比例寒武系来源原油的混源油主要分布在轮南低凸起的桑塔木断垒带东侧和轮东断裂周围,明显受烃源岩分布、输导体系和成藏过程等因素控制,该研究对进一步认识塔北地区油气生成、运移、聚集规律,以及指导油气勘探都具有重要意义。

英文摘要:

The Tabei area of Tarim Basin has abundant oil and gas resources in with complex origin. The marine oil was mainly from Cambrian or Ordovician hydrocarbon source rock, or the mixture of both. There was much qualitative examination but less quantitative investigation in this field. The quantitative examination of mixing ratio was needed with the exploration in depth. In this paper, according to the artificial mixing ratio experiment of diffraction origin, it's showed the biomarker was relative to the mixing ratio. The relation between mixing ratio and biomarker was established. The mixing ratio of mixing oil in Tabei area was quantitatively calculated, as well as the occurrence and generation mechanism. It could be presumed that, the oil of Tabei area was mainly from Middle and Upper Ordovician, less from Cambrian. The proportion of oil generated from Cambrian source rock was mainly increasing in the direction of W to E and superficial to deep, which along East Sangtamu fault and East Lundong fault has the highest proportion. It was obviously controlled by the hydrocarbon source rock distribution, migration pathway and accumulation process. This research was significant for the further research of hydrocarbon generation, migration and accumulation, and will be guidable for exploration activity.

关键词: [混源油](#) [定量研究](#) [寒武系](#) [塔北地区](#) [塔里木盆地](#)

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