

## 欧利坨子火山岩油藏原油特征及成因分析

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中文摘要:火山活动可能对烃源岩的演化过程产生重要影响.通过对欧利坨子原油地球化学特征的研究,发现原油性质的差异同储集层与火山口的相对位置有着密切的关系,在火山口附近的粗面岩储集层中,原油的饱和烃及其单体碳同位素值偏轻,类异戊二烯烃的碳同位素负异常基本消失,原油的CPI和OEP值较低(平均为1.21和1.06).虽然火山岩储集层中油气显示良好,有多口井获得工业油流,但油藏的开发效果差别较大.研究表明,火山活动对火山口附近烃源岩的影响不可忽视,在埋藏深度相对较浅的粗面岩储层中,主要富集了未熟或低熟烃源岩因火山作用而快速

中文关键词:火山岩 原油 生物标志物 碳同位素 辽河盆地

## Characteristics and Genetic Analysis of Crude Oil in the Volcanic Reservoir of Oulituozi Area

**Abstract:** Volcanic activities might exert important effects on the evolution of oil sources. In this paper, the authors studied geochemical characteristics of oil in Oulituozi area of Liaohe Oilfield, and demonstrated that different distances between the reservoirs and the crater may result in different geochemical properties of crude oil. The stable carbon isotopes of saturated hydrocarbon and specific compound composition of the oil from the trachyte near the crater are relatively low, and the negative anomalies of the isoprenoids disappear. The oil has lower values of CPI and OEP, with the averages being 1.26 and 1.06, respectively. There are good indications of oil and gas in volcanic reservoirs, and commercial oil flows can be obtained in some wells. Nevertheless, there exist great differences in the development results of these reservoirs. The influence that volcanic activities impact upon the sources near the crater cannot be ignored. The relatively shallow volcanic reservoirs were mainly filled with oil generated rapidly from interactions between the volcanic activities and the sources. The deep volcanic reservoirs, which were affected by volcanism and also filled with non-conventional oil and gas, contained oil generated by the sources which experienced normal evolutions.


**keywords:** [volcanic rocks](#) [crude oil](#) [biological marker](#) [stable carbon isotope](#) [Liaohe Basin](#)

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