
欠平衡钻井技术

摘要

欠平衡钻井也称为负压钻井，该项技术始于上世纪五六十年代。目前，国内外欠平衡钻井的井数每年都在增加。应用欠平衡钻井技术，其中压差控制技术非常关键，尤其是井下压力和地面压力需要严格控制，精细处理。控制不得当，如压差过大，会使井下情况变复杂，但如果压差太小，就无法实现欠平衡。所以欠平衡钻井的应用研究已成为当今世界石油公司和石油科研单位研究的一个高频点。

本文在系统总结欠平衡钻井技术的概念，类型和发展趋势上，对欠平衡钻井工艺技术、欠平衡钻井的钻井液技术、欠平衡钻井设备等进行研究。最后以某地区欠平衡钻井为例，阐明了在此过程中需要解决的问题。本文对于保护油气层，降低钻井失败率，降低钻井成本等具有重要意义。

关键词：欠平衡钻井；钻井液；压差控制

Abstract

In the 1950s and 1960s a well-balanced drilling began, also known as negative pressure drilling. Currently, the number of drilling holes in Germany and abroad increases with each year. When using an unbalanced drilling technique, the key to the abnormal pressure differential control technology is needed, A faulty control, such as an excessive pressure differential, makes the situation in the pit more complex, but if the pressure differential is too small, it cannot be achieved in balance. Therefore, research on the application of the mine is not possible. from unbalanced drilling to a high frequency point in the research of oil companies and research institutes in the world.

This paper systematically summarises the concept, nature and development trend of unbalanced drilling techniques and examines unbalanced drilling techniques, drilling fluid technology and unbalanced drilling equipment. This paper is of great importance for the protection of the oil and gas container, the reduction of drilling salts and the cost of drilling.

Key words: Underbalanced drilling; drilling fluid; differential pressure control

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