
适用于大庆油田 B 区块的钻井液体系

摘要

石油作为工业的“血液”，不仅是一种不可再生的商品，更是国家生存和发展不可或缺的战略资源，对保障国家经济和社会发展以及国防安全有着不可估量的作用。随着油田不断的被发现开采，储层的污染问题逐年增加，造成的产量下降，储层污染问题的问题迫在眉睫。

本篇论文以大庆油田 B 区块的储层为研究背景，分析各种油层伤害机理和规律。通过检测钻井液膨胀性、流变性，得出了岩心渗透率受两种钻井液的影响程度，找出了储层的污染源，为解决储层的污染问题给出了实际依据。根据工作液的特点，研制出适合现场实际的钻井液、完井液。通过该体系的复配实验、抑制性等方面进行研究，提出优化方案，从而得到适合于大庆油田 B 区块的钻井液、完井液体系。

关键词：储层污染与保护 油层伤害机理 工作液 岩心渗透率

Abstract

As the "blood" of industry, oil is not only a non-renewable commodity, but also an indispensable strategic resource for the survival and development of the country, which plays an inestimable role in ensuring the economic and social development of the country and the security of national defense. With the continuous discovery and exploitation of oil fields, the problem of reservoir pollution is increasing year by year, resulting in a decrease in production, and the problem of reservoir pollution is imminent.

Based on the reservoir in B block of Daqing Oilfield, the mechanism and law of reservoir damage are analyzed. By testing the dilatancy and rheology of drilling fluid, the influence degree of core permeability by two kinds of drilling fluid is obtained, the pollution source of reservoir is found out, and the practical basis is given to solve the pollution problem of reservoir. According to the characteristics of working fluid, drilling fluid and completion fluid suitable for the field are developed. Based on the research of compound experiment and inhibition, the optimization scheme is put forward to obtain drilling fluid and completion fluid system suitable for B block of Daqing Oilfield.

Key words: reservoir pollution and reservoir damage protection mechanism
working fluid core permeability

目 录

第 1 章 绪论	1
1.1 研究目的及意义	1
1.2 国内外研究现状	2
1.3 研究内容	3
第 2 章 油气层伤害机理分析	4
2.1 油气层伤害研究	4
2.1.1 微粒运移与流体因素	4
2.1.2 化学反应与水化膨胀因素	5
2.1.3 有机垢与无机垢堵塞	5
2.1.4 细菌与外来固相堵塞	5
2.2 产生伤害的油层工艺过程	6
2.2.1 钻井与固井	6
2.2.3 射孔完井损害与防护	6
2.2.4 生产过程与油井作业	7
第 3 章 钻井液、完井液对油气层的伤害	8
3.1 分析室内配制钻井液的性能	8
3.1.1 确定钻井液体系	8
3.1.2 流变性的测定	8
3.1.3 滚动回收实验	9
3.1.4 静态膨胀实验	10
3.1.5 在不同浸泡时间下两种钻井液体系对岩心渗透率的影响	11
3.2 油层受现场钻井液、完井液的危害评价	14
3.2.1 钻井液性能的评价	14
3.2.2 岩芯渗透率受钻井液的影响	14

以上内容仅为本文档的试下载部分，为可阅读页数的一半内容。

如要下载或阅读全文，请访问：

<https://d.book118.com/075004002144011313>