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龙岗礁滩气藏气井产能预测新方法

邓惠,冯曦，杨学锋，樊怀才，李明秋，王颂夏，刘光耀

A New Method of Predicting Gas Wells Deliverability in Longgang Reef Gas Reservoir

DENG Hui，FENG Xi，YANG Xue-feng，FAN Huai-cai,LI Ming-qiu，WANG Song-xia，LIU Guang-yao

摘要/Abstract

摘要：

龙岗礁滩气藏具有高温、高压、高含硫、非均质性强和气水关系复杂等特征，其测试成本高、安全风险大，很难全面开展正规产能测试，而常规“一点法”计算的气井产能（无阻流量）误差较大。为此，通过分析α值对该气藏气井无阻流量计算结果的敏感性，利用部分气井正规产能测试资料和地层参数，绘制了α值与地层有效渗透率和有效储层厚度的关系图版，建立了适合于求取该气藏各气井“一点法”产能公式的新方法。通过实例计算，该方法能够较为准确地预测气井产能，从而实现在气藏产能测试不全面的情况下对气井产能进行准确简便评价的目的。

关键词: 礁滩气藏, 单点测试, 地层系数, 产能方程, 新方法

Abstract:

Longgang reef gas reservoir is characterized by high temperature,high pressure,high sulfur content,great heterogeneity and complicated gas-water relation,which is hard to carry out standard deliverability testing for the whole reservoir in virtue of high cost and security risk.The deliverability (absolute open flow capacity) of gas well which is usually calculated by conventional one-point deliverability formula may have remarkable great errors in calculation.Therefore,by analyzing the sensitivity of the absolute open flow capacity against α value,the test data and formation parameters of gas wells,which have taken standard productivity testing,are used to draw the chart of α value versus formation effective permeability and effective thickness.Meanwhile a new method of one-point deliverability formula is established to calculate the absolute open flow capacity of gas wells.This method is reliable via calculation of concrete examples,and can be used to evaluate gas well productivity without carrying out normal productivity testing on a large scale.

Key words: Reef reservoir, Single point test, Formation conductivity, Productivity equation, New method

中图分类号:

TE348

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地址： 甘肃省兰州市天水中路8号 (730000)

电话：(0931)8277790 Email: geogas@lzb.ac.cn