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开发工程

苏里格气田苏五区块天然气动态储量的计算

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摘要：

运用气藏开发动态资料，选取与气藏相适应的计算方法就能准确地确定其动态储量，故而筛选不同气藏的动态储量计算方法十分重要。为此，针对鄂尔多斯盆地苏里格低渗透强非均质性气田的生产动态特征，在动态资料不断补充和丰富的基础上，综合运用压降分析法、弹性二相法、广义物质平衡法、不稳定生产拟合法、递减曲线分析法等方法对苏里格气田的可动储量进行了对比计算，分析了各种方法的适应性以及计算结果的可靠性。结论认为，苏5区块宜采用压降法和不稳定生产拟合法计算其天然气动态储量，Ⅰ类井平均单井动态储量为2 936×10^4 m^3，Ⅱ类井平均平均单井动态储量为1 355×10^4 m^3，Ⅲ类井平均单井动态储量仅为981×10^4 m^3。所得结果对苏里格气田开发中后期调整方案的制定以及气藏产能的评价具有参考价值。

关键词： 鄂尔多斯盆地 苏里格气田 苏五区块 低渗透储集层 非均质性 动态储量 计算方法 开发中后期 调整方案

Calculation of dynamic gas reserves in Block SU 5 of the Sulige Gas Field

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Abstract:

The dynamic reserves of a gas reservoir can be determined by use of the dynamic data of the reservoir and the correct calculation method appropriate for it. Therefore, it is significant to carefully screen out the dynamic reserve calculation methods for different gas reservoirs. Taking into account the characteristics of low permeability and strong heterogeneity of the Sulige Gas Field, Ordos Basin, this paper, with the dynamic data continually improved, integrates multiple methods including pressure drop analysis, elastic two phase method, generalized material balancing, unstable production fitting and recession curve analysis to calculate the recoverable reserves of the Sulige Gas Field. The applicability of each method and the reliability of the results from the calculations are analyzed therein. According to the analysis, pressure drop analysis and unstable production fitting should be employed for the studied gas block. The calculated results of average single well dynamic reserves are 2936×10^4 m^3 for the type I wells, 1355×10^4 m^3 for the type II wells, and only 981×10^4 m^3 for the type III wells. It is proved that these results are supportive for the preparation of the later period development plan of the Sulige Gas Field, as well as for the assessment of the gas reservoir production capacity.

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