

集输工程

长庆气区开发模式及地面配套工艺技术

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摘要:

长庆气区包括靖边气田、榆林气田及苏里格气田, 属低渗透率、低丰度、中低产、大面积复合连片整装气区, 开发难度较大。为此, 结合不同区块的地质特性、气质特点及试采情况, 遵循安全、高效、简单、先进、实用的原则, 探索出适合长庆气区不同区块特点的3大开发工艺模式(靖边模式、榆林模式、苏里格模式)及12项地面配套工艺技术(多井高压集气、多井高压集中注醇、多井集中加热节流、周期性间歇计量、小型橇装脱水、低温高效聚结分离、小型高效设备应用、井下节流、井口湿气带液计量、常温分离中低压湿气输送、二级增压和气田数字化管理工艺技术), 提高了地面建设水平, 简化了工艺流程, 降低了工程投资。10多年的生产运行证明: 上述12项地面配套工艺技术经济、可靠, 保障了长庆气区的经济高效开发, 是同类型气藏开发工艺设计借鉴的典范。

关键词: [长庆气区](#) [低渗透率](#) [低丰度](#) [中低产](#) [开发模式](#) [地面工艺](#) [配套技术](#) [评价](#)

Development mode and surface supporting technology in the Changqing gas zone

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Abstract:

The Changqing gas zone, including the Jingbian, Yulin, and Sulige fields, is a composite uncompartmentalized gas field with low permeability, low abundance, medium low production, a large area, and great difficulty in development. Based on the geologic features and pre production situation of different blocks, as well as the principles of safety, high efficiency, simplicity, advancement and practicability, the paper discusses three development process modes (Jingbian mode, Yulin mode and Sulige mode) and 12 surface supporting processes which are suitable for different blocks. The 12 surface supporting processes are high pressure gas gathering of multiple wells, centralized high pressure methanol injection of multiple wells, centralized heating and throttling of multiple wells, periodic metering, small scale skid mounted dehydration, high efficiency low temperature coalescing separation, application of small scale high efficiency facilities, downhole throttling, wet gas metering at well heads, wet gas transmission under low medium pressure and atmospheric temperature, two level pressure boosting, and gas field digital management process. All the above mentioned processes have boosted the surface construction level, simplified the process flow, and reduced the project investments. Successful field production and operation for more than one decade has demonstrated that those surface supporting processes are economical and credible, ensuring the high efficient development of the Changqing gas zone, which provides a good example for operators to develop those similar gas reservoirs.

Keywords:

收稿日期 修回日期 网络版发布日期

DOI: 10.3787/j.issn.1000-0976.2010.02.027

基金项目:

通讯作者:

作者简介:

作者Email:

参考文献:

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