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Cost effective and optimized production completion technique for gas well

A well completion is an integrated set of equipment and components that has been specifically designed to produce hydrocarbons from a particular reservoir as cost-effectively and safely as possible. Well completion is a very challenging job, because it is not that easy to select an appropriate completion design according to the reservoir characteristics without compromising on safety and economics of the well. As main objective of completion design is the completion should be the simplest as possible, in order to maximize productivity and minimize initial capital cost.

In a conventional well completion it is not possible to keep design so simple because it contains a number of completion equipment. These equipment cause major pressure drop in completion string due to their different internal diameters and make the completion more expensive particularly for the marginal wells. Monobore completion is solution to this problem. The well can be completed with the constant ID's throughout the tubing string. This would minimize the pressure drop and consequently improve productivity. Its simple design reduce the number of completion equipment like SSD, nipples etc. also minimize initial capital cost of completion.

This paper presents the modeling of both monobore and conventional completion designs using PROSPER software. Based on the comparative analysis, the productivity of well was found optimum with monobore completion than conventional. The conventional well produce 33MMscf/day and production of monobore is 35MMscf/day. Frictional pressure drop in completion string is also reduced from 1005psi to 917psi. Hence, it is concluded that monobore completion is suitable for gas wells in order extend its life and to reduce the overall cost of completion.

Keywords: Completion, Monobore, Pressure drop.

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