

عنوان مقاله:

Impact of Deviation from Vertical Direction on Pressure Drop in Advanced Wells

محل انتشار:

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نویسندگان:

Ahmed Zoeir - *M.Sc. Petroleum Reservoir student in Sahand University of Technology*

Mahdi Sadri - *M.Sc. in Reservoir Engineering from Department of Petroleum Engineering at Shiraz University*

Mohammad Reza Malayeri - *professor of Chemical Eng, head of department of Petroleum Eng, Shiraz University*

خلاصه مقاله:

In many instances, advanced wells are preferred over vertical ones to enhance production of oil or gas from reservoirs. Investigating the effect of well deviation from vertical to inclined direction on pressure drop would help to reliably assess the production rate under such circumstances. While gravitational pressure drop is the dominant component of total pressure drop in many vertical oil/gas two phase flows, frictional pressure drop becomes appreciable in nearly horizontal directions especially for high gas hold-ups. In this work, several cases of oil and gas flow through different directional paths were simulated using OLGA7. The results show that in complex wells with gas lifting facilities, up to 40% of pressure drop is due to deviation of well from vertical direction such that even gas lifting would not lead to noticeable increased production. In submarine pipelines which carry gas condensate or volatile oil, though the pressure drop due to deviation is not insignificant thus the position of offshore platform must carefully be optimized to minimize the total pressure drop. Other results show that in multilateral wells drilled in order to reach maximum contact between main well and reservoir, the pressure drop in system of laterals may become 3 or 4 times greater than when using multi perforation completion system only in one vertical well.

کلمات کلیدی:

Advanced well, Complex well, Directional drilling, Multilateral well, Two-phase flow pressure drop

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