

Comparison of critical rate correlations

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Abstract

© Research India Publications. Water coning is a term used to describe the upward movement of water into the perforations of a producing well. This phenomenon can also be described as a steady and usually sharp displacement of some or all the oil production by the bottom water when the critical withdrawal rate from the well is exceeded. Water coning may lead to several serious problems. There may be loss in total recovery. Water coning is a usual problem that is faced by petroleum engineers in reservoirs having an aquifer, particularly at the bottom. The critical rate is the subject discussed mostly in the studies on water coning. This paper presents a simulation study using RUBIS, a subprogram of ECRIN. Some correlations for critical rate are analyzed and their results are compared with those from RUBIS. For reasonable comparison, parameters in the simulation program are set so that the assumptions used in correlations could be met.

Keywords

Breakthrough time, Crest, Critical rate, Ecrin, Rubis, Stimulation, Water coning