

Assessing Aquifer Capacity for SAGD Development

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Abstract

It has become of high interest in steam assisted gravity drainage (SAGD) to know how much water is an aquifer capable of producing and how dependable its production will be with time. Aquifer capacity is determined by Transmissivity (T) as derived from pumping tests. Although the aquifer testing theory provides analytical solutions to estimate T , data collected for interpretation may be negatively impacted by well efficiency, a quality-indicator of well completion. Thus, a close approximation of aquifer capacity – a reliable T – can only be derived by testing highly efficient wells. This assessment was initiated to investigate aquifer capability of delivering water for SAGD schemes. The results show that average geometric mean Transmissivity was $103 \text{ m}^2/\text{day}$, which is an indication of a prolific aquifer. Average Q_{20} rate was $619 \text{ m}^3/\text{day}$.

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