

Estimating the Impact of Microholes on Economy & Environment Via Geo Mechanical Simulation

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Abstract

Geo-mechanics has always been a challenge during drilling process. It has also been a common observation that 40% of the over-all capex is given away during drilling process. Moreover, it also damages the land mass at large, loads of drill cuttings are generated from subsurface which are disposed on the earth surface, simply affecting the topography. Even, drilling does not prove to be successful in various cases as most of the exploratory wells are found to be dry this issue requires an ultimate solution. A well known technology called microhole drilling has been introduced to cope up with such concern. No doubt, all these specifications are achieved with the help of micro instrumentation.

This study reflects the estimation of all the solids as wastes that are generated during the drilling process and imparts the environmental destruction. Microhole has been used effectively so far to hit the wells up to 700ft. Further, serious drilling issues are encountered but with the help of micro instrumentation it can be taken up to 5000ft or even farther. The main aspect that was found during the study that is microholes are drilled with the help of coiled tubing rig which consumes less disturbance area. In order to prove the metal of this technology a geo mechanical simulator is developed and model of microhole is even built on the developed software. The specifications and lithology of lowergoru reservoir coordinates were used as input. Later, the results were compared to evaluate the recommended technology to avoid environmental issues and optimize the drilling program.