

The Slant on Hay - Part 1: History, Earning and Learning

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ABSTRACT

Discovered in 1984, the Hay Bluesky oil field only began production in 2000. Successful development of the Hay Bluesky field required detailed study of rock properties, fluid properties, fluid contacts and the application of horizontal well technology. Production was limited by seasonal access and a remote location, so accurate reservoir modelling was invaluable for project design.

Initial drilling indicated apparent variation in oil-water contacts of up to 9 meters. Test production rates were low with a rapid increase in watercut. With the collapse of oil prices in 1986, the play became unattractive and the play remained dormant for many years.

The play was revived with a new operator in 1994, after an independent geologist showed the existence of a widespread vertical permeability barrier in the reservoir. A horizontal well drilled in 1995 improved oil production rates but soon had increasing watercut and a rising GOR. Disappointed, the operator offered a farm-out to Canadian Occidental (now Nexen).

In 1997, non-damaging vertical wells were drilled to evaluate production potential. Appraisal wells increased the estimated OOIP to 135 MMbbls and proved the existence of a gas cap. Reservoir properties were determined through special core analysis. A detailed reservoir segment model was built and used to plan horizontal wells.