

SAGD Start up at Suncor Firebag Project

S.K. Das* and L. Sullivan

Suncor Energy Inc., 112 - 4th Avenue S.W. Calgary, AB T3A 2X4
Sdas@suncor.com

ABSTRACT

Exceptional reservoir quality at Suncor Energy's Firebag In-Situ Oil Sands Project led to the use of long and challenging well bores. Both injectors and producers are ~1600 m (MD) long with ~1000 m in the horizontal section. To accommodate high steam injection rates and the corresponding production volumes the horizontal section of the wells are completed with 9 5/8" / 10 3/4" slotted liners. To minimize the risk in well completion, concentric, rather than the usual parallel tubing configuration was used.

During the start up phase of a SAGD operation, steam is circulated in both injector and producer. This circulation volume is usually significantly lower than the normal operating conditions. Therefore, the same tubular design should have the capacity to handle both extremes in flow rates. The concentric design of the injection and production strings at Firebag complicated the start up process due to the counter current heat transfer between the injected steam with the colder return fluids. This presentation deals with the modelling and history matching of the start up well bore fluid dynamics.