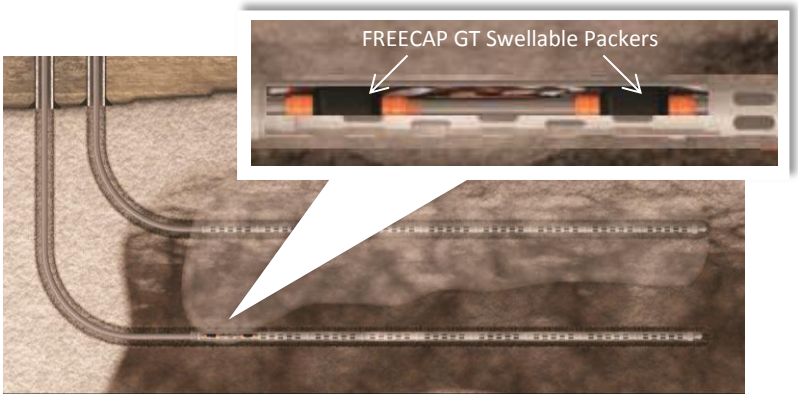
TAM INTERNATIONAL
Inflatable and Swellable Packers

CASE HISTORY

Unconventional Resources | FREECAP® GT – Swellable Packers

ISOLATES DAMAGED ZONE IN HEAVY OIL SAGD WELL

FREECAP®GT Swellable Packers straddle the damaged zone and enables Canadian operator to produce sand free after successful isolation



CHALLENGES: An operator in Alberta, Canada producing heavy oil with a horizontal SAGD well pair discovered that the heel of the producer had a damaged slotted liner and sand was entering the wellbore causing reduced production and equipment damage. In SAGD operations two horizontal wells are drilled, one above the other. The upper well in the well pair is the steam injector and the lower well is the oil producer. Steam is pumped into the reservoir heating the oil, thereby allowing it to flow. Due to hydraulics and frictional losses, it is common for most of the steam injection to exit the injector well at the heel. This results in steam breakthrough causing erosion of the slotted liner and eventually sand production in the producer requiring the operator to shut-in the well. The sand is detrimental to the operation of the down hole pumps and results in wells being shut in and, in many cases, abandoned. Operators require a solution to seal off the breakthrough while allowing production to enter from below the damaged zone.

SOLUTION: TAM suggested a casing patch using dual high temperature FREECAP GT swellable packers with 1 joint of casing between the packers to straddle the damaged slotted liner. One of the major technical hurdles was to have a water swell elastomer that would withstand high temperatures and remain swelled during oil production. The TAM water swell FREECAP GT packer withstands high temperatures, up to 575°F (302°C) associated with SAGD operations.

RESULTS AND BENEFIT: The swellable packers were successfully run in the hole and landed at the desired interval. The well was placed back on line with higher oil production and lower steam oil ratio - equivalent to pre-breakthrough rates. The cost of replacing the well pair would have run approximately $5 Million. The well pair was salvaged at a fraction of the well replacement cost.