

Reservoir Conformance & Water Shut-Off

RESERVOIR CONFORMANCE

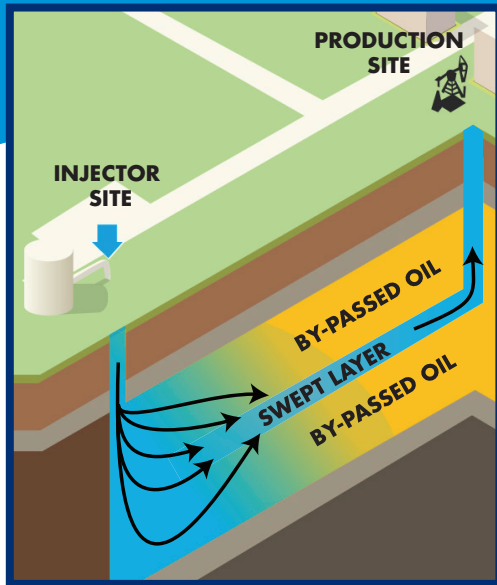
Whether your secondary or tertiary recovery project is in a reservoir dominated by fracture or matrix flow, SNF has the gelled polymer system to handle your profile modification and conformance needs. These systems are customized to solve specific conformance issues for your reservoir. The successful placement of these gels into previously swept paths of the formation, or into flow anomalies impacting flood performance, will help divert subsequently injected water or EOR fluids. This allows for improved reservoir sweep and recovery of by-passed oil from lower permeability formations. The result is increased oil production, reduction in water/oil or gas/oil ratios, and improved overall efficiency of your flood project.

WATER SHUT-OFF

Excess water emanating from oil and gas wells reduces the amount of hydrocarbon able to be produced. If the capabilities of the artificial lift equipment are exceeded, high fluid levels reduce the amount of drawdown placed on the remaining reservoir rock, thus limiting oil/gas production. Polymer gels dramatically reduce the amount of water by entering into the high permeability water flow paths or fractures and blocking the flow of water from those conduits. Therefore, treatments for leaks behind casing, tubing or packers, or fracture-connected aquifers can be particularly beneficial. Successful blockage takes place without damaging the remaining oil-bearing areas of the reservoir. As a result, lower fluid levels increase drawdown on the remaining oil-saturated rock. Artificial lift equipment can usually be down-sized after the treatment. The lease operating expense (LOE) of the project is often significantly reduced due to lower power, water treatment, water handling/disposal, and equipment maintenance requirements and associated costs.

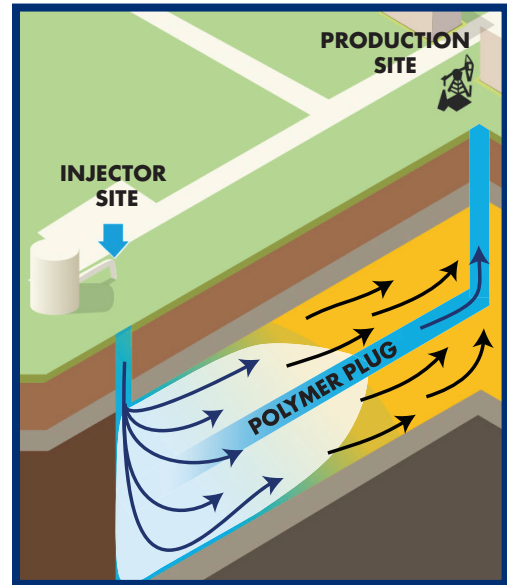
SNF offers systems that cover a wide range of reservoir temperatures and conditions. Our MARCIT™ and MARA-SEAL™ polymer gel systems can be formulated with a wide range of molecular weights, concentrations, and cross-linker ratios to handle reservoir conditions plugging both matrix to fracture-type flow features.

Reservoir Conformance & Water Shut-Off Solutions



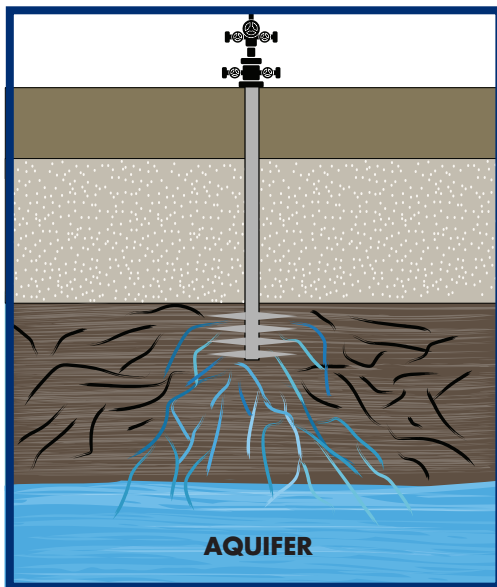
CONFORMANCE PROBLEM

Injected fluids are cycling through the reservoir, bypassing areas that contain remaining mobile oil.



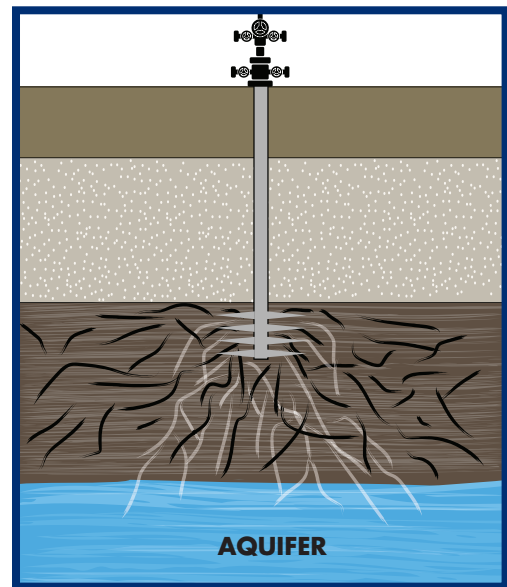
CONFORMANCE SOLUTION

Placing polymer gel into the swept layer diverts the following injected fluid into previously unswept portions of the reservoir.



WATER PRODUCTION PROBLEM

Fractures provide a direct path for water to flow from an underlying aquifer to the wellbore. This can result in high fluid levels and lower oil production.



WATER PRODUCTION SOLUTION

Crosslinked polymer gel is injected into the well, preferentially blocking the largest water flow paths. The result is reduced water production, which leads to increased drawdown and increased oil recovery.

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