PermTrol™ Gelation Service

PermTrol™ service is an in-situ polymerized gelation system that (1) reduces permeability to water in waterflood and carbon dioxide (CO₂) water-and-gas (WAG) injection wells and (2) diverts injection fluids to increase sweep efficiency.

Applications
PermTrol service is a batch-blended monomer solution that is pumped as a water-thin fluid. The well is then shut in so that the fluid can polymerize into an elastomeric gel. The monomer concentration of the solution dictates the final viscosity and solubility rate of the service. PermTrol service is effective in injection wells with bottomhole static temperatures (BHSTs) between 65° and 200°F (18° and 93°C).

Features
PermTrol service can increase oil recovery by two mechanisms: diversion and improved mobility ratio. The thick polymer slug formed by the service diverts the injection fluid from the most permeable zones to previously unswept oil-bearing zones, increasing volumetric sweep efficiency. The injection water slowly moves through the thick, water-soluble slug, viscosifying as it solubilizes the polymer. Viscosified injection water yields a better water-oil mobility ratio because it behaves like a polymer flood treatment with improved volumetric and unit-displacement efficiencies.

Benefits
PermTrol service does not require zonal isolation and does not contain heavy metal crosslinkers. This chemically removable service is also cost-efficient. In addition, it can provide the following benefits:

- water-thin placement
- in-situ polymerization
- resistance to hydrogen sulfide (H₂S) and CO₂
- deep matrix penetration
Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.