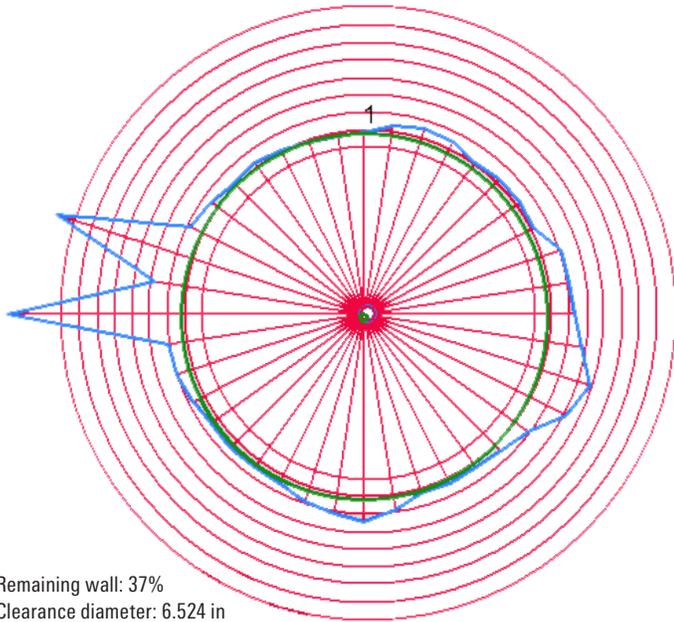


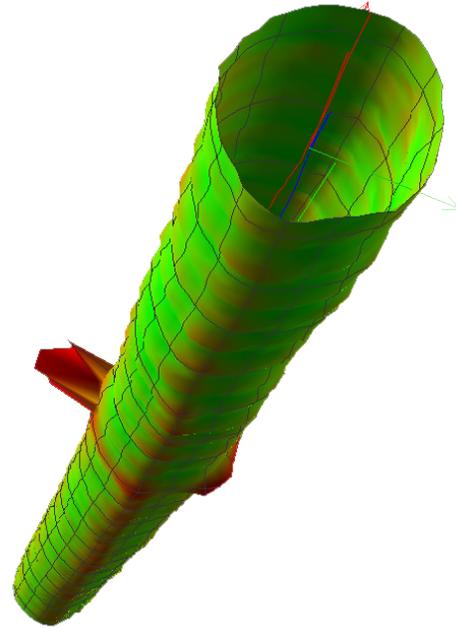
# Casing Patch Restores Production and Well Integrity in Corroded-Casing Well

Stainless steel patch using Saltel Xpandable technology extends well life and enables continued gas production, Sherman County, Texas



Remaining wall: 37%  
Clearance diameter: 6.524 in

*Cross-section of the zone to seal. Green represents the nominal ID (at the time), blue is the actual ID with metal loss, and the red circles indicate the remaining casing thickness versus metal loss.*



*3D casing inspection log of the corroded casing section.*

**Gas wells in Sherman Country, Texas, have a very low bottomhole pressure. A casing leak can release fluid from water aquifers into the well. The fluid column hydrostatic pressure can halt or impede production. A customized steel patch using Saltel Xpandable\* expandable steel technology met the operator's objectives.**

## Restore well integrity and production

After 70 years of production, a gas well in the Texas Panhandle experienced severe casing corrosion, including uneven surfaces and a large, irregular hole. The leaking casing allowed water from the water aquifer to kill the well. The customer was looking for a quick, feasible, and effective solution to restore well integrity and production.

## Conform to irregular geometry with bespoke setting process

The steel patch with Saltel Xpandable technology was the optimal solution. In contrast with all other technologies, the steel is not pushed out to a predetermined diameter by a cone but is expanded in a controlled setting process using an inflatable packer, which ensures the patch is pushed out to effectively seal against the inside of the existing casing, irrespective of the casing ID.

## Propose fit-for-basin patch design with adapted, specific setting method

To help ensure good sealing across the casing surface, a customized patch with swellable elastomer skin was developed to effectively seal the challenging geometry, despite significant casing wear due to severe corrosion. Engineers also calculated that the remaining wall thickness would not withstand the packer inflation pressures typically used to set the Saltel patch. Instead, they adapted the setting procedure to minimize risks of further casing degradation.

## Enable continued production with minimal downtime

The patch was set in 12 steps in 2.3 hours and drifted at 5.9 in with the setting tool. The well was successfully pressure tested at 200 psi for 30 min. Production and well integrity were restored with minimal deferred production. This operation extended the life of the well and allowed the operator to continue gas production.