

# Cement Plug for Water Shut-Off Using Coiled Tubing Hydrostatic Valve.

## PROJECT

**Case A** - Following a workover on an older well gas lift was tried to flow the well but did not work. The well was put onto production using a jet pump but a general decline in production was observed along with a sharp increase in water production making the well unproductive and difficult to manage.

It was decided to try and shut off the water producing zones of the well. An inflatable bridge plug was installed on coiled tubing but did not work. It was then decided to isolate the water using Acid Soluble Cement Slurry spotted with coiled tubing and conveyed using the DTI Hydrostatic Valve set to open at 2,200 psi.

**Case B** – A well was recently completed with gravel pack screens across a pay zone. A high expansion plug was placed at 2480 ft to isolate the water producing zone and a jet pump was used to flow the well. The cement behind the casing was compromised so the high expansion plug was ineffective, the casing was also damaged meaning the water production issue was not solved. It was decided to try and shut off the water producing zone using Salt Saturated Cement Slurry and place it in the well on coiled tubing using the DTI Hydrostatic Valve set to open at 1,200 psi.

## RESULTS

The DTI hydrostatic is adjustable so the valve can be set to open and a precise setting to enable the accurate deposition of the cement slurry at a controlled hydrostatic pressure and then shut off the valve precisely when required.

In Case A water production was reduced from 1,800 bpd to  $\approx$  30 bpd and oil production increased from 30 bpd to  $\approx$  120 bpd with the jet pump.

In Case B within 24 hours a complete water shut off was achieved as water production ceased from 1,700 bpd

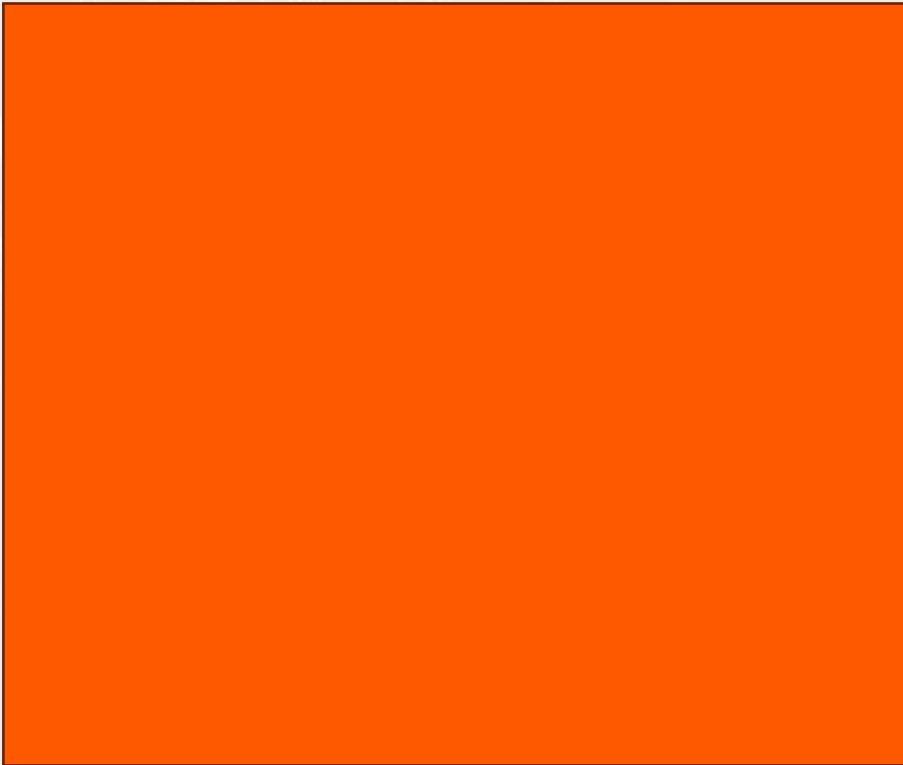


The fully field adjustable valve can be set to an opening pressure, within the design range, at the well site, whilst the tool is on the BHA, to suit the specific downhole conditions at the point of deposition.

**FEATURES &  
BENEFITS**

The DTI CT Hydrostatic Valve supports a column of fluid in the coiled tubing until an increased pressure is applied. Once the required volume of fluid is deposited by reducing coiled tubing pressure, the valve will close, and the fluid will cease to flow through the valve.

The DTI CT Hydrostatic Valve features an integral adjuster mechanism, which is activated by removing the locking screws and winding the Upper Connector sub clockwise to increase or anti-clockwise to reduce pressure. This feature allows the valve opening pressure to be set without disassembling the tool or removing from the BHA.

**KEY FIGURES  
& STATS**

- Available in sizes from 1 11/16" OD to 3 1/8" OD.
- Typical Activation pressure for the 2 1/8" OD tool is from 300 psi to 2,700 psi fully adjustable.
- No special adjustment tools required.
- Easily adjust the opening pressure while in the BHA during surface testing.
- Torque thru capability
- Used for placement of Cement, Acid & Solvents.
- Used as a control valve for inflatable element BHA's
- Available in H2S or standard service