

# HCU TECHNOLOGY SOLVES CUSTOMER HYDRATE ISSUE ON >9,000 PSI WELLS



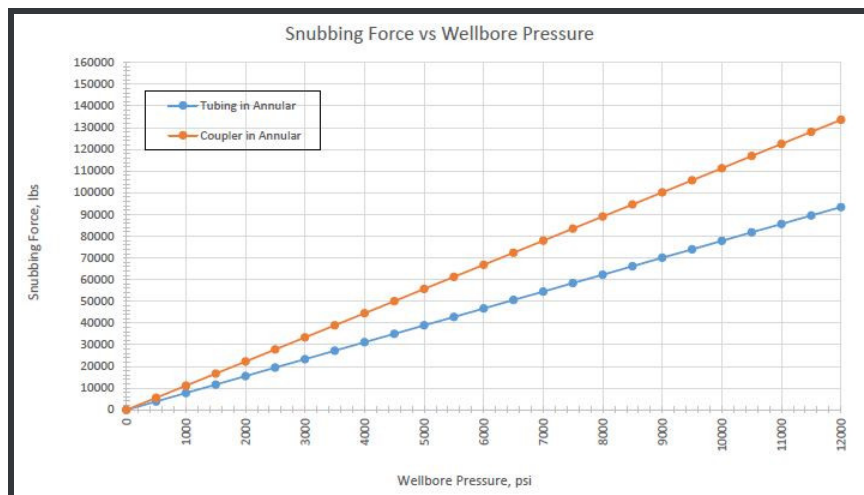
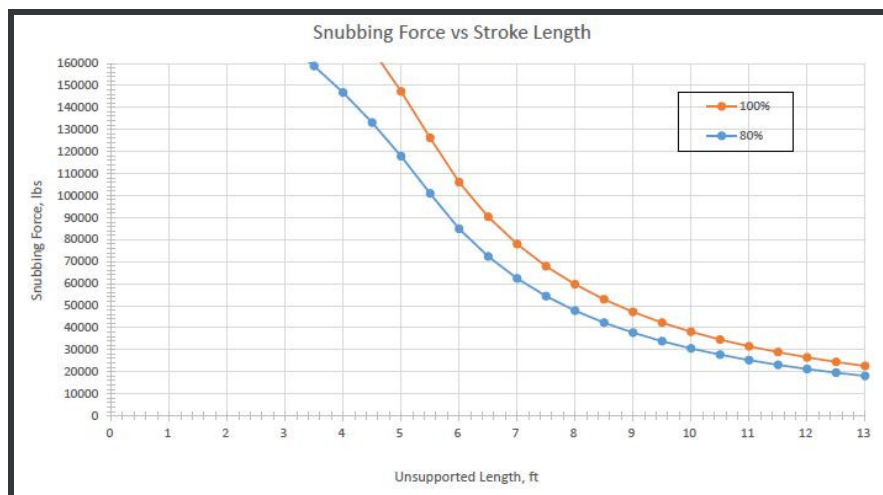
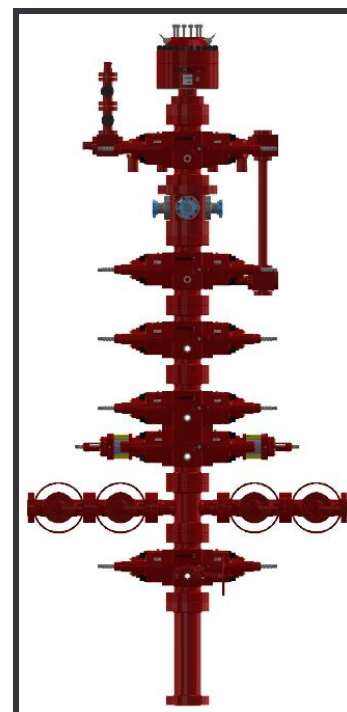
CASE STUDY

## CHALLENGE & OBJECTIVE

Our customer encountered a unique situation where two of their four high-pressure wells had hydrates present near surface which prevented them from flowing or installing production tubing. DWS objective was to recover their lost days by safely and efficiently removing hydrates from these high-pressure wells.

## PRE-JOB PLANNING

DWS Operations team developed a custom operating procedure to safely remove the hydrates from these high-pressure well bores. The pre-job planning included designing the high-pressure stack with buckling force contingencies using our patented DWS Guide Spool.



### Well #1

Surface Pressure = Equalize to 9,000 psi and pulled hanger  
 Top of Hydrate 1 = JT#1 at 30' KB – 7,100 psi  
 Estimated Length = ~87.03'  
 Top of Hydrate 2 = JT#38 at 1,217' – 5,200 psi  
 Estimated length = ~166'

### Well #2

Surface Pressure = Equalize to 9,500 psi and pulled hanger  
 Top of Hydrate 1 = JT#1 at 23.81' KB – 8,500 psi  
 Estimated Length = ~118'  
 Top of Hydrate 2 = JT#24 at 780' KB – 5,800 psi  
 Estimated length = ~236'

## RESULTS & CONCLUSION

Our patented HCU technology safely completed the high pressure milling operations to remove the hydrates and installed the production tubing in all four wells. This success on this pad has enabled our customer to resume flowing their wells and continue with their operations.