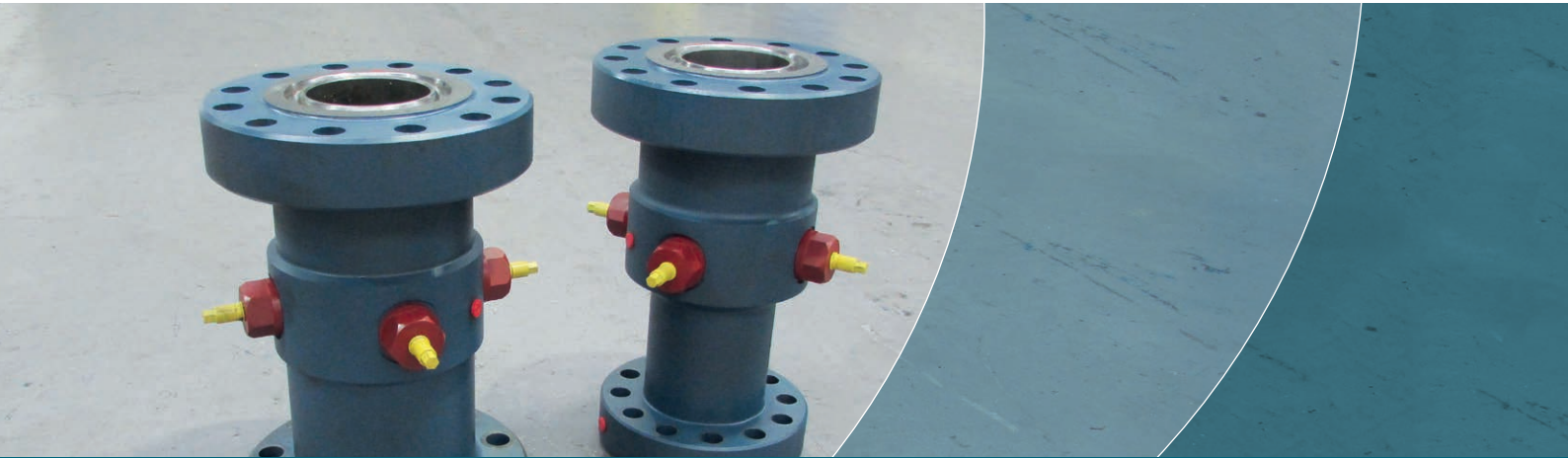


## CASE STUDY

# Frac Sleeve Protects Xmas Tree During Frac Campaign



PRODUCT: XMAS TREE FRAC SLEEVE

PRODUCTION TECHNOLOGY



## PROJECT:

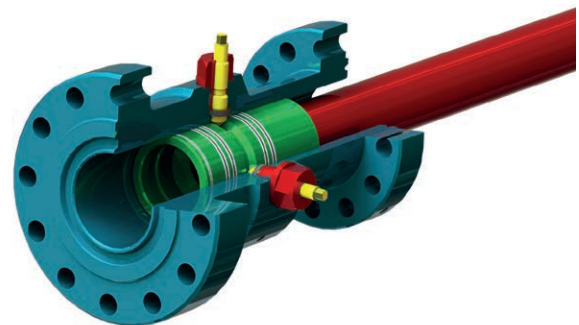
A major oil and gas operator undertook a hydraulic fracturing campaign to unlock further reserves from a reservoir with declining production in the northern North Sea. The xmas trees on the low producing wells were not sufficiently rated to withstand the hydraulic frac pressures planned for the operation.

Well-Centric designed and manufactured xmas tree Frac Sleeves that would allow the existing xmas trees to withstand the high pressures exerted on them during the campaign.

## SOLUTION:

- Each xmas tree Frac Sleeve comprised a spool with the relevant bottom connection to suit the respective xmas tree and an internal hanger/sleeve assembly that sealed in the seal bore of the respective tubing hanger.
- The Frac Sleeve was designed as a single piece forged body in which the sleeve hanger located and sealed inside.

- A lock down arrangement in the Frac Sleeve prevented upward movement of the internal hanger/sleeve assembly.
- The xmas tree Frac Sleeve increased the pressure rating capabilities of the xmas tree by 20%, allowing the frac campaign to take place.
- The system prevented a new xmas tree from being required, saving over £200,000, as well as avoiding a delay of around 12-18 months for a new tree and the loss of additional production over that time.
- Its use helped the operator access hundreds of thousands of pounds in extra hydrocarbon revenue from what was previously a low producing well.



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