

# Integrated solution completed 3 HP/HT offshore wells, saved \$6 million USD

The Culzean offshore field is an ultra-high pressure, high temperature (HP/HT) gas condensate development containing fluids, which are characterized as lean gas. With pressures and temperatures up to 15,000 psi and 350°F (176°C) and a near monobore well design (5-in. liner and a 5 1/2-in. upper completion), the customer needed a partner who would design, test, build, deliver, and install equipment that would allow first gas production in the first quarter of 2019.

Baker Hughes was well positioned to fulfill every customer requirement from liner shoe to the wellhead outlet and the surface monitoring package. Among the technologies installed in the customized solution were the **BASTILLE™ Ultra-HP/HT removable production packer, Orbit™ tubing-retrievable surface-controlled subsurface barrier valve, REALM™ tubing-retrievable surface-controlled subsurface safety valve, the SureVIEW™ monitoring system,** anchor, extended body head, and flow control equipment.

As the only removable production packer rated at 20,000 psi and 400°F (204°C), the BASTILLE packer can be removed from the wellbore by mechanically cutting the body and applying tension to the tubing. The Orbit lubricator valve enabled a safer, more time effective retrieval of the fired guns after the completion had been installed.

To date, the integrated Baker Hughes team, operating out of Aberdeen, Scotland, have successfully completed, perforated, and well tested three of the six planned wells. The plan called for each well to be completed in 13 days. Baker Hughes beat that estimate, installing the first well in 10.5 days, the second in nine days, and the third in seven. With a daily rig cost of \$520,000 USD (£400,000), the overall savings amounted to \$6.5 million (£5 million). After the completion had been installed, the Orbit valve saved 10 hours rig time per well during operations, equating to an additional \$650,000 (£519,000) for the customer.

With the BASTILLE packer, Baker Hughes proved the only service provider with technology suited for the customer's challenges. By using a consolidated Baker Hughes solution, the customer substantially minimized the number of interfaces involved in the completion, reducing overall operational costs.

## Challenges

- Complete, perforate, and test 3 HP/HT offshore wells
- Minimize operational costs

## Results

- Deployed unified solution to complete, perforate, and test three wells more efficiently than planned
- Saved \$6 million when measured against AFE costs
- Incurred minimal nonproductive time
- Experienced zero health, safety and environmental (HSE) issue