



## Completion Solution

### Successful execution of the deepest and highest pressure producing wells in the world for client

Location: Gulf of Mexico, USA

#### Overview

An operator in the Gulf of Mexico had a deepwater project 138 miles south of the Louisiana coast in 2,118 ft of water. The gas and condensate production came from sands located at depths of 19,300 ft. The high-pressure (>15,000 psi) complex reservoir structure and inherent stratigraphy, along with the potential for compartmentalization, provided multiple challenges to well completion success. Government regulations on commingling and cross flow prevention also had to be considered.

During the planning stage of the project, well control analysis dictated that a 10,000 psi differential rating packer was required to mitigate against a potential worst case scenario, such as tubing leak below the tree with a full column of gas. Also, the packer had to be compatible with the zinc bromide completion fluid that was required for this completion. Halliburton was given six months to design and deliver the required packer, which was no small order.

#### Solution

A two-zone stacked intelligent completion solution was employed to address regulatory requirements on commingling and cross flow. A shrouded 2 7/8-in. and a upper 3 1/2-in. HVC interval control valve (ICV) was deployed for zonal control of the frac-packed reservoirs. Three ROC™ gauges were installed to monitor downhole tubing and annulus pressures from the different commingled reservoirs, which were frac pack completed as two zones.

**2000 ft+**  
**15000 psi**

**SUCCESSFUL EXECUTION OF 2 ZONE FRAC PACK**

CHALLENGES	SOLUTIONS	RESULTS
<b>Deepwater &gt; 2,000 ft</b>	<b>Two-zone</b> frac pack / stacked intelligent completion	<b>Successful execution</b> of the deepest and highest pressure producing wells in the world for the client
<b>High pressure &gt; 15,000 psi</b>	<b>HVC ICVs</b> for zonal control	Two wells were drilled and completed <b>in 15 months</b>
<b>Aggressive timeline</b>	<b>ROC™ triple gauge</b> monitoring system	<b>Achieved desired production</b> targets

**Result**

Project financials were based on a targeted production of 30 to 50 MMcfd gas condensate and 4,500 to 7,500 BOPD. The operator was able to achieve the target deliverables on both wells, despite the very aggressive timeline. Two wells were drilled and completed in less than 15 months from the day that the project was sanctioned, with less than 5% non-productive time (NPT).

Not only was this complex project successfully executed, a record was set for the operator, making these wells their deepest and highest pressure producing worldwide.

(Reference OTC 19622 technical paper)

