

## Case Study

## Well Barrier & Isolation

# Efficient straddle solution enables successful repair of production Christmas tree

### The Challenge

A customer required an innovative straddle solution to anchor and seal in a production Christmas tree above and below a leaking Upper Master Gate Valve (UMGV) Stem Seal to allow repairs to be undertaken.

### Considerations

The straddle was required to sit above the top of the Lower Master Gate Valve (LMGV) and below the bottom of the Swab Valve without causing damage; and it could not exceed 44in in length.

A minimum straddle ID of 4.425in was also required by the customer to enable them to run through and set a plug below the Christmas tree to isolate the well, and to provide the option to pump through to kill the well to perform a tree change-out in the event repairs could not be completed, or were delayed.

The operation would be subject to a working pressure of 3,000psi, and an in-service temperature rating of 5 to 80degC. The proposed solution was to meet the customer's ISO 14310 V0 specification requirements.



**Location:** North West Shelf, Australia

**Customer:** Oil & Gas Company, Australia

**Well Type:** Gas producer

**Casing Sizes:** 7-in Christmas tree and completion

**Products/Services:** Bespoke Peak Straddle System and eSetting Tool. Deployment by Peak Field Specialists.

## 3

Third tree repair straddle solution deployed for the customer

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Solution developed to fit three different types of production tree

## 4.425in

Minimum straddle ID

## 3,000psi

Working pressure

## Peak's Solution

Peak's engineering team developed a solution to meet all the customer's requirements within a short time frame; one that would isolate the UMGV to allow repair, and one that was soft set to ensure the LMGV would not be damaged during the operation.

The straddle solution was manufactured at Peak's Perth facilities after which it underwent fluid testing before undergoing an SIT test. Further ISO 14310 nitrogen gas testing was conducted at Peak's Aberdeen facilities to meet the customer's zero-gas bubble (V0) validation criteria.

After a drift run to ensure no obstructions were present, the straddle was deployed via slickline by Peak's Field Specialists and set using a modified version of Peak's non-explosive mechanical setting tool that provides a reliable deployment technique without

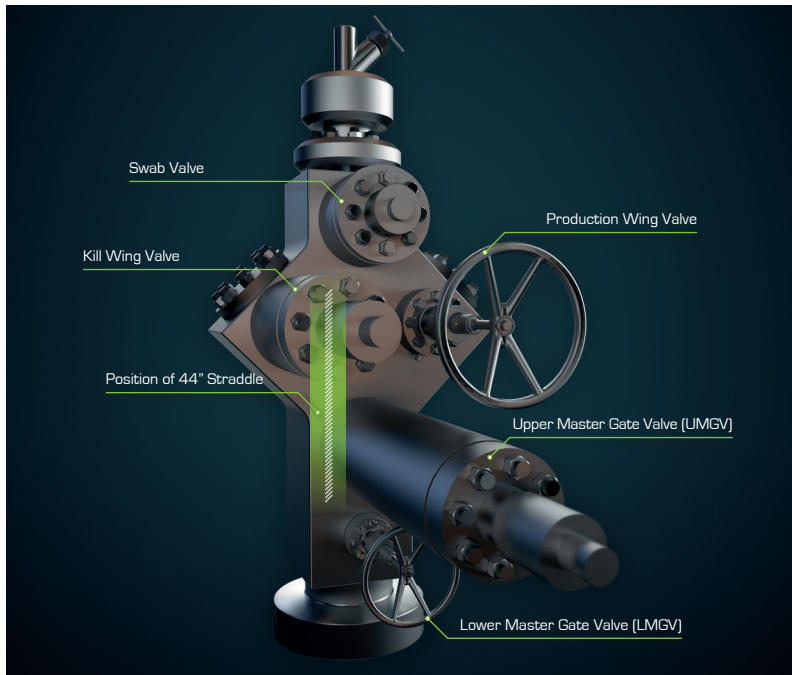
the need for pyrotechnics, pressurised nitrogen or complex hydraulic pumps.

The setting tool was triggered using a pre-programmed electronic timer system and set the straddle on top of the LMGV without causing any damage. After repairs were made, the straddle was successfully retrieved and the campaign resumed.

## Value to Customer

The straddle was successfully set, enabling the customer's maintenance crew to carry out the necessary repairs to the leaking UMGV, and complete the full campaign without having to carry out any contingency operations or killing the well.

The straddle solution is one that would fit three different production trees giving the customer the flexibility to use this solution for future operations if required.



▲ Compact Straddle

**Product Code(s):** Straddle – A310

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