

First Use of a Remote Trigger and MPAS-e Programmable Packer

Problem

The operator needed to achieve openhole zonal isolation between two zones in a combined cemented and slotted liner that was run to a depth of 10,800ft (3292 m). One zone was behind the slotted liner and the other was the openhole section of the well. The slotted liner was 7 in. and the OD of the MPAS-e™ packer was 7.731 in. at the rubber element, which could then expand to a 12.250 in. OD.

Solution

- The unique feature of this system was the fact that the packer was set using a remote trigger that required no manipulation or hydraulic actuation
- Hydraulic actuation was not possible in this situation because it was a slotted liner that was installed
- The trigger device activated a timer which had to pass pre-set temperature and pressure criteria before being active
- Once the timer started, a pre-determined time elapsed before the trigger allowed hydrostatic pressure to set the packer
- Hydrostatic pressure will continuously act on the packer, keeping it set, in addition to a ratch latch mechanism that keeps the packer mandrel in place

Results

- The liner was run to TD, the liner hanger and ZXP™ liner top packer were successfully set and the stage cementing job was performed flawlessly

- The operator performed a production test from the two different zones. Pressures and production clearly indicated that the packers were successfully set and functioned as designed
- This installation has saved the need for a fully cemented liner and perforations and the associated running and manipulation involved
- Savings are estimated at \$1.5 million
- A three-zone completion using MPAS-e packers is being planned. The next installation will not use any cemented liner at all and the entire liner will be slotted but isolated, using the MPAS-e packer. The completion string will be installed in one run and provide the necessary open and closing devices for each zone

Project Details

Location: Qatar

Total Depth: 10,800 ft

Slotted Liner: 7 in.

MPAS-e Packer: 7.732 in., 12.250-in. OD upon expansion

Baker Oil Tools Equipment

- 7-in. x 9-5/8-in. FLEX-LOCK liner hanger
- 7-in. x 9-5/8-in. ZXP liner top packer
- 7-in. PAC™ valve
- 2-ECP ISOZONE™
- LFC landing collar
- 2-MPAS-e
- 4-1/2-in. HCM-Plus™ sliding sleeve
- 4-1/2-in. HCM™ shrouded

