Weatherford®

REAL RESULTS

ESS® Expandable Sand Screens Use ACE™ Technology to Set Record for World's Longest 4-in. Single-Trip Expansion

The *ACE* system facilitates single-trip, compliant EST® expansion to provide borehole support and prevent particle migration. Hydraulic actuation pressure is 1,800 psi (12.4 MPa), with a compliant expansion speed of 10 ft/min (3.04 m/min).

Objectives

- Remediate wells that had been shut-in because of a high water cut, then sidetrack existing cased-hole deviated wells to target deeper reservoir horizons.
- Drill long horizontal boreholes through the new reservoir intervals to maximize well productivity and reservoir sweep efficiency.
- Minimize the friction-pressure gradient to retard water coning from an active underlying aquifer.
- Employ ESP artificial lift systems to produce the wells. Because the wells could not tolerate solids production, sandface completions to provide sand control were considered essential.
- Achieve zero or negative completion skin to maximize well productivity.

Results

- Approximately 1,900 ft (579 m) of *ESS* expandable sand screens were employed in each well to prevent sand production, provide borehole support, and minimize friction pressure loss.
- Completion skin was kept to a minimum by eliminating the screen-borehole annulus, with Weatherford's unique ACE™ axial compliant expansion technology.
- Extensive torque-and-drag modeling was performed for the *ESS* expansion process to optimize the *ACE* expansion string design and configuration.
- The expansion of both 4-in. *ESS* systems were completed in a single trip, setting a new *ACE* technology world record for a 4-in. diameter *ESS* screen.

Location
Onshore Saudi Arabia

Well Type
Oil producers

Number of Wells
2

Hole Size
6-in. sidetrack

Hole Angle
Horizontal

Screens
4 in., 230 micron

Setting Depths
6,596 ft and 7,761ft (2,010 m and 2,366 m)

***ESS* Lengths**
1,900 ft and 1,938ft (579 m and 591 m)

Well TD
8,700 ft and 9,909 ft (2,652 m and 3,020 m)

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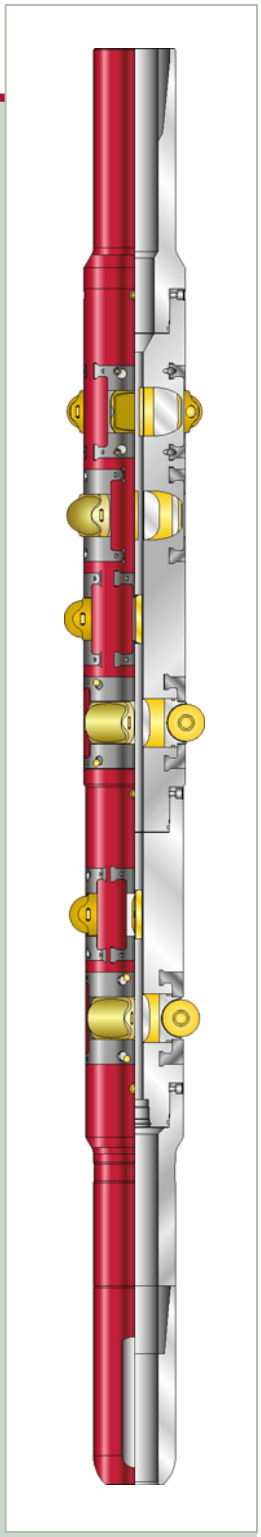

Value to Client

- The expansion of the *ESS* screens in a single trip reduced well operating expenses.
- The large ID and inflow area of the *ESS* screens improved well productivity.
- Borehole support from compliant expansion sustained lift-of-well productivity.
- The 4.39-in. OD of the unexpanded 4-in. *ESS* screens enhanced running clearance, minimizing the risk of holdup during deployment.
- Production into the *ESS* screens generated virtually no pressure drop, reducing field abandonment pressure and thus boosting ultimate reservoir recovery factors.

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