

Expandable screens expanding their applications

RECORD DEPLOYMENT

An expandable sand screens (ESS) is a sieve like material that keeps out sand while letting in oil through the drain point. It is typically run in a drain hole to the required producing zone and when it is expanded it remains in that state for the production life.

The authors discuss how the integrated drilling team successfully deployed ESS technology at a total length of 1,447 ft at a well depth of 6,740 ft, the longest since the technology debuted. The ESS eliminated the need for internal gravel packs, chemicals and acids and the associated

tivity index due to larger effective well-bore radius. After the wells were brought on stream, the effectiveness of the ESS completions in controlling sand production was routinely evaluated using a digital-ultrasonic sand monitor.

Expandable Sand Screens for Multi-Zone Sand Control Completions: A Case History (SPE/IADC 79788) by **S Chandra, E Ali, Cairn Energy.**

THREADED CONNECTIONS

Early work on expandable casing focused on development of ductile casing materials and expansion tools and methods. Less effort has been devoted to the threaded connections that hold the joints of casing together before, during and after expansion.

The authors say that threaded connections for expandable casing must work on thin-walled pipe of low-yield, ductile materials, the authors say, and ideally would offer a gas-tight metal-to-metal seal that works at make-up and throughout the expansion process, and that will maintain high mechanical strength as

a percentage of pipe-body strength after expansion.

Threaded Connections for Expandable Casing (SPE/IADC 79789) by **H A Reynolds, R S Snively, Hydril.**

MONODIAMETER DRILLING LINER

With the recent success of a field trial well, the monodiameter well has moved from concept to reality and is now a viable well construction process. The monodiameter well is a breakthrough in the oil and gas industry, allowing multiple strings of the same size drilling liner to be installed in a well without a decrease in internal diameter. The monodiameter well construction process reduces total drilling costs, especially in challenging areas, and enables operators to maintain well's

optimal completion diameter, according to the authors.

Monodiameter Drilling Liner: From Concept to Reality (SPE/IADC 79790) by **B Dean, L M Ring, R Cook, D Briso, Enventure Global Technology; A Flipov, C Williams, D Campo, Shell**

EXPANDABLE SCREEN

Marlim Sul in Campos Basin, southeast Brazil, is the one of the largest oilfields in the country. The water depth ranges from 1,000 to 1,900 meters and has been developed by horizontal wells with potential productivity up to 5000 m³/d.

Sand control is one of the main issues in this field due to the presence of unconsolidated sandstones in the reservoir. The application of new technologies like expandable sand screen allowed a new well design to be set eliminating one phase in the well.

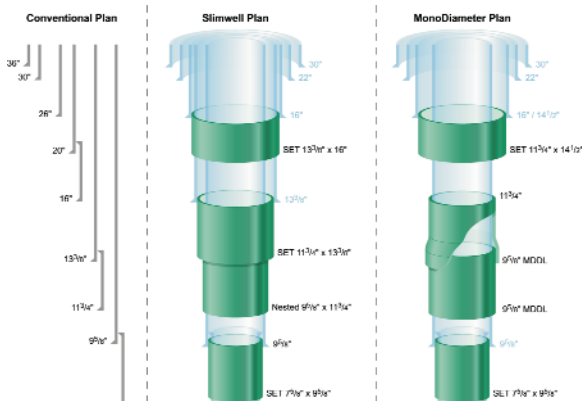
New Well Design Using Expandable Screen Reduces Rig Time and Improves Deep Water Oil Production in Brazil (SPE/IADC 79791 - Alternate) by **F S N Rosa, L C B Bianco, P D Barata, Petobras**

EXPANDABLE IN UNDERBALANCED

Recent technology advancements now make possible the deployment and expansion of Expandable Sand Screen into an underbalanced well, opening the door to bringing the well-established benefits of UBD into the area of less consolidated sandstone reservoirs that require some form of sand control. Key to achieving this desirable end result is the development of a new full-bore Downhole Deployment Valve (DDV) that serves as a subsurface lubricator valve for running the unexpanded ESS safely into the live UBD well.

The elimination of gravel packs and conventional sand screens results in significant production improvements over alternative solutions.

Completion of an Underbalanced Well Using Expandable Sand Screen for Sand Control (SPE/IADC 79792 - Alternate) by **R L Cuthbertson, A Green, Weatherford International.** ■



The monodiameter well allows multiple strings of the same size drilling liner to be installed in a well without a decrease in internal diameter. The monodiameter reduces drilling costs and enables operators to maintain the well's optimal completion diameter.

disposal problems. In addition to describing the planning and application of ESS technology, the paper also evaluates the best practice and lessons learned in the well construction.

Record Deployment of Expandable Sand Screen in a Horizontal Well (SPE/IADC 79787) by **J Ntukidem, C Onuwazo, E Ochuko, Shell Petroleum Development Company**

MULTI-ZONE COMPLETIONS

A case history of a sand control campaign using ESS technology in two oil and two gas production wells offshore India is presented. Major drivers for choosing ESS as an alternative for gravel pack in the wells were cost savings in terms of rig time, less risky operations in multi-zone completions in deviated wellbores and higher expected produc-