

Egypt

Tailored cement solution successful in troublesome onshore field

First operation in Egypt with IsoBond™ cement solution improves CBL results in permeable sands formation with gas influx

CHALLENGE

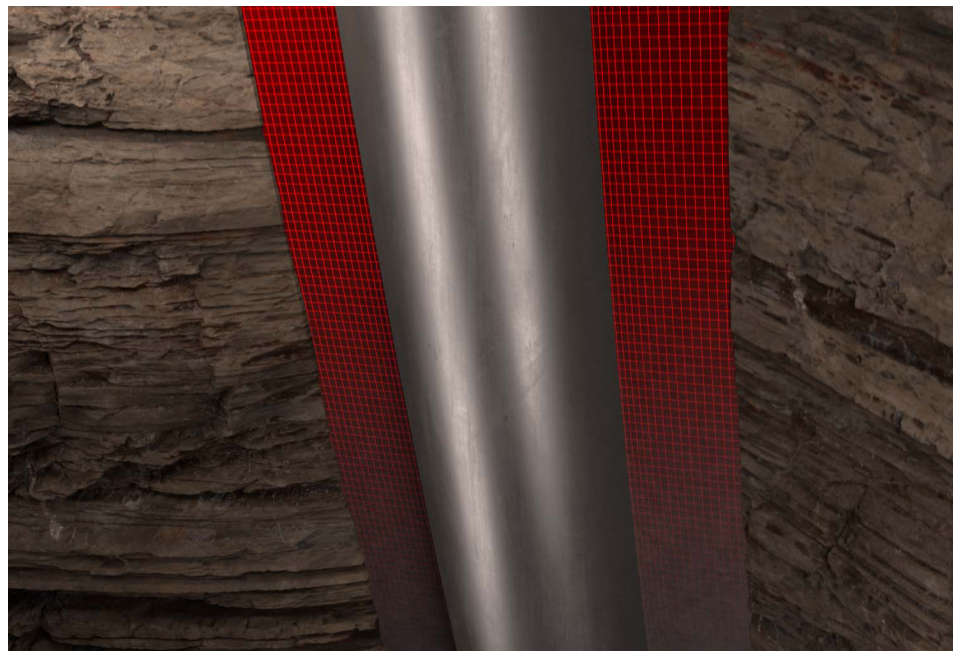
- Losses induced by high pump pressure
- Cement sheath penetrated by gas intrusion
- Increased water cut during production
- CBL revealed cement debonding across permeable sands

SOLUTION

- Mitigate flow through unset cement, reduce cement sheath permeability, and improve shear bonding using the IsoBond™ cement solution

RESULT

- Noticeable drop in pump pressure profile
- CBL showed no signs of cement debonding
- Absence of gas pockets in cement sheath



The IsoBond™ cement system builds rapid gel strength, and this short transition time reduces the risk of gas or fluid influx, which reduces the risk of sustained casing pressure due to flow through unset cement. The system's rapid gel strength development can also help create effective zonal isolation in challenging wellbores.

Overview

Drilling operators face increasingly challenging environments to unlock potential reservoirs in the search for hydrocarbon. Gas influx and cement debonding are regularly encountered in formations characterized by highly permeable sands. This creates channels in the cement sheath that can lead to the communication between water zones in addition to potential remedial cement operations to help isolate them.



Challenge

The operator encountered losses attributed to cement fallback caused by high pump pressure in addition to the presence of gas pockets within the cement sheath. Interconnected channels in the well increased water cut during production and a cement bond log (CBL) revealed cement debonding across the highly permeable sands of this formation.

Solution

Halliburton recommended implementation of a tailored IsoBond™ cement solution to mitigate flow through the unset cement and improve barrier dependability. The system provided tight fluid-loss control at 15 cc/30 minutes to minimize the loss of slurry filtrate across the highly permeable sands. This was in addition to rapid gel strength development with a two-minute transition time to help mitigate the potential for flow through the unset cement.

This cement system improves barrier dependability through reduced cement sheath permeability and increased shear bond strength. The slurry provides lower rheological readings and improved cement mixability, which helps decrease friction pressure while pumping.

Result

This was the first implementation of the IsoBond cement solution in Egypt and, as a result, pump pressure throughout the operation decreased by approximately 500 psi. Additionally, no losses were reported during the operation. The CBL showed no signs of cement debonding and did not record any gas traces in the cement sheath.

IsoBond™ cement system
mitigates flow through
unset cement and improves
barrier dependability

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com

Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.

H014815 9/24 © 2024 Halliburton. All Rights Reserved.

halliburton.com

HALLIBURTON