

CleanWell® Solutions Help Operator to Effectively Clean Up Challenging Big-Bore ERD Well

HALLIBURTON DELIVERS UNIQUE SOLUTION WITH ZERO HSE ISSUES OR NON-PRODUCTIVE TIME

OFFSHORE SAKHALIN, RUSSIA

CHALLENGE

Provide a cost-efficient solution to displace and clean up a complex, big-bore ERD well, while also avoiding HSE issues and non-productive time

SOLUTION

Uniquely engineered Halliburton solution comprised of both wellbore cleaning tools and fluids to effectively displace and clean up the well in a single run

RESULTS

- » Successfully displaced and cleaned the well, while also managing to achieve the required specifications after circulating 1.8 well volumes
- » Completed operation with zero HSE issues or NPT

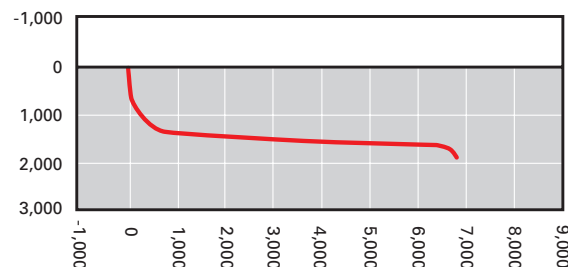
OVERVIEW

A major customer in Sakhalin, Russia, required a cost-efficient solution to displace and clean up a complex, big-bore extended-reach-drilling (ERD) well that was 26,161 feet (7,974 meters) deep in measured depth (MD). Halliburton provided the operator with a uniquely engineered solution comprising both wellbore cleaning tools and fluids that were cost effective and efficient, thus reducing risks and non-productive time (NPT).

CHALLENGE

This was the longest well that the operator had drilled in the region and the most complex in terms of well architecture. The well construction consisted of 12,831 feet (3,911 meters) of mixed 13 5/8-in. and 13 3/8-in. casing and 13,330 feet (4,063 meters) of 9 5/8-in. liner. The ERD lateral kicked off at 5,634 feet (1,720 meters) and continued all the way to 24,507 feet (7,470 meters), with inclination up to 84–87° all through the lateral. The big-bore architecture of the well, its trajectory, and its depth made it a huge challenge to displace and clean up the well effectively in a single run.

Well Trajectory



SOLUTION

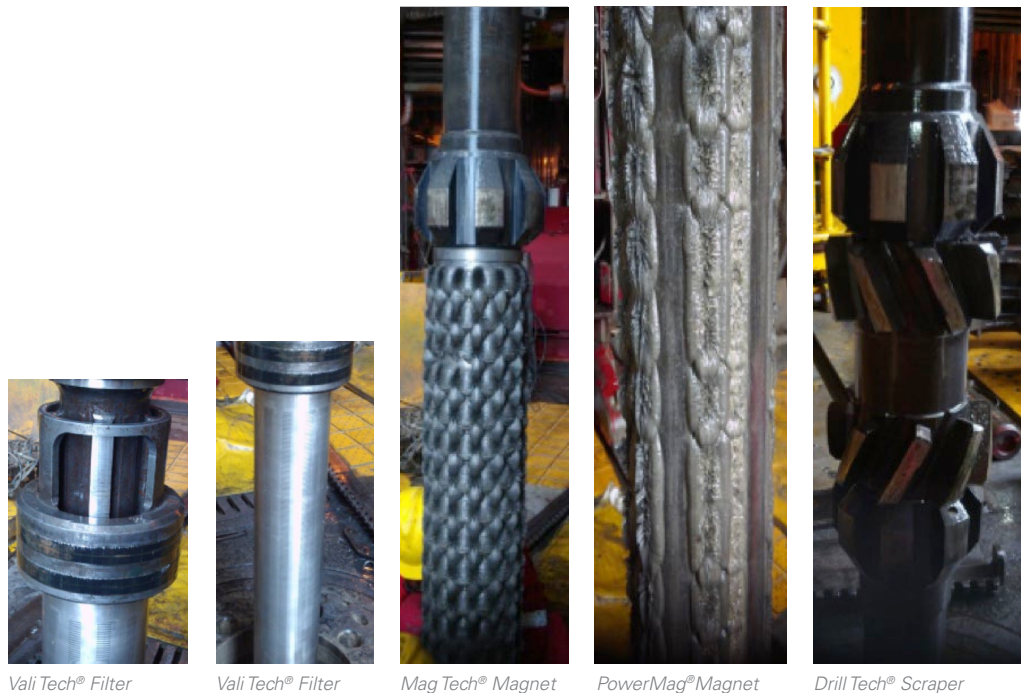
Halliburton Completion Tools and Baroid came up with robust procedures and specially designed solutions, including a cleanup chemical pill train modeled through proprietary software, extensive torque and drag simulations, and a bottomhole assembly (BHA), which, in the end, helped the operator to successfully clean up and displace the well from the OBM to seawater without any NPT. Part of the key solution to this challenge was the ability to circulate at a maximum achievable flow rate and to rotate the workstring as fast as possible. CleanWell® technology tools enabled the operator to rotate the workstring up to 120 rpm for extended periods of time, without any damage to the tools.

RESULTS

The displacement operation achieved the customer stipulated cleanliness specification after circulating 1.8 well volumes. It was particularly impressive that the Vali Tech® filter was empty after it was pulled out of hole, as this further proved that the well had been very effectively displaced and cleaned. The operation was completed as planned, with zero health, safety, or environmental (HSE) issues or NPT. These CleanWell tools were successfully pulled out of hole, and their respective debris recovery results are summarized below.

Debris Recovery Analysis

Tools	Quantity	Tool Size. in.	Recovery
Vali Tech® Filter	1	13 3/8	Empty
PowerMag® Magnet	1	13 3/8	40
Mag Tech® Magnet	2	13 3/8	20
PowerMag® Magnet	1	9 5/8	30
Mag Tech® Magnet	2	9 5/8	20



Vali Tech® Filter

Vali Tech® Filter

Mag Tech® Magnet

PowerMag® Magnet

Drill Tech® Scraper

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