Tenaris

Total improves running times in Absheron field using Wedge 623® Dopeless® connections in the deepest well of the Caspian Sea

TenarisHydril Wedge 623® connections were successfully run in stands in the tapered intermediate casing string of the ABD-001 deepwater well.

Summary

In 2009, Total and SOCAR, Azerbaijan's state oil and gas company, signed an Exploration, Development and Production Sharing Agreement covering a license area on a block of the Absheron field. This offshore development is located in the Caspian Sea, 100km from Baku and 30km away from the Shah Deniz gas and condensate field, at water depths of around 450 meters. In 2012, the ABX-2 exploratory well resulted in a major gas discovery.

In its first development project in Azerbaijan, Total faced the challenge of drilling the deepest well in the Caspian Sea from a 6th generation semisubmersible drilling rig. The bottom hole pressure at the top of the reservoir was expected to be high.

To face this complex situation, Total chose TenarisHydril Wedge 623® Dopeless® connections and TenarisHydril BlueDock® connectors for the critical surface casing string. Running the intermediate casing in triple stands led to a 15% decrease in running time.

PROJECT PROFILE

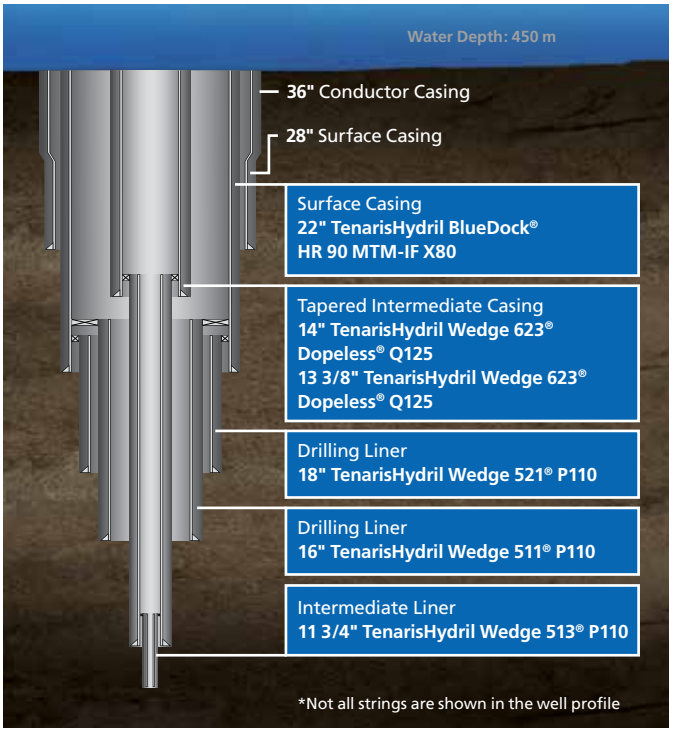
Operator
Total

Location
Absheron Field, Azerbaijan

Well
ABD-001

Products highlighted
- TenarisHydril Wedge 623® Dopeless® connections
- TenarisHydril BlueDock® connector

Service provided
- Field Services:
  - Field inspection
  - Running Assistance
- Technical Assistance
- Wall thickness segregation



Challenges

Extreme depth and complex geology

The ABD-001 well, currently the deepest in the Caspian Sea, is located at a water depth of 450 meters and has a depth of 7,411 mMDRT.

The operational zone featured a complex geology, which had already been identified during the perforation of the ABX-2 exploration well in 2012. Accordingly, the architecture of this well consisted of more than ten sections, with extremely limited clearances and tolerances.

For this particular project, the pipes had a special drift and a minimum wall thickness tolerance of 90% for increased internal pressure performance. Tenaris also performed a selection of the pipes to be placed in particular sections of the well based on their actual wall thickness.

Stands assembly

Running the casing in stands is an operation performed to reduce the time required to run the connections in the rig. Two or three joints are pre-made-up and racked, ready to be run in hole. When the stand is moved to the derrick, with just one make-up the crew is able to run a stand of triple joints with an average length of 36 meters, instead of the standard Range 3 (~12 meters). Operating with stands implies a higher risk of misalignment due to the increased length of the stand, the increased weight and the more complex handling. Flush and semi-flush connections are, due to their own geometry, more susceptible to damage from impact and pressure acting on the thinner wall of the pin nose when racked in stands. This makes it necessary to carefully select robust connections.

Total compared the running times of the casing installed in single joints and in stands, obtaining objective data on the benefits achieved with this challenging procedure.

Solutions

TenarisHydril BlueDock® HR 90 MTM

The operator chose TenarisHydril BlueDock® weld-on connectors, which provide high fatigue performance and gas sealability in the most complex ultra-deepwater operations. The connector is robust, quick and easy-to-operate, with high back-off resistance and outstanding structural capacity. It has been tested according to API RP 5C5 CAL I and evaluated with full scale testing for fatigue performance.

TenarisHydril Wedge 623®

TenarisHydil Wedge 623® Dopeless® connections were selected for such a complex project thanks to their high tensile and compression efficiencies coupled with the outside diameter of a semi-flush connection.

This connection, developed for deepwater and HP/HT (high pressure/high temperature) wells, is CAL-IV compliant and has the largest full scale test validated Connection Service Envelope (CSE) of any semi-flush connection on the market. Exceptional torque capability and compression efficiency are achieved through the simultaneous engagement of opposing flanks of the dovetail thread. The clearance OD 1.5 – 2% of specified nominal pipe body OD makes this connection perfect for tight clearance applications.

The TenarisHydril Wedge 623® comes with Dopeless® technology, a dry, multifunctional coating that renders the use of thread compounds obsolete and improves the efficiency of the running operation.

The unrivaled running reliability and robustness given by the wedge thread and Dopeless® technology make TenarisHydril Wedge 623® connections particularly suitable to be run in stands, promoting efficiency and safety at the rig site.

Results

A smooth performance with single joints

Total ran in hole 13 3/8" and 14" single joints with zero rejects and re-makeups due to connection related issues. The high quality of the graphs recorded during the assembly operations proved the reliability that this connection along with Dopeless® coating bring in the most complex environments.

Improving running performance through stands

Part of the 13 3/8" joints were assembled in stands of triples and were installed without rejects and re-makeups caused by connection related issues. The connections were able to withstand the racking process and the stands were made up without problems, allowing the operator to achieve a 15% reduction in running times vs standard running operations.

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For contact information, please visit our site:
www.tenaris.com