



New TenarisHydril connections promote reliability in North Sea HP/HT well

Maersk Oil & Gas successfully drilled an HP/HT offshore well using an integrated package of TenarisHydril premium connections and related services.

Summary

Maersk Oil & Gas Norway faced the challenge of drilling the exploratory 6406/6-4S (Tvillingen Sør) well in block PL510, located in the difficult waters of Norway. This offshore exploration well had high pressure and high temperatures (HP/HT) as well as a potentially sour environment. In addition, the oil and gas company needed to comply with stringent HSE regulations issued by the local government.

Typical to HP/HT projects, the operator's primary focus was to minimize risks. To achieve this, Maersk Oil & Gas required a reliable casing solution, qualified in accordance with the most demanding testing protocols used to evaluate connection robustness or otherwise being demonstrably field-proven. In response, Tenaris offered a series of products developed and tested to perform in these operating conditions.

Tenaris supplied a full package, including the newly designed TenarisHydril Blue® Quick Seal, Blue® Max, and Wedge 623™ connections plus the Wedge 523™ connection, all with Dopeless® technology. The products came with added value services, including Tenaris technical assistance in the field and coordination of accessories production.

As a result, Maersk Oil & Gas conducted a successful operation with outstanding running times, zero rejects and re-makeups due to connection related issues, and full compliance with Norway's environmental and safety standards.

Challenges

Difficulties all around

As with many exploration projects, there was a certain level of uncertainty regarding downhole conditions. The oil and gas company had to be ready to face unexpected complications.

The HP/HT well was located at a water depth of 261 meters and had a total planned depth of 4669 meters. Bottom hole pressure was expected to be 11484 psi and the temperature at the top of the reservoir was around 169°C. The risk of encountering H₂S meant that the casing had to be resistant to Sulfide Stress Corrosion Cracking (SSC) failures.

PROJECT PROFILE

Operator

Maersk Oil & Gas Norway

Location

Tvillingen Sør, Norway.

Well type

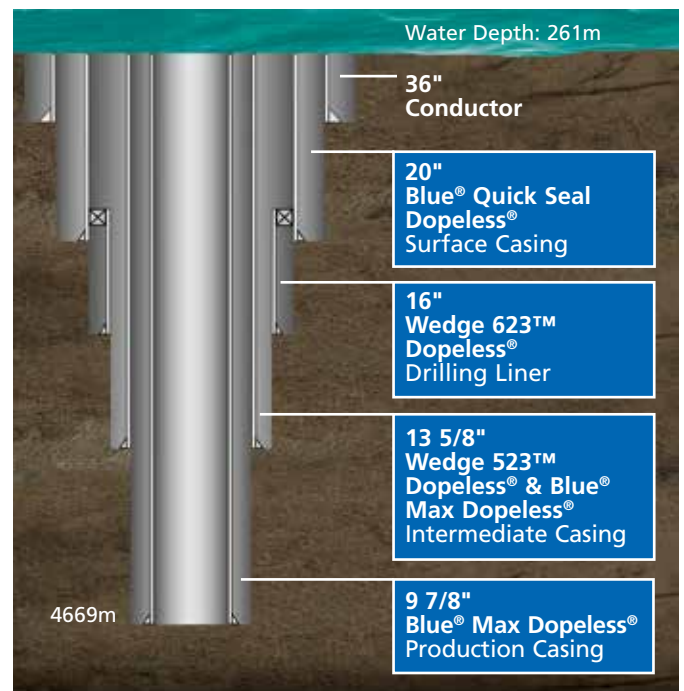
HP/HT Offshore

Products highlighted

- Blue® Quick Seal connection
- Blue® Max connection
- Wedge 623™ connection
- Wedge 523™ connection
- Dopeless® Technology

Services provided

- Field Services
- Accessories



In addition, this offshore location is characterized by harsh weather conditions that posed extra difficulties for the operator, who drilled this well from a semi-submersible rig (the Leiv Eriksson.)

High HSE standards

The Norwegian government has stringent regulations aimed at protecting the local environment and enhancing personnel safety. To comply with these high standards, Maersk Oil & Gas required a solution able to minimize the discharge of hazardous chemicals and reduce pipe handling operations at the rig site.

Solutions

A full package of qualified solutions

Tenaris supplied Maersk Oil & Gas with the newly developed and qualified TenarisHydril Blue® Quick Seal, Blue® Max and Wedge 623™ connections, along with the field-proven Wedge 523™ connection.

The Blue® Quick Seal, Blue® Max and Wedge 623™ connections are all compliant with the forthcoming revision of the API RP 5C5 CAL-IV.

The Blue® Quick Seal connection was tested beyond protocol to ensure it would meet the requirements of this particular operation. This product has been designed for large OD surface casing that requires a gas-tight seal and fast make-up.

The Blue® Max was designed for HP/HT applications that demand 100% pipe body performance. This connection's seal geometry provides reliable sealing under extreme loads. The twin start thread ensures easier and faster make-up.

The Wedge 623™ connection comes with internal and external metal-to-metal seals that are in line with API RP96 for deepwater applications. The connection offers a compression efficiency of 70% to 75%, which is outstanding for a semi-flush connection.

Tenaris also supplied pipes with proprietary sour service steel grades. These products are designed and tested to resist Sulphide Stress Corrosion (SSC).

Multiple benefits

In standard operations, dope is applied manually in the field with a brush. In contrast, Dopeless® technology is applied in the controlled industrial environment of Tenaris mills. This fully automated and industrial process ensures that a consistent amount of lubricant is applied to each connection. The consistency of the coating

increases the reliability of the installation, considerably reducing rejects and re-make-ups.

With the Dopeless® technology solution, customers can extend their quality control plan to the lubrication of the connection, which takes place in Tenaris mills.

This solution makes thread compounds obsolete, minimizing the environmental footprint of the operation and making the rig site cleaner and safer.

Dopeless® connections can undergo a seal inspection right before the running while, on the other hand, pipes coated with thread compounds can't go through this step. Therefore, Dopeless® technology allows an extra security step that further promotes the reliability of the installation.

Local assistance and well integrity

Field service specialists were present during the running to promote operational safety and efficiency. The local support team worked side-by-side Maersk Oil & Gas, offering advice regarding the appropriate use of the products and the application of the corresponding operational practices.

The complete tubular package supplied by Tenaris also included accessories that fulfilled the requirements of this challenging operation.

Results

Reliability first and foremost

Maersk Oil & Gas led this operation in an extremely difficult offshore environment. However, the operator achieved outstanding running times due to there being no connection-related rejects or re-make-ups. Tenaris field service specialists were present on site to assist the customer during the installation and running of the products.

In addition, the oil and gas company was able to minimize the environmental impact of the operation and promote the safety of the personnel at the rig site.

The excellent results obtained with the use of TenarisHydril connections in this well validated their performance and provided a useful track record for Maersk Oil & Gas. These results were taken into consideration when it awarded Tenaris with a contract to supply casing and related services for another challenging, HP/HT gas development project located in the UK sector of the North Sea that will start during 2016.



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