



Pluspetrol runs Dopeless® technology for the first time in Vaca Muerta shale well

The Argentine company chose Wedge Series 500™ connections and had the technical support of Tenaris to run Dopeless® technology in a horizontal well.

Summary

In recent years, the exponential growth in the exploitation of shale wells made it necessary for oil and gas companies to use products specially designed to perform in these unconventional wells.

Argentine company Pluspetrol took on the challenge of drilling a horizontal well in Vaca Muerta, Argentina's most important shale play. Located in the province of Neuquén, it has technically recoverable resources of 20 billion barrels of oil and 583 trillion cubic feet of gas (Vaca Muerta and Los Molles). Currently, Argentina is the second most important country in the world as a potential producer of shale gas (TCF 802) and fourth in shale oil (27 billion barrels).

To drill the PSO-1009h well, Pluspetrol decided to use TenarisHydril Wedge 563™ and Wedge 513™ premium connections and Dopeless® technology, along with technical consultancy services, pipe management services and field services.

Challenges

A horizontal well with high pressure and complex geometry

The PSO-1009h well is located in Puesto Silva Oeste, where Pluspetrol already had other vertical wells with evidence of high pressure formations and the need for well control. The operator decided to drill a horizontal well to maximize fracture stimulation effectiveness and promote high production rates.

In unconventional wells, the hydraulic fracturing operation defines the mechanical design of the production casing. This casing must be strong enough to withstand both high internal pressures during stimulation (between 10,000 and 14,000 psi) and high axial tensile loads induced by low temperatures and high pumping rates.

Also, given the well geometry, it was essential for this operation to use connections with high torque capability in case the operator needed to rotate the pipe to reach the final depth.

Pluspetrol follows the highest engineering standards and applies environmentally friendly technologies. For that reason, the company

PROJECT PROFILE

Operator

Pluspetrol

Location

Puesto Silva Oeste, Vaca Muerta, Argentina

Well

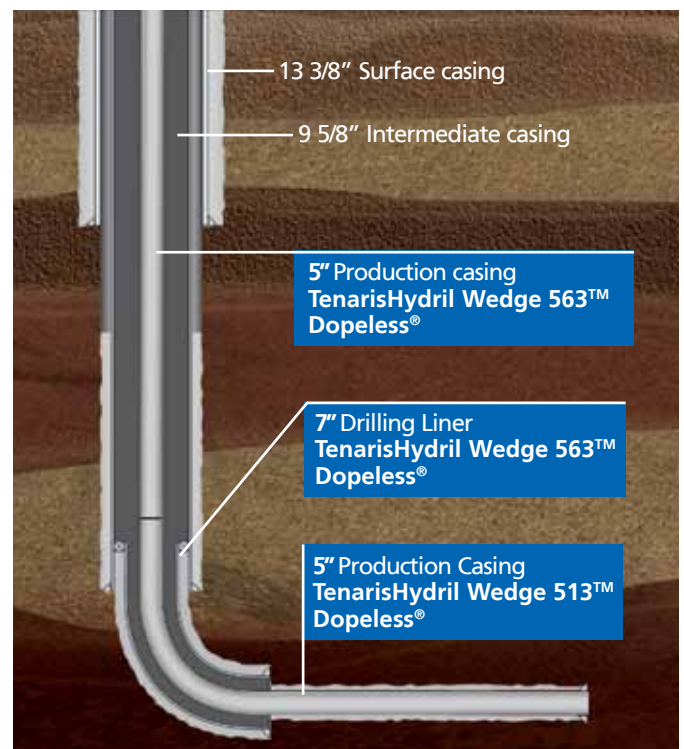
Shale, horizontal

Services provided

- Well design and material selection
- Accessories make-up at Tenaris base
- Product management with just-in-time delivery
- Running assistance

Products highlighted

- TenarisHydril Wedge 563™
- TenarisHydril Wedge 513™
- Dopeless® technology



looked for solutions that minimized the risk of accidents and reduced the environmental impact of the operation.

Solutions

Robust connections with high torque capability

Pluspetrol chose Wedge Series 500™ premium connections, used in operations where torque resistance is essential.

The production casing used 5" pipes that combined TenarisHydril Wedge 513™ connections in the open hole section -extending almost 1,000 meters horizontally within Vaca Muerta- with TenarisHydril Wedge 563™ connections in the vertical section.

The high torque resistance of these connections was a key factor for both the 7" TenarisHydril Wedge 563™ liner and the 5" TenarisHydril Wedge 563™ and Wedge 513™ production casing. The latter combined TenarisHydril Wedge 513™ integral flush connections in the open hole in order to reduce drag during the running and the equivalent circulating density during the cementation and TenarisHydril Wedge 563™ threaded and coupled connections to reach the values of torque and tension that the trajectory of the well may demand. For the production casing, Pluspetrol chose connections that had both a reduced OD to maximize clearance and an internal flush profile to prevent turbulence during fracturing.

Pluspetrol used the P110S grade steel, a popular choice of leading shale operators in the United States.

Efficient technology

The TenarisHydril Wedge Series 500™ connections came with Dopeless® technology. This dry multifunctional coating is applied at Tenaris mills, in a completely automatic process that ensures that the exact amount of lubricant is used. Dopeless® products increase the reliability of the installation by reducing make-up problems and the risk of rejects.

The pipes arrive rig-ready because they do not require cleaning nor the application of dope before the running. Field experience shows

that Dopeless® technology reduces running times up to 25%. In addition, Dopeless® technology eliminates the need to clean the connections before the running and use thread compounds, promoting a safer work place and minimizing the environmental impact of operation.

Support

Tenaris worked side-by-side Pluspetrol throughout the entire operation. The Technical Sales team collaborated with the well design and material selection. Then, Tenaris provided field services to make up accessories at its base, product management services for just-in-time delivery and assistance in the field during the running.

Results

Operating efficiency

The operation was safe and effective. Pluspetrol drilled the PSO-1009h well to a final depth of 3,900 meters with zero rejects and no re-makeups.

In this challenging well, Pluspetrol improved running times thanks to Dopeless® technology. Furthermore, contaminating waste was eliminated because Dopeless® pipes do not require thread or running compounds. The thread protectors were removed dry and clean, and therefore they did not become hazardous materials and their management was simplified. Minimizing running times was considered very important because it helped reduce the risks associated with the presence of inflows.

Pluspetrol was satisfied with the benefits provided by Dopeless® technology and the tubular products that were used. Tenaris accompanied the customer throughout the entire operation, bringing all its knowledge of unconventional wells and helping the operator make the best out of Tenaris products.

This operation marks a new milestone in the collaboration between Pluspetrol and Tenaris, with a long-term agreement that is strengthened in each operation.



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