

# Gazprom Neft Reduces Well Construction Time by an Average of 10 Days with Direct XCD Bit, Russia

Drillable alloy casing bit facilitates cost reductions and overall performance increase in existing onshore oil and gas condensate field

## CHALLENGE

Efficiently drill and case unstable shale formation in which field limitations increase operational complexity.

## SOLUTION

Run the Direct XCD\* drillable alloy casing bit to enable effective casing while drilling.

## RESULTS

- Ran casing in 30.7 hours versus the 31 days previously required.
- Landed casing in record time, reducing well construction time by an average of 10 days.

**“This is a significant milestone in the development of company technology, which will facilitate cost reductions and increase overall performance.”**

Well Construction Deputy Director  
Gazprom Neft Orenburg



## Avoid wellbore collapse in swelling shale formations

In Russia, Gazprom Neft has undertaken efforts to increase production by developing existing fields more efficiently and acquiring new assets. The operator is currently deploying this strategy in the eastern area of the Orenburg oil and gas condensate field.

Due to field specifics and limitations, some sections of 9<sup>5</sup>/<sub>8</sub>-in [244<sup>1</sup>/<sub>2</sub>-mm] casing are very difficult to drill and complete. In the Orenburg field, Gazprom Neft faced wellbore stability issues caused by shale formations, which are prone to swelling and, at the same time, may cause wellbore collapse in the upper intervals. Additionally, water-base mud (WBM) was the only viable option for the operator.

## Test drillable alloy casing bit to overcome challenging formations

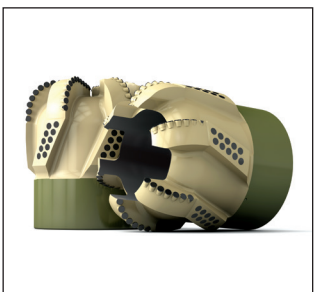
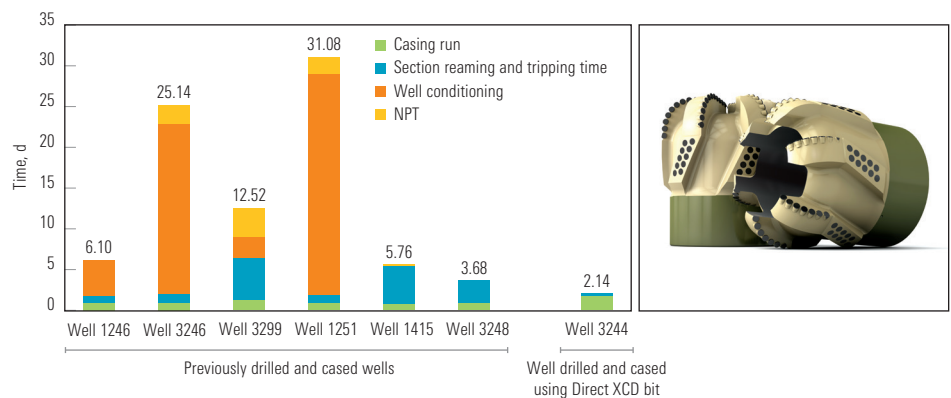
After comprehensive analyses performed by Schlumberger and Gazprom Neft engineers, Schlumberger segments collaborating within petrotechnical engineering services chose to test the Direct XCD bit in a predrilled section.

The Direct XCD was built to enable drilling and casing while drilling through unstable wellbores, making it ideal for the job. The bit drills on standard casing that is rotated at the surface and enables casing while drilling. After the Direct XCD bit drills to TD and the casing has been cemented in place, the bit’s unique alloy can be drilled out by any standard PDC bit, eliminating the need for special drillout bits.

During the test, casing was run with the casing running tool, and tubing torque rings were used to significantly increase the casing’s torque capabilities. The test was successful, and the operator decided to continue using the Direct XCD bit throughout the drilling operation.

## Reduced well construction time by an average of 10 days

With the immediate help and support of the Gazprom Neft drilling department, casing while drilling took only 30.7 hours, as opposed to up to 31 days. Although some intervals required heavy reaming, the section was completed in record time, resulting in an average well construction time reduction of 10 days.



Graph showing number of days for each operation and NPT for Orenburg wells (left); Direct XCD drillable alloy casing bit (right).

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