Kazgermunai Achieves Precision Well Placement Objectives with PeriScope HD Service, Onshore

Multilayer bed boundary detection service enables crucial placement of horizontal section in the Kyzylorda region of Kazakhstan

The PeriScope HD service mapped internal layering while drilling the target interval, identifying a shale layer 2 m [6.6 ft] below the bottom of the target. The trajectory was adjusted to avoid exiting through the reservoir bottom, and again to stay within the target layer’s approximate thickness of about 5 m [16 ft]. Kazgermunai navigated the BHA through the 611-m [2,005-ft] horizontal section with one run over eight days, saving five days compared with the well plan.

"PeriScope HD enabled meeting all geological objectives, including avoidance of exit through the reservoir bottom, which was critical for the future production. Survey quality management allowed to place the well within given coordinates, as well as perform anticollision scan with offset wells."

Akimzhan Lukpanov, Chief of Reservoir Modelling Department
JV Kazgermunai LLP

Background
JV Kazgermunai LLP needed to quantify the positional uncertainty and validate existing survey data for more than 100 offset wells. Offset wells indicated that the target was between a naturally fractured 4- to 7-m-thick carbonate layer and a shale layer with a water-bearing formation below. Additional concerns included a possible structural dip and subseismic faults. This required careful maneuvering to prevent mud losses and accidental exit into the shale layer, which would result in water influx at the production stage.

Technology
- PeriScope HD* multilayer bed boundary detection service
- PowerDrive X6* rotary steerable system

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**TECH REPORT**

**AKSHABULAK OIL FIELD**
KAZAKHSTAN, KYZYLORDA REGION

<table>
<thead>
<tr>
<th>Lithology</th>
<th>Clastic, carbonates, low resistivity contrast</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MD</strong></td>
<td>2,600 m [8,530 ft]</td>
</tr>
<tr>
<td><strong>Horizontal section length</strong></td>
<td>611 m [2,005 ft]</td>
</tr>
<tr>
<td><strong>Target zone thickness</strong></td>
<td>5 to 8 m [16 to 26 ft]</td>
</tr>
</tbody>
</table>

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