



## AnTech Sets Test For Horizontal Drilling With Coiled Tubing

Scott Weeden December 27, 2011

A step-change is under way in the coiled-tubing drilling market with the testing of a bottomhole assembly that utilizes solid-state, gyro mechanism for orienting AnTech Ltd.'s five-inch, POLARIS™ tool to drill directional wells with a 6-1/2 inch hole size.

"Shallow wells are the market for this tool," Paul McCutcheon, AnTech marketing manager, told *Hart Energy E&P*. "Companies drilling with coiled tubing haven't had the option to drill economic horizontal wells of this size. This will open up those markets."

AnTech is working with Advanced Drilling Technologies (ADT) to drill three wells along the Kansas-Colorado border in the Niobrara Formation. The companies are using ADT's hybrid rigs to test the Polaris.

As AnTech noted, ADT has drilled more than 2,000 vertical wells with coiled tubing. The recent operations in Kansas were the first time ADT had the opportunity to drill directionally with the tool.

"Based on the success we have experienced using our hybrid rigs, we have always believed that an affordable, reliable downhole drilling system would revolutionize the directional market for coiled-tubing drilling," stated Ovi Alfarc ADT's president.

The first well was drilled to nearly 3,000 ft true vertical depth (TVD) with over 600 ft of lateral displacement.

The second well, following a one-day mobilization, was directionally drilled to over 1,500 ft TVD with an average dog-leg severity of about 7.5°. The tool was easily steered and the job was completed in less than one day, according to AnTech.

The third well was drilled at a site near Goodland, KS, to a TVD of over 1,100 ft with a 700-ft lateral displacement.

McCutcheon pointed out that these were the first three wells drilled with the tool and were part of the learning curve. On the first well, for example, too much angle was built into the orientation and the operators had to pull it back. However, the bottomhole ended up within the parameters for the final target. Until more wells are drilled, it will be difficult to say if there are any distance limitations on the system.

The bottomhole assembly includes the rotating joint, gyro system and downhole sensors, which are connected to a drilling motor with a bent sub and bit for the directional drilling. By using the rotating joint to re-orient the tool, the operator can drill a build section and by rotating it continuously, a straight hole can be drilled.

The Polaris system negates the need for a magnetic steering instrument, allowing the tool to be shorter and easier to steer, he explained. "We're getting information from the gyro and pressure sensors in real time. Because the sensors are close to the bit, corrective actions can be carried out immediately."

The next two wells will demonstrate the tool can perform equally as well while drilling horizontally and under the harsher conditions of drilling with air, AnTech noted.

ADT and AnTech have worked well together, McCutcheon stated. AnTech runs the Polaris tool while ADT performs a other drilling and completion operations. There have not been any particular quality issues in drilling the first three wells.

"We built it as robust as possible. It provides low mobilization costs and quick drilling," he emphasized.

The tool can be used for unconventional gas shales, coal-bed methane and underground coal gasification. It can also be used to re-enter wells in mature fields to drill sidetracks to tap additional reserves.

"The success of these operations has shown that the Polaris tool will most certainly be instrumental in catapulting the coiled-tubing-drilling market into new applications," said Toni Miszewski, managing director, AnTech. "From simple shallow wells to multiple wells from a single pad, Polaris offers a quick and cost-effective solution."

AnTech was responding to industry demands for coiled-tubing solutions. "We heard over and over that downhole tools were expensive and not economically feasible with coiled tubing. We're out to change that perception," McCutcheon said.

With the tool, the rate of penetration can be increased. Wells can be drilled underbalanced. The tool can be run with gaseous drilling fluids easily. It is a more efficient and economical tool.

As Alfaro noted, "Clearly, the Niobrara Formation operations prove that the Polaris tool, used in conjunction with our hybrid rigs, will achieve the higher efficiencies and lower costs."

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