

# Rotary Steerables:

## Step-change benefits shadowed by cost concerns



ROTARY STEERABLE systems are seen as one of the industry's best hopes for exploiting marginal and difficult-to-access reserves. The following articles highlight recent advances in RSS technology and detail several successful case histories.

But, while relishing the technology, many operators harbor cost concerns. In many situations, the price tag for an RSS system overshadows the cost of the whole operation, operators say.

"I drill a few high-dollar wells, but I drill a gazillion low dayrate wells," said one independent drilling manager, noting that his AFE encompassed as many as 1,100 land wells per year. In many of his company's wells, the cost of an RSS system can be twice or even three times the rig rate – and rig rates are hardly at an ebb point.

"I don't disagree that it's a good tool, but I've got to make the dollars and cents work, too," he said.

Yes, the dayrate can be high, but as usage increases, costs should decline, observed **Simon Peach**, strategic business manager for **Weatherford**.

"Operators have a valid point," he remarked, "but as use of rotary steerables becomes more commonplace, costs will decline."

Service companies also stress value over price tag. **Jon Ruzska**, product line manager for AutoTrak X-treme at **INTEQ**, acknowledges that rotary steerables are not "cheap," but when applied correctly, are extremely cost-effective, often irrespective of rig costs.

"The types of wells that rotary steerables can drill enable operators to economically access otherwise stranded reserves and/or increase the amount of reservoir exposed," he pointed out. "The ultimate value is increased production, higher field-recovery factor and lower environmental footprint."

Noted **Mike Williams**, global sales manager for **Schlumberger**, the true consid-

eration should be how fast an operator could get oil to the market, not how it compares with rig rate.

"Rig cost is not always the driver," he said. "With today's oil price, the driver might be how fast I get my oil to sell. If rotary steerable makes that 2 weeks quicker, then relative cost of the RSS service to the rig is much less of a concern."

And RSS are becoming increasingly indispensable. Said a veteran drilling engineer with a major operator, "We couldn't do our work without them."

Operators concede that service firms have a right to recover their investments. However, the larger operators are encouraging competition in the RSS market, with the goal of cutting prices across the board.

"There is a perception that rotary steerable systems are only for high cost market," noted Mr Williams. "[But] we drill more footage in west China with rotary steerables than in the Gulf of Mexico."





# Best value vs price tag

By Mike Killalea, Editor & Publisher

The amount of rotary steerable footage is increasing by leaps and bounds, as well. In 2006, some 20 MM ft were drilled using rotary steerables industry wide. Mr Williams said that Schlumberger's tools accounted for 9.5 MM ft of the total, just shy of half. Furthermore, despite cost concerns, overall RSS footage is increasing 20%-25% per year, Mr Williams added.

Another driver pointed out by Mr Williams are those drilling environments where operations are limited to a narrow time. The ability of RSS to cut drilling time by as much as 20% is central here.

"Rotary steerables might mean drilling 7 wells in stead of 5," he said. "Now the driver is not rig rate. It's how many wells can I drill in the limited time frame. That influences how much oil I can produce."

INTEQ's Mr Ruzska's outlook is similar. "Time savings can be achieved to lower well costs and enable construction of

more wells in a set period of time to increase production rates on declining assets."

Weatherford's Mr Peach says operators should consider more subtle, but nonetheless important, benefits of RSS.

"Quite often, operators don't look at advances that translate into less tangible advantages," he said. "For example, there is very little risk of losing assemblies in the hole, so that is a large potential savings. Another less-tangible advantage is that the chance of getting casing to bottom on the first try is greatly improved." The latter enhancement, Mr Peach said, owes to smoother doglegs and better gauge produced by RSS.

The opportunities for lower-priced RSS systems are legion, thanks to the almost routine nature of horizontal wells. Even shallow wells in California, the Rockies and elsewhere are largely directional these days. One major indicated that he would use RSS on tight gas in the US were the rates lower.

Mr Ruzska urges operators to identify true needs before automatically ruling RSS out. "Today," he said, "there are more options available. These include automated directional drilling systems that which are not rotary steerables.... These 'non-rotating automated directional drilling systems' are seeing rapid growth in markets where less challenging trajectories are required. In essence, they are very effectively filling the void between conventional directional drilling techniques and rotary steerables."

Promised one operator drilling manager, "I'm not giving up. I think rotary steerables are excellent tools and use it significantly in the Middle East. I'm just trying to figure a way to use it in more of our wells.

"There is a huge market on land in the US for all these rotary steerables. The guys need to figure out a way that we can make them work there economically."