

## Chevron completes deepest successful well test in GOM as Jack, Kaskida push Lower Tertiary trend higher

IN EARLY SEPTEMBER, Chevron announced that it successfully completed a record-setting production test on the Jack No. 2 well at Walker Ridge Block 758 in the Gulf of Mexico. The Jack well was completed and tested in 7,000 ft of water and a depth exceeding 20,000 ft, breaking Chevron's 2004 Tahiti well test record as the deepest successful well test in the GOM. The Jack well was drilled to a total depth of 28,175 ft.

During the test, the well sustained a flow rate of more than 6,000 bbls/day of crude oil, with the test representing about 40% of the total net pay measured in the Jack No. 2 well. More than a half-dozen world records for test equipment pressure, depth and duration in deepwater were set during the Jack well test. For example, the perforating guns were fired at world record depths and pressures. The test tree and other drill stem test tools also set world records. However, technical details of the test remain confidential for now, according to Chevron's media relations department.

Chevron is the operator, with 50% working interest. **Devon Energy Corp** and **Statoil** each have 25%. Chevron had estimated the 300-sq mile region around the test well could hold 3 billion to 15

Prospect	Discovery year
Trident	2001
Great White	2002
Cascade	2002
Chinook	2003
St. Malo	2003
Tobago	2004
Silvertip	2004
Tiger	2004
Jack	2004
Stones	2005
Gotcha	2006
Kaskida	2006

billion bbls of oil and natural gas liquids. The companies plan to drill an additional appraisal well in 2007.

In recent months the Lower Tertiary trend in GOM deep waters has been highlighted, especially as the Jack well's encouraging news came right on the heels of BP's announcement on 31 August of a major Lower Tertiary discovery in the Kaskida prospect, about 80 miles northwest of Jack.

BP's well, located on Keathley Canyon

block 292, lies in about 5,860 ft of water and was drilled to a total depth of about 32,500 ft using **Transocean's** Deepwater Horizon semisubmersible. It encountered 800 net ft of hydrocarbon-bearing sands. Appraisal will be required to determine the discovery's size and commerciality.

BP has a 55% working interest in the field, **Anadarko Petroleum** has 25% and Devon has 20%.

For Devon, Jack and Kaskida are 2 of the 4 discoveries it has made in the Lower Tertiary trend of deepwater GOM. The others are St. Malo drilled in 2003 and Cascade in 2002. In August, Devon increased its working interest in the Cascade unit from 25% to 50% in a purchase from **BHP Billiton**.

The company also said it has identified 12 more exploratory prospects in the Keathley Canyon lease area and that it has secured a 4-year contract on **Diamond Offshore's** Ocean Endeavor. That deepwater drilling rig is being refurbished at a shipyard in Singapore and is scheduled to arrive in the Gulf of Mexico in the second quarter of 2007. Devon believes the long-term availability of the Ocean Endeavor will allow it to more aggressively pursue its high-impact deepwater strategy. ♠

## Noble Amos Runner sets record for deepest conventionally moored rig



**The Noble Amos Runner is scheduled to be equipped with Noble's NC-5SM mooring system, with 12 mooring points for more stationkeeping ability.**

NOBLE CORP recently announced that its semisubmersible Noble Amos Runner has established a world record for the deepest "conventionally moored rig" by mooring in 7,650 ft of water in Green Canyon Block 955. The rig will be drilling at this location, about 200 miles south of Houma off the Louisiana coast, for **Kerr-McGee Oil & Gas Corp**, a subsidiary of **Anadarko Petroleum**.

The Noble Amos Runner set this record using the rig's existing mooring system, as opposed to pre-set mooring systems that require anchors or suction piles to be in place before the rig arrives. The system includes 9,500 ft of 3 1/4-in. anchor wire and 4,250 ft of 2

3/4-in. anchor chain on each of the rig's 9 anchor points. With a total length of more than 23 miles, the complete mooring system weighs in excess of 2,270 tons. The rig is a Noble EVA-5000 designed semisubmersible unit upgraded in 1999. Rated to operate in water depths up to 8,000 ft, it is equipped to drill wells up to 32,500 ft TD.

The Noble Amos Runner is 1 of 4 Noble EVA-4000 rigs scheduled to be equipped with Noble's NC-5SM mooring system, developed following Hurricane Ivan in 2004 and Hurricanes Katrina and Rita in 2005. It increases the number of mooring points from 9 to 12 to provide additional stationkeeping ability. ♠

## Advanced metal seal bearing improves bearing life, reliability, cutting durability

HUGHES CHRISTENSEN has applied a new steel tooth rollercone bit with a technically advanced metal seal bearing to provide improvements in bearing life, seal reliability and cutting structure durability. Technological improvements in the MXL bit include an updated single energizer metal (SEMS2) seal package that significantly increases bearing reliability, especially in high-speed motor applications compared with the standard SEM and elastomer sealed bits.

In the new SEMS2 sealed bearing package, the metal seal cross-sectional width was increased approximately 20%. Since metal seal wear is relatively linear, this results in a 20%

increase in potential seal capacity. A proprietary surface treatment also was applied to the metal seal surface on the cone seal insert, which produces an extremely hard, thin layer on the metal seal face to decrease the seal wear rate and reduce friction coefficient at the seal faces.

Specific Gulf of Mexico case studies show examples of 1 new MXL bit replacing 2-3 standard steel tooth bits, effectively doubling the footage drilled in the process. Another example shows 3 of the new MLX bits replacing 5 standard steel tooth bits with substantial cost savings due to higher ROPs and less flat time due to fewer trips. Cost savings of up to \$300,000 have been documented. ♠

## New connections reduces revolutions from stab to makeup by at least 50%

GRANT PRIDECO has introduced TurboTorque rotary-shouldered connections for extreme drilling environment such as deepwater, ultra-deep, extended reach, HPHT and horizontal wells. They're designed to meet the specific and different needs of each pipe size.

"Rather than designing one thread form and extrapolating upwards and downwards throughout the product line, we took a 'one size does not fit all' approach and engineered multiple connection designs to meet the different needs of each pipe size," said **Randall Edwards**, senior vice president - sales and marketing, drilling products and services division.

The connections offer a double-start thread form. Dual thread

forms, 180° apart, reduce the number of revolutions from stab to makeup by 50%. The thread form — larger than the root radii of API connections — significantly reduces peak stress in the thread roots. The increase in thread lead angle also provides an increased torque capacity of up to 12%.

The connections also optimize hydraulics, improve clearance and fishability, reduce risk of failure and extend equipment life, the company said. ♠



## World's first monobore expandable casing system installed in BP well

THE WORLD'S FIRST true monobore expandable casing system was successfully installed in a BP commercial well in southeast Oklahoma. The linEXX Solid Expandable Casing Extension System is the product of a collaborative development project between **Baker Oil Tools** and BP. Deployment of the system included an RC9-R Recess Shoe run on the 9 5/8-in. parent casing string, FORMlock expandable hanger/packer, 36 joints of 8 in.-by-0.345 in. wall expandable liner and a RNX guide shoe. Expansion of the liner was accomplished using the catEXX expansion tool system.

The linEXX system features one-trip, top-down expansion to extend the prior 9 5/8-in. casing string while maintaining the full drift ID of the parent casing, i.e., 8 1/2 in. It allows for isolation of troublesome downhole conditions and facilitates deeper wells by preserving critical hole size.

First, a contingency recess shoe was installed on the 9 5/8-in. parent casing at a depth of 2,588 ft (789 m). A total of 1,514 ft (461 m) of 8-in. expandable liner was run in the hole and positively located in the previously installed Recess Shoe profile. The liner was expanded through its full length and the guide shoe was retrieved in a single trip. The string was expanded 18% to 8.625-in. nominal ID and 8 1/2-in. drift ID.

The expanded liner was pressure tested, the circulating sleeve in the Recess Shoe was shifted open and the expanded liner cemented in place using a K-1 cement retainer with returns taken through the ports of the RC9-R Recess Shoe. The retainer and cement were then drilled out. Drilling continued below the linEXX shoe at 4,020 ft (1,225 m) with rotary steerable directional tools. Plans call for isolating the linEXX system with production casing before completing the well.

Complete details about this record-setting achievement will be available in the January/February 2007 issue of DRILLING CONTRACTOR. ♠