

Schlumberger Integrated Services Manages Wildcat Well Project for Tullow

Integrated Services manages remote, logistically, and technically challenging operation revealing 72m of net oil

CHALLENGE

Drill complex ultradeepwater wildcat well to achieve client objective of proving the Jubilee play extends across the Atlantic.

SOLUTION

Effective project management through the Schlumberger Integrated Services organization, leveraging structured processes developed for deepwater operations.

RESULTS

The well proved the extension of the Jubilee play across the Atlantic, and made a significant new discovery for the client with 72 m of net pay. No lost time incidents were experienced in over 625,000 personnel hours worked.

“Any one of these things in itself would have created an operational challenge, to have all five of them together made this an exceptionally tough well to take on... all of these were achieved without hurting anyone and without losing control of the well.”

David Lawrie
Regional Business Manager,
Equatorial Atlantic, Tullow Oil plc



Tullow Oil PLC, an independent exploration and production company, recorded its largest ever discovery, the Jubilee field, offshore Ghana, West Africa in June 2007. The Jubilee field is a large continuous accumulation of light, sweet, crude oil in Cretaceous turbidite sandstone fans. Earlier that year Tullow had completed the purchase of Hardman Resources Limited, making it the operator of the deepwater Guyane Maritime exploration license—offshore French Guiana—on behalf of a joint venture consisting of Shell, Total, and Northpet Investments. To determine whether the Jubilee play was mirrored on the western side



Map of the prospect area, offshore French Guiana.

of the Atlantic, the company identified a drilling target for an exploration well in 2,048 m water depth, approximately 150 km from the French Guiana coast.

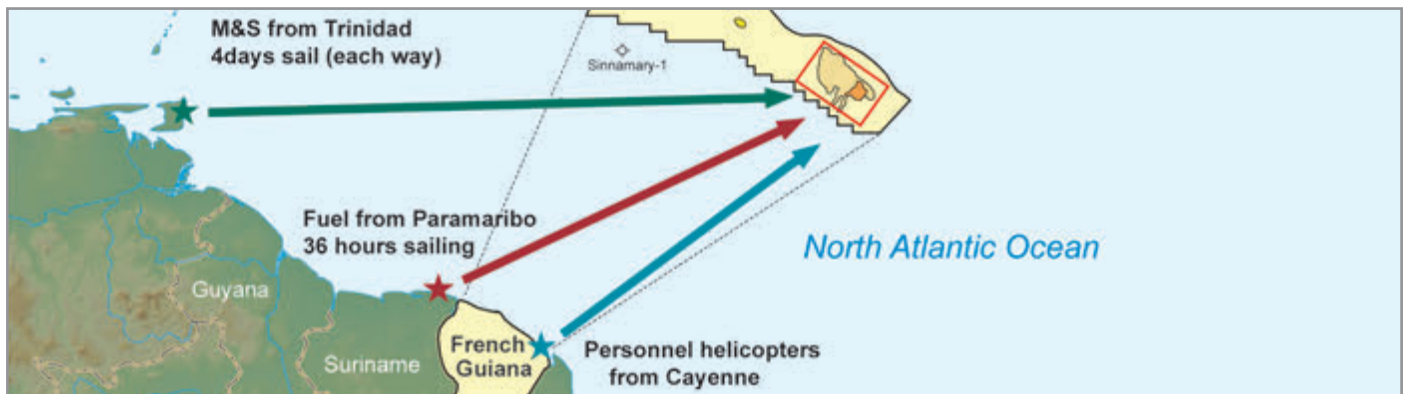
Operational challenges

Tullow finalized the conceptual well design and selected Schlumberger to provide services for directional drilling, MWD and LWD, wireline logging, mud logging, drill bits, drilling mud and completion accessories. Planning for the Zaedyus (GM-ES-1) wildcat well would need to address a range of technical and logistical challenges. It would be

- Tullow’s deepest well offshore
- Tullow’s first well in South America
- have no relevant offset data available
- have no established supply chain in an unfamiliar regulatory environment
- a new build, using an unfamiliar rig.

Ensuring deepwater readiness

Colocated in the Cayenne office with the Ensco rig manager and the Tullow drilling superintendent, Schlumberger appointed a qualified Integrated Services Project Manager (ISPM) who coordinated intensive prejob planning and risk management processes, following Schlumberger deepwater-specific guidelines. The ISPM—using the Schlumberger Project Readiness Assessment tool—assessed and monitored project readiness in terms of exposure, complexity and processes, people and competency, and technology and equipment. This identified issues requiring remedial action to reduce the likelihood of unplanned



Locations and distances between Trinidad, the rig and Paramaribo

events and non-productive time. For instance the importance of people and experience continuity for the duration of the project was flagged. While Trinidad was the closest base, staffed by experienced deepwater personnel, engineers from GoM were to be deployed. This decision ensured experienced deepwater personnel were available for the duration of the project.

Integrated support

An exploration project of this magnitude, with such varied challenges, necessitated structured project management, planning and execution. The ISPM actively managed project scope, schedule, cost, quality, risk, human resources, communication, procurement, and logistics. Central to the project risk management was the creation of the risk register. Tracked by the ISPM, and synchronized to the drilling timeline, it ensured that appropriate risks and mitigation plans were reviewed in a timely manner.

Throughout the drilling program, multidomain experts in an operations support center (OSC) in Houston shared real-time downhole data with the onsite team, ISPM, and Tullow staff, via a secure internet collaboration system. This engendered a holistic approach to problem solving, driving productivity gains. During the most challenging times—for instance when drilling through tight pore pressure windows and unconsolidated formations—the OSC was extended to include GeoServices PreVue[®] real-time geopressure service and M-I SWACO PressPro RT¹ services, along with Smith Bits and Drilling and Measurement domain experts. Working cohesively, the team ensured bit and fluid optimization to deliver the best combination of hole cleaning and hydraulic horsepower to drill longer intervals with more time in hole, thereby eliminating costly tripping.

Logistical expertise

Considerable planning and administration was required to facilitate the transport of equipment in, through, and out of Trinidad, Suriname, and French Guiana. Permits to import, transport, and use the explosives and radioactive materials required for drilling activities were compli-

cated—some taking almost a year to obtain. Schlumberger leveraged its global presence, having its experts in the research center near Paris extend their existing French import, storage, and usage licenses to cover the required materials. This expedited the process; ensuring critical materials arrived on the rig when required.

Despite the logistical and technical challenges of the project, and the limited time available for planning, the well encountered 72 m of net oil pay in two turbiditic sandstone fans. Tullow's objective of proving the extension of the Jubilee play across the Atlantic was achieved with an important new discovery for the company. Also, no lost time or injury incidents were experienced in over 625,000 personnel hours worked.

“The ISPM did a first class job of coordinating the various SLB services on our ultradeepwater wildcat remote exploration well. He was an integral member of a great team that worked closely together to ensure maximum productivity and return on investment. I would have him on my team again anytime.”

Steve Devereux
Drilling Superintendent
Tullow Oil PLC

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