

# Noble Energy Saves Up to 20 Deepwater Drilling Days Using Integrated Services and Project Management

Proactive project planning, execution, and integration streamline operations and reduce NPT in the Eastern Mediterranean

## CHALLENGE

- Drill a new well in a remote location, given limited infrastructure, multiple permitting processes, complex geological environment, and large multidisciplinary teams.
- Reduce NPT and increase efficiency as compared with previously drilled wells.

## SOLUTION

Collaborate with Integrated Services Management (ISM) to streamline people, processes, and drilling and completions services.

## RESULTS

- Successfully planned, executed, and integrated a deepwater drilling operation that
- saved as much as 20 drilling days, with no HSE or tool failures
  - reduced the number of interfaces and simplified communication.

**“Our ISPM offered a service that satisfied the most critical demands. His service provided continuity between product lines—which is critical to operations—without NPT and safety issues. He was a pleasure to work with!”**

**Randall Anderson**  
Eastern Med Drilling Superintendent  
Noble Energy



## Improve NPT in deepwater operation

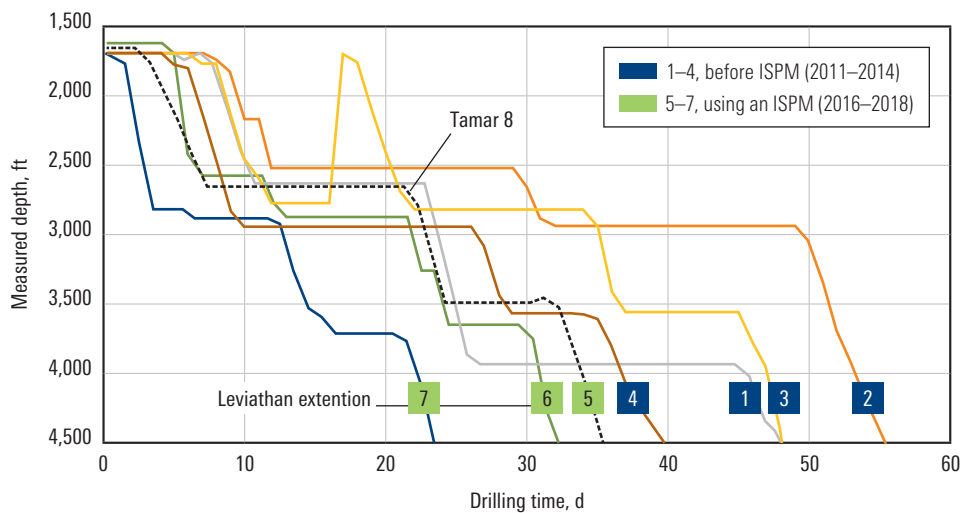
The deepwater natural gas Tamar Field is in the Eastern Mediterranean off the coast of Israel. Part of Noble Energy’s plan to expand production was to drill an additional well, the Tamar 8. Because previously drilled wells experienced high NPT, a solution was needed that would improve efficiency by addressing the lack of local infrastructure, complex permitting requirements for both materials and personnel, and complex geological drilling challenges.

## Streamline resources to increase efficiency

ISM proposed streamlining planning, execution, and drilling and completions phases—a first for Noble Energy. Within one month of project sanctioning, a team was put together and led by an integrated service project manager (ISPM) who planned the operation. Using a project readiness assessment, the ISPM assigned the necessary personnel and equipment to perform the job, assessed risk exposure, and continuously tracked the project status to ensure that people, processes, and technologies met the project requirements in a timely manner.

Project execution efficiently addressed logistical and drilling challenges. The ISPM coordinated the service delivery schedules of over 178 personnel and various equipment. More than 410 containers with a total weight of 3,791,951 lbm [1,720,000 kg] were transported on 90 vessels from 17 locations, including multiple countries that required obtaining the necessary permits. The ISPM also cleared over 205 shipments and coordinated air freight with over 150 packages of cargo from 85 flights at a total weight over 130,073 lbm [59,000 kg].

To improve drilling efficiency and overcome complex geological issues, such as salt and subsalt challenges, Schlumberger integrated fit-for-purpose technologies and services. The approach used Smith Bits technology for drilling the wellbore; directional drilling; mudlogging, LWD, MWD,



Proactive project management and integrated services save as much as 20 days in drilling Tamar 8 as compared with previously drilled wells. Success with Tamar 8 led to an extension of the Leviathan Field development, Well 6 and Well 7.

## CASE STUDY: Integrated services and project management save up to 20 drilling days, Eastern Mediterranean

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and openhole logging; DRILCO pipe inspection services; reservoir characterization services; wireline completion services; M-I SWACO solids control and cuttings management, fluids processing, and slop water treatment; and OneSubsea® products and services. Several technologies were run for the first time in the region, including the Rt Scanner\* triaxial induction service and the XL-Rock\* large-volume rotary sidewall coring service for comprehensive formation evaluation.

### **Reduced NPT to a record low and extended work scope**

Noble Energy and Schlumberger successfully built one project team, for which onsite colocation of the ISPM enabled the team to work together on a short time line to deliver Tamar 8 with zero misses for crew changes. The well spudded on time without any delays upon the rig's arrival. After the pilot and sidetrack holes were drilled, the well trajectory was followed per the developed drilling plan. In addition to creating a new business model for cuttings disposal and recycling with zero waste, this approach reduced NPT to a record low—saving as much as 20 drilling days in reaching TD as compared with previously drilled wells in the field.

The success of this operation led to extending development in the Leviathan Field, about 30 mi [48 km] west of the Tamar Field. Drilling and completions concluded in December 2018, and the wells are expected to produce by the end of 2019.

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