

CASE STUDY

Gulf of Mexico

TEMS
INTERNATIONAL

TEMS International is an independent provider of environmental management and compliance services to the global oil and gas industry. Our services are focused on managing and optimising drilling performance and drilling waste in real time, while ensuring an asset remains in environmental compliance. Ultimately, our experienced team aim to reduce drilling costs and ensure legislative compliance targets are met or exceeded.

- ▶ Location: **Gulf of Mexico, United States**
- ▶ Project date: **March – December 2019**
- ▶ Drilling duration: **252 days**
- ▶ Total footage drilled: **17,680ft**
- ▶ Total estimated saving: **\$322,672.24**
- ▶ Estimated SBM savings: **1,700 barrels**

OUTLINE

TEMS International was contracted by an independent exploration and production company to support the drilling of a well in the Gulf of Mexico. The project, which commenced in March 2019, lasted for 252 days, during which time TEMS International engineers oversaw more than 17,500ft of drilling.

TEMS International provided its drilling performance management and optimisation, and continuous environmental compliance legislation services during the project. These services were delivered without using secondary processing equipment such as cuttings dryers.

Prior to the project commencing, TEMS International engineers conducted an extensive audit to identify potential issues regarding the operation of internal valves; missing protective guards for emergency stop buttons; the need for regular hose inspections; and the introduction of weekly spill drills. The noted issues were resolved prior to and during drilling operations, depending on their seriousness.

The overall aims of the project were to:

- Achieve governmental oil on wet cuttings (OOWC) limitations in line with EPA reporting
- Optimise solids control equipment to deliver maximum solids removal with minimum liquid retention
- Reduce synthetic based mud surface consumption
- Reduce shaker screen consumption
- Minimise environmental impact

SERVICES DELIVERED

Drilling performance management and optimisation

A process approach to drilling performance management that adds value to the entire drilling process. The service aims to ensure more effective and efficient drilling – reducing drilling days – through optimised fluid management, effective solids control management with the overriding proviso of safety and environmental protection.

Continuous environmental compliance legislation

Leading guidance on environmental compliance, prior to and for the duration of a drilling campaign. The comprehensive technical services and environmental consultancy enable well planners to ensure permits are in place, and that drilling operations keep pace with, or exceed, the evolving compliance regulations of drilling locations.

GULF OF MEXICO

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OUTCOME

The firm's involvement in the drilling campaign helped the operator achieve a reduction in its synthetic-based muds consumptions, resulting in significant cost savings. Over 1,700 fewer barrels of mud were used to drill the well against the target, generating a total saving of \$322,672. Savings were achieved in seven of the eight sections, with increased usage against target in one section attributed to interface losses.

During the drilling campaign shaker screens were run for 3,070 hours, during which time 89 new screens were installed.

In the Gulf of Mexico, the US Environmental Protection Agency (EPA) permitted retention on cuttings (ROC) discharge value for synthetic-based muds is 6.9%. TEMS International achieved an average ROC rate of 3.55%, comfortably within the EPA regulations.

All of this was achieved without the need for secondary processing equipment – cuttings dryers – to be used onboard the rig. This removed the need for additional personnel to be onboard to operate the dryers, reduced operational costs, improved drilling performance, reduced bottlenecks usually caused by secondary solids processing equipment and provided substantial improvements in ROP (rate of penetration) seen especially in larger hole sections. There was also a reduction in waste generated onboard, leading to shipping, treatment and logistics savings. This all contributed to a reduction in the asset's carbon footprint.

Weekly spill drills were introduced, led by TEMS International engineers. These sessions are designed to train and educate relevant rig personnel, ensuring they are efficient and knowledgeable in their response when dealing with spills.

Overall, TEMS International engineers helped the client achieve its environmental aims of working in the Gulf of Mexico, reduced drilling costs, and ensured drilling activity was comfortably within permitted environmental regulations within the region.

1,700+

Fewer barrels of mud used

\$322,672

Saved on mud costs

3.55%

Average ROC rate achieved

Spill drills

Introduced to train rig personnel

No dryers

Used onboard the rig, reducing carbon footprint

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