BaraSolve™ Engineering Services Save Offshore Operator 16 Hours and USD 570,000

PERLA FIELD, OFFSHORE VENEZUELA

CHALLENGE

Optimize waste management services for offshore operation, where cuttings handling inefficiencies and limited space for cuttings boxes were causing drilling disruptions

SOLUTION

BaraSolve™ engineering services for:

- Streamlining process and providing greater efficiencies
- Removing unnecessary components in the system configuration
- Opening up space for six cuttings boxes

RESULTS

- Recorded zero NPT related to outdrilling cuttings handling capacity
- Achieved faster average ROPs
- Increased drilling time by eight hours per well
- Saved operator more than USD 570,000 through optimization of this offshore cuttings handling system

INEFFICIENT CUTTINGS HANDLING DISRUPTS DRILLING, CONSUMES DECK SPACE

The solids control and waste management processes initially used on the Cardon IV project offshore Venezuela resulted in significant nonproductive time (NPT) and lower rates of penetration (ROPs) on wells drilled in the Perla field. The system configuration included unnecessary equipment and did not provide enough deck space for an adequate number of cuttings boxes. In addition, the cuttings transport methods were inefficient.

The typical rig rate in the field was USD 750,000 per day. The Perla 5 well registered eight hours of NPT directly related to this issue, along with slow ROPs.

OPTIMIZED OFFSHORE CUTTINGS HANDLING SYSTEM

SAVED 16 HOURS

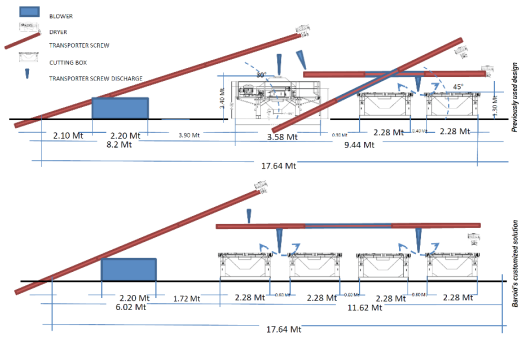
OF RIG TIME

OPTIMIZED SYSTEM ELIMINATES COMPONENTS AND ADDS STORAGE

Baroid personnel for BaraSolve™ Engineering Services analyzed lessons learned from the poor performance of the original process and equipment layout. Based on their findings, they proposed optimizing the system in order to improve the logistical aspects of cuttings treatment and to provide additional cuttings storage. With the operator's approval, the Baroid team planned and executed a cuttings box transportation process that made the most of the limited boat space available.

Their proposal focused on correcting two deficiencies: a) limited space for storing cuttings boxes, and b) poor waste processing efficiency. The new design called for the complete removal of some unnecessary components. This allowed the entire layout to be reorganized, as illustrated in the comparison between the original and the new systems.

After this modification, instead of having space for only one cuttings box at a time, up to six boxes could be stored and handled simultaneously. The operator was able to significantly increase ROP because it was no longer necessary to stop drilling and to circulate while offloading full cuttings boxes from the rig.



Comparison of original and optimized solids control and waste handling systems.

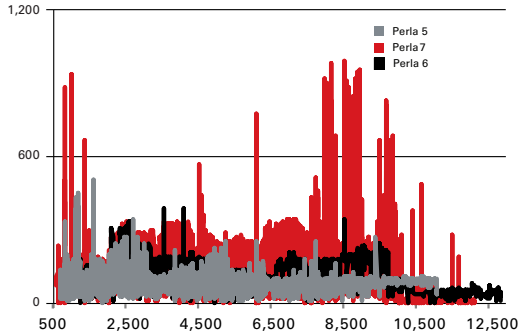
The Baroid solution enabled the operator to save more than USD 570,000 through optimized efficiencies.

ZERO NPT AND REDUCED OPERATING COSTS SAVE MORE THAN USD 570,000

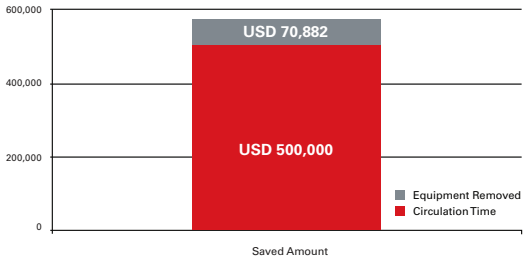
The Perla 6 and Perla 7 wells were successfully drilled using this new design. No time was spent circulating and waiting on waste handling operations. The ROP increased significantly, as shown in the plot of instant ROP values achieved on the Perla 5, 6, and 7 wells. This helped bring down drilling costs and allowed the operator to modify the budget for future wells.

As shown in the cost vs. savings comparison graphs, the Baroid solution enabled the operator to save more than USD 570,000. These savings were based on eliminating two issues:
a) 16 hours of NPT compared to previous wells that used the old cuttings handling system, and b) the rental cost of components that were removed from the optimized configuration.

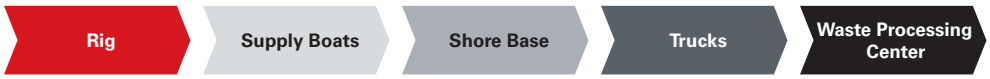
Even though the operator had initially considered its typical NPT as a normal amount to be expected, Baroid demonstrated that there is always an opportunity to optimize operations and reduce costs. The results were commended several times by the operator's representatives.



Comparison of ROP achieved on wells before and after the system optimization.



Savings gained on the Perla 6 and Perla 7 wells, using the optimized system.



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