

Perenco Uses POLYTRAXX™ TC to Reduce NPT in Reactive Clay, FluidControl Waste Management System Achieves Zero Liquid Discharge in Turkey

Challenges

- Drill the reactive clay from Karadut and Kastel Marl formations, which, in the past, presented problems with tight hole (stuck pipe, POOH joint by joint with circulation), bit balling and difficulty running the casing, as well as NPT.
- Find a solution to replace waste pit due to environmental impact and reduce the volume of liquid and solid waste.

Well Information

- Location: Diyarbakir, Turkey – Malatepe, Kayakoy, Kedil fields

Solution & Results

- POLYTRAXX TC WBM system was used for 16 wells. Perenco was able to drill continuously with no bit balling and no torque. Using the POLYTRAXX TC system they were also able to increase ROP, POOH and RIH without any problem, run the casing, cement successfully and eliminate NPT, yielding an approximate cost savings of \$2.5 million over the course of the campaign.
- FluidControl proposed dry location as a waste management system. In addition to complying with all local environmental regulation, the dry location system reduced overall waste volume, water volume, and environmental risk by transporting only stabilized solids. It reduced overall cost per well and resulted in no NPT.



The challenges facing this project were two-fold: drilling in reactive clay and replacing the existing waste pit disposal system with a solution that eased environmental impact and reduced waste volumes. FluidControl engineers proposed POLYTRAXX TC WBM for the drilling of 16 wells. The system proved to be highly inhibitive to reactive clays, excellent for ROP, excellent for lubrication and provided stability for the formation. It eliminated bit balling and reduced clay accretion. NPT was eliminated and drilling time was reduced by eight days per well, which yielded an approximate cost savings of \$2,560,000 over the course of the 16 well campaign from June 2013 to February 2015.

To address the waste management challenges, a dry location system was implemented. Cuttings were collected and stabilized into half-moon tanks. Residual fluid was collected and transferred to a storage tank via submersible pumps. From there, the fluid was processed (dewatered) using one floc-unit and one centrifuge. After dewatering, water was transferred to a second storage tank and reused.

The stabilized solids were transported and used for road construction, new site build out and site reclamation. The dry location waste management system met Perenco's goals of zero discharge and zero liquid waste volume. It also reduced the water volume necessary to complete the job by reusing processed water. Risk to the environment was mitigated by reducing the overall volume of waste and stabilizing the solid waste being transported.

The dry location system used the following equipment:

- Four half-moon tanks (for liquid recovery, stabilization process)
- Two storage tanks for water treatment
- Two high speed HS-3400 centrifuges
- One floc-unit
- Two submersible pumps
- One excavator with clamshell

Contact a NOV FluidControl representative to learn more about POLYTRAXX TC and other drilling fluid systems.

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