BaraCRI™ Unit Solves Operator’s Challenge for Real-Time Cuttings Reinjection

CUSTOMIZED SOLUTION EFFECTIVELY HANDLES CUTTINGS DISPOSAL

SAKHALIN ISLAND, RUSSIA

OVERVIEW

In 2014, a customer operating in the Odoptu North field located in the Sakhalin region of Russia was in need of a winterized mobile Cuttings Reinjection Unit (CRI) that had the ability to be connected and disconnected from the rig, and to handle cuttings processing from a 24-inch hole with a rate of penetration (ROP) in excess of 150 m/hr, while eliminating nonproductive time (NPT). Previous equipment used in this field did not have the capability of managing the fast ROP from the rig, causing the rig to be shut down or cuttings to be transferred to a reserve pit.

CHALLENGE

A previous method of grinding cuttings for reinjection was to use centrifugal pumps with grinding impellers. This slow process could not keep up with fast drilling rates. The Halliburton solution to this ineffective method was to employ the BaraCRI™ cuttings reinjection system combining a two-stage hammermill processing unit with advanced slurry rheology design for safe and efficient cuttings disposal. This technology relies on a tandem mill that is equipped with hard-phased hammers that rotate, effectively grinding and processing the cuttings while keeping up with the fast ROP. The two-stage hammermill unit allows the drum to be run independently or the whole unit to run simultaneously.

In addition, this unit incorporated three transfer pumps serving as backups to the coarse or fines tanks. The coarse and fines tank each included backup submersible pumps in case the transfer pumps malfunctioned.

RESULTS

Since the BaraCRI two-stage hammermill modular unit was plug and play, it could be moved with three different cranes: one for the motor control center (MCC), one for the top, and one for the bottom module. This unit was also tied into the rig and the MCC with plugged connections and hammer unions, which cut down on rig move times and personnel.

Thanks to the fast nature of connecting the unit, Baroid experienced zero hours of NPT during rig moves and operations.

With the implementation the modular BaraCRI two-stage hammermill unit for managing fast ROP while effectively processing cuttings, Halliburton successfully fabricated a CRI unit that was unique to the customer’s specifications.

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