

BaraCRI™ Cuttings Reinjection Operations Save More Than US 4 Million on Six-Year Project

THE MIDDLE EAST

CHALLENGE

Reduce costs and environmental risks related to skip-and-ship cuttings management process

SOLUTION

Install BaraCRI™ cuttings reinjection systems at designated injector wellsites, in order to:

- » Achieve high-capacity disposal
- » Reduce the number of crane lifts required
- » Minimize risk for spills or environmental incidents
- » Supplement CRI operations with skip-and-ship processes on locations where injection is not feasible

RESULTS

- » Injected over 1.49 million bbl during six-year project
- » Reduced cuttings disposal costs by more than USD 4 million
- » Completed project with zero safety or environmental incidents

SKIP-AND-SHIP PROCESS IS COSTLY AND INEFFICIENT

An operator in the Middle East wanted a safe, economical, and environmentally friendly alternative to the skip-and-ship process that would provide reliable cuttings disposal without disrupting drilling or rig operations.

BARACRI™ SYSTEMS SAVE
US 4 MILLION
ON DRILLING WASTE DISPOSAL

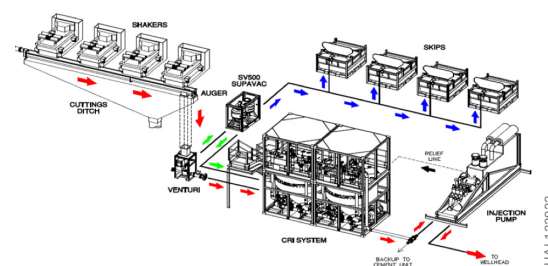
BARACRI CUTTINGS REINJECTION SYSTEMS OPTIMIZE CUTTINGS DISPOSAL

Baroid personnel visited the field and collected data to conduct the study on the feasibility of installing BaraCRI™ cuttings reinjection (CRI) technology at various injection wellsites in the field. This feasibility study included geomechanical modeling to find out appropriate candidate zones for the injection; hydraulic fracturing simulations to estimate the capacity of the candidate zones, and to check the reliability of barrier zones preventing drilling waste migration; erosion estimation; and specification of surface/subsurface equipment required for safe and continuous CRI operations. Based on the findings of this study, the final plan was prepared and presented to the customer, showing the proposed equipment, installation process, and operational requirements. As an additional safety benefit, the CRI process would significantly reduce crane lifts and associated risks. The operator accepted the plan, which also included a contingency for skip-and-ship operations in areas where the CRI systems were not feasible.

During the six-year project, approximately 1.49 million bbl of cuttings and drilling waste were successfully injected. On the supplemental skip-and-ship sites, an estimated 31,961 MT of skips were handled with zero safety or environmental incidents.

MORE THAN USD 4 MILLION SAVED IN CUTTINGS DISPOSAL COSTS

The BaraCRI operations eliminated the need for over 10,000 skips during the project, resulting in savings of more than USD 4 million.



Cuttings reinjection equipment setup on the CRI rig.



Cuttings reinjection slurrification system

CASE STUDY

The BaraCRI™ operations eliminated the need for over 10,000 skips during the project, resulting in savings of more than USD 4 million.

This environmentally friendly approach helped prevent spills and reduce risks related to transporting the skips and waste to other disposal locations.

The project was completed with zero lost-time incidents and zero environmental issues.

Injection Well	Volume Injected (bbl)
CRI Well 1	143,280.00
CRI Well 2	205,040.00
CRI Well 3	137,635.00
CRI Well 4	338,660.00
CRI Well 5	105,137.08
CRI Well 6	164,093.00
CRI Well 7	319,428.00
CRI Well 8	80,323.00
Cumulative Volume Injected	1,493,596,08

Cuttings slurry injection volumes for the field (bbl)

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