

# Combined Coring Technology Helps Operator Evaluate Field for Carbon Capture Utilization and Storage Potential

**ROCKSTRONG FCS™ CORING SYSTEM COMBINED WITH ROCKSIGHT™ SPLIT LINER CORING SYSTEM RESULTS IN A 98.5% CORE RECOVERY RATE JAPAN**

## CHALLENGE

- » Perform coring operation and provide operator quick access to core at the surface to aid analysis
- » Dual lithology formation comprised of hard caprock and unconsolidated sand
- » High potential for junk/debris
- » Formation hardness uncertainty

## SOLUTION

- » Deploy the RockStrong FCS™ coring system to help mitigate vibration in the interbedded top section and capture unconsolidated sand formation
- » RockSight™ split liner coring system for quick core access at the surface
- » Use optimized FC3843 coring bit for optimal performance

## RESULT

- » 45.3 m of quality 4 in. core recovered for analysis purposes at a recovery rate of 98.5%
- » First successful global deployment of this technology combination

## CHALLENGE

An operator desired quick access to core samples from the surface to evaluate a field for carbon capture utilization and storage (CCUS) potential. Halliburton was recruited to recover 45 m of core from the 8 -1/2 in. target formation comprised of hard caprock (up to 40 kpsi unconfined compressive strength) in the top section and unconsolidated sand (5 to 10 kpsi unconfined compressive strength) in the lower section. Coring was planned just below the casing shoe with high potential for junk/debris. Uncertainty involving formation hardness required a secondary core catcher system.

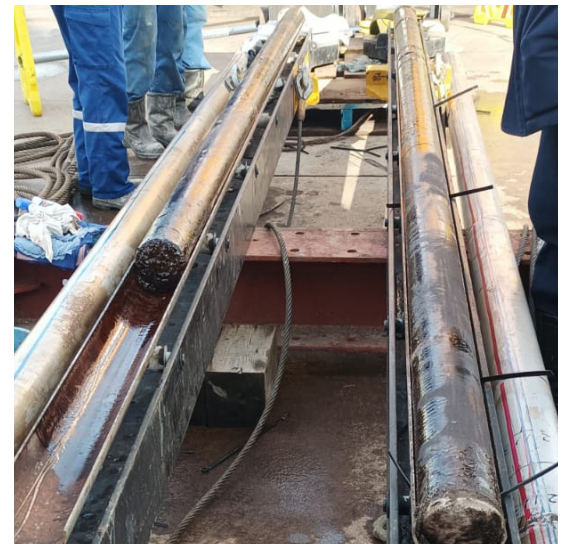
## SOLUTION

To help mitigate vibration in the interbedded top section and capture core where the formation hardness was uncertain, Halliburton deployed the RockStrong FCS™ coring system. Because minimizing vibration is crucial to reducing core jamming, the RockStrong FCS jamming mitigation design includes a top spacer assembly that acts like a preloaded spring to absorb axial vibration along the inner assembly. The double bearing on the shaft keeps the inner barrel in a stable and vibration-free position to facilitate smooth core entry, helping maximize recovery in the unconsolidated formation.

For quick core access from the surface, this technology was combined with the RockSight™ split liner coring system. Because of the dual lithology of the formation and based on offset well performance, an optimized FC3843 coring bit was selected for optimal performance. This was Halliburton's first time deploying this technology combination in one job.

## RESULT

A total of 45.3 m of good quality 4 in. core was recovered for analysis purposes with a 98.5% recovery rate using the RockStrong FCS system. The RockSight system allowed the geologist to gain access to the core safely and efficiently from the surface.



Operator examining full length of core on surface via the RockSight™ split liner coring system.

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