

STOPPIT® LCM in High-Vis Pills Helps Prevent Losses in Vugular Formation, Saves \$50K in Rig Time

ABU DHABI, UAE

CHALLENGE

An operator in the vugular UER formation needed a proactive solution that would prevent or minimize losses while drilling a 16-inch hole.

SOLUTION

Baroid recommended pumping a series of high-vis LCM pills while drilling.

- » Added 10 ppb of STOPPIT® LCM to provide effective sealing for the wider fractures
- » Avoided spotting a time-consuming conventional LCM pill

RESULTS

The UER formation was drilled with minimal losses, allowing the operator to reach total depth with no disruption, and to save five to six hours of rig time valued at USD 50,000.

- » Saved 5-6 hr of rig time
- » Saved \$50K USD

VUGULAR UER FORMATION POSES RISK OF 100-BPH LOSSES

The vugular Umm er Radhuma (UER) formation in the United Arab Emirates (UAE) is prone to severe losses, beginning around 3,500 feet (1,067 meters) and continuing throughout the drilling operation. Two offset wells had experienced loss rates in excess of 100 bph.

Failure to prevent or control these losses could lead to well control issues and nonproductive time (NPT). The operator wanted a proactive solution that would safely prevent or minimize losses while drilling a 16-inch hole through this zone.

STOPPIT® LCM IN HIGH-VIS PILLS HELPS SEAL WIDER FRACTURES

Pumping high-viscosity (high-vis) pills containing lost circulation material (LCM) was already a planned practice for drilling the UER formation on this well. The typical pill formulation is shown below:

#	LCM Type	Concentration (ppb)	Micron Sizes	
			d ₅₀	d ₉₀
1	Calcium Carbonate C/BARACARB® 600	50	600	850
2	Calcium Carbonate M/BARACARB 150	30	140	425
3	Calcium Carbonate F/BARACARB 25	20	25	50
4	BAROFIBRE® M/C Seepage Loss Additive	25	180	1,180
5	Coarse Nut Hulls (Operator-Supplied) / BAROFIBRE Seepage Loss Additive	25	1,000	2,800
6	HYDRO-PLUG® Engineered, Composite LCM	40	150	500

The addition of STOPPIT® LCM helped ensure that these pills were effective.

STOPPIT LCM is a key option in the Baroid LCM decision tree. It is engineered to provide a broad particle size distribution (PSD) that can seal fracture openings ranging from 200 microns to 2,500 microns. The STOPPIT LCM treatment would deliver the higher particle sizes needed for larger fracture coverage in the vugular UER formation.

The Baroid team recommended that each high-vis pill contain 10 ppb of STOPPIT LCM, in addition to other LCM at the rigsite. The formulation is shown below:

#	LCM Type	Concentration (ppb)	Micron Sizes	
			d ₅₀	d ₉₀
1	Calcium Carbonate C/BARACARB® 600	30	736	1,122
2	Calcium Carbonate M/BARACARB 150	30	22	55
3	STOPPIT® Composite Additive	10	1,390	2,672
4	BAROFIBRE® M/C Seepage Loss Additive	10	312	1,096

While drilling into the top of the UER formation, the operator observed a 5-bph loss rate, which could quickly increase to 80 bph based on offset well data. The STOPPIT LCM treatment was added to the high-vis pills pumped periodically while drilling the loss zone.

While drilling the surface section, Baroid personnel recommended pumping one to two pills per day. This decreased the loss rate and enhanced hole cleaning.

ON-THE-FLY LCM PILLS SAVE RIG TIME, TIME VALUED AT USD 50,000

This preventive action allowed the operator to drill to total depth without stopping. It also eliminated the need for mud/brine cap operations.

The high-vis pill treatments were pumped on the fly, delivering faster results than the conventional method of pumping a large pill. The conventional pill would require activating the PBL sub, spotting the pill, then pulling out of the hole to the top of the pill to let it soak for several hours, for a cumulative 10-hour interval.

The STOPPIT LCM treatments were applied much faster and helped save five to six hours of rig time, valued at USD 50,000.

**PREVENTIVE
TREATMENT
STOPS LOSSES
IN HIGH-RISK ZONE**

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