

Oman: RAPID SWEEP polymer stick emerges as viable, cost-effective alternative to Hi-Vis sweeps

“I would say it is a fantastic concept”

Operator’s Drilling Foreman

Well Information

Location	Fahud, Oman
Well Type	Vertical
BHA	12 ¼ in. bit, MWD and Roller Reamer
Nozzle Size	3 x 14/32, 3 x 15/32
Interval	13 ¾ in. Casing Set Point
Fluid Type/Density.....	KLA-SHIELD*/10.3 lb/gal (1.2 s.g)

The Situation

In offset wells, the operator had encountered logistic and cost issues in supplying drill water in the 26 in. hole section. In addition, the frequent pumping of Hi-Vis sweeps in the 17 ½ in. section increased mud viscosity and rheology in the shale formations. While the dump and dilute technique had been applied to maintain rheology, the maintenance costs for the KLA-SHIELD drilling fluid used on this well would be excessive. Moreover, while drilling the 12 ¼ in. section at a penetration rate between 16 to 30 ft/hr (5-9 m/hr) only a very small volume of cuttings was returning to surface with only 5% of excessive cuttings returning while pumping the Hi-Vis pills.

The Solution

After discussions with the operator’s fluids team and ALPINE SPECIALTY CHEMICALS, M-I SWACO recommended operator employ its RAPID SWEEP* polymer sticks technology as a substitute for the Hi-Vis pills used in the 17 ½ in. hole. After initial testing, the operator agreed to apply RAPID SWEEP polymer sticks and monitor its performance.

The Results

RAPID SWEEP polymer sticks helped alleviate solids build up around the bit, roller-reamer and BHA to clean the hole with no adverse effect on the fluid properties or BHA. The operator immediately identified benefits that included:

- Immediate improvement in hole cleaning was observed with approximately 15-20 % more solids returned to surface at ‘bottoms up’
- No increase and/or reduction in fluid viscosity or rheology were observed

A nearly 31% reduction in torque was noted initially (7 k – 8 k ft-lbs prior to RAPID SWEEP polymer sticks / 5 k – 5.5 k ft-lbs immediately following the treatment)

- RAPID SWEEP polymer sticks reduced treatment costs more than 20% in the 26 in. section and more than 41% in the 17 ½ in. hole, compared to the projected costs of HV sweeps in this well
- No plugging of the bit and BHA or pressure spikes were observed

The Details

The operator's drilling manager, drilling supervisor and fluids supervisor observed the trial run. RAPID SWEEP was utilized at a rate of five sticks per connection (5 in. drill pipe @ 790 - 800 GPM). An increase of 15-20 psi Stand Pipe Pressure was noticed as the RAPID SWEEP polymer sticks passed through the bit and BHA. The operator's drilling team noted the hole cleaning and torque benefits immediately following the RAPID SWEEP polymer stick treatment.



DRILLING / CIRCULATING @ 790 GPM

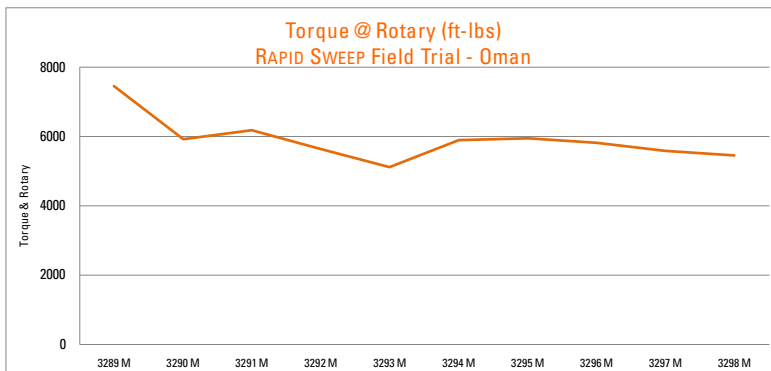
40% Coverage / Few Solids



(5) RAPID SWEEP RETURN @ 790 GPM

60% Coverage / Excessive Solids

The operator's drilling team applauded the performance of RAPID SWEEP polymer sticks, especially its capacity to maintain proper viscosity, generate effective hole cleaning with less treatment and complications compared to mixing and pumping Hi-Vis sweeps. The operator requested M-I SWACO check of the availability and the delivery time of sticks for the next 26 in. and 17 ½ in. hole sections.



Questions? We'll be glad to answer them.

If you'd like to know more about RAPID SWEEP polymer stick and how it's performing for our other customers, please call the ALPINE SPECIALTY CHEMICALS or M-I SWACO office nearest you.

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