

Agitator™ Tool and MOCS Save Multiple Trips

Agitator™ tool and MOCS tool deliver outstanding performance achieving 20% faster ROP and 42% less CPF than the best offset, saving the client \$579,747

Objective:

To drill the 8½” section at a competitive ROP, low CPF while achieving directional requirements (dropping angle from 57.5° to 0° at TD in an “S” profile well). The sections was to be drilled through challenging and interbedded lithology. Previous wells were suffering from BHA hanging, torque and drag issues and as a consequence, 5 to 6 bit and BHA runs were required to drill the 8½” section.

Summary:

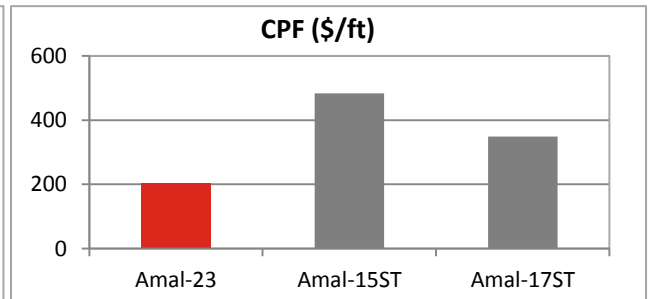
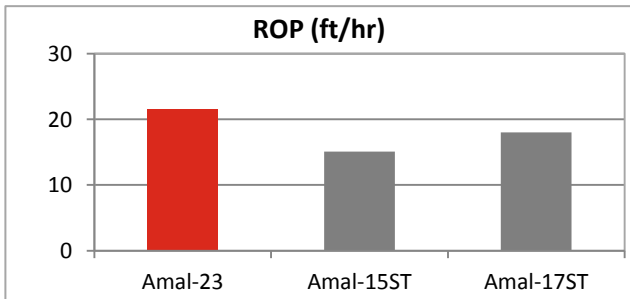
A 6¾” Agitator tool was picked to overcome the torque and drag challenges, while a MOCS was placed in the BHA to protect the LWD and RSS from LCM as losses were expected in this reservoir section. The Agitator improved WOB transfer considerably and drag was low despite the complex well profile. This enabled the 8½” SKF716M to drill the entire section in one bit run compared to offset wells where multiple bit runs were required. The MOCS was pre-activated on surface as the Agitator system was placed above it, and the tool was successfully cycled into bypass mode to divert flow to the annulus protecting BHA components before LCM was pumped. A total interval of 3,990ft was drilled with an excellent ROP of 21.5ft/hr. Parameters were controlled in the salt section for directional and LWD logging purposes.

Client	AL-AMAL
Well Name	Amal-23
Field/Block	Amal
Country	Egypt
Date	Q4 2015
Lithology	Salt, sand, anhydrite, sandstone, siltstone, shale and limestone



Results:

- 20% faster ROP than Amal-17 offset and 42% faster than Amal-15.
- 42% less CPF than Amal-17, saving customer \$579,747.
- Saved the customer 5-6 bit/BHA trips.
- The MOCS tool was successfully cycled 26 times without any issues.
- The MOCS protected the MWD, LWD and RSS tools by diverting LCM to the annulus.



Well Name	Bit Type	Depth Out (ft)	Interval (ft)	Hour	ROP (ft/hr)	CPF (\$/ft)	Inc In (°)	Inc Out (°)	BHA/Drive
Amal-23	SKF716M	11205	3990	185.5	21.5	204	57.4	0.1	RSS + Agitator + MOCS
Amal-15 ST	7 bits Used (2 RR bits)	9220	2789	184.1	15.1	483.3	35.6	37.6	MTR + Rotary
Amal-17 ST1	6 bits Used (3 RR bits)	9965	4311	239	18	349.3	30.1	27.3	MTR