

## ORCA for WBM: Restoring production of a well following a long-term decline, offshore West Africa



"We wanted to significantly improve production within our equipment constraints. Coiled tubing was not available at the time. Also, it was extremely important to us that the clean up method we used was low hazard. Our operations were far from the nearest hospital and we were not comfortable with using hydrochloric acid. ORCA for WBM gave us the result we wanted. It delivered improved production, and was simple and safe to use."

**Petroleum Engineer, Operator, West Africa**

**ORCA for WBM tackled a remedial well challenge in West Africa with notable success. Production increased from 150 barrels of oil per day (bopd) to 500 bopd after the treatment. Six months later production was still well over 300 bopd. ORCA for WBM delivered a highly effective and low hazard remedial treatment.**

### The challenge

This horizontal well with 700m of openhole wellbore had been drilled into a carbonate formation and acidized with HCl immediately after completion, to try to remove drilling damage. Production peaked at around 2,300 bopd after the HCl treatment, but rapidly declined to around 800 bopd, followed by a gradual decline to 150 bopd ten years later. The GOR increased during this period, with gas coning suspected as a possible cause.

Drilling mud damage had almost certainly not been cleaned up uniformly by the original HCl treatment. Logs indicated that fluid flow into the openhole section was from four separate zones, jointly accounting for less than 10% of the total length of openhole wellbore in the reservoir. Lack of fluid flow from the remaining 90% of openhole suggested incomplete filter cake cleanup which may have resulted in the well producing below potential and also contributed to the suspected gas coning. The operator wanted a more uniform clean up to increase oil production and reduce the GOR.

### The solution

An ORCA for WBM formulation was selected, producing organic acid in-situ to clean the formation face effectively. The formulation was low hazard, conforming to the operator's concern for staff and environmental safety.

### ORCA for WBM in action

ORCA for WBM was bullheaded into the openhole horizontal section. (The original HCl treatment had used coiled tubing, but this was not operationally possible when ORCA for WBM was deployed). Following the required soak period of 48 hours, the well was gradually brought into production.



### The result

The well achieved a major and sustained increase in oil production following the ORCA for WBM treatment. Production rose more than five times to a peak rate of 800 bopd, before levelling off at a stabilised rate of 500 bopd within a few weeks. Six months later, production was still well over 300 bopd – twice the rate before the ORCA for WBM clean up operation. In addition, the gas-oil ratio came down by approximately 40%. Because of this success, the operator deployed ORCA for WBM treatments in other wells in the field with similar success.

Reference:  
SPE 68911.



### Get in touch

Cleansorb has a team of ORCA for WBM specialists to advise you on the best strategy for your circumstances. Please e-mail [contact@cleansorb.com](mailto:contact@cleansorb.com) for more information.

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