



MATURE FIELDS



UNCONVENTIONALS

# Optimized Fluids Help Operator Save US\$2.96 Million

## SOLUTION SAVES 37 DAYS OF DRILLING TIME, ACHIEVING FIELD RECORD

COMALCALCO, TABASCO, MÉXICO

### CHALLENGE

- » Reactive clays, a salt dome, and variable formations caused operational delays and excessive wiper trips on offset wells

### SOLUTION

- » Drill upper hole with inhibitive BOREMAX® WBM and displace to reliable INVERMUL® OBM for remaining intervals

### RESULT

- » PC-161 well set field record with zero operational issues, 37 days faster than plan for US\$2.96 million in savings

### OVERVIEW

The operator planned to drill the onshore Puerto Ceiba-161 (PC-161) well to a measured depth (MD) of 6,050 meters (19,849 feet). This required drilling the Jurassic Kimmeridgian formation and 9 meters (30 feet) of salt dome.

### CHALLENGE

Offset wells had experienced some issues with reactive clays and needed multiple wiper trips to maintain wellbore stability.

### SOLUTION

After testing formation samples and conducting pre-well optimization analysis, the Baroid team recommended an inhibitive BOREMAX® potassium-chloride (KCl) water-based mud (WBM) for drilling the surface interval to 1,000 meters (3,281 feet). The system would then be displaced to an INVERMUL® oil-based mud (OBM) for drilling the remaining intervals, including the salt dome.

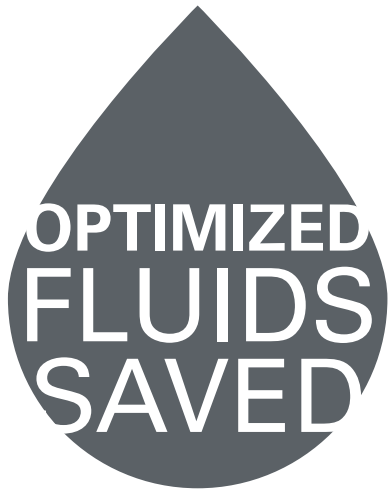
The low-solids/non-dispersed BOREMAX KCl fluid would allow the upper hole to be drilled quickly, resulting in an in-gauge wellbore for ease of running and cementing the 20-inch casing.

The INVERMUL system is designed to prevent dispersion and swelling of clays that can result in washouts, tight holes, and the need to condition the wellbore with wiper trips.

### RESULT

The well was executed as planned with no operational issues. High-quality wireline data was retrieved, and the caliper log showed a completely in-gauge wellbore. No additional wiper trips were required before running and cementing the final casing strings.

The Puerto Ceiba-161 well was drilled 37 days faster than the plan, saving the operator US\$2.96 million (see Figure 1).



**37 DAYS AND US\$2.96 MILLION**

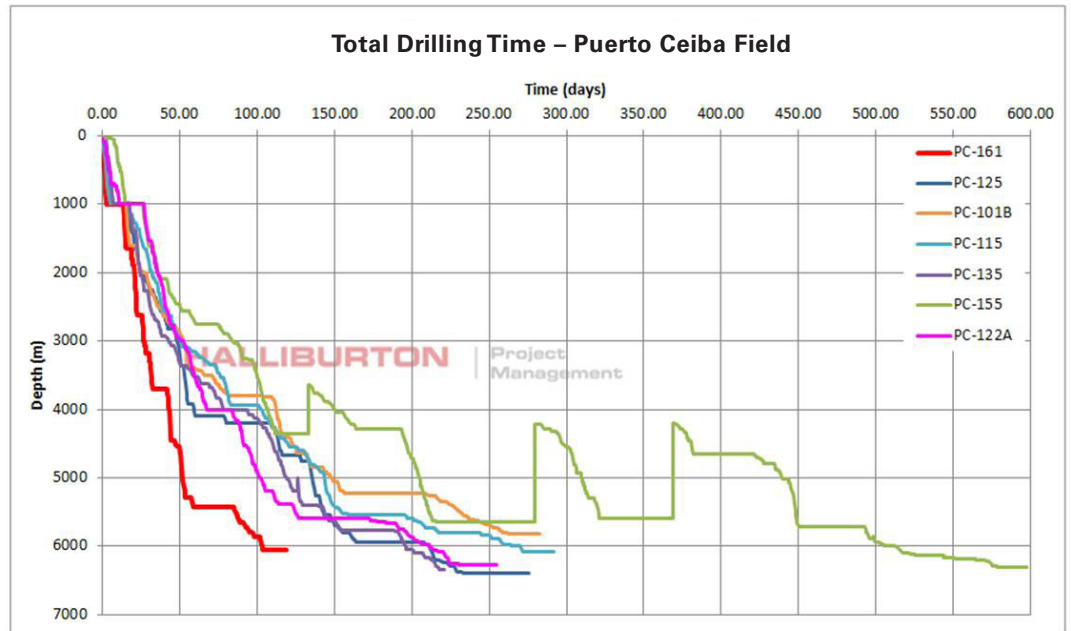


Figure 1. This graph shows days vs. depth (in meters) of wells in the Puerto Ceiba field, showing plan (black) vs. actual (red) on the record-setting PC-161 well.