

# Halliburton Formation Evaluation (FE) Program Helps Client Discover More than 400 Feet of Net Pay

## SAFE, EFFICIENT OPERATIONS COLLECTED THE REQUIRED DATA IN 17 DAYS ACROSS TWO WELLBORES

DEEPWATER GULF OF MEXICO, USA

### CHALLENGES

- » Obtain high-quality FE, rotary cores, pressures, and fluid samples in two large open holes
- » Perform reservoir characterization and rock evaluation for whole-core calibration
- » Collect lab-quality samples and accurate reservoir pressures for reservoir quality and structure
- » Optimize time constraints with efficient coring operations
- » Convey wireline in a highly challenging wellbore trajectory in the sidetrack

### SOLUTIONS

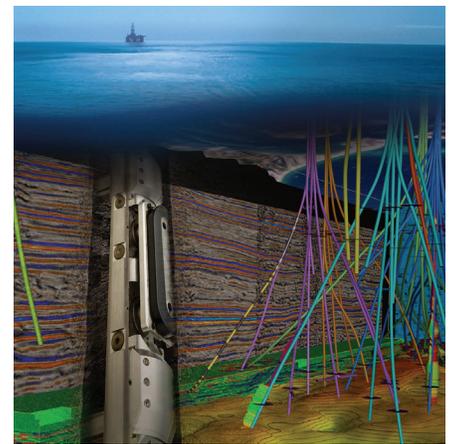
- » Propose a DeepSuite™ reservoir characterization package
- » Collect cores using the Xaminer® Rotary Sidewall Coring Tool
- » Obtain lab-quality samples in real time with the Reservoir Description Tool service using Fluid Identification and ICE Core® technology
- » Combine Super Combo Unit with industry-leading 18,000-lb Powered Capstan, 40,000-lb PowerPull™ cable, Releasable Wireline Cable Head, and LockJar® technology for successful wireline conveyance in both wellbores

### RESULTS

- » Safely deployed the different tool combinations in one descent
- » Obtained high-quality sonic, image, porosity, elemental, and magnetic resonance in large wellbores
- » Recovered 52 out of 57 (91%) of requested rotary cores in 24 hours – averaging 2.4 cores per hour
- » Captured 42 very low-contaminated fluid samples in 36 x 1000 cc and 6 x 1 gallon chambers
- » Executed 10 descents, 409.5 operating hours (17 days) between the two wellbores

### OVERVIEW

The Halliburton Gulf of Mexico openhole wireline team recently completed logging a customer’s deepwater exploration well. The complex project, located in the Wilcox formation in the Perdido Corridor, was evaluated using the latest Halliburton DeepSuite™ technology for formation evaluation, along with the Reservoir Description Tool (RDT™) and Xaminer® Rotary Sidewall Coring Tool, among others. Halliburton performed all wireline operations safely and efficiently, collecting all the required data in 17 days between two wellbores. Post-wireline operations, more than 400 feet of additional net pay was discovered.



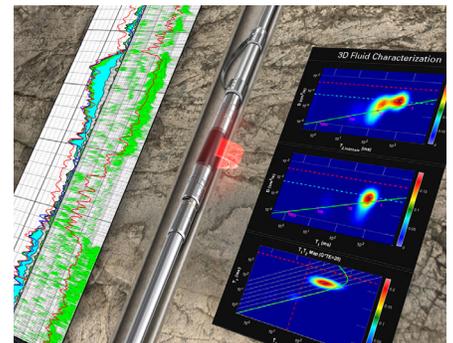
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### CHALLENGES

The customer needed to obtain high-quality formation evaluation, rotary cores, pressures, and fluid samples in two large open holes. The requirements included performing reservoir characterization and rock evaluation for whole-core calibration, and collecting lab-quality samples and accurate reservoir pressures for reservoir quality and structure. Time constraints would need to be optimized for efficient coring operations, while conveying wireline in a highly challenging wellbore trajectory in the sidetrack.

### SOLUTIONS

Halliburton recommended a DeepSuite™ reservoir characterization package, including the Compensated Spectral Natural Gamma Ray (CSNG™), GEM™ tool, Dual-Spaced Neutron (DSN™) tool, Spectral Density Logging (SDL™) tool, Xaminer® Array Sonic Tool (XAST™), Xaminer® Multicomponent Induction (MCI) tool services, as well as its latest technologies, the Xaminer® Magnetic Resonance (XMR™) and High-Fidelity Borehole Imager (HFBI™) services. This in-depth formation evaluation suite provided the client with valuable information about the reservoir, including porosity, fluid mobility, grain density, clay type, rock mechanics, Rv/Rh, and structural dip.



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The Xaminer® Rotary Sidewall Coring Tool safely and efficiently collected required cores. The RDT™ service, including FLID™ and ICE Core® technology, was proposed for its flexible and combinable probe configurations to accomplish all of the required pressure testing, sampling, and fluid analysis in the same run.

A Super Combo Unit (SCU) with industry-leading 18,000-lb Powered Capstan, 40,000-lb PowerPull™ cable, Releasable Wireline Cable Head (RWCH), and LockJar® technology would be employed for successful wireline conveyance in both wellbores. Toolpusher™ conveyance, using flawless downhole technology, would also assist on the job.



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### RESULTS

This reservoir lies below 8,000-plus feet of salt and over 6,000 feet of water. With the safest, most capable conveyance system in the industry, Halliburton was able to safely deploy the different tool combinations in one descent, obtaining high-quality sonic, image, porosity, elemental, and magnetic resonance in both large wellbores.

The Xaminer Rotary Sidewall Coring Tool recovered 52 out of 57 cores in 24 hours of coring operations. Averaging 2.4 cores per hour, all of the cores cut and recovered met the customer's critical success factors.

The RDT service performed over 180 total tests and captured 42 lab-quality fluid samples in 36 x 1000 cc and 6 x 1 gallon chambers in real time, using the EPS, E-FSS, DPS, and D-FSS probes in three successful runs. The versatility of the EPS probe added value to the program with the low-storage volume and flexibility of the tool providing seamless testing and sampling operations. The reservoir engineer was very complimentary of the tool's performance delivering high-quality, low-contamination samples.

Total operating time for this project was 17 days (409.5 hours) of logging, executed in 10 descents across the two wellbores. Following wireline operations, the client announced a discovery of over 400 feet of additional net pay.

OPERATOR DISCOVERS  
**ADDITIONAL**  
**400 FEET**  
**OF NET PAY**

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