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## **Real-time Drilling Assistance for Fast Drilling Horizontal wells**

Ameriven, a Phillips, Texaco PDVSA association working the heavy oil deposits of Venezuela have installed a real time data monitoring system. It provides the functionality of concurrent loading of real-time log and LWD data into Openworks databases at several widely separated locations using satellite communications. Geologists at the rig can request assistance from the headquarter staff when unexpected drilling results are encountered. With the high drilling rates possible, interrupting the drilling is very undesirable, and so rapid decisions need be made using all the available data in the earth model. Since the wells are drilled so rapidly, updating and planning for subsequent wells required high level of interaction with the field.

A visualization, telecommunication and data-sharing network was developed and installed to assist in this operation. The well paths and real-time logs are presented in a 3-dimensional earth model with seismic, impedance and geological interpretations. It has been running for approximately 80 fishbone and 25 lined horizontal sections as of August, and has proven invaluable in improving the efficiency of the drilling operations and making rapid informed updates to the well design.

This well monitoring design of transmitting and reviewing complex well patterns has significant additional economic and technical quality advantages for remote operations in hazardous locations through the use of modern telecommunication systems.