Case History

Measurement/Logging While Drilling

SOLAR® M/LWD Services Used on Thousands of High-Temperature Wells in Gulf of Thailand
Location: Gulf of Thailand, South China Sea

OPERATOR’S CHALLENGE – Precise placement of directional wells and real-time formation evaluation in high-temperature environment requiring reliable and accurate measurement/logging-while-drilling (M/LWD) data.

HALLIBURTON’S SOLUTION – SOLAR™ suite of M/LWD services: directional, gamma, resistivity, density and porosity sensors rated to 175°C.

ECONOMIC VALUE CREATED – Over 35,000,000 feet (10,000 km) of high-temperature footage drilled since 1995.

GULF OF THAILAND HOT HOLES – Drilling challenging directional wells in a high-temperature environment, the operators of large offshore developments in the Gulf of Thailand required reliable and accurate M/LWD systems that could routinely handle tool temperatures as high as 200°C. Some wells also required formation evaluation measurements to maintain geological control.

ROBUST, RELIABLE SERVICE FOR HARSH ENVIRONMENTS – Sperry Drilling services deployed the SOLAR™ suite of high-temperature MWD and LWD systems. Designed to provide accurate and timely measurements under the most extreme downhole conditions, the sensors within the SOLAR® service have been ruggedized to withstand temperatures as high as 175°C, with survival temperatures of 200°C. In addition, the entire HTHP suite of formation evaluation sensors incorporates high-temperature batteries, which allow both recorded data and pumps-off data acquisition under harsh wellbore conditions. During and after drilling, extreme environments can make tremendous demands on downhole equipment. The SOLAR HT sensors help ensure accurate directional data and steering capabilities through harsh environments. Wireline-quality reservoir data for effective, economical reservoir characterization is available in real time while drilling and is stored in downhole memory for later retrieval.

LEADER IN HIGH-TEMPERATURE OPERATIONS – The rugged and reliable SOLAR M/LWD tools are now run routinely in these high-temperature reservoirs. The average highest tool temperature in each well is approximately 170°C, with a maximum successful operational temperature of 178°C, and survival over 200°C. As well as the measurements required for directional control, the gamma, resistivity, density and porosity SOLAR tools have also been run.

With an established track record of over 5000 high-temperature wells drilled since 1995, and over 35,000,000 feet (10,000 km) of footage drilled, Sperry’s SOLAR M/LWD sensors have distinguished Halliburton as a leader in high-temperature operations in the Gulf of Thailand.