ExtremeHT-200™ M/LWD Sensors Help Operator Save Over US$145,000 in Haynesville Shale

Location: Haynesville Shale, Louisiana

OPERATOR’S CHALLENGE – An operator in the Louisiana Haynesville shale play required reliable and accurate measurement/logging-while-drilling (M/LWD) data while drilling horizontal wells in an extreme high temperature environment. Sperry Drilling services was challenged to provide a suitable M/LWD system for drilling the long horizontal sections of the wells, where typical static bottom hole temperature exceeds the 347°F (175°C) rating of current industry-standard high temperature tools.

HALLIBURTON’S SOLUTION – Sperry Drilling initially provided SOLAR™ MWD and LWD sensors rated to 350°F (175°C), including directional, gamma, resistivity, density and porosity sensors. However, the multi-well project provided an opportunity for the inaugural run of Sperry’s new ExtremeHT-200™ M/LWD tools, which are designed to increase the operational performance of current M/LWD sensors to temperatures of 392°F (200°C).

ExtremeHT-200 sensors for this well included power and telemetry plus directional, gamma, pressure-while-drilling and vibration sensors, using the real-time data communicated to facilitate steering. While drilling a total section of 4,543 feet (1,385 meters), including 4,000 feet (1,219 meters) in the target zone, the ExtremeHT-200 sensors performed reliably for the two runs totaling 170 hours circulating time, with a maximum circulating temperature of 343°F (173°C) and a maximum static temperature of 363°F (184°C).

ECONOMIC VALUE CREATED – Despite extreme temperature conditions in this horizontal shale well, the robust performance of Sperry’s ExtremeHT-200 suite of sensors enabled the entire lateral section to be successfully delivered in two runs. Designed to withstand downhole vibration and rigorously tested to ensure operational reliability, the Extreme HT-200 tools were tripped straight to bottom on both runs, saving significant time by eliminating the need to pump to bottom to protect the system electronics. In an application where four to six hours daily can be spent pumping to cool M/LWD sensors, use of the Extreme HT-200 sensors over 11 days in the well saved the operator an estimated 54 hours, with an approximate cost savings of US$145,800. Furthermore, by eliminating a possible 24 hours of non-productive time for a failure and trip, an additional savings of US$64,800 was realized.