**Mercury™ Electromagnetic Telemetry System Helps Save Time in Delivery of Extended Reach Shale Gas Well**

**Location:** Horn River Shale Basin, Canada

**OPERATOR’S CHALLENGE** – An operator working in the Horn River Basin, the largest shale gas field in Canada, was drilling an extended reach well with high downhole temperatures expected. The Horn River Basin is a very remote area where drilling costs are high, compelling the operator to look for an optimized drilling solution to reduce the days spent to deliver a well in this harsh environment.

**HALLIBURTON’S SOLUTION** – Halliburton’s Sperry Drilling services deployed Mercury™ electromagnetic telemetry (EMT) system. No other service provider working in the Horn River region had been able to successfully utilize electromagnetic telemetry to the anticipated total depth of the well, but the operator agreed to try Sperry’s Mercury system to help reduce the time spent running typical mud pulse surveys while drilling the extended reach well.

**ECONOMIC VALUE CREATED** – Sperry delivered a 5,345 meter (17,536 feet) measured depth (MD) well at 2,600 meters (8,530 feet) true vertical depth (TVD). This is the longest and hottest EM telemetry run Sperry has ever performed and also the deepest well in the region drilled using EM/MWD technology. This optimized solution saved the operator one day

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Two-way data communication is achieved via electromagnetic waves transmitted through the formation and the drill pipe. When signal strength is attenuated in deeper applications, a unique “through bore repeater” can be employed to boost signal amplitude.
of operating time by reducing the survey time required to almost zero due to the high-speed formation evaluation data transmission and the ability to take surveys during connections provided by the Mercury EMT system.

The Mercury EMT system allows data transmission without a continuous fluid column, providing an alternative to negative and positive pulse systems. Sperry's EMT system establishes two-way communication achieved via electromagnetic waves transmitted through the formation and the drill pipe. Using low frequency electromagnetic wave propagation, the EMT system facilitates high-speed data transmission to and from the surface through any formation. When signal strength is attenuated in deeper applications, a unique “through-bore repeater” can be employed to boost signal amplitude. The Mercury system is the only electromagnetic telemetry system able to provide this benefit.

Future wells drilled in the Horn River Basin have a good possibility of utilizing rotary steerable systems to replace traditional mud motors. The application of EM/MWD telemetry fits with this long-term plan as Sperry’s Mercury EMT system is fully compatible with Geo-Pilot® rotary steerable systems and Sperry’s complete suite of logging-while-drilling tools.