DEEPWATER TECHNOLOGIES FOR WYOMING DEEP GAS

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ABSTRACT

The next generation of Wyoming gas exploration and development will benefit from many of the same technologies that have made deepwater hydrocarbon exploitation possible. These technologies include (among others): 1) high-end pre-stack depth migration for accurate imaging of trapping structures; 2) seismic attribute analysis for direct reservoir and hydrocarbon indication; 3) expandable tubulars and advanced drilling systems to enable deeper drilling at lower cost; 4) new logging tools and routine use of MWD to mitigate drilling risks; 5) chemical analysis for hydrocarbon typing; 6) reservoir simulation and dynamic monitoring to optimize production; 7) modern HS&E management practices to operate safely, responsibly, and cost-effectively in an environmentally-friendly manner; and 8) virtual reality and other forms of advanced scientific visualization to facilitate cross-discipline communication, optimal decision-making, and effective partnering. Why? To find and delineate new TCF-scope fields in Wyoming, operators are already spending as much as $30MM on a single well– approaching the cost of a typical deepwater well. The risks can be high. When drilling trouble, for example, can easily double the cost of such a well, a $1MM pre-stack depth migration seems a bargain if it mitigates the risk. Industry experience in deepwater demonstrates that it does. These and other technologies have proven themselves time and again, so it is inevitable that smart operators and contractors will apply appropriate deepwater technologies to their expensive Wyoming deep gas projects.

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