

## **Economics of the Bakken/Three Forks Play and a Comparison to Older More Traditional Plays in North Dakota**

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Through the end of 2010 there were approximately 1700 horizontal wells producing from the Bakken/Three Forks in North Dakota. It is projected that another 1500 to 2000 wells will be drilled in 2011 and, if estimates hold, 10,000 or more wells may ultimately be placed under production before the play is exhausted. With EOR's of 350,000 bbls per well, North Dakota could be looking at 3.5 billion bbls of recoverable reserves with a gross undiscounted cash flow of \$250 billion over the next 20 years. Taken as a whole, this places the Bakken/Three Forks in the giant field category. With each of these wells costing \$7 to \$9 million to drill and complete and average operating costs of \$6,000 per month, the total investment in the play could easily surpass \$90 billion. Typical payouts often exceed two years with rates of return below three. On a well by well basis the economics appear to be somewhat marginal, but with the high success rates (in excess of 95%) and the ability to line up multiple well programs, the old measures of economic performance would seem to be suspended.

The Mississippian Madison and deeper Paleozoic sections have traditionally been the bread and butter of the Williston Basin. Many of these plays can be accessed with vertical wells at a fraction of the cost and provide EOR's matching and often exceeding those found in an average Bakken/Three Forks well. The down side is that many prospective dry holes need to be drilled before an economic field is discovered. The aerial extent of the field is also much smaller and requires greater expenditures in geology and geophysics to locate. Once a good field is found, the economics of each individual well can easily eclipse an average Bakken/Three Forks well but will be limited to maybe tens of wells as opposed to thousands.