Update on the McCully gas field, Sussex, New Brunswick

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The McCully Field lies 10 km northeast of Sussex, New Brunswick. It is comprised of an interbedded lacustrine sandstone and shale sequence of the Albert Formation. To date, seven wells have penetrated the field and all showed significant intersections of gas-bearing sandstones of varying reservoir quality. These seven wells indicate a very large original gas-in-place for the field. The primary challenge lies in the recovery percentage from these low permeability sandstone bodies.

The first two wells drilled in the field have been on production to the PCS potash mill since April of 2003. The McCully A-67 (#1) well produced 101 million cubic feet from start-up to December 31, 2003 out of one interval only. The McCully P-66 (#2) well produced 313 million cubic feet over the same time period from all intervals. Build-up tests and production graphs show that the well performance is strong, especially for the P-66 well. An independent engineering report assigned proven and probable reserves of 11.6 billion cubic feet to the P-66 well.

Studies and experience have shown that the McCully reservoir is very sensitive to water damage. This is due to the unusually low residual water saturations (RWS) in these rocks. Similar sandstones elsewhere have RWS of 40 to 50%, whereas the McCully sandstone RWS are in the order of 10%. This means that capillary forces in these rocks will imbibe any water from drilling or completion operations and not release it. The imbibed water blocks pore throats and prevents the movement (production) of gas. Of the seven McCully wells, only the bottom portion of the highly production P-66 well has not been subjected to some amount of water. Water will be avoided in the drilling and completion of future wells. A recent 3-D survey was shot to provide locations for future development wells and, if the data permits, illuminate fractured areas with higher production potential.