The McArthur River Deposit - A Geological Update

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ABSTRACT

The McArthur River deposit, previously designated P2 North, is located in the southeastern portion of the Athabasca Basin, 70 km northeast of the Key Lake uranium mine. The deposit was discovered by Cameco in 1988 and delineated by surface drilling through to 1992. An environmental impact statement (EIS) was submitted, and approval to conduct an underground exploration program was received in February 1993. A 5.5 m diameter shaft has been completed to a depth of 684 m. On the 530 m level, a 300 m long exploration drift parallels a portion of the deposit's 1700 m of strike length. A total of 10 000 m of diamond drilling has been carried out from the 530 m level.

The main structural control for the deposit is a southeast-dipping reverse fault with a vertical displacement of up to 80 m. This fault has thrust the hanging-wall block of Aphebian age, in part graphitic metasedimentary rocks, into the Helikian Group sandstone. The majority of the uranium mineralization occurs proximal to the fault contact between the sandstone and the overthrust basement rocks. Drilling from the 530 m level has delineated two mineralized zones. Pod 1 is typical of the overall deposit, occurring at the basement/sandstone fault contact. Pod 2, also known as the "pelite mineralization", is deeper, located within basement metasedimentary rocks which overlie a quartzite unit. The "pelite mineralization", with a strike length of 90 to 100 m, was only intersected in one of the surface exploration drill holes and was not included in the original reserve estimate.

Geological reserves are estimated at 416 million pounds at an average grade of 15 percent U_3O_8. This includes 189 million pounds at an average grade of 19 percent U_3O_8, from the 300 m of strike which has been drilled from underground.

The McArthur River project has submitted an EIS which would allow for an annual production of 18 million pounds U_3O_8, milled at Key Lake. If the project receives approval, construction could begin in mid-1997 and production could commence in mid-1999.