

Solitaire Minerals Corp. Options the Wheeler River Uranium Property to Delta Uranium located in the Athabasca Basin, Saskatchewan

May 27, 2009: Solitaire Minerals Corp. (TSX-V symbol: SLT) (the “Company”) would like to announce that it has entered into an Option agreement whereby Delta Uranium Inc. has the potential to earn up to an 80% interest in the 274 hectare Wheeler River Property (Block C 3) located approximately 20 km NNW of the Key Lake Mine in the SE Athabasca Basin. This Option Agreement is subject to TSX Venture Exchange approval.

A helicopter-borne VTEM time domain electromagnetic and magnetic survey was flown over the Wheeler River Property in 2007 by GeoTech Airborne Geophysical Surveys. Inversion of these data by Condor Consulting has indicated an approximately 1000m x 500m zone of conductivity, located at or near the unconformity at approximately 200m depth. This lies within a northeast trending magnetic low that could indicate basement metapellitic rocks, which are prospective for uranium in the Athabasca Basin. Limited compilation of historical data has also indicated the presence of basement conductor axes underlying the VTEM anomaly, identified from Noranda ground TDEM surveys. Further, three historical Noranda drill holes do not explain the VTEM or historical basement conductive responses. The drill holes do, however, confirm the presence of the potentially prospective rocks of the Wollaston/Mudjatik terrain.

Detailed compilation of historical data and a ground DC-Resistivity / IP program has been recommended to identify discrete drill targets for basement hosted /unconformity uranium.

Terms of the Option agreement are as follows:

For Delta Uranium Inc. (Delta) to earn an undivided 60% interest in the Wheeler River Property it must;

- Issue 250,000 Common Shares in the capital of Delta, at a price of \$0.10 per share, on the execution date of this agreement to Solitaire Minerals.
- Delta must spend \$500,000 in exploration expenses on or before October 31, 2011.

For Delta Uranium Inc. to earn an undivided 80% interest (an additional 20% interest) in the Wheeler River Property it must;

- Spend \$500,000 in exploration expenses on or before October 31, 2012.
- Pay \$100,000 or issue Common Shares in the capital of Delta equivalent to such amount to Solitaire Minerals no later than October 31, 2012.

Discoveries of Note in the Claim Area (All data has been sourced from the October 2007, Condor Consulting VTEM EM and Magnetic Survey Report prepared for Raytec Development Corp.):

- The Wheeler River claim area is situated on part of the original Cogema’s Martin Lake-Wheeler River grid where drilling 3km to the north intersected 1.6% U₃O₈ over 5.2 meters and 0.1% U over 4.0 meters in clay alteration above the unconformity.

-2 km to the south, the Cameco-Uranerz Esker Lake grid Drill hole EL-81 encountered sooty pitchblende mineralization within sheared and altered, grey to black, fine-grained graphitic biotite gneiss. Grab samples taken from this zone returned 2,300 ppm U and 3.5% Cu over 0.1 meters. A second hole EL-103, hit a sequence of pegmatoids within arkosic to semipelitic gneiss which returned 1560 ppm U over 0.5 meters. Drill hole EL-105, encountered two major zones of shearing and brecciation with graphite enrichment within chloritized and sericitised gneiss from 200 to 237 meters. Small sooty pitchblende crystals, 10% to massive graphite, plus pyrite and chalcopyrite occur as infillings within the zones of shearing. A 0.1 meter wide grab sample taken from this zone of shear-bound mineralization returned 1660 ppm U. North-northwest shearing was noted which strikes through S-107753, with uranium mineralization discovered within several kilometers on either side.

-5 km to the west, exploration by Phelps-Dodge on the Shift Lake property encountered uranium mineralization within sandstone at 189 meters which returned up to 1.42% U₃O₈ over 1.0 meter.

Mike Magrum, P.Eng., a qualified person under National Instrument 43-101, has approved the technical content of this news release.

About Solitaire Minerals Corp. Solitaire Minerals Corp. ("Solitaire") (TSX-V symbol: SLT). Solitaire is a diversified junior Canadian mineral exploration company with a specific focus on mineral properties in North America. The Company has assembled a portfolio of precious and base metal exploration prospects in Ontario, Saskatchewan, and the North West Territories. Solitaire's Red Lake, Ontario properties include the Baird and Chukuni projects, in which the Company has earned 100% interest. In addition, the Solitaire has entered into an option agreement with Rubicon Minerals Corp., whereby the Solitaire may earn up to a 55% interest in Red Lake North property. Also in Ontario, Solitaire has an option to earn 100% in the Lateral Lake property. In Saskatchewan, the Company has acquired a 90% interest in the Riou Lake Property (Central), and a 100% interest in Riou Lake North and South located in the Athabasca Basin. In the North West Territories, the Company has purchased the Mystery Island IOCG Property, and the Eldorado Property located in the Great Bear Lake area in which the Company has 100% interest. For additional information please contact Solitaire Minerals Corp. or visit www.solitaireminerals.com.

On Behalf of the Board of Directors

SOLITAIRE MINERALS CORP.

"Charles Desjardins"

Charles Desjardins,
President and Director

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This report contains forward looking statements. Resource estimates, unless specifically noted, are considered speculative. Any and all other resource or reserve estimates are historical in nature, and should not be relied upon. By their nature, forward looking statements involve risk and uncertainties because they relate to events and depend on factors that will or may occur in the future. Actual results may vary depending upon exploration activities, industry production, commodity demand and pricing, currency exchange rates, and, but not limited to, general economic factors. Cautionary Note to US investors: The U.S. Securities and Exchange Commission specifically prohibits the use of certain terms, such as "reserves" unless such figures are based upon actual production or formation tests and can be shown to be economically and legally producible under existing economic and operating conditions.