

CanAlaska Uranium Ltd.

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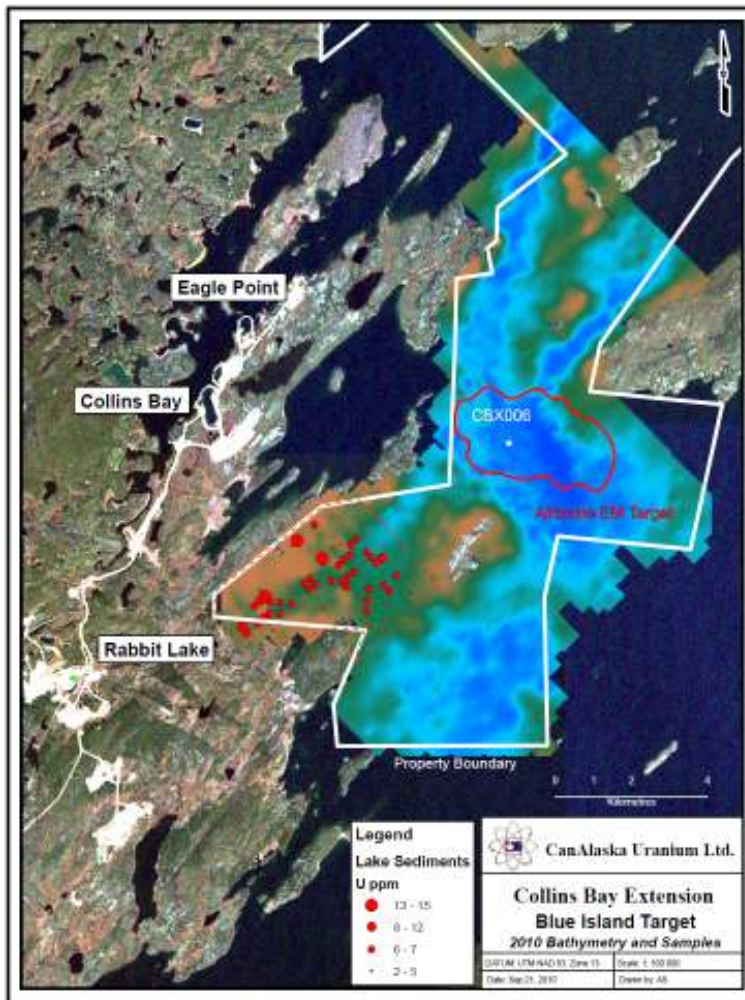
FOR IMMEDIATE RELEASE

NEWS RELEASE

CanAlaska Uranium Reports on Summer Exploration Surveys

Vancouver, Canada, September 22nd, 2010 – CanAlaska Uranium Ltd. (CVV – TSX.V) (the “Company” or “CanAlaska”) is pleased to announce preliminary results for summer exploration surveys in the Athabasca Basin on the Collins Bay Extension, Grease River and West McArthur uranium projects and new developments at the Fond Du Lac project.

Collins Bay Extension Project - Seismic Profiling of Target



CanAlaska’s geophysical staff carried out detailed waterborne seismic surveys across the large target south of Blue Island. This profiling was extended in the shallow offshore area west of the Rabbit Lake Mine, where CanAlaska had previously completed sediment sampling (see Figure 1). This sampling, in Pow Bay, was to test for the source of a uranium boulder train reported to be located south of the bay. The attached image shows the well-developed structural break which is associated with the Rabbit Lake fault system in the Pow Bay area. This map also shows a distinct channel of uranium enrichment trending north-easterly across the bay, following the postulated trend of the Rabbit Lake fault system. This trend, which also corresponds to features from CanAlaska’s winter gravity survey, can be drill-tested with shallow holes during the winter season.

Further offshore, the large airborne Blue Island electromagnetic anomaly matches a rapid change in the bathymetric survey, surrounding the location of CanAlaska drill hole CBX006.

This drill hole identified a 200 metre faulted offset in the basement rocks, underlain by breccias, and localized uranium mineralization. Processing of the seismic data, along with integration of historical lake

bottom sediment sampling, will commence within the next week, with final detailed images available for winter drill targeting in early December 2010. CanAlaska's seismic survey ties into the 1993 Goldak seismic survey and extends a major paleovalley, interpreted as a possible fault or shear zone, which ties into the Blue Island anomaly (see Figure 1).

Grease River Project - Detailed Mapping and Sampling:

The Shearika Ridge "Rossing Style" granite-hosted drill target is approximately one kilometre in length, and demonstrates high background radiometric readings, supported by the assaying of numerous higher grade fractures and shears in the granite (see [News Release February 17th, 2009](#)).

This summer, detailed mapping of outcrops and historical trenches on the Shearika Ridge prospect was tied into a close-spaced radiometric grid survey in preparation for a diamond drill program in 2010-2011. The survey used scintillometers and a calibrated gamma spectrometer to estimate uranium values from outcrops across the target area.

West McArthur Project - ZTEM Survey Processing

The Company is awaiting the processing of the results and images for the recently completed ZTEM survey at the West McArthur project. This survey is expected to have a bearing on the planning of further detailed ground geophysical surveys and exploration over the 5 year program as agreed between CanAlaska and Mitsubishi Corporation. In October, the joint venture partners will meet to confirm the geophysical and drill programs proposed for the 2011 winter field season. These plans will be reported along with scheduling when confirmed.

Fond Du Lac Project - Agreement to Increase Participating Interest to 50%

The Company has accelerated its exploration spending and cash and share payments and has concluded its earn-in under the first phase of exploration on the Fond Du Lac project with the Fond Du Lac Denesuline Community. The Company has also been granted an increase in its participating interest in the project to 50% by the community for consideration of the issuance of 100,000 common shares of the Company. This payment for the additional property interest is subject to acceptance by the TSX Venture Exchange.

CanAlaska expects to have multiple drill programs active in the Athabasca Basin commencing in December-January, 2011. The Company is continuing to develop relationships with major uranium consumer states and organizations, with the view to increasing the number of active drill projects in 2011.

President Peter Dasler states: "These technical developments, and the recent initiative to increase the corporate profile of the Company, make for a very exciting future in our quest to make new uranium discoveries in the Athabasca Basin region of Saskatchewan.

Peter Dasler, M.Sc., P Geo. is the Qualified Person responsible for this news release.

About CanAlaska Uranium

CANALASKA URANIUM LTD. (CVV -- TSX.V, CVVUF -- OTCBB, DH7 -- Frankfurt) is undertaking uranium exploration in twenty one projects in Canada's Athabasca Basin -- the "Saudi Arabia of Uranium". Since September 2004, the Company has aggressively acquired one of the largest land positions in the region, comprising over 2,500,000 acres (10,117 sq. km or 3,906 sq. miles). To-date, CanAlaska has expended over Cdn\$65 million exploring its properties and has delineated multiple uranium targets.

For more information visit www.canalaska.com

On behalf of the Board of Directors



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