

December 17 2013**TSXV: UAX
US Symbol: ATURF****ATHABASCA URANIUM ADVANCES SCIENCE ON BASIN PROJECTS**

Athabasca Uranium Inc. (TSXV: UAX) (“Athabasca” or the “Company”) is pleased to report that the University of Saskatchewan (USask) GeoSciences Team, headed by Dr. Zoltan Hajnal, has completed a Stage II data compilation of historical and proprietary datasets on the Company’s core uranium exploration projects at Keefe Lake, Fisher River and McGregor Lake.

The Stage II study, which integrated a host of datasets to examine geological trends and interpret faults and conductors, produced several top priority drill targets for the Company’s proposed 2014 drill program. In addition to utilizing 114 assessment reports from the Saskatchewan Mineral Assessment Data Base (SMDA), over 400 drill hole datasets from established uranium deposits were analyzed, including those from Moore Lake, Russell Lake, Wheeler River, McArthur River (P2), Keefe Lake, Christie Lake, Park Creek and the Harrigan Zone. The Keefe Lake geological structures and indicator minerals were also compared to mines and discoveries in the region.

The result of the study was the identification of three new high priority anomalies (drilling targets), all of which have multiple positive indicative characteristics. The most prominent target (K14) lies within the Keefe Lake Project, along a line projected NE of Cameco’s mineralized Harrigan Zone. The target will be incorporated as a top priority in the Company’s proposed Keefe Lake Phase 3 drill program, slated for early 2014.

The Keefe Phase 3 drill program has been designed through the integration and assessment of several existing datasets derived from the most advanced and comprehensive scientific methods available, including: VTEM, Geotem, Z-TEM, downhole gamma and sonics, plus high definition 2D Seismic ground geophysics and historical and proprietary drill core data. The new Stage II integrated analysis is the most comprehensive geological analysis to date, and will allow the Company to further refine the Keefe program to increase the chances of success.

On the results of the additional study performed by the USask team, Gil Schneider, Athabasca Uranium’s CEO commented “We continue to advance our projects with all available science - this Stage II analysis appears to confirm our theory that the subsurface formations of Keefe Lake are an extension of those observed at Cameco’s Harrigan Zone. Discovering Basin deposits has always been about getting out in the field and drilling – our extensive preparation will hopefully give us the best shot at success in next year’s program.”

The Company’s Keefe Lake Project borders Cameco Corp.’s McArthur River property, approximately 20 km SE of the McArthur River Mine (450MM lbs U₃O₈ @ 12.5% avg grade), and is flanked north and south by Denison Mines properties. The Keefe Lake Phase 3 drill targets are shallow (300-350 meters). As disclosed in previous news releases, the Company has developed an exploration program at Keefe Lake that employs all available proven science in order to mitigate its drilling risk. The Company is currently seeking joint venture partners or other funding to continue its Keefe Lake exploration program.

About Athabasca Uranium

Athabasca Uranium Inc. is a uranium exploration and development company exploring an aggregate of over 68,500 hectares strategically located in the uranium-rich Athabasca Basin region of northeast Saskatchewan. The Company’s stated vision is to explore the region using leading-edge technology to become a world-class

uranium mining company. Additional information on Athabasca Uranium and its vision is available on the Company's website at www.athabascauranium.com.

ON BEHALF OF THE BOARD OF DIRECTORS

"Gil Schneider"

Gil Schneider, President & CEO

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