



**Uranium Exploration  
Australia Limited**

ABN 65 112 714 397

6 August 2009

Mr Ian Scrimgeour  
Director  
NT Geological Survey  
Department of Regional Development,  
Primary Industry, Fisheries and Resources  
GPO Box 3000  
DARWIN NT 0801

Dear Mr Scrimgeour

**Crystal Creek Project – discovery of uranium mineralisation**

In accordance with Section 24.(d) of the *Mining Act*, Uranium Exploration Australia Limited (UXA) wishes to report the discovery of uranium mineralisation at its Crystal Creek Project on EL 24566 (Ngalia Thrust).

On 16 July 2009 the directors of UXA announced to the Australian Stock Exchange that the company had made the discovery, which crops out over a strike distance in excess of 3,000 m.

Details of the discovery, including scintillometer readings and Niton XRF U grades, are provided in the enclosed copy of the ASX announcement.

Please contact Simon Powell, Exploration Manager, on the numbers below if you require additional information or have any queries.

Yours sincerely

Teena Coppin  
Tenement Manager

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10 AUG 2009

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Uranium Exploration  
Australia Limited

ABN 65 112 714 397

16 July 2009

The Manager  
Company Announcements Office  
Australian Stock Exchange  
20 Bridge Street  
SYDNEY NSW 2000

**ASX ANNOUNCEMENT**

**UXA DISCOVERS 3KM ZONE OF  
OUTCROPPING URANIUM MINERALISATION**

**PROJECT UPDATE - CRYSTAL CREEK, NT**

**High grade uranium - field sampling returning up to 4,120 ppm  $U_3O_8$**

The directors of Uranium Exploration Australia Limited ('UXA') are pleased to announce that the Company has made a potentially very significant discovery at its 100% owned Crystal Creek Project on Exploration Licence (EL) 24566, Ngalia Thrust, located approximately 320km northwest of Alice Springs in the Northern Territory.

Recent field work has identified a zone of uranium mineralisation which crops out intermittently over a strike distance in excess of 3,000m, with early field sampling indicating  $U_3O_8$  concentrations of up to 4,120 ppm.

Commenting on the discovery, Managing Director Dr Russell Penney said, "We are excited by the discovery, given the 3km length of the structure, the early indicators of high grade uranium mineralisation and its location near to the 20.6 Mlb  $U_3O_8$  Bigrlyi deposit. As such, this is potentially the most significant discovery of mineralisation made to date by UXA".

**High uranium concentrations detected across 3km structure length**

The discovery comes on the back of an airborne radiometric survey in 2007 which identified two anomalies (Anomaly A and Anomaly B, (Figure 1), (Announcement dated 8 January 2008). In late 2008, UXA drilled at Anomaly A which lies 3km south of Anomaly B, and discovered some narrow zones of uranium mineralisation (best 1m @ 208 ppm  $U_3O_8$ ).

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Figure 1. Niton XRF readings at Anomaly B, Crystal Creek

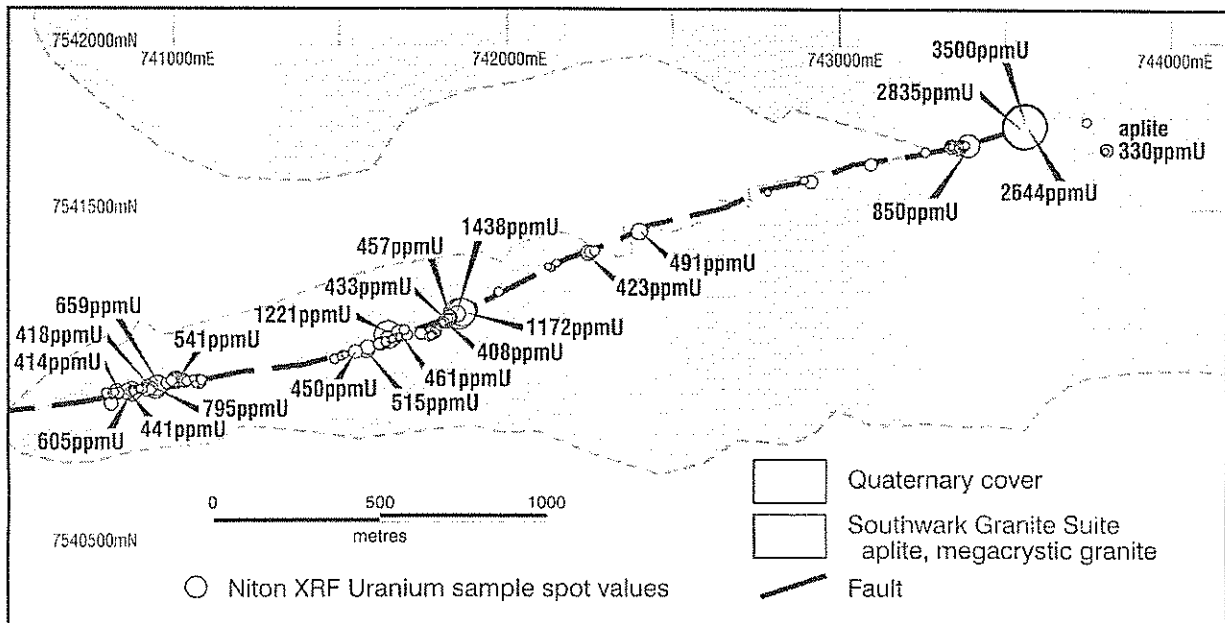


Table 1. Scintillometer reading & Niton XRF Uranium grade from Anomaly B uranium bearing fault structure for values > 400 ppm U.

Easting	Northing	Scintillometer Reading Counts Per Second	XRF value U ppm	XRF value U3O8 ppm+
741864	7541191	2,000	457+/-76	538
743558	7541753	10,000	3,500+/-209	4,123
741877	7541195	2,000	1,172+/-129	1,381
741868	7541190	1,500	1,438+/-140	1,694
741840	7541179		433+/-59	510
741831	7541169		408+/-98	481
741693	7541132		461+/-88	543
741659	7541128	900	1,221+/-164	1,438
741660	7541113		515+/-64	607
741595	7541085	1,000	450+/-102	530
742256	7541373	1,200	423+/-65	498
742408	7541436	1,300	491+/-98	578
743388	7541694	2,600	850+/-92	1,001
743557	7541750	8,000	2,835+/-177	3,340
743559	7541751	8,000	2,644+/-174	3,115
740846	7540958	1,200	414+/-66	488
740878	7540959	2,500	441+/-78	519
740891	7540959	1,500	605+/-128	713
740938	7540970	460	418+/-67	492
740963	7540972	850	795+/-109	937
740967	7540977	700	659+/-114	776
741023	7540993	500	541+/-84	637

+ Values of U are converted to U<sub>3</sub>O<sub>8</sub> by multiplying by 1.178

Recent geological mapping has identified radiometric Anomaly B to be due to an east northeast striking uranium bearing fault zone within granite and aplite of the Mesoproterozoic age Southwark Granitic Suite, part of the Arunta Inlier.

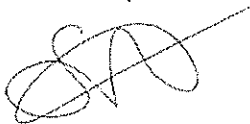
The structure has been traced for a distance in excess of 3km and varies in width from 30cm to 12m, averaging 3m. Uranium appears to be associated with ironstone and grades are highly variable from trace up to 4,120 ppm  $U_3O_8$ . Uranium mineralisation is poddy along strike and highly variable across strike.

Uranium values were measured in the field using an appropriately calibrated portable Niton XL3t XRF unit. Values in Table 1 are the maximum uranium values recorded for any single location (point). Scintillometer and XRF readings were taken at 185 points along the structure. Of these 96 points recorded XRF uranium values of between 100 ppm U and 500 ppm U and 12 points recorded values between 500 ppm U and 3,500 ppm U (4,120 ppm  $U_3O_8$ ).

High uranium concentrations up to 389 ppm  $U_3O_8$  have also been recorded within aplite (a type of fine grained granite), located north east of the mapped structure and this provides a potential target to drill a broader zone of mineralisation.

The Company will follow up this discovery and initial field work with a detailed surface radiometric, field XRF and geochemical sampling program over the fault structure and adjacent anomalous aplite. This work will lead to a drilling program later this year.

***For further information, contact.***



**Russell Penney**  
**Managing Director.**

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*Technical Information in this report is based on information compiled by Mr Simon Powell who is employed by Uranium Exploration Australia Limited and who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Powell has sufficient exploration experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' ("JORC 2004"). Mr Powell consents to the inclusion in this release of the matters based on his information in the form and context in which it appears.*