

**United Uranium Limited**  
**Partial Relinquishment Report on**  
**Dunmarra Project EL25838**

**For Period 21 September 2007 to 20 September 2011**

**Title Holder:** United Uranium Limited

**Tenements:** Exploration Licence 25838

**Project Name:** Dunmarra Project

**Report Type:** Partial Relinquishment Report

**Mineral Field:** Carpentaria Mineral Field

**Location:** Tanumbirini SE5302 1:250 000

**Datum / Zone** GDA 94 / Zone 52

**Commodities:** Uranium

**Date of report:** 12 December 2011

**Author:** I. Prentice

**Contact Details:** Ian Prentice – Consultant Geologist  
Zephyr Consulting Group  
PO Box 1424  
West Perth, WA, 6872  
Ph – (08) 9200 4474  
Fax – (08) 9200 4475  
Email (technical) – [ian.prentice@zephyrgroup.com.au](mailto:ian.prentice@zephyrgroup.com.au)

**Distribution:**

- 1 Northern Territory Department of Minerals & Energy
- 2 United Uranium Limited

## **ABSTRACT**

- Location:** The Dunmarra Project is located approximately 240 kilometres south east of Katherine in the Northern Territory.
- Geology:** The project largely overlies Mullaman Beds, a sequence of Lower Cretaceous claystone, sandstone and conglomerates, in the Dunmarra Basin, with the Nutwood Downs Volcanics, a Lower Cambrian sequence of tholeiitic basalts, tuffs and agglomerates, outcropping to the north east of the tenement area. Tertiary deposits of laterite generally overlie the Mullaman Beds.
- Work done:** Exploration activities on the relinquished portion of EL25838 consisted of a review of existing exploration data, high level targeting utilising reinterpreted regional geophysical data, compilation of public domain geological, geophysical and other digital data, limited geological reconnaissance and desktop review of exploration activities completed.
- Results:** The work completed identified a number of lower order radiometric anomalies within the relinquished portion of EL25838, however the limited geological reconnaissance completed has downgraded the prospectivity of these anomalies.
- Conclusion:** Exploration completed on the relinquished portion of EL25838 downgraded the prospectivity of the regional radiometric anomalies therefore no further exploration activity is recommended.

**INDEX**

1 SUMMARY ..... 4  
2 INTRODUCTION..... 5  
3 TENURE ..... 7  
4 GEOLOGY ..... 7  
5 PREVIOUS EXPLORATION ..... 11  
6 EXPLORATION ACTIVITIES ..... 13  
7 CONCLUSION ..... 13  
8 REFERENCES..... 14

**Table of Figures**

*Figure 1 - Location Plan*..... 6  
*Figure 2 - Tenement Plan* ..... 8  
*Figure 3 - Local Geology*..... 10

# 1 SUMMARY

This is a partial relinquishment report for tenement EL25838, United Uranium Limited's Dunmarra Project. The report provides a summary of the exploration history of the surrendered portion of EL25838 for the period 21 September 2007 until relinquishment on 21 September 2011, plus a brief description of exploration by other operators prior to 21 September 2007. A brief description of the regional and local geology is also included in the report.

EL25838 is located approximately 240 kilometres south east of the township of Katherine within the Carpentaria Mineral Field of the Northern Territory.

Exploration on the relinquished portion of tenement EL25838 consisted of a review of existing exploration data, high level targeting utilising reinterpreted regional geophysical data, compilation of public domain geological, geophysical and other digital data, limited geological reconnaissance and desktop review of exploration activities completed. The work completed downgraded the prospectivity of the regional lower order radiometric anomalies identified within the relinquished portion of EL25838.

The project largely overlies the Mullaman Beds, a sequence of Lower Cretaceous claystone, sandstone and conglomerates, in the Dunmarra Basin, with the Nutwood Downs Volcanics, a Lower Cambrian sequence of tholeiitic basalts, tuffs and agglomerates, outcropping to the north east of the tenement area. Tertiary deposits of laterite generally overlie the Mullaman Beds.

## 2 INTRODUCTION

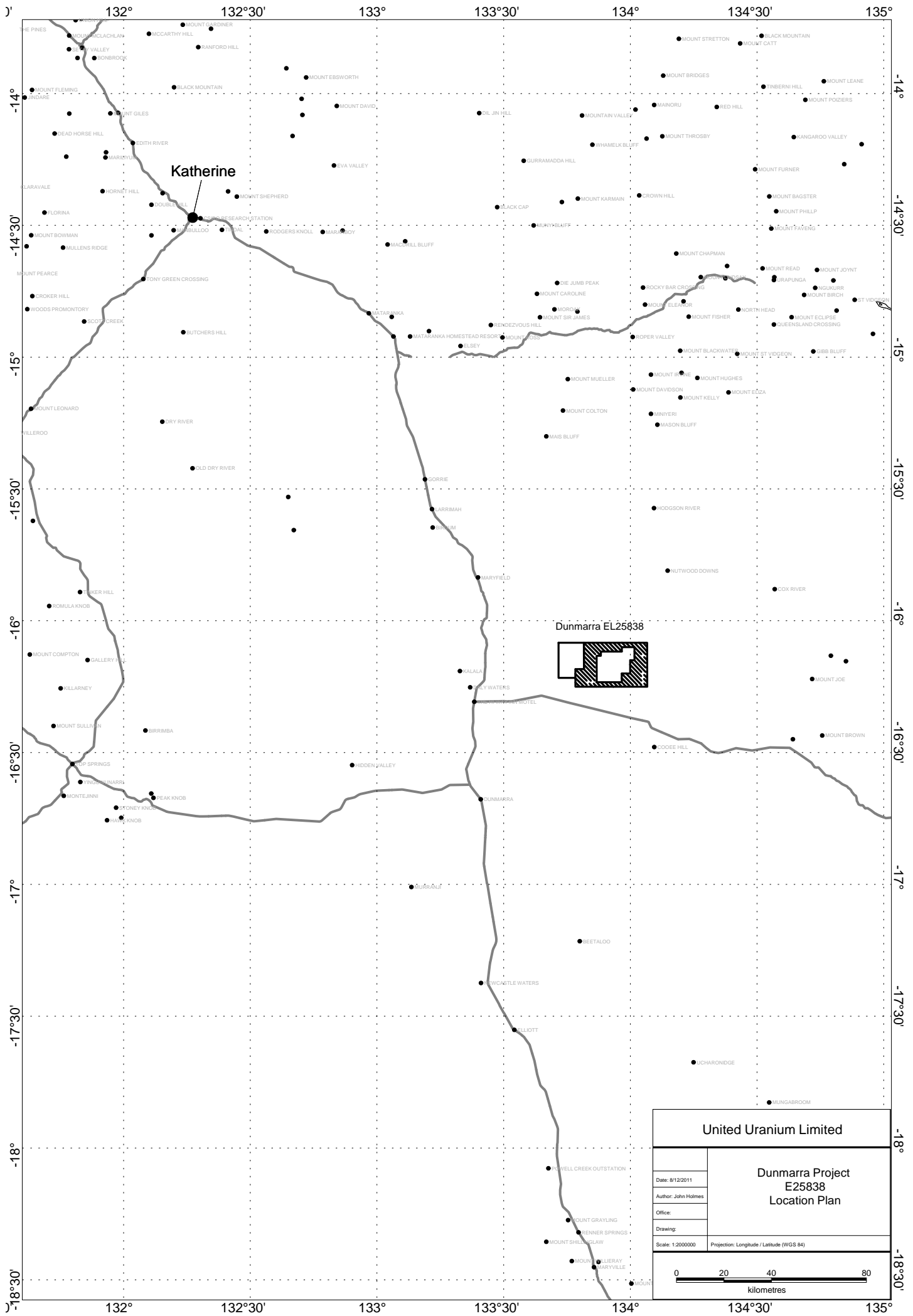
This report details exploration carried out on the relinquished portion of the Dunmarra Project, EL25838, during the period 21/9/2007 to 21/9/2011. United Uranium Limited is the operator and holds an 80% interest in the tenement.

The project area is located approximately 240 kilometres south east of the township of Katherine in the Northern Territory (Figure 1). Access from Katherine is south east via the Stuart Highway, then approximately 20 kilometres east on the Carpentaria Highway. The Carpentaria Highway crosses the south western corner of the relinquished portion of the tenement, while the north western portion of the tenement is accessible on station roads and fence lines.

The tenement largely overlies the Mullaman Beds, in the Dunmarra Basin and is considered prospective for sandstone hosted and roll front uranium deposits. The Rum Jungle and South Alligator Uranium fields are located 300km to the north west of the tenement. The Dunmarra Basin also contains many minor copper occurrences, largely on the margins of the basin.

Up to eight radiometric anomalies have been identified from reprocessing of the Northern Territory Geological Survey (NTGS) airborne radiometric within the project area. Some of the lower order radiometric anomalies occur within the relinquished portion of the tenement.

The tenement was subject to partial relinquishment on 21 September 2011. This report details exploration activity completed on the relinquished portion of the tenement from grant on 21 September 2007 until relinquishment on 21 September 2011. It also provides a brief summary of the geology and previous exploration activity of the project area. Exploration activities included a review of existing exploration data, high level targeting utilising reinterpreted regional geophysical data, compilation of public domain geological, geophysical and other digital data, limited geological reconnaissance and desktop review of exploration activities completed.



### **3 TENURE**

The Dunmarra Project consists of a single granted exploration licence held in a joint venture between United Uranium Limited (80% interest and manager) and United Mining Resources Pty Ltd (20%). The project is located approximately 240 kilometres south east of Katherine in the Northern Territory.

EL25838 was granted on 21 September 2007 and covered an area of 403 sub-blocks (approximately 1,321 sq km). The tenement was subject to partial relinquishment on 21 September 2011. Refer to Figure 2 for location of the relinquished portion of the tenement.

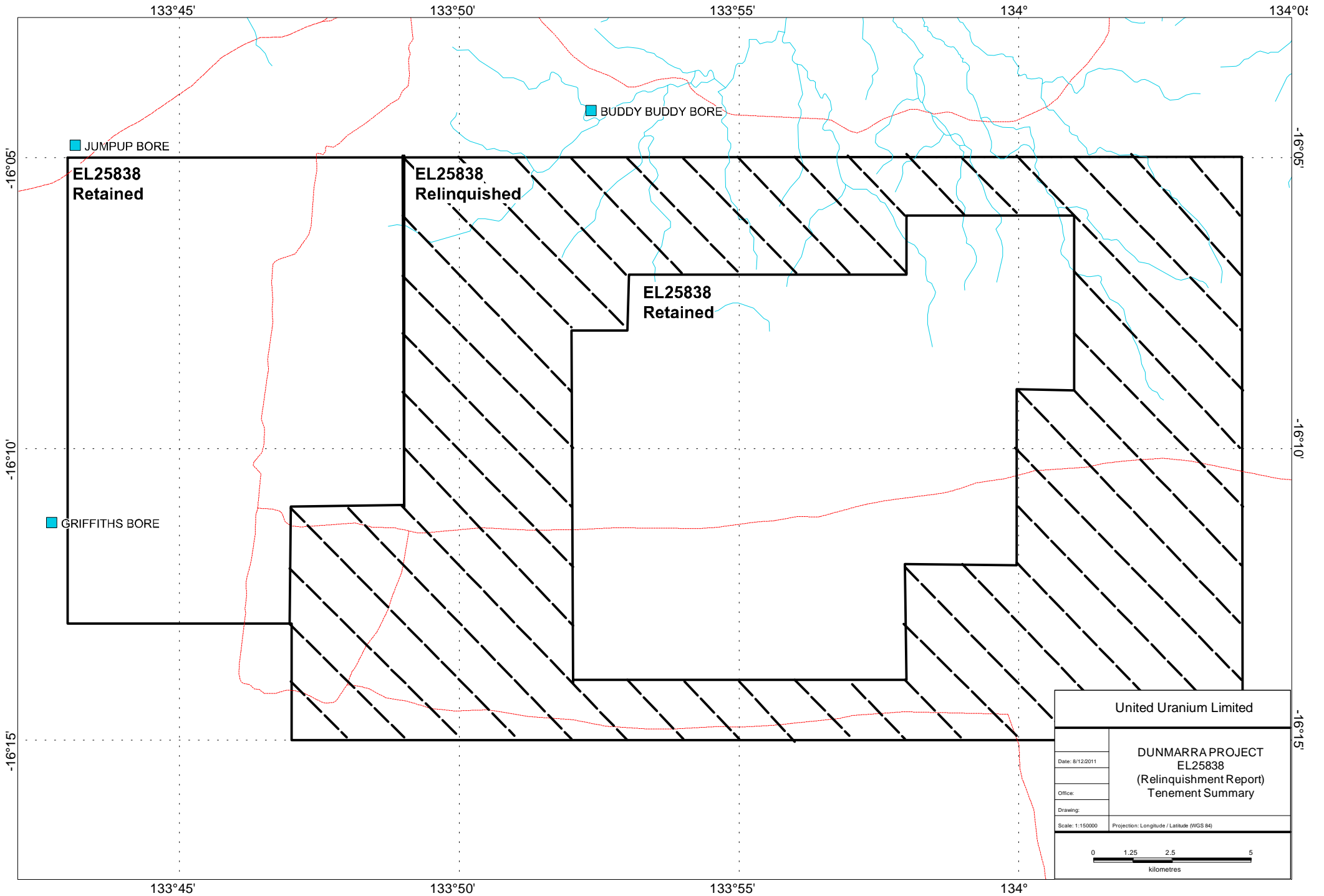
### **4 GEOLOGY**

The project is located in the Dunmarra Basin, a large intracratonic basin comprised of mainly lateritised Cretaceous mudstones and shales. The basin sediments have an average thickness of 100m and unconformably overlie Palaeo to Mesoproterozoic rocks of the McArthur Basin.

The Lower Cretaceous Mullaman Beds, comprising lateritised claystone, soft grey claystone, impure sandstone, white grey sandstones, and conglomerates extend over the majority of EL25838. The sediments outcrop extensively along the scarp dividing the tableland from the Nutwood Downs Basin which lies to the north east of the tenement area. Exposures consist mostly of white to light brown highly lateritised claystone with occasional porcellanite and interbeds of fine grained sandstone.

A Lower Cambrian sequence of tholeiitic basalts, tuffs, and agglomerates (Nutwood Downs Volcanics) outcrop to the north east of the tenement area.

Tertiary deposits of laterite and lateritic rubble generally overlie the Mullaman Beds. The laterite is a semi-pisolitic ironstone laterite and varies in thickness from a few centimetres to over 10m. Deposits of residual soils, sands and ferruginous gravels generally occur along the water courses.



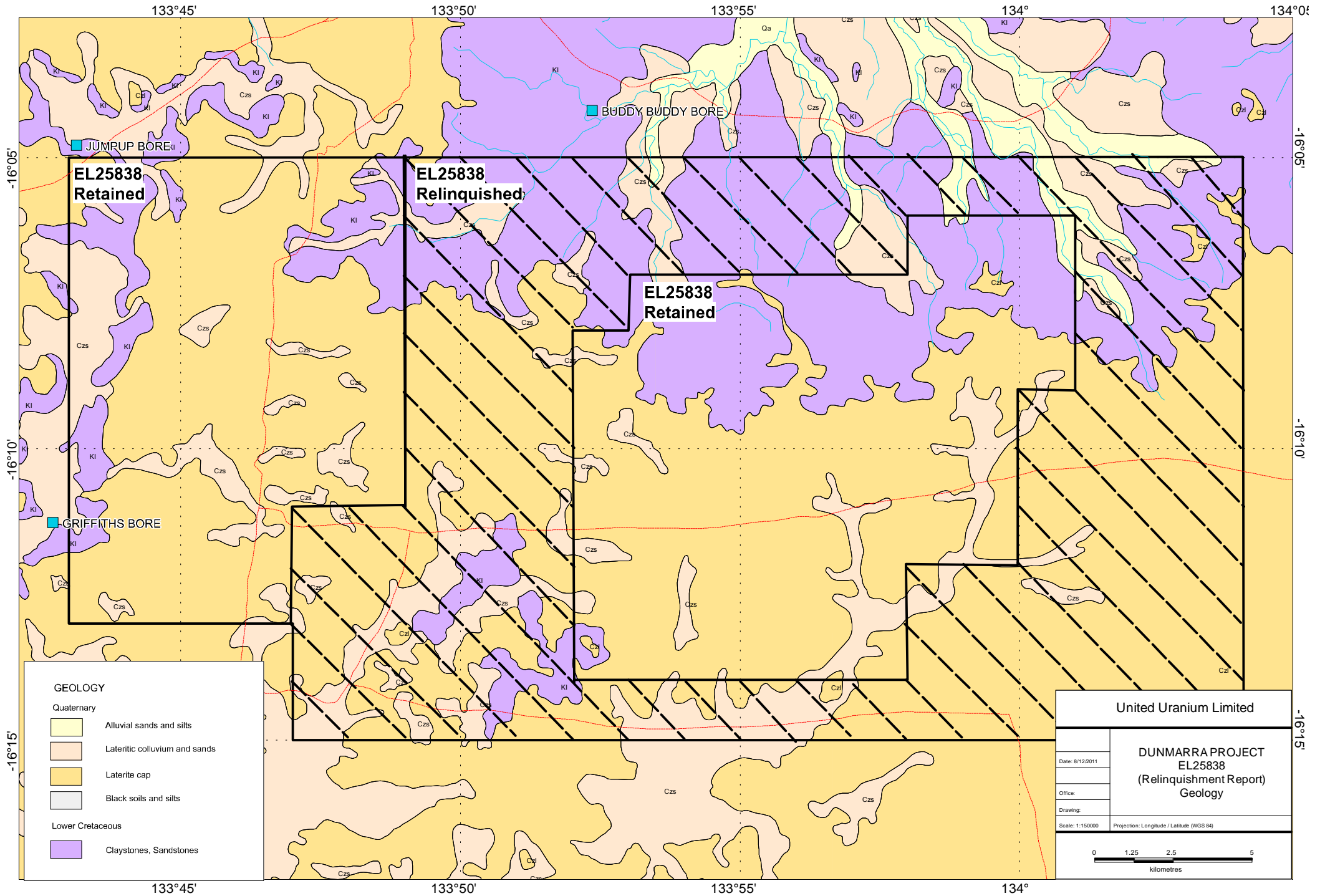
United Uranium Limited	
Date: 8/12/2011	<b>DUNMARRA PROJECT</b> <b>EL25838</b> <b>(Relinquishment Report)</b> <b>Tenement Summary</b>
Office:	
Drawing:	
Scale: 1:150000	Projection: Longitude / Latitude (WGS 84)



The lateritised plateau, also known as the Barkly-Beetaloo Tableland, forms a major physiographic division of the area. The edge of the tableland is marked by a 40m scarp of lateritised Mullaman Beds, largely claystone. North east of the breakaway, the area is represented by lowlands (Nutwood Downs Basin) surrounding Nutwood Downs Homestead.

There are no gazetted uranium occurrences proximal to the tenement area. The Rum Jungle and South Alligator Uranium fields are located 300km to the north west of the tenement whilst the Calvert Hills uranium occurrences are located 430km to the east south east of the project. The Dunmarra Basin contains many minor copper occurrences, though these are largely on the margins to the Dunmarra Basin and also within the McArthur Basin 150km to the east of the tenement area.

Reprocessing of the NTGS radiometric data draped over the DEM has highlighted a number of radiometric anomalies. Some of the lower order radiometric anomalies are contained within the relinquished portion of EL25838. These anomalies, based on the uranium count, generally appear to be associated with the Mullaman sediments. These sediments are conceptually favourable sedimentary lithologies for the formation of roll front, sandstone or unconformity style uranium deposits.



## 5 PREVIOUS EXPLORATION

The Dunmarra Basin as a whole is relatively underexplored in comparison to other Provinces in the Northern Territory.

All historical exploration undertaken within the tenement area has been reviewed. Based on the open file reporting from the Northern Territory Geological Survey, there were a limited number of historical tenements that either partially or fully covered EL25838.

Historical exploration carried out within the area covered by EL25838 has been carried out since 1970 largely for diamonds and base metals. Extensive exploration was also carried out for base metals by BHP.

Previous exploration conducted both within EL25838 and proximal to the tenement area (*EL Number, Year, Report Number, Company*) follows;

### **AP2781 1970-1971 Comalco**

*(CR1971-0011)*

The Commonwealth Aluminium Corporation Limited (Comalco) carried out extensive exploration for a range of minerals with the focus being on Bauxite in 1970-1971. Field work included drilling and radiometric surveys. A detailed investigation of an airborne radiometric anomaly was also conducted.

An extensive vacuum drilling program was conducted using an Edson tractor mounted vacuum rig to bedrock or to a depth of 10m. A total of 276 holes were drilled, the majority of which fall within the EL25838. Hole collars have been digitised into MapInfo by Zephyr. The deepest hole drilled was 22m. A total of 2000 samples were collected from the drilling and 50 surface samples were also taken. There were no significant results.

Three radiometric surveys were carried out;

- (i) Airborne gamma radiation survey
- (ii) Surface gamma radiation survey
- (iii) Geiger-Probe borehole gamma radiation survey

Counts of upto 2½ times background (90cps) were recorded although the anomalies were patchy and non contiguous. Higher counts were almost all

invariably over areas with a dense covering of ironstone gravels and surface lag.

Scintillometer readings were collected for all drill hole samples from the areas outlined within the airborne radiometric anomaly but no readings above background were recorded.

***EL 22742 2002 Rio Tinto Exploration***

*(CR2004-0464)(CR2005-0455, 0460)*

Rio Tinto Exploration held two tenement areas on the northern margin of EL25838. The ground was considered prospective for diamonds following the identification of a number of kimberlitic indicator minerals occurrences, largely chromitite, and also included micro-diamonds from a historical sampling campaign.

A Falcon Airborne gravity survey was flown. Results from the survey downgraded the prospectivity of the area for diamonds and the ground was relinquished. It was also concluded that the ground remained prospective for base metals.

***EL 23016, EL 23017, EL23020 2004 De Beers Australia Exploration***

*(CR1992-0567)*

EL 23016 covers the majority of EL25838 and was assessed by De Beers Australia for diamonds in 2004. No work was reported.

***EL 8451 1994 Normandy Exploration***

*(CR1997-0040) (CR1999-0095) (CR1995-0922) (CR1996-0872) (CR1997-0759)*

EL8451 covers the eastern margin of the ground now held by United Uranium as EL 25838. The licence was applied for to target base metal mineralisation in the Middle Proterozoic Roper Group. The region is host to the giant MacArthur River (HYC) shale-hosted Zn-Pb-Ag deposit.

Exploration carried out included an aeromagnetics and radiometric survey. Data from a petroleum well open file report revealed that the depth of cover in the area is in excess of 150m over the tenement area and in some places upto 450m and the ground was subsequently relinquished.

## **6 EXPLORATION ACTIVITIES**

Exploration activity completed on the relinquished portion of EL25838 from grant on 21 September 2007 until relinquishment on 21 September 2011 consisted of a review of existing exploration data, high level targeting utilising reinterpreted regional geophysical data, compilation of public domain geological, geophysical and other digital data, limited geological reconnaissance and desktop review of exploration activities completed.

This work, particularly the reinterpretation of geophysical data, identified a number of lower order radiometric anomalies within the relinquished portion of the tenement. Limited geological reconnaissance work completed in this area has downgraded the prospectivity of these anomalies.

## **7 CONCLUSION**

Exploration completed by United Uranium has downgraded the prospectivity of the regional radiometric anomalies within the relinquished portion of EL25838. No further exploration activity is recommended for the relinquished portion of EL25838.

## 8 REFERENCES

Comalco Limited., Prospecting Authority No. 2781, East of Daly Waters-Northern Territory. Geological Report. September 1971. Open File Report CR1971-0011

De Beers Australia Exploration., Annual and Surrender Mineral Exploration Reports EL2300 & 23014-23018. Open File Report CR2004-019, CR2004-045

Holmes J.S., Dunmarra Project EL25838. Project Assessment and Data Compilation. January 2008. Internal United Uranium Report

Holmes J.S., Dunmarra Project EL25838. Field Reconnaissance Program, August 2008, Summary Report. Internal United Uranium Report

Kastellorizos P., First Annual Report on Dunmarra Basin Project, Northern Territory, Dunmarra Basin Uranium Project, Exploration Licence: 25838, October 2008. United Uranium Limited.

Normandy Exploration., Partial Relinquishment Report on Exploration Licence 8451 (Arnold) for the period 20/10/94 to 19/10/96. Open File Report CR1997-0040

Normandy Exploration., Final Report on Exploration Licence 8451 (Arnold) for the period 20/10/94 to 25/09/98. Open File Report CR1999-0095

Normandy Exploration., Annual Report on Exploration Licences 8449, 8451, 8462, 8463, 8464, 8465, and 8871. Velkerri Project. December 1995. Open File Report CR1995-0922

Normandy Exploration., Annual Report on Exploration Licences 8451, 8463, 8464, 8465. Velkerri Project. November 1996. Open File Report CR1996-0872

Normandy Exploration. Annual Report on Exploration Licences 8451. 20/10/96 to 19/10/97. Velkerri Project. November 1997. Open File Report CR1997-0759

---

Prentice I., Annual Report on Exploration Activities, Dunmarra Project, Northern Territory, for Period 21 September 2008 to 20 September 2009, Exploration Licence: 25838, October 2009. United Uranium Limited.

Prentice I., Annual Report on Exploration Activities, Dunmarra Project, Northern Territory, for Period 21 September 2009 to 20 September 2010, Exploration Licence: 25838, October 2010. United Uranium Limited.

Prentice I., Annual Report on Exploration Activities, Dunmarra Project, Northern Territory, for Period 21 September 2010 to 20 September 2011, Exploration Licence: 25838, October 2011. United Uranium Limited.

Rio Tinto Exploration. EL22742. Hodgson Diamonds Project, NT. Relinquishment Report for Period ending 8 July 2004. Gravity Diamonds Limited. Open File Report CR 2004-0464

Rio Tinto Exploration., EL22743 Hodgson Diamonds Project, NT. Final Report on Exploration Activities. Gravity Diamonds Limited. Open File Report CR 2005-0455

Rio Tinto Exploration. EL22742 Hodgson Diamonds Project, NT. Final Report on Exploration Activities. Gravity Diamonds Limited. Open File Report CR 2005-0460