



# **NORTHERN URANIUM LIMITED**

## **AMADEUS BASIN PROJECT**

**ANNUAL REPORT for the period  
20 April May 2009 to 19 April 2010  
Exploration License EL26920**

**OPERATED BY  
NORTHERN URANIUM LIMITED**

ANNUAL REPORT

NUMBER:

NAME: AMADEUS BASIN PROJECT

ACTIVITIES: EXPLORATION

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PREPARED BY: K. DAS

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## **1.0 SUMMARY**

The Amadeus Basin exploration license 26920 lies approximately 65km to the east of the township of Alice Springs, in the Northern Territory. The tenement consists of 214 blocks and covers an area of 610.1 square kilometers. The license was granted to Northern Uranium on the 20<sup>th</sup> May 2009 for a period of 6 years.

Northern Uranium Limited is targeting Cambrian aged phosphorite deposits within the Amadeus Basin. The Todd River Dolomite which is seen to be outcropping in the southern portion of EL26920 is considered to be a potential host for phosphate mineralisation.

Due to difficult finance circumstances experienced worldwide it was not possible to complete the proposed mapping, sampling and drilling activities. It is anticipated that the proposed exploration activities will be undertaken in 2010 and 2011.

## **2.0 INTRODUCTION**

All major Australian phosphate deposits occur in the Georgina Basin, several occurrences having been recorded within the Cambrian sediments of the Amadeus Basin. The Cambrian Todd River Dolomite which outcrops in the north eastern margin of the Amadeus Basin has been recorded to contain significant phosphatic occurrences.

Literature review has found Cambrian phosphorite occurrences within the (Early Cambrian) Todd River Dolomite, (Middle Cambrian) Tempe Formation (Late Cambrian – Ordovician) Pacoota Sandstone, all of which are located in the central and eastern portion of the Amadeus Basin. The Todd River Dolomite is of Cambrian age and is considered the most prospective unit for hosting phosphate mineralisation

This report details exploration activities conducted by Northern Uranium Ltd on exploration license 26920 between 20 May 2009 and 19 May 2010.

## **3.0 LOCATION & ACCESS**

The Amadeus Basin tenement EL26920 is situated within the large east west trending intra-cratonic Amadeus Basin which is of late Proterozoic to Carboniferous aged marine and continental sediments. The tenement is located approximately 65km to the east of the township of Alice Springs in the Northern Territory (Figure 1).

Access to the tenement is via the seal Ross Highway and graded gravel roads provide access within the tenement area. Exploration license 26920 is within close proximity to Alice Springs and favorably positioned to access existing rail and road infrastructure (Figure 1).

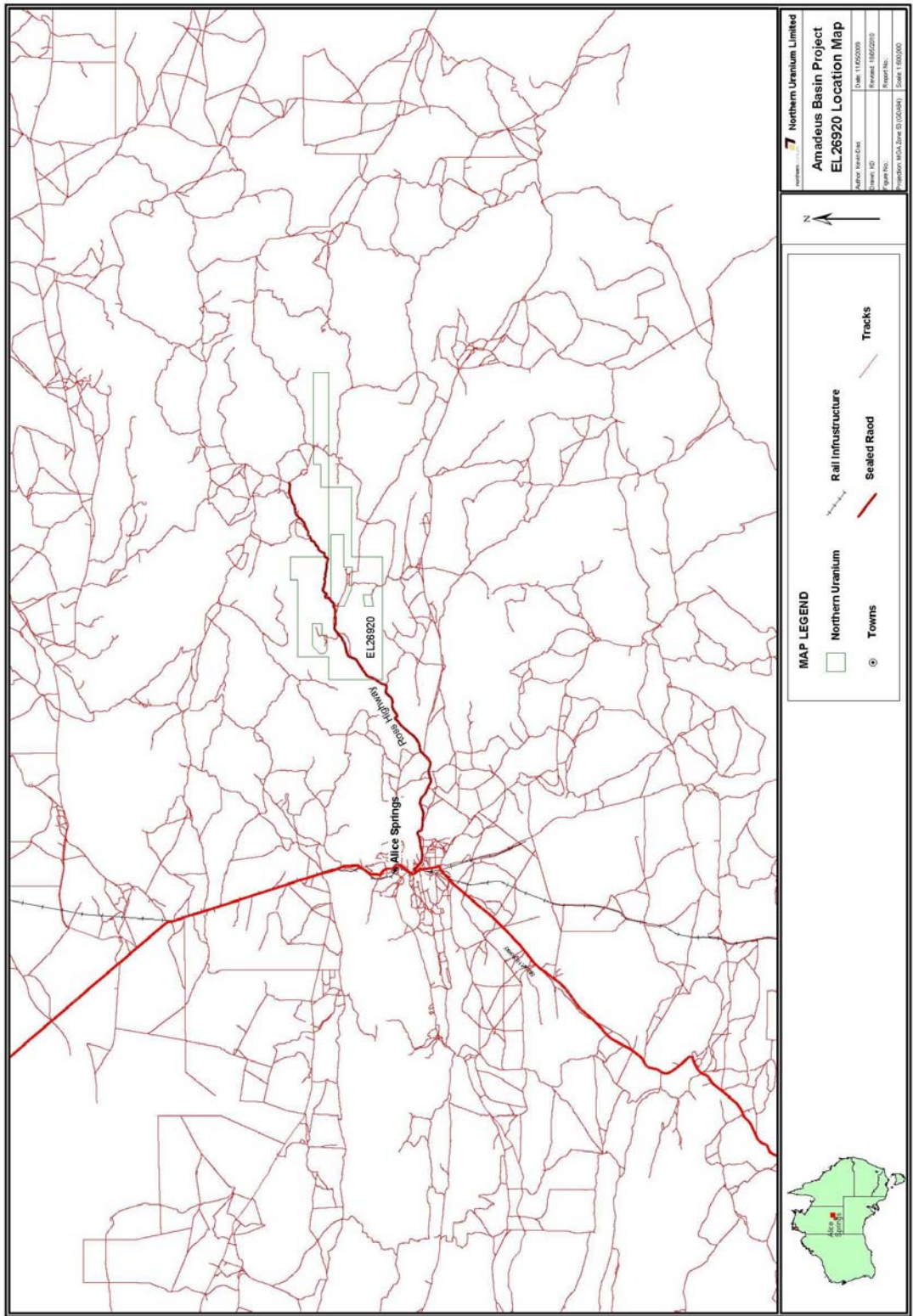


Figure 1: Tenement Location and Access Map

#### 4.0 TENURE

The exploration license area consists of 214 blocks and covers an area of 610.1 square kilometers. The license area was granted to Northern Uranium on the 20<sup>th</sup> May 2009 for a period of 6 years.

**Table 1: Tenement Schedule**

Tenement	Tenement no.	Blocks	Blocks Relinquished	Grant Date	Expiry Date
Amadeus Basin Project	26920	214	Nil	20/05/2009	19/05/2015

#### 5.0 REGIONAL GEOLOGY

Exploration license 26920 lies within the north east portion of the elongated Proterozoic Amadeus Basin and is located within the Alice Springs 1:250,000 map sheet, number SF 53-14.

The Amadeus Basin is a large east west trending intra-cratonic Basin of Late Proterozoic to Carboniferous aged marine and continental sediments. These sediments were derived from the surrounding early to mid Proterozoic granites and metamorphic rocks of the Arunta Block to the north and Musgrave Block to the south.

The rocks are deformed by broad folding and faulting. The main trends are east west, while faulting is both normal and thrusting styles. Only weakly developed low grade metamorphism is recognized in the southern part of the Basin.

The Early Cambrian basal deltaic sediments of the Arumbera Sandstone underlie the lower Cambrian Todd River Dolomite which itself is overlain by the Giles Creek Dolomite and subsequently the Chandler Limestone. The siltstone, shale and limestone Shannon Formation is overlain by Goyder formation which is subsequently overlain by the Pacoota Sandstone. The sediments of the Larapinta Group can be separated into the Carmichael and Stairway Sandstones which are overlain by the cross-bedded Mereenie Sandstone. The valleys floors and creek lines are primarily consist of Quaternary and Tertiary aged transported sediment cover.

Literature review has found Cambrian phosphorite occurrences within the (Early Cambrian) Todd River Dolomite, (Middle Cambrian) Tempe Formation (Late Cambrian – Ordovician) Pacoota Sandstone, all of which are located in the central and eastern portion of the Amadeus Basin.



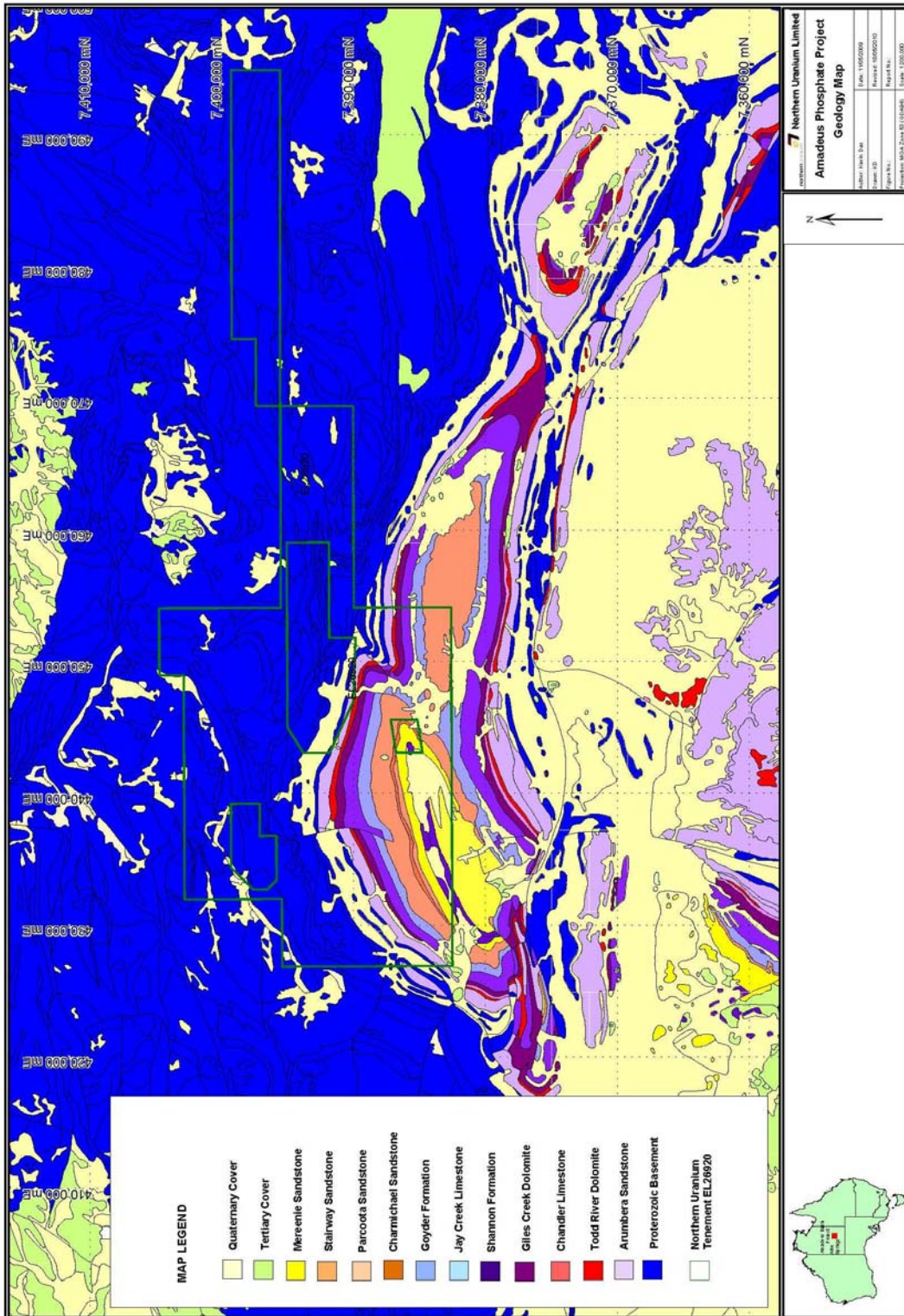


Figure 2: Geological Setting

## **6.0 EXPLORATION ACTIVITIES**

To date exploration work completed by Northern Uranium Ltd has been a review of the previous completed historical exploration work and a compilation of all publicly available government data sets including geological and geophysical data. A sacred site inspection was also carried out through the Aboriginal Areas Protection Authority (AAPA). The results of the review are described below.

Exploration completed in the first year of tenure includes:

### **6.1 Data Compilation and Review**

A detailed review of previous work has been completed on all available data relevant to the EL area which was compiled into GIS format using the MapInfo/Discover software. The data include topographical, cadastral, geological, geophysical, geochemical and drillhole information sourced from NT government agencies and records of previous exploration activities. The data was interpreted to identify exploration target areas for follow-up geological reconnaissance mapping and surface geochemical sampling where appropriate.

### **6.2 Sacred Site Inspection**

An aboriginal sacred site inspection over EL26920 was carried out through the Aboriginal Areas Protection Authority (AAPA). The inspection provided a search of all recorded sacred sites that have been placed in the AAPA register.

### **6.3 Geophysical Data Compilation**

All available government geophysical data over the central Georgina Basin was purchased for processing and interpretation. The data has been processed by Resource Potential to produce several new images, and has been compiled into (GIS) MapInfo format. The data was interpreted by Northern Uranium geologists to identify potential exploration target areas for follow-up geological reconnaissance mapping and surface geochemical sampling.

## **7 PROPOSED EXPLORATION**

### **7.1 Geological Mapping and Geochemical Sampling**

The tenement areas with outcropping Todd River Dolomite unit will be subject to reconnaissance geological mapping and detailed mapping of target areas. The mapping programs will be focused on identifying target zones for surface geochemical sampling (rock chip and soil sampling) where appropriate. Following the identification of targets, a systematic geochemical sampling program will be implemented where appropriate (i.e. areas of outcrop and/or in-situ soil cover).

The follow-up mapping and sampling of target areas defined from the initial reconnaissance work will be initiated. This will include more detailed mapping and geochemical sampling where appropriate to refine target areas in preparation for drilling.



### **7.3 Aircore Drilling**

Regional aircore or RAB Drilling will be carried out over target areas defined from the previous work. Drilling will be reconnaissance in nature with holes wide-spaced (1km) and to depths of 40-50m. Some site preparation may be required in order to facilitate drill rig access, although existing tracks will be used wherever possible.

### **8 REFERENCES**

Alice Springs (Second Edition), NT 1:250,000 Geological Series Explanatory Notes, Sheet SF/53-14