COMPANY / OPERATOR: Quantum Resources Limited

PROJECT: Ware Range

TENEMENTS: EL 27745

REPORTING PERIOD: 29 July 2010 to 28 July 2011

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DUE DATE: 28 August 2011

STATE: Northern Territory

LATITUDE: 18° 28’00’ to 18° 31’00’S

LONGITUDE: 129° 42’00’ to 129° 47’00’ E

AMG mN: 7952477mN to 7958024mN

AMG mE: 573900mE to 582,687mE

1:250,000 SHEET: Birrindudu SE52-11

1:100,000 SHEET: Ware 4860 & Nongra 4861

MINERAL DISTRICT: Ware Range

COMMODITY: Uranium, Gold

KEYWORDS: Tanami Region, Ware Range, Uranium
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1. SUMMARY OF EXPLORATION ACTIVITIES

This report contains collation of exploration activities over Exploration Licence 27745 for the year ending 28th of July, 2011, the first year of the tenure for the licence (Figure 1).

After acquiring the tenement, Quantum Resources initiated the process of evaluating the mineral potential, of EL27745 by examining the publically available geophysical data and historic exploration reports. The prime objective of the project is to discover economic uranium mineralisation; however, the project area will also be evaluated for precious metals. Previously, significant higher than back ground uranium levels were recorded from the neighbouring tenement EL25010 during the RadonX cup survey.

2. TENEMENT STATUS

Exploration Licence 27745 was granted on the 29th of July, 2010 to Quantum Resources Limited (Figure 1). The following table summarised tenement details:

<table>
<thead>
<tr>
<th>Tenement</th>
<th>Date of Grant</th>
<th>Date of Expiry</th>
<th>Area (km$^2$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL27745</td>
<td>29/08/2010</td>
<td>28/08/2016</td>
<td>26.06</td>
</tr>
</tbody>
</table>

Figure 1: Exploration Index
3. LOCATION AND ACCESS

EL27745 is located approximately 700 kilometres south of Darwin, Northern Territory and 500 kilometres south west of Katherine (Figure 2). Due to the remoteness of the licence, exploration activities will likely require helicopter support. By road, the tenement can be reached from Darwin along the Stuart Highway to Katherine and then to Willeroo along the Victoria Highway. From Willeroo, the Delamere Road and Buntine Highway provide access to Inverway Station. The tenement is situated approximately eighty kilometres south of the Inverway Station. Roads and tracks in the region are few and paucity of landmarks makes navigation difficult. During the wet season, roads and tracks may become treacherous due to flooding.

Figure 2: Location Plan
4. GEOLOGY

The following description of geology has been adapted from Blake (1975) and Crispe et al. 2007.

4.1 REGIONAL GEOLOGY

The project area lies within the Palaeoproterozoic Tanami Region. The Tanami Region is part of the North Australian Craton. It abuts the Arunta Region to the south and east and is onlapped by younger cover sequence including the extensive Palaeozoic Wiso Basin on its northeastern margin. To the west, sedimentary succession of the Mesoproterozoic Birrindudu Basin overlies and separates the Tanami Region from similar age rocks in the Halls Creek Orogen.

The oldest and rarely exposed rocks in the Tanami Region are Neoarchaean (2520-2500 Ma) amphibolites facies gneiss and metasedimentary rocks of the Browns Range Metamorphics and the Billabong Complex. Overlying the Archaean basement is the metasedimentary succession of Tanami Group (1880-1830) and volcanics and siliciclastic sedimentary rocks of Ware Group (1825-1810 Ma). An unconformity marking the major deformational and metamorphic event known as Tanami Orogeny (ca. ~1830 Ma) separates the Tanami Group from Ware Group.

The Tanami Region sequence is unconformably overlain by quartz sandstone, lithic arenite, and conglomerates of Pargee Sandstone representing the syn-tectonic sedimentation related to the 1730 Ma Strangways Orogeny. The Pargee Sandstone itself is unconformably overlain by Mesopaleoproterozoic platform cover sequence comprising sandstone, siltstone, shale, and carbonate of Birrinduddu Group.

The Palaeozoic Antrim Plateau volcanics and Redcliff Pound Group and Mesozoic sediments together form the post-Proterozoic geological record in the Tanami Region.

Detail mapping and structural analysis indicates that Tanami Region experienced complex and protracted structural evolution. Its deformational history was largely influenced by tectonic events occurring in the neighbouring Halls Creek Orogen and Arunta Region. At least six deformational events (D1-D6), two metamorphic events and several period of intrusive activity have been recognized in the Tanami Region.

Metamorphic grade in the Palaeoproterozoic sequence of Tanami Region ranges from greenschist to amphibolites facies. During 1825-1790 Ma, voluminous granitoids, dominated by I-type, biotite granodiorite and monzogranite were intruded in the Tanami Region. Based on their geochemistry these granites have been subdivided into the Birthday, Federick and Grimwade Suites.

4.2 LOCAL GEOLOGY

The geology of tenement EL27745 is dominated by Cainozoic sediments; sand silt and gravel deposits obscuring the basement rocks (Figure 3). Lateritisation occurs only in small areas, and typically consist of 1-2m thick pisolitic layer on the top, followed by 2-3m thick mottled zone in the middle and a bleached zone at the bottom.
5. EXPLORATION

The EL27745 is a neighbouring tenement to the Quantum’s EL25010. The EL25010 has been investigated for surficial calcrete-hosted and unconformity related uranium deposits. Results from RadonX cup survey carried out in 2008-2009, showed that recorded radon values are significantly higher than the background levels, indicative of possible existence of a surface/subsurface occurrence of uranium mineralisation within or proximal to the tenement. Moreover, the elevated values from the western traverses appear to extend further to the south into northern part of the EL27745.

The surficial calcrete-hosted deposits in a semi-arid to arid climate are formed where deeply weathered U-rich rocks such as granite or felsic volcanic rocks act as a source. Uranium leached from the weathered rock of a large catchment area and transported to the valley where it concentrate in valley-fill sediments along Tertiary drainage channels and in playa lake sediments. Carnotite is a principal U mineral found in this type of deposits. Noteworthy examples are Yeelirrie deposits in northern Yilgarn Craton, WA and Langer Heinrich deposit in Namibia.

Uranium prospectivity of Ware Range project for surficial calcrete-hosted deposits is demonstrated by the presence of anomalously uranium rich source, the Gardiner Sandstone, in the project area. The uranium liberated from the Gardiner Sandstone by leaching would have transported by the alkaline, oxidizing surface waters or shallow ground waters as uranyl carbonate or bicarbonate complexes. The fixation of uraniferous fluids may have achieved by number of mechanism such as:
a: by precipitation of carbonate mineral,
b: by evaporative concentration,
c: change in valence state of V or U which decreases the solubility of the ore mineral or
d: sorption by silica, iron hydroxides and clay or
e: initially sorption and then reduction by organic matter.

Entire licence area is covered by the younger Tertiary sediments obscuring the basement geology. This cover has produced a difficult environment for exploration. However, Gardiner Sandstone, the basal unit of late Palaeoproterozoic Birrindudu Group, outcrops in the vicinity of the licence. The age of Birrindudu Group is not well constrained but interpreted to be deposited between 1760-1640 Ma (Crispe et al. 2007). The Gardiner Sandstone is presumed to occupy an earlier portion of that time interval. The Birrindudu Group, the Tolmer Group from western Pine Creek Inlier and the upper part of the Katherine River Group from northern McArthur Basin are correlated with each other.

The Gardiner Sandstone rests unconformably above the early-mid Palaeoproterozoic and Achaean rocks of the Tanami Region. This geological framework is somewhat comparable to the one that exists in the Pine Creek Inlier (NT) where unconformity related economic uranium mineralisation has been discovered. The uranium mineralisation age of Alligator River Field in Pine Creek Inlier and Westmoreland has been constrained to 1680±10 Ma (Polito et al. 2011) and 1606-1655±80 Ma (Polito & Kyser 2005) respectively.

6. FUTURE WORK

It is proposed that the RadonX cup survey should be carried out to delineate elevated values that appear to extend southward from western part of the EL25010. The survey will identify areas with higher radon gas discharge than the background level. These areas are considered to possess surface/subsurface enriched uranium source and would be followed up with the ground gamma-ray spectrometer survey and geological mapping. The goal is to enhance the potential for the discovery of economic uranium deposits by delineating areas requiring investigation by drilling. In addition to that, review of all available geological and geophysical data will continue to identify factors that support the possibility of occurrence of unconformity-related uranium mineralisation in the project area.

7. CONCLUSION

Geological and geomorphologic factors that are considered suitable for calcrete-hosted uranium deposits in EL25010 extend into the adjoining EL27745. It is envisaged that EL27745 will be prospective for surficial calcrete-hosted uranium deposit. Likewise, possibility of occurrence of unconformity related uranium mineralisation will be further explored.
8. BIBLIOGRAPHY


