Titleholder: Territory Phosphate Pty Ltd
Operator: Rum Jungle Resources Ltd
Tenement Manager: Complete Tenement Management
Tenement: EL 25183
Project Name: Ammaroo Phosphate
Report Title: Partial relinquishment report for EL25183, Ammaroo Phosphate Project
Author: John Dunster
Corporate Author: Rum Jungle Resources Ltd
Target Commodity Rock Phosphate
Date of Report: 10/09/2015
Datum/Zone: GDA94/ Zone 53
250K map sheet: Barrow Creek SF53-06, Elkedra 53-07
100K map sheet: Ammaroo 5954, Sandover 6054
Address: PO Box 775, Darwin NT 0801
Phone: 8942 0385
Fax: 8942 0318
Contact Email: jdunster@rumjungleresources.com.au

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SUMMARY
The Ammaroo Phosphate Project is located 240 km southeast of Tennant Creek. The project area contains the billion tonne Ammaroo Phosphate Deposit, which is currently Australia’s largest undeveloped JORC phosphate resource, the satellite Ammaroo South resource, the Rockhole Prospect and significant greenfields potential in the east. The overall Ammaroo Phosphate Project prefeasibility has been announced and higher tenure applied for. Seventeen blocks are being voluntarily relinquished from EL 25183 because they contain a large CLC no-go zone along Alcherie Creek. No on-ground work was possible in the area being relinquished. Twenty-four blocks are being retained.
INTRODUCTION
The Ammaroo Phosphate Project tenements are located 280 km northeast of Alice Springs and 240 km southeast of Tennant Creek, on the Barrow Creek SF53-06, Elkedra SF53-07, and Frew River SF53-03 1:250,000 mapsheets. Rum Jungle Resources has been exploring for Cambrian rock phosphate in this area since 2009 resulting in the discovery of Barrow Creek 1 deposit and the Ammaroo South Prospect. Rum Jungle Resources also acquired the Arganara Phosphate deposit, which is contiguous with Barrow Creek 1, by taking over Central Australian Phosphate. The flagship deposits have been combined into Australia’s largest undeveloped JORC rock phosphate resource now called Ammaroo Phosphate and the satellite Ammaroo South deposit has been elevated to Inferred Resource status.

LOCATION, ACCESS AND LAND USE

Location
EL 25183 is located in the southern part of the Ammaroo Phosphate Project on the Elkedra and Barrow Creek 250K sheets.

Access and Logistics
Access to the project area is via the sealed Stuart Highway and the partly sealed Plenty and unsealed Sandover Highways from the south and the Taylors Road / Murray Downs road from the north (Figure 1). The 20-person Rum Jungle Resources’ Ammaroo base camp and fly-camps are used for exploration. Bores are used for drinking water. A medical clinic is located at the Ampilatwatja Aboriginal Community. Fuel is carted from Alice Springs on an as-needs basis. The nearest airstrips are at Ampilatwatja and Ali Curung. The Rum Jungle Resources’ Ammaroo base camp has an emergency helipad and JetA1 and AvGas.

Figure 1. The Ammaroo project area showing EL 25183 and the area being relinquished (outlined in pink).
**Climate**

The climate is described as arid tropical by Baker et al 2005. The year is notionally divided into two main seasons, a short, hot summer featuring the bulk of the annual rainfall and a longer mild to cold and dry winter. These two dominant seasonal patterns are separated by short (1-2 month) transitional periods. The summer rains are somewhat influenced by the monsoonal rain patterns from the north and particularly those cyclones which cross the Western Australian coastline. Rainfall is highly variable and unpredictable and annual records range from 86.4 mm to 914 mm. As shown below, January 2007, much of 2010 and the start of 2011 were atypically wet while the rainfall since has been more typical (Figure 2).

![Figure 2. Average rainfall for the project area.](image)

The average monthly relative humidity at 9 am (derived from the previous 16 years) fluctuates between 31 to 52 percent with an average of 42 percent (Figure 3). The average monthly relative humidity at 3 pm is about 11-21 percent lower than the 9 am recorded humidity.

![Figure 3. Mean monthly relative humidity (%) at 9am and 3pm at Ali Curung, NT (BOM 2015).](image)
Summer temperatures can fluctuate between 21 and 38 degrees Celsius and the winter temperatures can flux between 7 and 27 degrees Celsius. Sub-zero temperatures occur occasionally during July and August and there have been instances of surface water freezing at night. During the 2014 field season, maximum temperatures exceeded 40 degrees Celsius. Figure 4 shows the mean monthly maximum and minimum temperatures recorded at Ali Curung from 1988 to 2014.

Figure 4. Mean maximum and minimum monthly temperatures (°C) at Ali Curung, NT (BOM 2015).

**Physiography, Land Systems, Flora and Fauna**

*Figure 1* (previous) shows the physiography. The area of EL 25183 being relinquished is bisected by Alcherie Creek.

The project is located in the Tanami Bioregion south of the Davenport Ranges. This bioregion is comprised mainly of red sand plains with underlying rock strata occasionally exposed as hills and ranges. The sand plains are vegetated with mixed shrublands of Acacia, Eucalyptus or Hakea over Triodia hummock grasslands. On the ranges, Acacia shrublands occur over hummock grasses. This bioregion contains many plant taxa that are endemic to the region or the Northern Territory and several flora and fauna species that are of conservation significance.

Using the system devised by Perry, the area contains two major land systems; the Alinga and Singleton. The Alinga Land System can generally be described as a system of undulating plains interspersed by low rounded ridges with shallow stony soils, red earths and red clayey sands. The land system is dominated by *Acacia aneura* (Mulga) or *Acacia georginae* (Gidgee) woodlands over short grasses and forbs. On shallow stony soils, sparse shrublands occur over *Triodia sp* (Spinifex). The Singleton land system includes red sands forming undulating plains and sand rises, separated by moderately wide, flat swales. Alluvial flats and drainage floors may also be present. Vegetation is dominated by sparse shrublands over *Triodia* (Spinifex), with Acacia woodlands also being present.

The project has been the subject of several baseline fauna and flora surveys commissioned by Rum Jungle Resources. These, a Threatened Species Report, and a report on weed species have been provided with MMPs and are not repeated here.
**Land Use**

The area is sparsely settled. The largest permanent habitations are the indigenous communities at Ampilatwatja (population approx. 500) and Ali Curung (population quoted variously as 960 or 535 of which over 95% are Indigenous persons). The dominant Aboriginal languages spoken are Warlpiri and Alyawarr with English as a second or third language.

EL 25183 is on Derry Downs perpetual pastoral lease. Cattle are run in the area of EL 25183.

**Aboriginal Sites of Cultural Significance and Agreements**

Various AAPA Register searches have been conducted and there are AAPA sites within the area being relinquished. The project is almost entirely on pastoral lease but Rum Jungle Resources has multiple Native Title Agreements over the Ammaroo Phosphate Project. Each of the ELs under the agreement(s) contains areas of various levels of restricted access relating to sacred sites, hunting grounds, dreaming trails, soaks or other sites of significance to the Aboriginal people. These are documented in multiple generations of Sacred Site Clearance Certificates which have now been consolidated by Rum Jungle Resources into a single GIS layer which has been confirmed by the CLC. The area of EL 25183 being relinquished contains a large CLC-designated cultural no-go zone associated with Alcherie Creek. The exact locations of sites of significance and of restricted access are kept in confidence to the Traditional Owners and the CLC. Such sites and areas have deliberately not been depicted on maps here-in.

**Heritage Sites**

A search of the NT Heritage Register held by NRETAS shows no Declared Heritage Sites in the area being relinquished.

**HISTORY OF TENURE**

The three original Territory Phosphate Pty Ltd ELs (25183, 25184 and 25185) were originally held by Finching and Mundena, having been granted to them in 2007. A 25% interest in each EL was transferred from Mundena Holdings to Arc De Triomphe Securities Pty Ltd on 07/04/2008. The ELs were then transferred to Territory Phosphate Pty Ltd on 16/06/2008. On 29/08/2008, Aragon Resources Limited acquired 100% of Territory Phosphate Pty Ltd. In August 2010, Rum Jungle Resources signed a Joint Venture agreement with Aragon Resources allowing Rum Jungle Resources to earn up to a 70% interest in the Territory Phosphate’s Ammaroo tenements over a period of 7 years. However, in February 2011, Rum Jungle Resources completed the purchase of 100% of the issued capital of Territory Phosphate Pty Ltd from Aragon Resources for a total consideration for $1M cash and 16 million fully paid ordinary shares of Rum Jungle Resources. Rum Jungle Resources now holds 100% interest in the three tenements, though they remain in the name of its subsidiary Territory Phosphate. As part of Rum Jungle Resources’ philosophy of ‘drill and drop’, all three ELs have been significantly reduced over their life. EL 25183 was granted in 2007 as 410 blocks. Prior to this partial relinquishment, it had been significantly reduced four times to 41 blocks. This voluntary partial relinquishment reduces EL 25183 to only 24 blocks. The most recent renewal for two years was applied for on 31/03/2015 and is still pending.

**EXPLORATION AND PROJECT RATIONALE**

The Ammaroo Project is being explored for rock phosphate. Exploration is directed at locating phosphate where it is shallow (low strip ratios), not entirely weathered (predictable rock properties amenable to mining), and highest grade and thickest (palaeo-coast and potentially draped over palaeo-highs). Rum Jungle Resources’ approach, which has worked successfully to date, is to initially undertake reconnaissance RC or air core drilling on existing tracks and fences. Samples are analysed in the field with a handheld XRF and potential phosphate is sent for laboratory analysis. Depending on success, follow-up drilling usually involves cleared drill lines and/or grid RC drilling.
Since the discovery of economic grades of phosphate in 2010, Rum Jungle Resources has moved to rapidly prove them up to JORC 2012 standard including a significant component in the Measured category. The company has also completed a Scoping Study and a Prefeasibility Study.

GEOLOGICAL SETTING

Regional Geology
The Ammaroo Project is located in the Georgina Basin which contains the largest sedimentary rock phosphate deposits in Australia. The Georgina Basin includes rocks of Neoproterozoic to Devonian age, with Cambrian platform carbonate rocks dominating basin fill.

The southern Georgina Basin includes a thick sequence of Cambrian-Ordovician sediments, deposited within the Dulcie Trough and on the adjoining Elkedra Shelf. Work by previous explorers and NTGS identified an extensive area of shelf-facies marine carbonate and clastic sediments of Middle Cambrian age within the southern Georgina Basin (Figure 5).

![Figure 5. Simplified Cambrian lithostratigraphy of the southern Georgina Basin, from NTGS.](image)

Cambrian sedimentary rock outcrop is generally restricted to the north of the project area, along the flanks of the Davenport Range. Several formations contain very similar carbonate and recessive shale units that can be very difficult to tell apart without palaeontology and the Elkedra 250K published map shows incorrect formation assignation.

Local Geology and Prospectivity
Alluvial, aeolian and residual sediments of Cenozoic age blanket all of the area being relinquished.

WORK BY RUM JUNGLE RESOURCES ON RELINQUISHED AREA
Rum Jungle Resources has been unable to undertake any on-ground work in the area relinquished because of a CLC no-go zone. The phosphate potential cannot be tested.

BLOCKS BEING RELINQUISHED
Figure 6 below shows the blocks being relinquished.
CONCLUSION AND RECOMMENDATIONS

Seventeen blocks are being relinquished from EL 25183 as they contain a CLC no-go zone. The phosphate potential cannot be tested.