Titleholders: Rum Jungle Resources Ltd
Operator: Rum Jungle Resources Ltd
Titles Agent: Ross McColl
Tenements: EL 28885
Project Name: Angas Downs
Report Title: First annual report on EL 28885, Angas Downs
Authors: John Dunster
Corporate Author: Rum Jungle Resources Ltd
Target Commodity: Potash
Date of Report: 27/03/2013
Datum/Zone: GDA94/ Zone 53
250K map sheets: Henbury SG5301
100K map sheets: Wallera 5348
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SUMMARY
EL 28885 is held by Rum Jungle Resources to explore for potash brine, rock potash or other evaporites. The CLC could not arrange meetings with Traditional Owners during Year 1 of tenure. Without an access agreement, work was limited to desktop studies. The geochemistry of existing waterbores was investigated. SPOT5 imagery was acquired and interpreted in conjunction with ASTER data. Admissible expenditure for Year 1 was $7,836.85 against a covenant of $36,000.
PHYSIOGRAPHY, ACCESS AND LOGISTICS

Location, Physiography and Land Use
EL 28885 is located in flat, arid desert country on the Henbury 250K map sheet, between Liddle Hills in the south and the contiguous Rum Jungle Resources’ EL 27933 to the north. It was pegged to cover several small palaeo salt lakes. The EL falls entirely on Angas (also less correctly spelt Angus) Downs Perpetual Pastoral Lease which is an Indigenous Protected Area under Commonwealth legislation. The Traditional Owners wish to use Angas Downs as a homeland. They currently use it for traditional hunting and have attempted to farm emus. Feral camels are a major problem. Imanpa is the closest Aboriginal community of about 150 people. It has a store, police house and medical clinic.

Aboriginal Agreements
On 10/08/2011, the CLC acknowledged the application and asked for a formal Native Title Agreement. Rum Jungle Resources Ltd met with the manager of Angas Downs Station in 2012, but he was not in a position to grant access. An AAPA site survey was conducted on the adjacent EL 27933 with no sites registered. Organising an on-country meeting involving all the relevant TOs proved difficult and could not be organised by the CLC until 14/03/2013.

Access and Logistics
EL 28885 is bisected by the existing partly-formed Lurritja Road. This and a few poorly-maintained station tracks to bores are the only existing access. The remainder of the EL is covered by sand dunes and clay pans.

Figure 1. Access to the Angas Downs Project, including EL 28205.
HISTORY OF TENURE AND DME ADMINISTRATION
EL 28885 of 126 sub-blocks (392.28 km²) was applied for 18/07/2011, 100% in the name of Rum Jungle Resources Ltd. The grant of EL 28885 was delayed when the DoR incorrectly plotted the application in the Titles Information System (TIS) and publically advertised it in the wrong location. Although it was quickly rectified in TIS, the DoR had to be reminded again on 17/11/2011 that they still had not re-advertised the application. The date of grant for the normal six year term is officially 06/03/2012.

An application has been lodged with DME to include EL 28885 along with the existing contiguous EL 27933 within Rum Jungle Resources’ Karinga Creek Authorisation 0565-02 and the associated MMP.

GEOLOGICAL SETTING
EL 28885 covers several palaeo salt lakes believed to be similar to the active lakes in the Karinga Creek to Lake Hopkins system. There are at least three aquifers in the Angas Downs region generally. It is not known at this stage if any discharge zones similar to the Central Australian Groundwater Discharge Zone were ever active at Angas Downs. Most interest is focussed on the largest lake on EL 28885. Note that this lake appears to have a central mound of cover which may be a clay and gypsum “island”.

Figure 2. Access within EL 28885.
EXPLORATION AND PROJECT RATIONALE
EL 28885 is targeting subsurface brine suitable for the production of potash fertiliser similar to Rum Jungle Resources’ Karinga Creek project. Palaeo-lakes on EL 28885 also have potential for rock potash minerals or other evaporites such as bulk gypsum. Only the largest palaeo lake on EL 28885 was deemed to be of sufficient size to test initially.

PREVIOUS EXPLORATION
There is no previous mineral exploration of relevance to the potash search.

PROPOSED YEAR 1 PROGRAM
The work originally proposed for year one included an archaeological clearance and a very basic program of auger or air core drilling (Figure 4) for a year one covenant of $36,000. This program has been revised and refined several times as desk-top studies have progressed but could not be undertaken because of the lack of an agreement with the CLC and traditional owners.
CURRENT EXPLORATION AND RESULTS

Year 1 – Waterbore Studies
Existing waterbores were checked. Unfortunately, potassium was not assayed in all the bores for which results are available. There are several aquifer systems involved, at least one of which is CaSO₄-dominant and one of which is NaCl-dominant. Overall, the available potassium values are generally lower than at Karinga Creek, but there is some possibility of brines suitable for potash production. Abes Folly Bore, closest to the proposed drilling, is peripheral to the palaeo-lake. It is assumed to be low in K based on the incomplete assays available and was only tested to 15 m with a standing water level of 5 m. The only mention of waterbores having penetrated bedded evaporites is a single instance of shallow bedded gypsum in RN015038.
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</table>

Table 1. Waterbore data from in and near EL 28885.

Year 1 – Conceptual Targeting and Remote Sensing
Rum Jungle Resources acquired stitched rectified SPOT 5 imagery from GeoImage for the whole project area. In accordance with the standard SPOT users’ agreement, the data itself will be kept in-house. These SPOT5 data were compared to other satellite imagery to best pick the limits of the palaeo lakes and any palaeo drainages. Various dates of satellite image were used to ascertain temporal variations.
Figure 6. SPOT5 data for the project area.

Figure 7. Close-up of the SPOT5 image over the palaeo lakes on EL 28885.
The potassium channel radiometric image gives some hope for potash in the main palaeo lake. It is best expressed around the edge of the lake where it would be expected to be shallowest. It could also be deeper and not showing on the image towards the centre of the lake where it may be covered by the “island”.
ASTER mineral maps and images were obtained gratis from NTGS. All these images were used in a remote-sensing study conducted across the whole Angas Downs Project during 2012. This is part of on-going studies aimed at better remotely predicting palaeo lake characteristics and prospectivity. The numerous NTGS ASTER mineral maps and derived images proved to be of limited use. The most useful including the MgOH and silica indices, were ratioed and combined using selectively transparent overlays between them. Snap-shots of unmanipulated ASTER images are shown below.
and included in the accompanying data. Rather disappointingly, the experimental ASTER gypsum index failed to show anything on EL 28885.

Figure 12. ASTER vegetation index.

Figure 13. ASTER regolith ratio.
Figure 14. ASTER MgOH composition index.

Figure 15. The ASTER kaolin index shows little variation. This is in contrast to the Karinga Lakes where the more active lake system is clearer in the equivalent image.
Figure 16. The Silica index shows more character than the Kaolin index.

**PLANNED EXPLORATION – Year 2**
Subject to timely grant of access from the CLC and an MMP from DME, activities for Year 2 are planned to include the awaited aircore drilling as previously described.

**PLANNED EXPENDITURE**

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<td>B. Geochemical Activities</td>
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<td>C. Geophysical and Remote Sensing Activities</td>
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<td>D. Drilling</td>
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**CONCLUSIONS AND RECOMMENDATIONS**
Further on-ground work on EL 28885, including the planned drilling program, is contingent on reaching an agreement with the CLC.