Partial Relinquishment Report
EL 28253 Moonlight

For the Period
15/04/2011 to 14/04/2012

Compilation Date: August 2012
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Contact Ph: 03 9618 2590
1:100 000 Maps: Vaughan 5053
1:250 000 Maps: SF52-12 Mount Doreen
Datum: GDA94 - UTM53
Target commodity: Uranium and Rare Earth Elements
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SUMMARY

During the 2011-12 reporting period Callabonna Uranium Limited conducted field reconnaissance and desktop research on its Moonlight project (EL28253). The exploration tenement was found to be dominated by granites assigned as members of the Proterozoic Southwark granite. These granites produced an elevated regional radiometric response. On field inspection this radiometric response was related to slightly elevated Th concentrations (up to 180ppm). No evidence for alaskite type deposits could be found within these granites leading to a relinquishment of the northern half of the exploration license. A small area (Callisto Prospect) in the south-west of the tenement is comprised of silicified quartz gravels, weathered granite regolith and a small outcrop of mylonitic basement and hematitised gravel which returned anomalous uranium (130 ppm) and REE (total REE with Y up to 6970 ppm). This region has been retained in order to conduct further mapping and sampling for heavy mineral sands during 2012-2013.

INTRODUCTION

The Moonlight License EL28253 is located approximately 350km north west of Alice Springs on the western rim of the Arunta Inlier. The exploration lease is dominated by the partially exposed highly radiogenic Southwark Granite which is considered to be a possible uranium source for the nearby sandstone hosted 24 Mlb Bigrlyi resource (located just 20km to the east).

In house project generation has identified an area of young Cainozoic silicified quartz gravels (silcrete) and kaolin rich weathered granites that may host uranium and Rare Earth Element mineralisation remobilized and concentrated from the underlying granite. Swiss Aluminum Mining Australia explored for calcrete hosted uranium to the north of the Moonlight lease during the mid-late 1970’s and identified active superficial concentration mechanisms with peak rock chip samples exceeding 800ppm U₃O₈ (CR1977-0072).

Potential also exists for primary in-situ vein or pegmatite hosted Uranium (+/- Rare Earth Elements). Previous exploration companies have focused on the gold potential of the area with little uranium exploration over the majority of the lease.
The exploration lease EL28253 “Moonlight” was granted to Arunta Uranium Pty Limited (a wholly owned subsidiary of Callabonna Uranium Limited) on the 15th of April 2011 for a period of six years and initially consisted of 99 sub-blocks, covering an area of 314.67 km².

<table>
<thead>
<tr>
<th>Tenement</th>
<th>Name</th>
<th>Granted</th>
<th>Expiry</th>
<th>Sub Blocks</th>
<th>Area (km²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL 28253</td>
<td>Moonlight</td>
<td>15 Apr 11</td>
<td>14 Apr 17</td>
<td>99</td>
<td>314.67</td>
</tr>
</tbody>
</table>

The licence was defined by 99 graticular units as listed below:

<table>
<thead>
<tr>
<th>1:1,000,000</th>
<th>Blocks</th>
<th>Units</th>
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<tr>
<td>Vaughan</td>
<td>1928</td>
<td>Z</td>
</tr>
<tr>
<td>Vaughan</td>
<td>1931</td>
<td>A, F, G, L, M, N, Q, R, S</td>
</tr>
<tr>
<td>Vaughan</td>
<td>2000</td>
<td>E, K, P, U, Z</td>
</tr>
<tr>
<td>Vaughan</td>
<td>2002</td>
<td>A, B, C, D, F, G, L, M, Q, R</td>
</tr>
<tr>
<td>Vaughan</td>
<td>2072</td>
<td>E, K, P, U</td>
</tr>
<tr>
<td>Vaughan</td>
<td>2073</td>
<td>A, B, D, D, E, F, G, H, L, M</td>
</tr>
</tbody>
</table>
Figure 2: Location of Callabonna Uranium Ltd's exploration tenement EL28253 Moonlight with the regional infrastructure indicated.

Exploration lease EL28253 is located on Mount Doreen station approximately 300km NW of Alice Springs in the Northern Territory. Access to the exploration lease is possible via the Tanami track from Alice Springs and then along Mount Doreen Station tracks (Figure 1). Base camp for exploration activities is available from Vaughan Springs homestead which approximately 8 kilometres from the eastern edge of the exploration lease.

GEOLOGY

Regional Geology
EL28253 is located on the Mount Doreen (SF52-12) 1:250,000 geological map sheet, and on the Vaughan (5053) 1:100,000 geological map sheet. The tenement lies on the western rim of the Arunta Inlier.

The oldest rocks of the Arunta Block exposed in the area are assigned to the Lander Rock beds and Nicker beds. These units consist of greywacke, siltstone, sandstone, and minor mafic and felsic volcanics, which have been deformed and regionally metamorphosed mainly to upper greenschist or lower amphibolite facies, although higher grade migmatitic rocks are present locally.

In the far north the Lander Rock beds are intruded by gneissic granophyre and overlain unconformably by the Reynolds Range Group, comprising quartz sandstone of the Mount Thomas Quartzite and sandstone, siltstone, carbonates, and basalt of the Pine Hill Formation. This group was folded into a major upright isoclinal syncline and metamorphosed to mainly greenschist fades, probably during the Strangways Orogeny at around 1760 Ma, before being intruded, together with the Lander Rock beds, by Wabudali Granite. To the south the Lander Rock beds are intruded by granites of the Carrington and Southwark Suites, Buger Creek Granite, and Ethel Creek Granite. These granites are cut by mafic dykes and displaced by faults marked by ridge-forming quartz veins.
The Arunta Block is overlain in the south by the Ngalia Basin succession, represented by the late Proterozoic (Neoproterozoic) Vaughan Springs Quartzite, Albinia Formation and Mount Doreen Formation, and the Palaeozoic Djamara Formation and Mount Eclipse Sandstone. These units were affected by folding, faulting, and thrusting at the end of the Alice Springs Orogeny, about 300Ma ago. Since the Alice Springs Orogeny the area has been part of a tectonically stable craton subjected to sub aerial erosion and deposition, and now consists of residual hills and ridges rising above extensive plains covered with a veneer of Cainozoic sediments.

Local Geology

The northern part of EL28253 is dominated by the Meso-Proterozoic Southwark Granite Suite, and can be generally described as a Megacrystic biotite to 2-mica granite with minor pegmatites and leucogranites. On the eastern flank of the exploration project is a folded package of Neoproterozoic to Ordovician sediments which form a large NE-SW trending antiform between the edge of the tenement and Vaughan Springs Homestead. At the southern extent of the Exploration Licence Cainozoic gravels are dispersed around a few outcrops of the Southwark Granite (Figure 3). This granite is considered to be a possible uranium source for the nearby sandstone hosted 24 Mlb Bigrlyi resource (located just 20km to the east).

Figure 3: Map of EL28253 Moonlight showing Mount Doreen station tracks, Walking routes used by Callabonna and the regional Geology.
HISTORICAL EXPLORATION ACTIVITY

Historically, work in the vicinity of EL28253 has been limited to regional geochemistry (lag, rockchip and stream sediment sampling) for gold and copper-gold occurrences. Very little uranium exploration has occurred in and around this tenement area. The southern “Silcrete” region does not appear to have been sampled for uranium.

Swiss Aluminium Mining Australia explored for calcrete hosted uranium to the north of the Moonlight lease during the mid-late 1970’s and identified active superficial concentration mechanisms with peak rock chip samples exceeding 800ppm U₃O₈ (CR1977-0072).

EXPLORATION ACTIVITY

Fieldwork was conducted in late 2011 in order to ground truth apparent elevated regional radiometric signatures across the exploration tenement EL28253. To achieve this mapping, sampling and ground radiometrics using a spectrometer were undertaken. This work was conducted in two distinct regions of the exploration tenement:

a) The granite region which extends over much of the central and northern part of the tenement;

b) The Callisto Prospect – which lies in the south of the license and consists mostly of very young gravels, silcrete and some Mesoproterozoic Southwark granite outcrops.

The Granites region

The geology of EL28253 tenement (Figure 1) is dominated by outcrops of granites which are generally 2-mica microgranites to course grained k-feldspar and quartz porphyritic granite. Ground radiometrics for these granites yield low eU values between 17 and 25 ppm but slightly elevated eTh values of between 85 to 143 ppm. Samples CALA0252 to 255 (see table 1, below) were taken for assay to verify ground radiometrics results.

A number of late dykes on the northern margin of the tenement were studied in the field and were identified as course grained quartz blows with no mineralisation potential. A number a quartz blows striking NE-SW were investigated but these appeared late and barren of mineralisation. The remainder of the granites were devoid of any major deformational fabric, large shear zones or major faults.

Table 1: Sample locations and ground radiometrics for the granites region of EL28253.

<table>
<thead>
<tr>
<th>Sample_ID</th>
<th>Waypoint</th>
<th>Y</th>
<th>X</th>
<th>Zm</th>
<th>Project</th>
<th>Lithology</th>
<th>eU</th>
<th>eTh</th>
<th>eK</th>
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<tbody>
<tr>
<td>CALA0252</td>
<td>M1</td>
<td>-22.2215</td>
<td>130.779</td>
<td>0</td>
<td>MOONLIGHT</td>
<td>Fine grained granite</td>
<td>21</td>
<td>138</td>
<td>6</td>
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<tr>
<td>CALA0253</td>
<td>M3</td>
<td>-22.1716</td>
<td>130.8398</td>
<td>0</td>
<td>MOONLIGHT</td>
<td>Porphyritic granite</td>
<td>17</td>
<td>90</td>
<td>5</td>
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<tr>
<td>CALA0254</td>
<td>M5</td>
<td>-22.1782</td>
<td>130.8349</td>
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<td>MOONLIGHT</td>
<td>course grained porphyritic granite</td>
<td>19</td>
<td>85</td>
<td>6.5</td>
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<tr>
<td>CALA0255</td>
<td>M6</td>
<td>-22.1774</td>
<td>130.8346</td>
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<td>MOONLIGHT</td>
<td>course grained porphyritic granite</td>
<td>25</td>
<td>143</td>
<td>8.6</td>
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</tbody>
</table>
Assay results

4 samples were sent for geochemistry assay to be representative samples of the Southwark Granite with lithologies as described in Table 1.

These granites samples returned low U and REE’s values and are shown simplified in Table 2 (also see the attached digital data). The assay results along with the lack of any particular structural controls present in the field leads the company to believe that the granites region is not a viable exploration target for Alaskite style uranium mineralisation.

Table 2: Summary of the assay results from the granites region.

<table>
<thead>
<tr>
<th>Sample_ID</th>
<th>Y</th>
<th>X</th>
<th>REO wt% only</th>
<th>YO wt% only</th>
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<th>U2O₆ wt %</th>
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<td>0.001232311</td>
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A voluntary relinquishment of 50% of the Company exploration tenement EL28253 was made in February 2012. Having established no viable exploration model for uranium or REEs in the northern section of the exploration lease (the granites area), this area was chosen to be relinquished (Figure 16). This will allow Callabonna Uranium Ltd to focus on the uranium and REOs targets that have been initially identified in the Callisto Prospect region to the south-west of Vaughan Springs Homestead.

CONCLUSIONS

Callabonna Uranium Ltd’s Moonlight project (EL28253) is dominated by Proterozoic Southwark granites which show slightly elevated Th values producing a regional radiometric anomaly. The granites not appear to contain any economic grade mineralisation and therefore the area has been relinquished. In the south-western area of the tenement a silicified quartz gravel surface contains a number of uranium and REE anomalies in assay with up to 130 ppm U and up to 6970 ppm total REE (including Y). This region has therefore been retained for further investigation.
BIBLIOGRAPHY

Internal Company Memorandum. 8th February 2010. Moonlight Open File Review.