ANNUAL REPORT
EL 26006 Mt Hay

For the Period
14th February 2010 to 13th February 2011

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Callabonna Uranium's former JV partner Nupower Resources Ltd was responsible for management of the Mt Hay lease during the third year of its tenure. Nupower Resources Ltd collected 9 water geochemistry samples from stock bores within the exploration lease area which indicate elevated levels of uranium and vanadium. Nupower Resources Limited advised Callabonna Uranium that they had not completed the agreed work program for the Mt Hay lease shortly after the end the third year of tenure and subsequently the pertaining JV agreement has been terminated.

INTRODUCTION

Callabonna Uranium’s Mt Hay project is located approximately 50kms north of west of Alice Springs, Northern Territory (NT). The project area is situated on the Anburla (5551) and Burt (5651) 100K scale map sheets and lies within the boundary of Hamilton Down Cattle Station. Good access is provided by the sealed Tanami Road directly from Alice Springs. The lease is dominated by flat aeolian plains covered with dense scrub vegetation that is primarily utilized for low density cattle grazing.

The climate is usually dominated by arid conditions throughout most of the year with the majority of thunderstorms and rainfall restricted to the October-March monsoonal months. However this previous year has seen extremely high rainfall for the region which severely impeded exploration progress.

Figure 1 Callabonna Uranium Arunta Project exploration leases, N.T.
TENURE

The exploration lease was granted on the 14th of February 2008 for a period of five years and initially consisted of 257 sub blocks covering an area of 797.3 km$^2$. Mandatory reduction enforced on the second and third anniversary has since reduced the lease to 71 sub blocks.

Figure 2 Extent of Mt Hay exploration lease. The map displays the lease extent prior to and after the third year anniversary reduction.

GEOLOGY

Geological Setting

Callabonna Uranium’s Mt Hay Project is located within Palaeoproterozoic Aileron Province of the Arunta Region. The geology is dominated variable grade metasediments with maximum ages exceeding ca.1820 Ma intruded by variable aged granites. Following initial sedimentation, a significant period of magmatism occurred during the period 1790-1770Ma known as the Yamba Event, this was followed by a series of sporadic igneous intrusions initiating with the ca. 1771±6Ma Jervois Granite through to 1552±14 Kanandra Granite (Scrimgeour, et al., 2001; Zhao, et al., 1995).
In the eastern Arunta, granulite protoliths underwent high grade metamorphism accompanied by intense asymmetrical deformation during the 1730-1715 Ma Strangways Event (Claoue-Long, et al., 2008; Collins, et al., 1995). The ca.1590 Ma Chewings Orogeny overprints earlier tectonothermal events and generated variable domains of metamorphism throughout the Arunta and Aileron Province (to the north) (Claoue-Long, et al., 2008). Later events including the Teapot (ca. 1130Ma), Larapinta (ca. 480-460Ma) and Alice Springs (450-300Ma) events generated localized migmatization, shear zones and faulting (Claoue-Long, et al., 2008).

**Local Geology**

The southern NT forms a “basin and range” province with Proterozoic and Palaeozoic rocks forming prominent ranges separated by broad valleys occupied by at least twenty Cainozoic sedimentary basins (Senior et al., 1995). Average sediment thickness ranges from about 180m to as much as 500m. The Mt Hay tenement covers portions of the Sixteen Mile and Burt Tertiary Basins (Fig. 4).

The stratigraphy of these basins is poorly known due to a lack of outcrop, intense weathering and paucity of drillholes. Drilling in the Sixteen Mile Basin indicated considerable thicknesses of probable Tertiary sediments including carbonaceous shales and clay with thin lignite seams (Hossfeld, 1954; Edworthy, 1967).

The Hale Basin was explored extensively for coal (lignite) and sedimentary uranium during the late 1970’s and early 1980’s. This basin is considered to represent a generalised Tertiary stratigraphy for the southern Northern Territory.

Figure 4: Tertiary Basins of the Alice Springs area

Senior et al. (1994) defined a two-fold stratigraphic subdivision that corresponds well with the observed pattern of Cainozoic sedimentation elsewhere in southern Australia. It comprises a restricted, fluvial palaeochannel dominated Palaeogene succession (Hale Formation) overlain by a
more widespread, dominantly lacustrine Neogene succession (Waite Formation). An additional stratigraphic unit, the Napperby Formation (Higgins, 2009) has since been recognised as overlying the Waite Formation and represents the development of prograding alluvial fans shed from the ranges flanking the Cainozoic Basins.

There are strong similarities between the Tertiary basins of the Northern Territory and Eocene sediments in southern Australia that host significant uranium deposits (Higgins, 2009).

EXPLORATION ACTIVITY

Callabonna Uranium entered a farm out agreement with Nupower Resources Limited during the first year of tenure and formed part of their Aileron Project where an extensive area prospective for secondary uranium in channels was indentified. As part of their first pass on the Aileron Project they completed a regional Airborne EM survey over the project area including EL 26006. The results of this survey over EL 26006 delineated potential shallow sand filled channels which could be prospective for uranium mineralization. Nupower as part of their earn in arrangement had proposed to us, their JV partner, a program of drilling fences of holes across these channels to test for uranium mineralization. This program was not completed and we were advised after the annual reporting period that Nupower were withdrawing from the JV and had not completed the agreed work program on the project. We therefore find ourselves as operator and owner of this lease with the previous operator having not completed the proposed program we agreed on and having not afforded us time to complete the program ourselves.

During the reporting year Nupower did collect a number of water geochemistry samples from stock bores, the results of which are attached as a data file. The results of the water geochemistry sampling indicate progressive reduction in uranium abundance deeper into the basin possibly indicating the stripping and subsequent precipitation of uranium minerals from transported fluids.

For the next year we have a proposed and approved an exploration program which includes numerous fences of aircore holes across the Airborne EM defined channels to test for uranium mineralization. The holes will be relatively shallow (50m) and a total of around 20 holes is planned. These holes will be aircore which affords a superior sample to mud drilling and they will all have down-hole gamma logging completed on them. This will highlight samples which are elevated in radioactive material and these will assayed.

The detail is as follows:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drilling 20x50m (1000m) $35 per meter</td>
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</tr>
<tr>
<td>Geophysics (Gamma logging)</td>
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</tr>
<tr>
<td>Assays</td>
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</tr>
<tr>
<td>Field Supervision</td>
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<tr>
<td>Vehicles and Travel</td>
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<tr>
<td>Admin Overhead</td>
<td>$6,450</td>
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<td>TOTAL</td>
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</tbody>
</table>
CONCLUSIONS

Exploration this year carried out by Callabonna Uranium's former JV partner Nupower Resources Ltd consisted of water geochemistry sampling from stock bores over the Mt Hay Lease. Water geochemistry assaying indicates elevated uranium and minor vanadium within aquifers interpreted as tertiary channels from the 2009 airborne AEM survey conducted over the lease.

Callabonna Uranium has cancelled its joint venture with Nupower Resources Ltd plans to test the prospective tertiary channels within the project this next exploration period.

BIBLIOGRAPHY


