

---

**EL2/2010  
AVOCA  
NE TASMANIA  
EXPLORATION REPORT  
JUNE 2012**

**Prepared for: Walkabout Resources Ltd.**

**Tim Callaghan, June 2012**

## **EXECUTIVE SUMMARY**

EL2/2010 is held by Walkabout Resources Pty Ltd, a wholly owned subsidiary of Nimrodel Resources Ltd.

Nimrodel are targeting sandstone hosted and surficial Uranium deposits. The Royal George Granite is a "hot" Uranium bearing granite. Weathering and erosion of the granite is likely to release Uranium into solution in an oxidizing environment. Oxidised, Uranium bearing ground waters permeating through porous sandstones can form Uranium deposits in a reducing environment. The Tertiary and Recent sediments filling the Recent and Palaeo drainage systems include permeable sandstones and impermeable lacustrine deposits containing reduced organic matter presenting potential trap sites for sediment hosted Uranium deposits. The Uranium Mineral Torbanite is reported from the historic reports on the district supporting the model.

No exploration was completed during the last year as Nimrodel were involved in capital raising ventures.

Work proposed for 2012-2013 includes mapping and sampling of recent and palaeo drainage systems and stream sediment sampling.

## **CONTENTS**

Executive Summary	2
1 Introduction	4
2 Regional Geology	5
3 Local Geology	6
4 Previous Work	8
5 Work Completed	8
6 Discussion	9
7 Proposed Work 2012 - 2013	10
8 Environmental	11
References	
Additional Notes	12

## **LIST OF FIGURES**

Figure 1 EL2/2010 and Local Geology	7
-------------------------------------	---

## **1 INTRODUCTION**

EL2/2010 Avoca is located in NE Tasmania, surrounding the town of Avoca in the Fingal Valley. (Figure 1). The EL is held by Walkabout Resources Pty Ltd, a wholly owned subsidiary of Nimrodel Mining Ltd. This report covers the second year of tenure of the EL, from June 2011 to June 2012.

Access to the EL is via the sealed Esk Highway A4 and the Royal George Road and numerous all weather dirt roads and farm roads. Much of the low lying river flats and valley floors are privately owned farms used for grazing and cropping. The higher wooded slopes are covered by open dry land eucalypt forest.

Two major rivers run through the EL, the South Esk and St Pauls River. The Climate is generally cool and dry although prone to high rainfall events on the mountains and associated flooding of river flats.

Walkabout considers the EL to be prospective for surficial and roll front sandstone hosted Uranium deposits. Deposit models and examples are discussed in the 2011 annual report (Surtees, 2011).

## 2 REGIONAL GEOLOGY

The Geology of Tasmania is separated into an Eastern Terrain and a Western Terrain by the Middle Devonian Tamar Suture Zone. The oldest known rocks in the Eastern Tasmanian terrain consist of the Ordovician to Silurian Mathinna Supergroup, a thick succession of turbiditic sandstone and mudstone. The base of the succession is not known.

The Mathinna Supergroup was compressed and thrust against the Western Tasmanian Terrain during the Devonian Tabberabberan Orogeny forming a generally northwest trending series of folds and thrust faults. Granitoid emplacement commenced in eastern Tasmania approximately 400Ma and continued to 350Ma with the youngest intrusions in the west of the State.

Post deformational sedimentation recommenced in the Permian to Triassic period with fluvial sandstones and glacio-marine mudstones of the Parmeener Supergroup filling the Tasmanian basin.

Large volumes of tholeiitic dolerite intruded into the Tasmanian crust in the early Jurassic. The dolerites formed large sills, mainly within the Parmeener Supergroup sediments. The dolerites form the tops of most of the mountain ranges in central and eastern Tasmania.

Middle to late Cretaceous rifting formed a series of basins filled with cretaceous and Tertiary non-marine sediments. Tertiary volcanic basalts are extensive throughout Tasmania forming, plugs, domes and localised volcanoclastic deposits filling palaeochannels and topographic lows. Subsequent erosion has resulted in an inversion of topography in some cases.

Tasmania was subject to several major phases of glaciation in the Pleistocene with Valley glaciers and ice sheets occupying mountain plateaus and valleys. The lower lying areas were in a cold, arid and windy environment during glacial periods, glaciofluvial outwash deposits and aeolian dune systems form some of the recent topographical features.

### **3 LOCAL GEOLOGY**

The local geology of the EL is dominated by a north-south trending fault zone separating a graben characterized by younger Jurassic Dolerites, Tertiary basalts and sediments to the west from the older Mathinna Group and Devonian (385 – 362Ma) Royal George Granite dominated sequence to the east (Figure 1).

The Devonian granites are known to host tin and tungsten deposits such as the historic Story's Creek, Royal George and Rosarden Mines. The Royal George Granite is an S-type, radioactive, biotite-alkali-feldspar granite, anomalously rich in Uranium. The Uranium mineral Torbanite was noted on rock faces and joints within the granite hosting the Royal George Tin Mine during its operation in the early 1900's.

Remnants of the Permian and Triassic sandstone-mudstone sequence lie unconformably over the granite sequence south and east of the EL.

Tertiary sediments consisting of alluvial sand and gravel deposits and mudstones of lacustrine and littoral origin infill palaeo basins and river channels. A Tertiary basalt flow runs through the centre of the EL in what was probably a Tertiary river channel.

Younger Quaternary fluvial and glacial sand, lacustrine and gravel deposits cover the recent land forms. Both of these younger terrestrial sedimentary environments occupy drainage systems running off the exposed granite outcrop. The Tertiary and Quaternary semi-consolidated sedimentary facies present good environments for the deposition of sandstone hosted or surficial Uranium deposits.

Exploration within the district has previously focused on Tin, Tungsten, Gold, Coal and Uranium. CRA noted the potential to host this style of Uranium deposit in the 1970's and drilled six holes

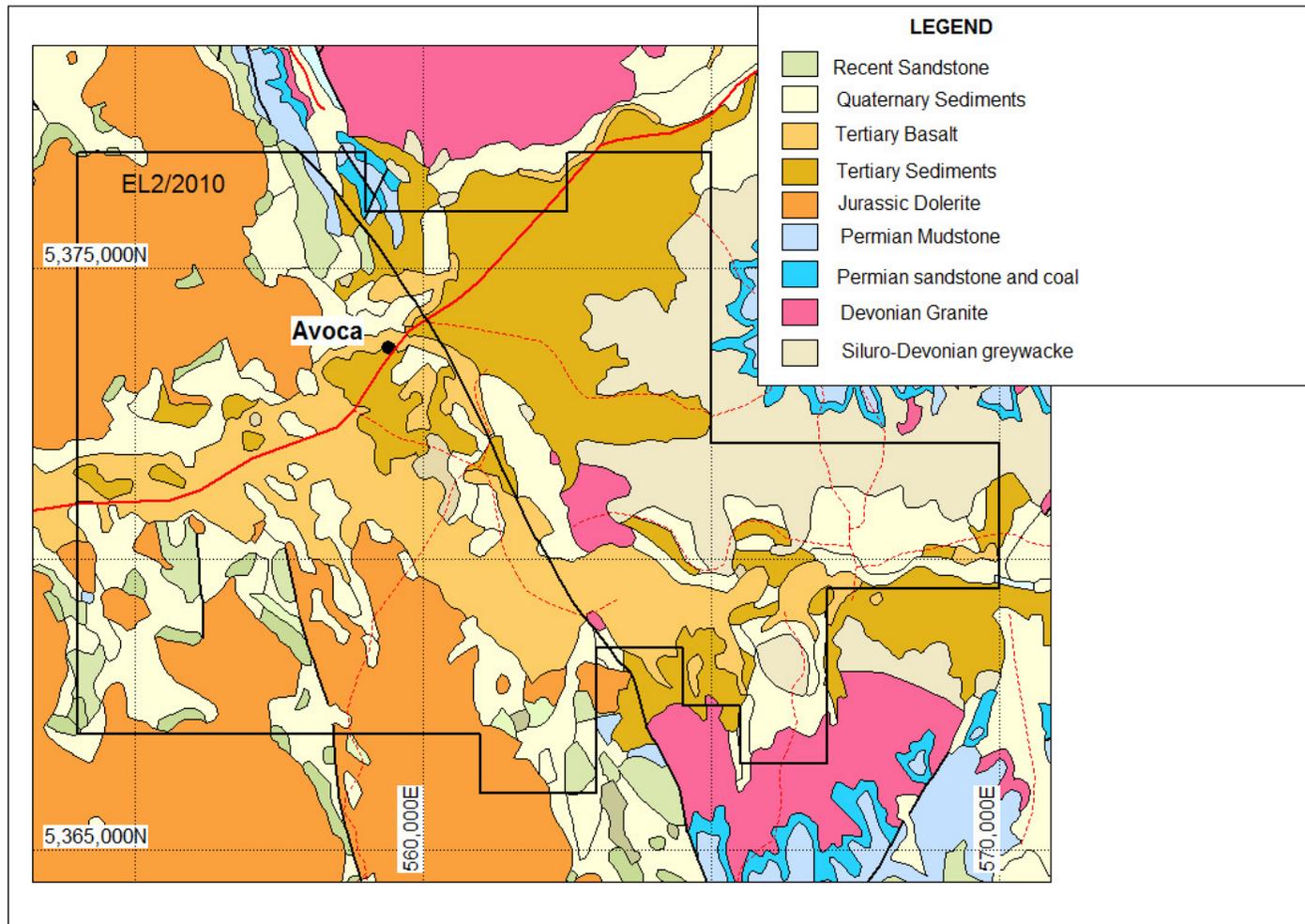


Figure 1. EL2/2010 and local Geology.

## **5 PREVIOUS WORK**

Tin lodes were discovered in the Royal George Granite in the 1880's and were mined from 1911 to 1922. Torbanite was recorded on rock faces and joints in the open cut (Urquart, 1966).

The Geological Survey of Tasmania Bulletin 46 whilst reporting on the Geology of the Rosarden Storeys Creek District commented on the Uranium showings in the area (Blissett, 1959).

A Joint Venture between Getty Oil and Tenneco Australia inc. picked up EL16/1972 covering the Ben Lomond Devonian Granite (Middleton, TW 1973). Getty drilled 122 RAB holes for 12,126metres. They found only low order anomalous radioactivity present in a ferruginised zone of sandstones south of Longford.

CRA Exploration Pty Ltd drilled 6 holes for 399m to test the potential of the St Pauls River Valley for Uranium deposits south of the Township of Royal George (Dunn PR, 1982). Their main focus was the tin mine at Royal George.

CRA found the Tertiary sediments to contain partially indurated silt and mud with pebbles of dolerite, wood and coal. Uranium values were low (7ppm). They found no evidence of a roll front cell and all of the sediments were reduced in holes 1-5 with only some oxidised sand in hole 6. They considered there to still be some potential further downstream.

## **6 WORK COMPLETED, JUNE 2011 – JUNE 2012**

Unfortunately no work was completed on the EL over the last 12 months. Nimrodel were involved in capital raising and a company float to raise funds to further progress exploration of this and other EL's.

## **7 DISCUSSION AND RECOMMENDATIONS**

Nimrodel are targeting the EL for sandstone hosted or surficial Uranium deposits. Uranium is soluble and mobile under oxidised conditions and readily precipitates under reducing environments.

The EL is considered prospective for these styles of mineralisation because they contain a suitable source for the generation of oxidised Uranium bearing ground waters, a suitable plumbing system and potential redox fronts capable of forming sediment hosted Uranium deposits.

The Devonian Royal George Granite is a likely source to generate Uranium enriched ground waters as it is reportedly high in Uranium with the Uranium mineral Torbanite being reported from the open pit at the Royal George Tin Mine.

The recent and palaeo drainage systems are an obvious plumbing system for the deposit styles targeted.

Potential trap sites include the Tertiary paleochannels filled with fluvial sandstones and lacustrine mudstones and recent fluvial and lacustrine deposits forming the current topography. There is some potential for the Permian sandstones and mudstones to also form potential trap sites. However the Tertiary and Recent sedimentary deposits are the most extensive, are flat lying and are probably the most permeable. The associated lacustrine sediments are likely to provide a suitable reduced environment to encourage precipitation of Uranium minerals.

## **8 PROPOSED WORK 2012-2013**

Exploration work proposed for the 2012-2013 year includes:

- Mapping of the Recent and Tertiary drainage channels and channel sediments
- Stream sediment sampling of recent streams.

## **9 ENVIRONMENT**

No rehabilitation is required.

## References

Blissett A H, 1959. The Geology of the Rossarden-Storeys Creek District. Geological Survey of Tasmania Bulletin 59.

Dunn, P R, 1982. Drilling of Cainozoic sediments in the St Pauls River Valley near Royal George, EL7/1978. Unpublished company report for CRA Exploration Ltd.

Middleton T W, 1973. Report on Phase 1 Exploratory Drilling in the Launceston Basin Area, Tasmania. Unpublished company report for Getty Oil Ltd.

Surtees, M, 2011. EL2/2010 Avoca, Annual Report June 2010 to June 2011. Unpublished Company report for Walkabout Resources Pty Ltd.

Urquart G, 1966. Notes on the Royal George Tin Mine.

## **ADDITIONAL NOTES**

### ***STATEMENT OF INDEPENDENCE***

Tim Callaghan has no material interest or entitlement in the securities or assets of Nimrodel Mining Ltd or any associated companies.

### ***LIMITATIONS AND CONSENT***

The report has been prepared for Nimrodel Mining Ltd using information provide by Nimrodel Mining and open file information available to the Author at the time of writing. The opinions stated herein are given in good faith and with the belief that the basic assumptions are factual and correct and the interpretations reasonable.

This report is not intended for the use as a public document nor, in whole or in part, in a public document without written consent to the form and context in which it appears.