EL25402

LIMBLA PROJECT

NORTHERN TERRITORY

ANNUAL REPORT

Date: March 2011
Period: 2 March 2010 to 1 March 2011
(Year Four of Tenure)

Report No.: LB11-01

Target commodity: Base Metals, Uranium

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Datum/Zone: GDA94 (Zone 53)

Map Sheets: 1:250,000 Illogwa Creek (SF5315)
1:100,000 Limbla (5950)
1:100,000 Quartz (5951)

Copies: Western Desert Resources Ltd (1)
Department of Resources - Minerals and Energy (1)
SUMMARY

EL25402 is located approximately 120 km east of Alice Springs in the southern part of the Northern Territory.

EL 25402 was granted to A W Mackie on 2nd March 2007. The licences were purchased by Red Desert Uranium Pty Ltd (now Red Desert Minerals Pty Ltd), a wholly owned subsidiary of Western Desert Resources Ltd (WDR), on May 2nd 2007. EL’s 25373 and 25554 were originally part of this tenement package and were surrendered in early 2010 and no longer form part of this reporting group.

The project area is located over the contact between the Palaeoproterozoic Aileron Province of the Arunta Block to the north and the Neoproterozoic Amadeus Basin to the south. The project area has been previously explored for uranium, diamonds, base metals, gold and heavy minerals.

In 2007, an airborne radiometric and magnetic survey was flown by UTS geophysics. In 2008, helicopter-supported ground reconnaissance was conducted to ground truth the identified radiometric anomalies.

A detailed airborne radiometric survey of the Tourmaline Gorge and Albarta prospects was conducted in 2009. Follow-up outcrop sampling was conducted to confirm the source of the radiometric anomalies. Three samples were taken from zones of high scintillometer counts in the Tourmaline Gorge area. Two of the samples returned anomalous REE, U and Th values.

An airborne electromagnetic survey was flown by Geosolutions using the RepTEM helicopter borne system in early 2010. The results of the survey did not return any high priority conductive targets. Ground follow-up of the priority 2 targets did not return many encouraging results. Two samples (LN001 and LN002) from an ultramafic body returned anomalous Cr and Ni.

Further work will be aimed at the determination of the mineralisation prospectivity of the more subtle targets that will be generated through compilation of the data and results gained to date and through further planned ground investigations.
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INTRODUCTION

EL25402 covers ground prospective for uranium and base metal mineralisation. The tenement was held by A W Mackie until it was acquired by Western Desert Resources Ltd in May 2007.

Location and Access

The tenements are located about 120km east of Alice Springs in the southern part of the Northern Territory (Figure 1).

Access is by the sealed Ross Highway from Alice Springs, and thence by an unsealed road to Ringwood Station. The Ringwood Homestead is located near the southwest corner of the project area. Access within the project area is by station tracks. Some parts of the area are inaccessible to vehicles.

Figure 1: Limbla Project Location – EL 25402 highlighted in blue (EL 25373 & EL 25554 surrendered in 2010 – in green)

Climate

The climate is arid, sub-tropical with cold winters and hot summers. The average annual
rainfall is 230mm with most falls in the summer months.

**Topography and Vegetation**

The project area is located at the eastern end of the Folded Central Ranges geomorphologic division. The Simpson Desert borders the area to the south.

Steep quartzite ridges form topographic highs in the central part of the project area, and are separated by narrow alluvial valleys and grass plains. The hills and ridges are lightly to moderately wooded with stunted eucalypts, gidgee, mulga and acacia.

**TENURE**

**Mining / Mineral Rights**

EL25402 was granted to A W Mackie on 2nd March 2007. The licence was purchased by Red Desert Uranium Pty Ltd, a wholly owned subsidiary of Western Desert Resources Ltd, on May 2nd 2007. Red Desert Uranium Pty Ltd has subsequently been renamed to Red Desert Minerals Pty Ltd.

EL25331 and EL25332 which originally formed part of the tenement package were surrendered in 2010 and no longer form part of this reporting group.

**Land Tenure**

The tenement is located within the boundaries of Perpetual Pastoral Leases 995 (Loves Creek), 1011 (Ringwood) and 1124 (Ambalindum).

The Ruby Gorge Nature Park lies on the western boundary of the project area.

**Native Title**

The Limbla project does not currently fall within the area of a registered Native Title Claim. Part of the project area is subject to an Aboriginal land claim under the Aboriginal Land Rights (NT) Act.

**Aboriginal Sacred Sites**

There are no known sacred sites within the project area.

**GEOLOGY**

**Regional Geology**

The project area is located over the contact between the Aileron Province of the Arunta Block of Palaeoproterozoic to Mesoproterozoic age to the north and the Amadeus Basin of Neoproterozoic age to the south, see Figure 2. The older rocks have been thrust over the younger rocks along a series of NW – SE trending thrust zones, of which the Oolera Fault Zone (Albarta Shear Zone) is the most important.
Local Geology

The northern part of the project area is underlain by metamorphic rocks of the Aileron Province of the Palaeoproterozoic Arunta Block, refer to Figure 3.

The Harts Range Group consists of the Bruna Gneiss of igneous origin and the Riddoch Amphibolite Member; parts of this group are now thought to be of Neoproterozoic to Cambrian in age. These rocks are separated from the Albarta Metamorphics to the south by the Illogwa Schist Zone.

The Illogwa Schist Zone is a major structural zone and contains basement rocks which have been subject to retrograde metamorphism. The Albarta Metamorphics are a sequence of metasediments, amphibolites and quartzo-feldspathic gneiss. The Albarta Metamorphics have been intruded by the Atneequa Granitic Complex, which includes the Tourmaline Gorge granite.
Figure 3: Local Geology – outline of the original Limbla tenement package
Rocks of the Amadeus Basin crop out in the southern half of the project area. The northern boundary of the Basin is marked by the major Oolera Fault Zone (Burt Plain – Albarta Shear Zone) which contains fault blocks of the lower members of the Amadeus Basin and the underlying Arunta Block. The faulting within this zone is reverse or overthrust, and granitoid rocks that occur within the zone are the noses of small nappes preserved as klippen.

The lowest member of the Amadeus Basin is the Heavitree Quartzite which forms steep ridges in the central part of the project area. The Bitter Springs Formation overlies the Heavitree Quartzite and is a sequence of shales, sandstones and carbonates. The Areyonga and Aralka Formations are exposed in the Limbla Syncline, and consist of siltstones, sandstones and carbonates with minor diamictite of possibly glacial origin. The youngest members of the Amadeus Basin exposed in the area are the Gaylad Sandstone and the Pertataka Formation which occur within a syncline northeast of Ringwood Station.

A Tertiary laterite capping has been preserved in some areas. Quaternary sediments occur within the Illogwa Creek drainage system.

PREVIOUS EXPLORATION

Exploration by Previous Companies

Esso Minerals Australia (1976-78)

Esso explored the area for uranium between 1976 and 1978. Two airborne radiometric surveys were flown and 56 radiometric anomalies were followed up. Four of these anomalies were found to be due to outcropping uranium mineralisation.

The Albarta prospect is related to a shear zone and with associated chlorite alteration. Secondary uranium minerals were observed in outcrop with rock chip assays recording up to 0.9% U₃O₈. Subsequent trenching of the mineralised shear zone gave results up to 260 ppm U₃O₈, and later drilling along the length of the radioactive zone gave results similar to those found in the trenches.

The H41 prospect is located to the north of the Albarta prospect. The anomaly is associated with a shear in leucogranite. Rock chip samples assayed up to 320 ppm U₃O₈, and one drill hole was completed.

The Tourmaline Gorge prospect is associated with poorly outcropping tourmaline granite in a steep sided valley. Secondary uranium minerals were reported in association with minor sulphide veins in the altered granite. No trenching or drilling was undertaken.

AGIP Australia (1977-78)

AGIP explored the Illogwa Creek catchment for channel uranium deposits with little encouragement.

Stockdale Prospecting Ltd (1979-80)
Stockdale explored the southern part of the project area for diamonds. No anomalous results were reported.

**Esso Minerals Australia (1980)**

Esso continued exploration on the Albarta prospect during 1980. No drilling was undertaken.

**Afmeco Pty Ltd (1980)**

Exploration for sandstone-type uranium was carried out in the Illogwa Creek area. Drilling did not intersect any uranium mineralisation.

**BHP Minerals (1982-84)**

Exploration for diamonds and base metals was carried out. Activities included geological mapping, stream sediment sampling, rock chip sampling and ground magnetic traverses. The results of the diamond exploration activities were negative for kimberlitic indicators. Some stratiform gossanous units were sampled and found to contain sporadic high Zn values (up to 5,500 ppm Zn). The gossanous units were thought to be originally quartz-magnetite-pyrite/pyrrhotite bands. BHP did not consider them to warrant further exploration.

**Pancontinental Mining (1990)**

The target for exploration was heavy minerals in the Hale River catchment. Surface sampling and widely spaced drilling failed to discover any economic concentrations.


Normandy explored the area for stratiform sediment–hosted base metal mineralisation within the Amadeus Basin succession. Exploration activities included stream sediment sampling, lag sampling, RAB, RC and diamond drilling. Geophysical techniques used included airborne magnetic, gravity and reconnaissance IP. Numerous anomalous samples were followed up but no economic base metal mineralisation was discovered.

**Roebuck Resources (1993)**

Exploration activities including stream sediment and rock chip sampling tested two magnetic anomalies for gold and base metals. Weak gold values (13 and 26 ppb Au) were found in -80# stream sediments draining the southern anomaly. Follow-up sampling was completed with negative results.

**Rio Tinto Exploration (1996-98)**

Rio Tinto targeted stratiform base metals, unconformity uranium and diamonds in their exploration of the area. The work was concentrated in the Amadeus Basin sediments. An airborne magnetic was flown over the area. Ground magnetic surveys were
conducted in follow-up of the airborne magnetic anomalies. Stream sediment and rock chip samples were collected.

Regional RAB drilling was undertaken to test the contact between the Heavitree Quartzite and the overlying Bitter Springs Formation. Some of the RAB holes returned anomalous base metal values. RC drilling was undertaken to test the best area of RAB drilling. Further anomalous base metal values were reported (best intersection: 4m at 1,500 ppm Cu), however Rio Tinto considered the continuity of the mineralisation to be poor.

**Gutnick Resources (2001-2003)**

Exploration was conducted for Witwatersrand gold mineralisation. Stream sediment samples were collected and analysed for BLEG gold. No anomalous values were found.

**Exploration by Western Desert Resources Ltd**

**2007 - 2008**

An airborne radiometric and magnetic survey was flown by UTS geophysics during November and December 2007. The survey covered two areas within the project tenements as shown on Figure 4.

**Figure 4: Airborne Radiometric and Magnetic Survey**

Interpretation of the radiometric data indicated that a number of uranium anomalies required ground follow-up.

**2008 - 2009**

In May 2008 a helicopter was used to visit a number of the radiometric anomalies delineated by the 2007 airborne survey. Sampling within the Tourmaline Gorge area returned anomalous REE, U and Th values.

**2009 - 2010**

In March 2009, Aerosystems P/L were contracted to complete an aeromagnetic and radiometric survey over several areas of the Limbla Project tenements and also a WDR Tennant Creek tenement. Within the Limbla project three surveys were conducted, over the Hale River Prospect, Alberta and Tourmaline Gorge. The airborne survey was conducted using a helicopter at an elevation of 25 metres with line spacing of 25 metres and a tie line spacing of 250 metres.

Helicopter-supported outcrop sampling was conducted of various sites within the project with sixteen samples collected. Assay results from the sampling returned some anomalous base metal and silver values at Sixpence prospect which is adjacent to Mithril’s Bob prospect to the east of EL25402. A grab sample from an airborne radiometric anomaly at the Alberta prospect returned 152.6 ppm U₃O₈.
EXPLORATION DURING CURRENT REPORTING PERIOD

Electromagnetic Survey

An airborne EM survey was flown by Geosolutions P/L using the RepTEM system, over the northern section of EL 25402 during February 2010, refer to Figure 5. A total of 788.7 line kilometres was completed at a line spacing of 200 metre with the survey traverse flown in a north south orientation. The survey specifications are provided in Appendix 1.

Appendix 1: Geosolutions RepTEM - Limbla Survey Specifications

Figure 5: EL 25402 Airborne Electromagnetic Survey Location

An interpretation of the AEM survey was commissioned to Montana G.I.S. who provided an interpretation report. The survey established that the area is quite resistive, with a significant amount of the signal reverting to noise within the first 0.32 msec, limiting the depth penetration of the signal to approximately 400 to 500 m. 37 conductors were identified within the area; however none of these are rated as a high priority for follow-up, and only nine were ranked as priority 2. The full interpretation report and list of conductors can be accessed in Appendix 2.

Appendix 2: Limbla RepTEM Interpretation
The electromagnetic survey data is represented in the following figures with Figure 6 to Figure 8 displaying the line data profiles, and Figure 9 to Figure 11 displaying the stacked CDI of the log resistivity.

- **Figure 6**: Lines 1000 to 1390 Data Profile
- **Figure 7**: Lines 1400 to 1790 Data Profile
- **Figure 8**: Lines 1800 to 2190 Data Profile
- **Figure 9**: Lines 1000 to 1390 Resistivity CDI Model Stacks
- **Figure 10**: Lines 1400 to 1790 Resistivity CDI Model Stacks
- **Figure 11**: Lines 1800 to 2190 Resistivity CDI Model Stacks

Stacked resistivity depth slice images of the survey are displayed in Figure 12.

- **Figure 12**: ReptEM Resistivity Depth Slice Images

The electromagnetic survey data can be found in the DATA directory of this report.

**Outcrop Sampling**

Helicopter-supported outcrop sampling was conducted across the northern portion of the tenement as part of the electromagnetic survey ground follow up work. Sixteen rock chips were collected during the program. Appendix 3 tabulates the location of the outcrop samples and Figure 6 displays the location map of the samples within the tenement.

- **Appendix 3**: Location of Outcrop Samples
- **Figure 13**: Location Map of Outcrop Samples

All samples were geochemically analysed at the ALS Global Laboratory in Alice Springs. The samples were analysed for a range of major and trace elements using ICP-MS methods.

Assays of the rock chips returned a high chrome and nickel response associated with the samples ultramafics in samples LN001 and LN002. The remaining samples did not return any results above the expected background values.

- **Appendix 4**: Geochemical Results for 2010 Outcrop Sampling

**PROPOSALS FOR FUTURE WORK**

The results from the airborne geophysical surveys have not provided any convincing targets warranting immediate follow-up drilling. Reconnaissance and ground follow-up sampling and mapping have not identified any strong indications of mineralising processes.

Further work will be aimed at follow-up of subtle anomalies on the project and target generation based on the work completed to date. It is hoped that the work will generate drilling targets for the fifth year of tenure.
REFERENCES