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# EL 26542 Sandover Annual Technical Report for Period 27<sup>th</sup> June 2008 to 26<sup>th</sup> June 2009

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Operator	Toro Energy Ltd				
Tenement Agent	Austwide Mining Title Management Pty Ltd.				
Title	EL26542 Sandover				
Project	Sandover				
Report Title	EL26542 Sandover Annual Technical Report for period 27th June 2008 to 26th June 2009				
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## **Summary**

This first Annual Technical Report for the Sandover Project covers work carried out during the twelve month period from 27<sup>th</sup> June 2008 to 26<sup>th</sup> June 2009. Exploration activities during the period have involved

- An historical data review comprising acquisition and assessment of all available open file reports and data.
- Field exploration activities conducted by Toro Energy on this tenement during the reporting period comprise only reconnaissance 4WD and foot traverses. No samples were collected and analysed.
- Native Title negotiations are also in progress with the Central Land Council and a draft Exploration Agreement is in Toro's hands. Toro are actively seeking an Exploration Agreement be in place prior to any ground disturbing work.

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#### 1 INTRODUCTION

This report outlines the work conducted within the exploration tenement EL26542 during 2008-2009 by Toro Energy Limited ("Toro"; ticker code "TOE").

EL26542 is located 200 km north-northeast of Alice Springs (Figure 1) in the Arunta, Aileron province on the 1:250,000 Alcoota SF53-10 and 1:100,000 Utopia 5853 map sheets.

The Arunta region is semi arid with monsoonal influences, with 75-80% of rainfall occurring in the summer months. Annual rainfall is generally higher in the north of the region. The mean annual rainfall for Tennant Creek (to the North) is 375 mm. Rainfall is extremely erratic.

Most of the region is hilly range country, covered by Spinifex (hummock grassland) and a variety of stunted vegetation. Adjacent are sand plains with minor sand dunes containing Spinifex, Acacia, Blue Gum and Mallee scrub plants. Drainage from the high-relief ranges quickly dissipates into shallow water courses and floodplains that break up the sand plains, or locally into ephemeral salt lakes. This tenement lies at the southeastern to central end of the Aileron Province and incorporates largely hilly country in the south and dissected low hills at the headwaters of the Sandover and Bundey Rivers in the north.

Access from Alice Springs is 55km North along the sealed Stuart Highway and then east along the Plenty and then Sandover Highways. The tenement lies adjacent to these highways. Access within the tenement is via station tracks and various unformed access tracks within the tenement. Hilly areas can only be accessed on foot or by helicopter.

#### **2 TENEMENT**

EL26542 was granted on 27<sup>th</sup> June 2008 to Toro Energy Ltd for a period of 6 years. This lease is in its first year of tenure and consists of 89 blocks covering a total area of 269.1 square kilometres.

Tenement	Tenement_Name	sub blocks	sq km	Tenement_Licensee	Grant Date	Expiry Date	Licence Manager	
EL26542	Sandover	89	269.1	Toro Energy Ltd	27-Jun-08	26-Jun-14	Toro Energy Ltd	

**Table I Sandover Tenement Details** 

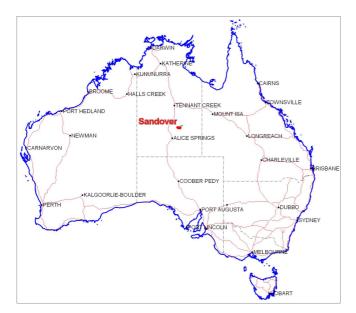


Figure I location of Sandover Project area

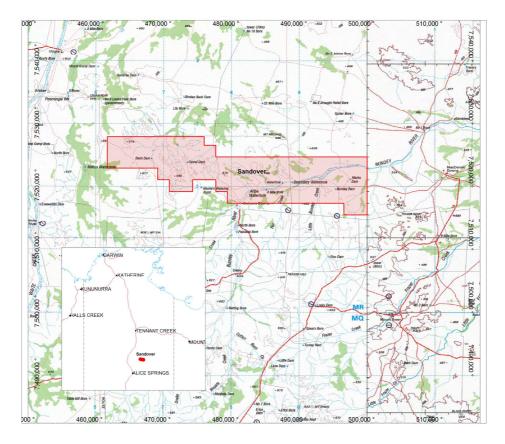


Figure 2 Sandover Project Tenement Location over topography.

#### **3 GEOLOGICAL SETTING**

The Sandover project lies within the Arunta/Aileron region of the Northern Territory. Basement is comprised of Palaeoproterozoic to Mesoproterozoic metasedimentary and granitic rocks assigned to the Aileron Province, including the Strangways Metamorphic Complex and the Reynolds Range Group. These granites and orthogneisses are notably highly-radiogenic within the Reynolds Range, hosting numerous veins and pegmatites with anomalous uranium and thorium. These rocks are overlain by Neoproterozoic to Carboniferous sediments of the Georgina Basin to the north of the tenements (fig.3). Locally, the Aileron Province rocks are overlain by a veneer of Tertiary to Recent clastic sequences.

Uranium mineralisation is known in the region and is restricted (thus far) to the Proterozoic Aileron Province and Carboniferous Ngalia Basin. Uranium at Nolans Bore (Arafura Resources), to the west, occurs in phosphatic and REE-enriched metasomatitic pods and veins within the high-metamorphic-grade Lander Rock beds. This deposit is subject of ongoing feasibility studies. Uranium is also present in high grades at Bigrlyi (Energy Metals-Paladin JV) to the west, within carbonaceous sandstones of the Mt Eclipse Sandstone. The deposit is a roll-front style formed during uplift and deformation of the Ngalia basin in the Carboniferous.

Tertiary to recent cover comprising lateritic sands and clays, calcrete and ferricrete is common in low lying areas occurring at depths in the order of 70m (drilling). Some calcrete shows replacement by chalcedonic silica and this silcrete has been demonstrated to be uraniferous, with a chip sample grading 500ppm.

The present static watertable is located significantly below the base of calcrete which is thus older than the present hydrogeological scheme. This is likely to have an influence on both the preservation and appropriate media of trap sites for secondary uranium mineralisation and the recognition of palaeo flow directions and source rocks.

Within the tenement, (from Alcoota 250K mapsheet) geology consists of Proterozoic Delamore Metamorphics (calc-silicates, gneiss and quartzite) unconformably overlain by Mid Proterozoic Ledan schists, quartzite, amphibolite and metamorphic conglomerates. These are intruded by gneissic biotite granites and numerous quartz veins and pegmatites (occurring as low conical hills – Jays CR 1981-0196). Tertiary aged sedimentary cover is interpreted to be part of the Waite Formation. The origin of the veining is presumed to be the Upper Proterozoic Mt Ida granites to the west (CR 1981-0196).

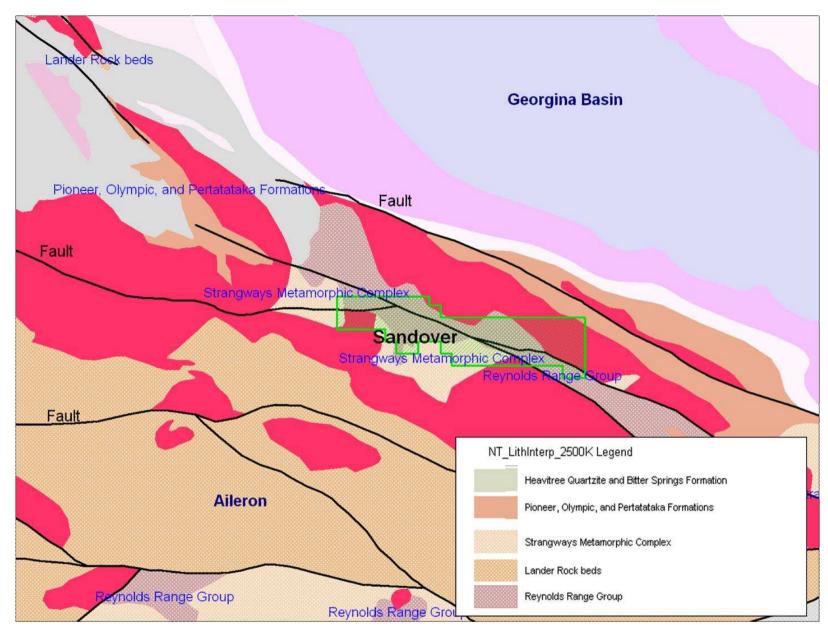


Figure 3 Location of Sandover over NT\_Lithinterp\_2500K interpreted geology and faults.

# **4 PREVIOUS EXPLORATION**

Previous work that has been carried out is summarised in Table I. The historical exploration reports are summarised briefly below in table 2.

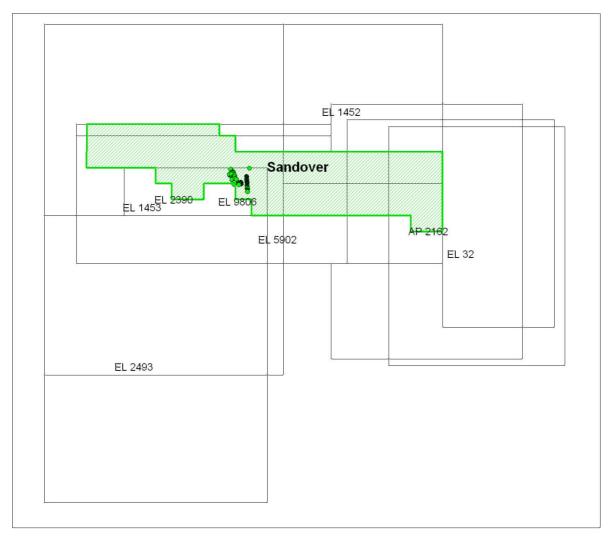


Figure 4 Sandover tenement overlain by historical tenements and open file exploration drill-holes; all are auger.

Tenement Number	Coverage	Company	No.of Reports	Commodity	GRANTED	CEASED	Exploration	Comments	Priority	Report_No
AP 2162	30%	Central Pacific Minerals	1	Au/Cu/Pb/Zn/Ag	19681209	19701208	IP/Diamond drilling	Shear zone with low grade Cu mineralisation. Qtz breccias/hematite-chlorite breccias	3	CR1970-0098
EL 1452	25%	Otter	1	U	19770401	19780331	radiometric survey? (or used state stuff)	Anoms caused by K and Th	3	CR1978-0047
EL 1453	50%	Otter	3	U	19770401	19790331	Radiometrics, rock samples	Found U anomalies in rocks and water bore	4	CR1978- 0048,CR1979- 0035,CR1979- 0091
EL 2390	20%	Jays	1	unknown	19800424	19820423	unknown	is their final report for the area	2	CR1981-0196
EL 2493	adjacent	CRA	1	U	19810912	19820911	unknown	geochem anomalies not of economic significance	1	CR1982-0358
EL 32	20%	Neptide Mineral Exploration	1	Base metals	19720321	19730320	unknown	"results unpromising" and tenement relinquished	2	CR1973-0208
EL 5902	95%	Eon Minerals	1	Au base metals	19880620	19890602	unknown	worth a look	3	CR1989-0705
EL 9806	100%	Tanami Exploration		Au/IOCG/Cu	20021118	20071017	rockchips/desktop compilation	worth a look for historical compilation	3	CR2005- 0604,CR2006- 0577,CR2007- 0595

Table 2. Summary of previous exploration activity around Sandover

# AP 2162, Central Pacific Minerals, reports; CR1970-0098

Central Pacific minerals carried out IP survey along approximately 20km of sheer zone/lineament where quartz veins, disseminated boxworks and "weak" Cu were identified. Central Pacific Minerals then drilled 3 diamond holes, (DD-NT-12-1, DD-NT-12-2 and DD-NT-12-3. These lie just southeast of the licence (see sampling plan, Drill-hole id: DD NT-12-2) (and is referred to as the Perenti Prospect). Portions of the core were split and assayed. Results for copper, over an average of 13m returned 6000ppm, lead and zinc values at <50ppm and silver and gold less than 0.5 dwt/ton.' Copper was recorded from the bottom of the hole (Drill-hole id: DD NT-12-2) at 600ft depth at 26ppm. In the quartz reef described, the copper values were much higher at up to 380ppm (550ft depth).

Description of stratigraphy based on the drillholes is; foliated granites at the surface followed by series of quartz-hematite breccias and quartz reefs with coarse chalcopyrite (2-5%),+-pyrite hematite/limonite and specular hematite and chloritised, porphyritic feldspar granites at the base (615ft deep). Mainly appears oxidised to 500+ft by presence of hematite and limonite with sulphides estimated at 2-5% associated with quartz reef/veins. Carbonates were not encountered. (The shear zone that the above holes were drilled into, continues through Toro's Sandover tenement).

## EL 1452, Otter, reports; CR1978-0047

Otter defined some radiometric anomalies with a GAD-4/GSP3. Compton stripping was applied to the uranium channel. Assays were from both fresh rock (granite) as well as calcrete. Sample no.Br6-2 location 282219, contained U;10ppm and Th;65ppm with total counts;794, see figure 5 below.

## EL 1453, Otter, reports; CR1978-0048, CR1979-0035, CR1979-0091

This exploration was undertaken at the same time as the tenement EL1452 listed above. Otter collected stream and sediment samples following an airborne radiometric survey. A Scintrex GSA 64 was used linked to a four channel Scintrex GAD-4, at I count per second for channels U, Th, K and total count. # locations were identified and ground samples were taken.

Uranium assays returned values of 46, 36 and 215 ppm. The uranium occurs as uraniferous leucoxene within quartz-feldspar-mica micro-gneiss or within quartz reefs associated with contact zones. A sample of water from the Ledan Peak Bore returned uranium content of 250ppb. Anomalous tungsten values of 230ppm were also assayed from quartz-muscovite-gneiss, rock chips. Figure 5 displays the locations of some anomalous uranium values. The anomalies were

suggested as being related to a ridge of quartz-feldspar gneiss. Anomaly c.4 was also assayed and sample Br6-4, by emission spectroscopy, returned values; Cu 30ppm, Zn 700ppm and Pb 200ppm also found in quartz-feldspar gneiss. Uranium was also detected in calcrete on a roadside outcrop, 14ppm, sample number Br6-6.

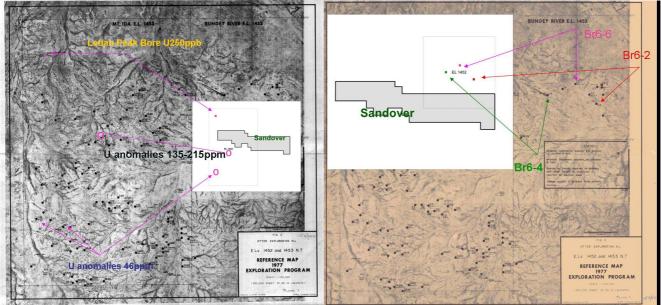


Figure 5 Uranium anomalies detected around the Sandover tenement.

## EL 2390, Jays, reports; CR1981-0196

Jays undertook extensive auger drilling to depths of up to 60m and is shown in figure 4. Drill logs and assays could not be located.

## EL 2493, CRA, reports; CR1982-0358

CRA followed up weakly anomalous base metals, tin and uranium by BMR airborne radiometrics with ground radiometrics, -80# stream sediment sampling and rockchips. The conclusion drawn was that radiometric anomalies and anomalous geochemistry was due to contrast effects of the granites and metamorphics with alluvium. Highest stream sediment results were 21ppm U. Scintillometer readings of 1700cps were recorded near epidosite (14ppm U, 310ppm Th). Fresh Mt Ida granite samples returned values of U, 44ppm and Th, 100ppm.

Equivalent U/Th ratios were mostly <1 indicating no U enrichment. Those that were greater were caused by manganese scavenging at surface. Twice background levels of radiation were found in Tertiary sediments (sandy conglomerate). CRA described radiometrics results as not being indicative of ore grade but they did indicate the presence of high heat producing granites and metamorphic rocks. Inference was made as to having potential for secondary uranium deposition.

# EL 32, Neptide Mineral Exploration, reports; CR1973-0208

Neptide only had tenure for 12 months and cited many logistic problems. They set up a field camp and carried out a ground reconnaissance which consisted of rockchip sampling, the best of which are below. They concluded they had more prospective ground elsewhere. MCI (1000ppm Cu, 2000ppmPb, 300ppm Cr), MC24 (1000ppm Cr) sample Wel 2 (8000ppm Mn)

## EL 5902, Eon Metals, reports; CR1989-0705

Eon metals in a joint venture with Track Minerals, conducted stream and rock chip sampling in an attempt to discover gold mineralisation. 62 stream sediment samples and 31 rock chip samples were collected and analysed for gold silver and copper. The exploration failed to locate any anomalous gold or base metals and the tenement was recommended for relinquishment. No further work was done.

## EL 9806, Tanami Exploration, reports; CR2005-0604, CR2006-0577, CR2007-0595

Tanami Gold held this tenement until only recently, (17<sup>th</sup> Nov 2008, expiry date). They were exploring for Au and Cu. Based on the regional assessment and results from the rock chip samples, 76 sub blocks (of 202) were relinquished in 2005 and further relinquishment of 34 blocks in 2006 leaving 92 blocks. Report CR2006-0577 contained assay values for 6 rock chip samples of which only one had any values of interest. Sample ALK076, which comprised weathered regolith and vein quartz contained; Ag 2ppm, As 0ppm, Au 11ppb, Cu 21ppm, and Pb 72ppm. The location for this sample is (GDA94 zone 53) 476959E, 7520423N. Bi value was assayed at 4.6% or 36400ppm. This was not followed up. In Tanami Gold's Final report, Dec 2007, very little was shown to have been done on the tenement aside from the previous samples already taken and analysed.

#### **5 EXPLORATION OBJECTIVES**

After reviewing available data Toro composed the following objectives for this tenement:

- Determine the likelihood of economic 'hard-rock' U mineralisation in the Palaeoproterozoic granites and gneisses. This should include identification of labile uranium species and phosphatic facies.
- 2. Identify potential palaeochannel sediments and determine if there are reduced facies or evidence of redox changes.
- 3. Determine the characteristics of radiometric anomalies present in the Government datasets.

#### **6 EXPLORATION COMPLETED**

Toro undertook a brief reconnaissance field trip in July 2008 to assess access and ground conditions. This also included foot traverses of granites close to the road using a scintillometer. A consistent high background was noted, suggesting natural high Th and U concentrations in the granites. This is consistent with airborne radiometric data. No local increases in counts per second ("CPS") were recognised, nor were any pegmatites or phosphatic bodies. No samples were collected. A desktop review of previous exploration was completed (see table 2).

#### **8 EXPLORATION EXPENDITURE**

Expenditure incurred during the first year of term for EL26542 was \$7141.27 (see associated Expenditure Report). These expenditure figures exclude DPIFM rent and legal costs. The expenditure shortfall of is due to a number of reasons. Firstly, exploration in the collective Sandover Project tenements has been held back to allow grant of tenements to the north, so that a coherent and contiguous land package can be incorporated into a proposed regional geophysical (AEM) survey. Quotes have been received from Fugro for this work and a tentative start date of 10<sup>th</sup> August has been negotiated with the contractor. Native Title negotiations have also been initiated with the Central Land Council, and Toro now have a draft Exploration Agreement at hand for consideration. To ensure good governance, Toro are actively seeking to have Exploration Agreements in place (or close to) in all Australian projects prior to any ground disturbing work, rather than utilising the AAPA for clearances. We believe this is the best way forward to engender a close working relationship with Traditional Owners and the successful development of any future discovery made in the Northern Territory. With an exploration agreement expected to be in place soon, Toro are planning to spend approximately \$75,000 on EL26542.

#### 9 EXPLORATION PROPOSED

Exploration programme for the upcoming reporting period will include the following:

- Undertake a regional airborne electromagnetic (AEM) survey of this and adjoining tenements with the view of identifying conductive bodies.
- Aircore drilling and associated sample assays based on the results of the AEM survey.
- Undertake more detailed rockchip sampling and analysis.