2nd YEAR REDUCTION REPORT

EL 25223

GIANT ANT CREEK

FOR PERIOD ENDING 23RD November 2008

DALY RIVER PROJECT NT

PINE CREEK  SD5208  1:250,000
Daly River  5070  1:100,000
Tipperary  5170  1:100,000
Reynolds River  5071  1:100,000
Batchelor  5171  1:100,000

Titleholder: Territory Uranium Company Limited

Report No. 2009- 10
Prepared for Territory Uranium Ltd
By TB Page
March 2009
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1. SUMMARY

Territory Uranium Company Ltd is exploring for uranium, and applied for EL25223 to explore for U mineralisation. Work during Year 1 of tenure consisted of a review of both NTGS data, compilation of significant results from Industry reports and geophysical data review. Work during Year 2 included a full assessment of uranium targets within 3 Daly River Project tenements EL25222, EL25223 and EL25229 followed by a helicopter reconnaissance program. At the end of Year 2 EL25223 was reduced by 125 blocks, targets identified in this review were retained hence no field work was undertaken within the relinquished ground.

This report details the work done on the blocks of EL25223 relinquished in the second year.

2. LOCATION AND ACCESS

EL25223 is 130km south of Darwin, and approximately 180km south of Darwin by road. Access from Darwin is via the Stuart Highway onto Dorat Road (from Adelaide River) then west onto the Daly River Road. Tipperary Station lies on the central eastern part of EL 25223. Tracks extend west and south of Tipperary Station, with the southern track accessing the Daly River at Bebom Crossing. Access is possible in the dry season only as the crossings at Bebom Crossing and smaller tracks to the west are impassable after rains.

The southern boundary of the Licence is defined by the Daly River, while Green Ant Creek roughly marks the eastern boundary. Most of the ground is open and with low relief and numerous sinkholes, except for the Rock Candy Range to the southeast of EL 25223.
Figure 1 Tenement Location Map
3. TENEMENT STATUS AND OWNERSHIP

EL 25223 was granted on 23rd November 2006 and expires on 22nd November 2012. It comprises 500 graticular blocks (1642 sq km) (Figure 1). There are no other mining leases or mineral claims shown within the Licence boundaries.

Underlying cadastre is crown lease in perpetuity held by:
PL 903 Tovehead Pty Ltd (Douglas Stn)
CLP 815 Branir Pty Ltd (Daly River)
PPL 1004 Tovehead Pty Ltd (Tipperary Station)
CLP 1711 Silkwood Ventures Pty Ltd (Dorat Rd, Robin Falls)

The expenditure covenant set for the first year was $58,900.

Second Year reduction was undertaken with 375 blocks retained, 125 blocks dropped. This report details exploration carried out by TUC on the relinquished ground for the duration that it was held.
4. GEOLOGY

EL 25223 is situated near the western margin of the Pine Creek Orogen on the SD5208 Pine Creek sheet. Descriptions of the regional geology can be found in several texts, including Ahmad et al., 1993; Ahmad, 1998; Dundas et. al., 1987; and Pietsch 1989. Figure 2 has the simplified geology from the Pine Creek 250,000 Metallogenic Map Series to show the main stratigraphic components within EL 25223.

Early Proterozoic Burrell Creek Formation (Finniss River Group) sediments have been mapped in the NE corner of EL 25223. Middle Proterozoic sediments of the Tolmer Group are mapped as overlying the western portion of EL 25223. The Tolmer Group is a sequence of arenite, siltstone and dolomite up to 1600m thick unconformably overlying Early Proterozoic Finniss River Group sediments. The Hinde Dolomite is the most commonly mapped stratigraphic unit of the Tolmer Group within EL 25223. Fault splays from the Giants Reef Fault to the west offset and thrust blocks of Depot Creek Sandstone adjacent to Stray Creek Sandstone in the Rock Candy Range area within EL 25223.

Further east, limestones and quartzarenites of the Cambro-Ordovician Daly River Group (comprising Tindall Limestone and Jinduckin Formation) form the Daly Basin. These sediments cover most of the area east of Which Wai Creek (and more than half of EL 25223).

The region has also been incorporated in the NTGS mineral resource projects. These include regional phosphate prospectivity which has been analysing selected rockchips from water bores in the district (Khan et al., 2007). No significant phosphate anomalies were noted in the Daly Basin.
Figure 2 Geology of the Daly River Project NTGS 1:2,500,000 map.
5. PREVIOUS EXPLORATION

A portion of the work done on EL25223 during the first year consisted of a literature review and data compilation. Appendix 1 contains the list of previous tenure, and reports from previous tenure.

AP 1682 covered a small southeast portion of EL 25223, but most of the AP Licence was outside of EL25222, extending in a southeast direction. IMC Development Corporation explored the AP for the phosphatic potential of the limestones. Samples were qualitatively tested for phosphate in the field with ammonium molybdate solution, with selected samples sent for qualitative analysis. No anomalous radioactivity was associated with the phosphate. The best phosphate assay value of 0.75% $\text{P}_2\text{O}_5$ was obtained from Ooloo Limestone outside of EL25223.

AP 1774 covered the central portion of EL25223. Tipperary Land Corporation explored for phosphates by examining outcrops and rotary drilling. Results showed several thin horizons containing a maximum of 1% $\text{P}_2\text{O}_5$ over 5ft. No diagnostic phosphatic lithologies were found and no further work is justified. However, anomalous copper was noted in the Cambrian basalts and ‘traces of lead and zinc occur in Tertiary laterites’. No other work was carried out.

AP 1996 covers approximately 6 blocks on the central southern portion of EL25223 (extending south into TUC’s EL 25222). Tipperary Land Corporation found ferruginous, gossanous material in small fractures in an outcrop of Hinde Dolomite (then called Waterbag Creek Formation) at Goose Lagoon. Assays by a prospector returned 65ppm Ni, 5ppm Co, 0.85% Pb, 0.19% Zn and 6 dwts/short ton Ag. Follow-up work did not show extensive gossans or other signs of mineralisation, with phosphate testing on nearby Tindall Limestone returning negative results.

AP 2057 cuts across the middle of EL25223. This was explored by Tipperary Land Corporation in conjunction with AP1774 (see above) who concluded that no diagnostic phosphatic lithologies were found and no further work was justified.

Suttons Motors explored EL’s 1355, 1357 and 1359 in conjunction with 5 other Licences in the area. EL 1359 covered most of the northwestern portion of EL25223, while EL’s 1355 and 1357 covered the SE and SW portions of EL25222 respectively. The 3 Licences covered most of EL 25223. Initial work included a preliminary assessment of the uranium potential, with the Company concluding that the potential for large deposits is low, but small uranium deposits may exist. Radiometric
anomalies exist in both the Cambrian and Upper Proterozoic sequences, but were not considered ‘attractive exploration targets’.

General notes of interest from this report include;

- Total Count from the BMR radiometric data reflect lithology; Tolmer Group sediments and Antrim Plateau Volcanics all give lows, the Litchfield Complex a high and Burrell Creek Fm seds are intermediate with local highs.
- Litchfield Complex has an irregular but high background of 5-17cps U, with possibly 1 or 2 U anomalies
- U count of 5-6cps in Burrell Ck Fm seds; higher values associated with faulting. U anomalies are small; only 1 – 2.5x bknd. Some variation in regional background which may reflect gradual facies changes; U channel response also affected by weathering and superficial cover

The report considered that Upper Proterozoic sediments had limited prospectivity because they were deposited after the last major phase of uranium mobilisation and concentration, although recent isotopic data indicates several episodes of uranium mineralisation between 1740 and 500Ma (Ahmad 1998) which negates this conclusion.

The report also notes uranium anomalies within EL25223 which may be the result of laterisation of Antrim Plateau Volcanics. It may also represent uranium mobilisation along the northern extension of the Dorisvale Fault and requires further investigation. The prospective areas within EL25223 were summarised as;

- Small tonnage, vein-type hosted in faults and
- Roll-front type on margins of Daly River Basin

Both prospective areas were rated as a ‘long shot’.

Suttons Motors also commissioned a report on the mineral potential of their Licences by Robertson Research. The Tindall Limestone was considered prospective for MVT-style base metal mineralisation. Minor copper mineralisation was known on the unconformity between the Antrim Plateau Volcanics with the underlying Proterozoic Waterbag Creek Formation (now Stray Creek Sandstone?). The sandstone-siltstone facies at the base of the Depot Creek Sandstone is considered prospective for uranium. Only the Jinduckin Formation could be considered a host for U mineralisation within the Daly River Group sediments as it contains sandstone and siltstone sequences that may act as permeability traps.

Exploration work for base metal mineralisation consisted of a 170 line km EM survey; a ground IP survey and limited ground mag survey plus geochemical sampling. There was no indication of massive sulphides in the vicinity of surficial massive
barites and stratiform barite-fluorite mineralisation, but there were some anomalous Pb-Zn geochemistry in calcareous fine-grained clastics in the Tindall Limestone. Some primary lead sulphides (galena) were identified in thin restricted silicified black shales.

CRA explored **EL 1743** (on eastern edge of EL25222 and covering western portion of EL25229). CRA acquired the ground after hearing that adjacent Licences had found base metal mineralisation. Work consisted of a literature review and field reconnaissance with one deep diamond hole planned for a location outside TUC Licences. The work was not carried out as CRA changed its focus from exploring for carbonate-hosted base metal deposits in Australia and the ground was relinquished.

Peko Wallsend explored **EL’s 3010 and 3011** for diamonds, but did not find any indication of alluvial diamonds or kimberlites. The Licences are along the southern boundary of EL 25223. There is mention of ‘gossanous outcrops on the southern boundary of the Licence may have significance for base metal potential’ and although the area wasn’t specified, the probable area has been captured (Possible_Gossanous_Area_CR19820351.tab).

BHP held **EL 4162** (which straddles the central part of EL’s 25222 and 25223); along with other tenements further south. Exploration consisted of stream sediment samples for base metals and heavy mineral concentrates (diamonds). The stream sediment samples were not assayed for gold or for uranium. No notable results were found on EL 4162 and the ground was dropped after a year.

Carpentaria Exploration Company held **EL4693** (covering SW part of EL25223) as part of a regional landholding (mainly further south and west of EL25222) exploring for gold. CEC delineated a radiometric uranium anomaly south of EL 25223 (on EL 25222).

A JV between Total Mining Australia and PNC Exploration explored **ELs 4857, 4870 and 4958** (southern and western portions of EL25223) for uranium by locating favourable lithologies using ground radiometrics and geological traversing combined with interpretation of geophysical and spectrometric data. Thermoluminescence studies were carried out on the basal Tolmer Formation sediments. The theory is that if sufficient amounts of uranium (>10ppm U) have resided in the sandstone over a sufficient amount of time (>100Ma) then the quartz lattice will be damaged. Artificial thermoluminescence will detect paleoradiation or cumulative radiation effects in the quartz grains of the sandstone. No details of results were presented in the reports. An INPUT survey did not indicate occurrences of graphitic schist beneath sandstone cover. Anomalies from the INPUT survey within TUC tenements
were digitised in TOTAL_PNC_INPUT_EM_Anomalies.tab. Anomalies were located on the Stray Creek and Hinde Dolomite outcrops rather than the basal Depot Creek Sandstone, so the anomalies were considered associated with small scale structures. The JV relinquished the ground in 1989 after these poor results from the INPUT EM survey.

Newmont held EL 6602 for a year over the old Suttons tenement EL1355, to follow up on the potential for sediment-hosted pervasive gold mineralisation. Sampling of the Suttons drillcore at BCD2 (which had 1m @ 3.0g/t Au assay value) was not possible due to insufficient core. Newmont carried out outcrop sampling and stream sediment sampling with ‘disappointingly low’ gold values, concluding that the system was not gold-mineralised but that the system was extensively base metal (Pb-Zn) and Ag mineralised, with vertical metal zonation. Newmont recommended grid-based soil sampling over the central ridge area, geological mapping (with emphasis on structure), with percussion drilling to test the downdip down plunge anticlinal crest positions (to be highlighted from geochemical sampling and geological mapping) but the ground was dropped before the work was carried out.

The Tipperary JV consisted of Normandy (later North Exploration) exploring for base metals and Stockdale exploring for diamonds over a series of tenements covering the Daly River area. Normandy drilled on EL 7983 (EL 7923_7983_Drilling.tab) on the southwestern side of EL 25223. Drilling verified the elevated Pb-Zn values associated with the Hinde Dolomite. Drilling also indicated that the grade/thickness continued in an easterly direction. A regional soil sampling programme that targeted conductive horizons identified from a QUESTEM survey in the second year of tenure did not produce any assay values ‘considered worthy of follow-up’ and the ground was dropped.

North Exploration carried out exploration for sediment-hosted stratiform base metals in a dolomitic shale unit near the base of the Hinde Dolomite. Work carried out included a QUESTEM Survey at 250m line spacings over the whole of EL 8331, with follow-up soil sampling and drilling targeting conductive units from the QUESTEM survey. The Hinde Dolomite is regionally elevated in Zn and sometimes Pb but with little variation in thickness or grade over a large area. Average grade is around 54m @ 345ppm Zn in the Hinde Dolomite and a maximum value of 3m @ 2690ppm Zn ad 1190ppm Zn was recorded in the Cambrian limestone. North concluded that the area had ‘been adequately tested for base metal mineralisation’ and dropped the Licence.
6. EXPLORATION DURING YEAR 1

Work done during Year 1 of tenure consisted of a historic data compilation. The results of previous work are still being compiled. Work done included checking:

   a) historic tenure in MapInfo, using a MapInfo file supplied by DPIFM (containing exploration tenure, but not mining tenure)
   b) checking NTGS datasets, such as COREDAT, MODAT
   c) checking open file company reports submitted for previous tenure covering EL 25223
   d) checking the sacred sites register (AAPA)

From this work;

   a) a list of previous tenure and Industry reports are in Appendix 1.
   b) there are 5 unnamed mineral occurrences recorded in MODAT (1 consisting of Sn veins; the other 4 being carbonate-hosted Zn-Pb occurrences near the central southern border of EL25223
   c) 3 stream sediment samples from Carpentaria Exploration on south-western portion of EL25223 in Explorer 3 database (uranium and gold values either not assayed or not recorded)
   d) two COREDAT holes (TIP-D2 from EL 7983 drilling; and NTGS 83/5)
   e) no positive results from DIM Database
   f) 7 sacred sites recorded within the Licence (all in the NE corner of EL 25223)

The data compilation work shows that;

   • the phosphate potential appears limited, with only thin horizons carrying just over 1% P₂O₅, and different companies concluded that the phosphatic lithologies were either limited or non-existent. Recent studies by the NTGS (Khan et al., 2007) noted ‘no significant phosphate anomalies were noted’ from the Daly Basin
   • a couple of areas have base metal mineralisation,
   • Suttons JV produced a series of radiometric anomalies that need further evaluation

Other activities during Year 1 included;

   a) production of radiometric images and TMI / analytic signal images by Lindeman Geophysics
   b) planning an airborne geophysics survey, and obtaining a quote from GPX Surveys
   c) familiarisation with mapped geology
Original work evaluating the potential of EL 25223 was produced by the Independent Geologist (Al Maynard and Associates Pty Ltd) that was included in the Territory Uranium Prospectus. This work delineated a ‘discrete magnetic anomaly’ (called Magnetic Anomaly 5) on the regional TMI within EL 25223 (Figure 3).

As part of due diligence, TUC conducted an independent geophysical review of the ‘discrete magnetic anomalies’ to determine their prospectivity as well as to review the publicly available regional geophysical data over EL 25223. Lindeman Geophysics carried out the following:

a) produce 1VD TMI, Analytic Signal images
b) examine the potential of the ‘discrete magnetic anomalies’
c) produce U, Th, TC and U/Th geophysical images with colour ranges clearly identified for the U channel radiometric image.

Lindeman Geophysics used the regional geophysical surveys of Litchfield South (1984; EW; 500m line spacings) and Rum Jungle (1992; NS; 200m line spacings). The data was obtained from GADDS website and had been gridded. The TMI image was reprocessed from gridded TMI data, and uses a different colour stretch to the regional TMI, resulting in highlighting magnetic anomalies. Magnetic anomaly 5 has been modelled and is deep (interpreted depth to top of magnetic body is 1600m) so will not be investigated further (Figure 4 below).
Figure 4 shows the U channel radiometrics over EL 25223 which has a range of 0 – 18.5 cps U; with light green >5 cps; orange >6; red>8 and purple >11 cps U. Figure 5 shows the U/Th with red highlighting anomalies. U has NNW trend within EL 25222/25223 which roughly follows the mapped contact between the Daly River Group limestones to east, and Tolmer Gp sediments west. Most of the U anomalies are within the limestones.

The ‘most prospective’ U anomalies are at:

**MGA 52:**
- 708100E / 8469280N
- 708310E / 8467700N in EL25223

These are within Stray Creek Sandstone, just east of the faulted contact between Stray Creek Sandstone and Depot Creek Sandstone. The other U anomalies are east of here within mapped younger sediments or Cainozoic/Quaternary sediments.

Areas of high U/Th which have been highlighted as areas of interest from the 100k map sheet are at:

**MGA52:**
- 705800E / 8469900N
- 701300E / 8466900N
- 695100E / 8456100N
- 695400E / 8459800N
- 695000E / 8446700N

These anomalies will be ground-checked during Year 2.

An airborne geophysical survey was discussed over a period of at least one month during August/September with GPX Surveys, as part of a larger airborne survey covering several TUC tenements. GPX Surveys were contracted to conduct an airborne geophysical survey over the neighbouring Crossland Uranium tenements, so TUC sought to extend existing flight lines into EL 25223. GPX Surveys delayed the quote and gave a start time of late November, which was considered unacceptable.
7. EXPLORATION DURING YEAR 2

An airborne radiometric and magnetic survey was completed (7,116 line km) on ELs 25222 & 25223. A small region of this survey cover the relinquished ground of EL25223. The survey data which covers this ground is included in Appendix B (images) and Appendix C (grid data).

The survey concentrated on areas of structural complexity which provide potential trap sites for uranium mineralisation. Processing of this more detailed, higher quality data (200m line spacing) highlighted a number of new targets for follow up work (Geophysical data, specifications, grids, images produced by Fugro and independent geophysicist images are included in Appendix D). A full assessment of uranium targets within the 3 tenements (EL25222, EL25223 and EL25229) based on structure, stratigraphic setting and radiometrics was undertaken and highlighted over 20 targets which were visited during a helicopter reconnaissance program.

None of the targets visited were within the relinquished ground and hence no field work was undertaken.
8. REFERENCES


APPENDIX A, List of Company Reports from Previous Tenure

See .xls file

APPENDIX B, Digital Images

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APPENDIX C, Digital Data

Survey Grid data supplied by Fugro Radiometric Services.

APPENDIX D, Digital Data Appendix

Details of the Airborne Radiometric and Magnetic Survey:
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