

**YEAR 3 ANNUAL AND FINAL REPORT**

**EL 28507**  
***'Bamboo Creek'***  
**TIPPERARY PROJECT**  
**FOR PERIOD ENDING 28<sup>th</sup> JULY 2014**

**PINE CREEK SD5208**  
**FERGUSON RIVER SD5212**

**Titleholder: Territory Minerals**

Commodities: Rare Earth Elements , U, Cu, Pb, Zn

**Prepared for Territory Minerals**

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## 1. SUMMARY

EL28507 is 150km south of Darwin, and approximately 200km 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. EL28507 was granted for a period of six (6) years in 2011 to expire on 26th July 2017. A total of 19 blocks were relinquished at the end of year 2 (63 blocks kept) as part of compulsory tenement reductions. The tenement was relinquished in year 3.

EL28507 is situated near the western margin of the Pine Creek Orogen. Middle Proterozoic sediments of the Tolmer Group are mapped as overlying the tenement. Further east, limestones and quartzarenites of the Cambro-Ordovician Daly River Group (comprising Tindall Limestone and Jinduckin Formation) form the Daly Basin.

Records of exploration date back to 1967 and AP licence #1682. Exploration phases have included searches for limestone, phosphate, base metals, gold, diamonds and uranium. Most of these programs have had limited success. Companies include IMC Development Corporation, Tipperary Land Corporation, Suttons Motors, Peko Wallsend, BHP, Carpentaria Exploration, Total Mining Australia, PNC Exploration, Newmont and Normandy.

Previous holders TUC Resources undertook exploration for unconformity related uranium mineralisation in the area. They targeted uranium associated with the mid Proterozoic unconformity between the Tolmer sediments and the Finniss River Group (Burrell Creek Formation). TUC completed a radiometric survey over the portion that is now EL28507.

Exploration targets include: stratabound Mississippi style base metal deposits, Unconformity related uranium mineralisation, carbonaceous shale units prospective for uranium, base-metal and REE mineralisation, REE mineralisation in similar settings to the nearby TUC Resources Stromberg and Scarramanga Prospects.

Exploration on this tenement was postponed whilst the company re-organised its exploration strategy and land holdings with a view to be listed on the ASX during 2013. This re-organising is progressing successfully, although taking longer than expected. No exploration was completed in year 3 and the tenement was relinquished.

## **2. LOCATION AND ACCESS**

EL28507 is 150km south of Darwin, and approximately 200km 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 is situated to the north of the tenement. Tracks extend west and south of Tipperary Station, with the southern track accessing the Daly River at Beebom Crossing. Access is only possible in the dry season because the crossings at Beebom Crossing and Oolloo Crossing and smaller tracks to the west are impassable after rains.

## **3. TENEMENT STATUS AND OWNERSHIP**

EL28507 was granted for a period of six (6) years in 2011 to expire on 26th July 2017. The original tenement was 273km<sup>2</sup> (82 blocks). There are no other mining leases or mineral claims shown within the Licence boundaries.

Underlying cadastre is parcel 03435 and 02700 of Fish River Station owned by the indigenous land corporation GPO Box 652, Adelaide SA 5001 (Figure 1), perpetual pastoral lease.

A total of 19 blocks were relinquished at the end of year 2 (63 blocks kept) as part of compulsory tenement reductions. The tenement was relinquished in year 3 on 28 July.

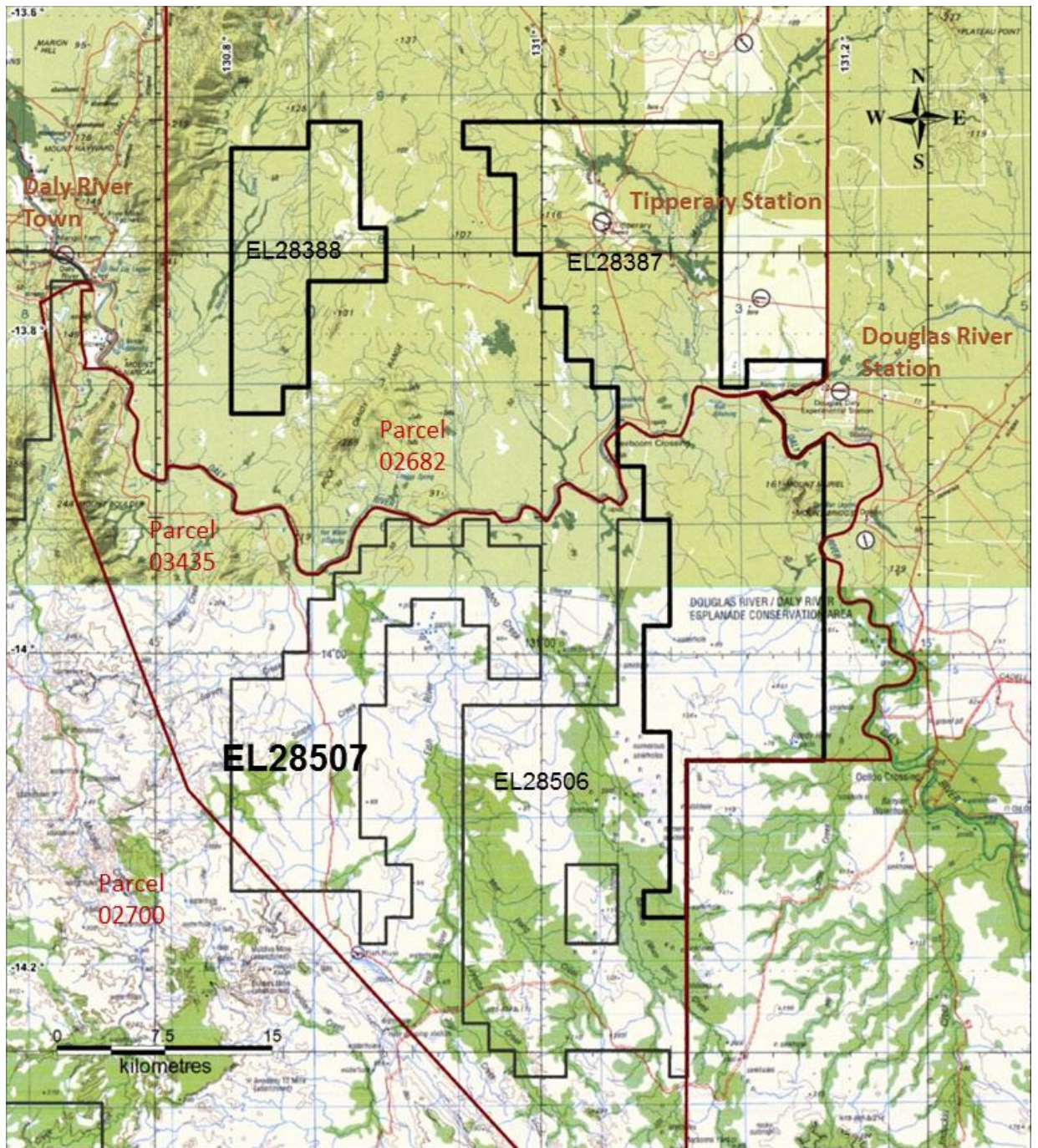


Figure 1 Tenement Location Map

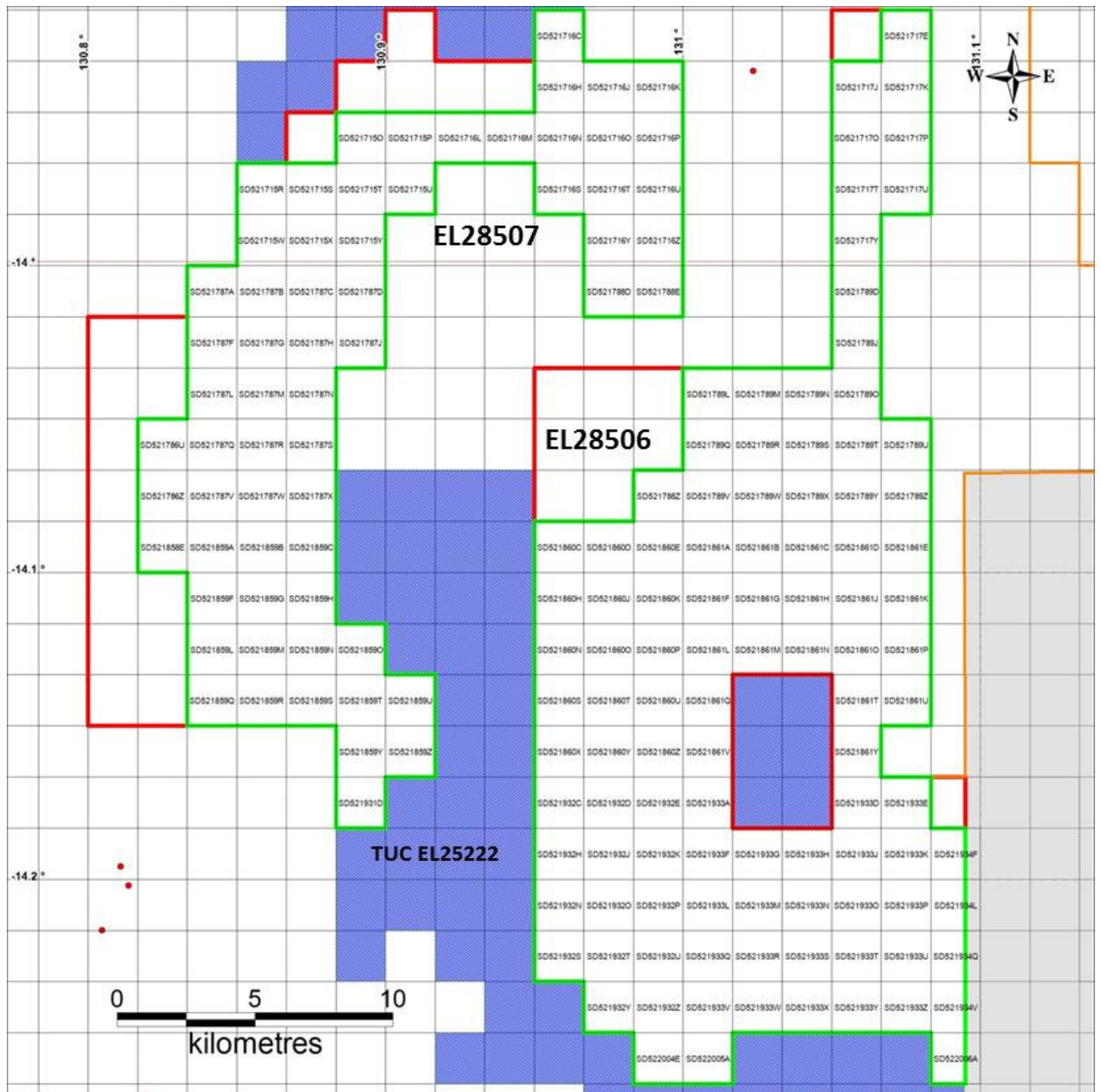


Figure 2 Tenement Reduction Map Year 2 (red blocks dropped)

## 4. GEOLOGY

EL28507 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 28507.

Middle Proterozoic sediments of the Tolmer Group are mapped as overlying the tenement. 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 EL28507. 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 to the west of the tenement.

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. The basin consists of Cambrian limestone sediments which obscure the mineral prospective lower Proterozoic sediments and severely limits exploration efforts.

Potential could exist for Barite and low grade base metals within the basin sediments but historical exploration in the area has failed to discover any economic grade mineralisation. There is also little evidence of radiometric or magnetic anomalies within the tenement. Exploration for early Proterozoic basement rocks (prospective for uranium and base metal mineralisation) beneath the basin is a possibility and is discussed below.

Exploration potential exists for base-metal and uranium mineralisation associated with the carbonaceous shale unit within the Hinde dolomite. The tenement covers over 20km in strike length of Hinde Dolomite and the shale unit is easily targeted using EM conductivity sections. Three of the historic drill holes intersected the carbonaceous shale unit all with low grade Cu, Pb and Zn. Higher grade mineralisation may be possible within the larger target area. It should also be noted that this carbonaceous shale unit may be the same unit identified at TUC's Energy Prospect and that uranium mineralisation was not tested for in the historic holes. The tenement also borders the TUC uranium prospect 'Green' or 'Drax' to the east.

A number of major fault structures that originate from the highly prospective Giants Reef Fault cross the tenement. The uranium and base-metal mineralisation 10km to the south

west sits on the same set of fault splays (Figure 3) and indicates that these structures provide a conduit for mineralising fluids. A zone of structural complexity caused by the splays within the tenement (Shown in Figure 3) provides an excellent target for mineralisation. This zone sits along strike of the Energy or Stromberg uranium trend.

It is possible for uranium mineralisation, sourced from the uranium rich lower Proterozoic basement, to have been deposited in the Tolmer sediments above the lower Proterozoic unconformity, in a similar way to some occurrences of uranium mineralisation above the unconformity in the Athabasca Basin in Canada. Uranium mineralisation at or below the unconformity is likely to be a prohibitively deep target but areas could be found along the splay structures where faulting may have brought it closer to surface.

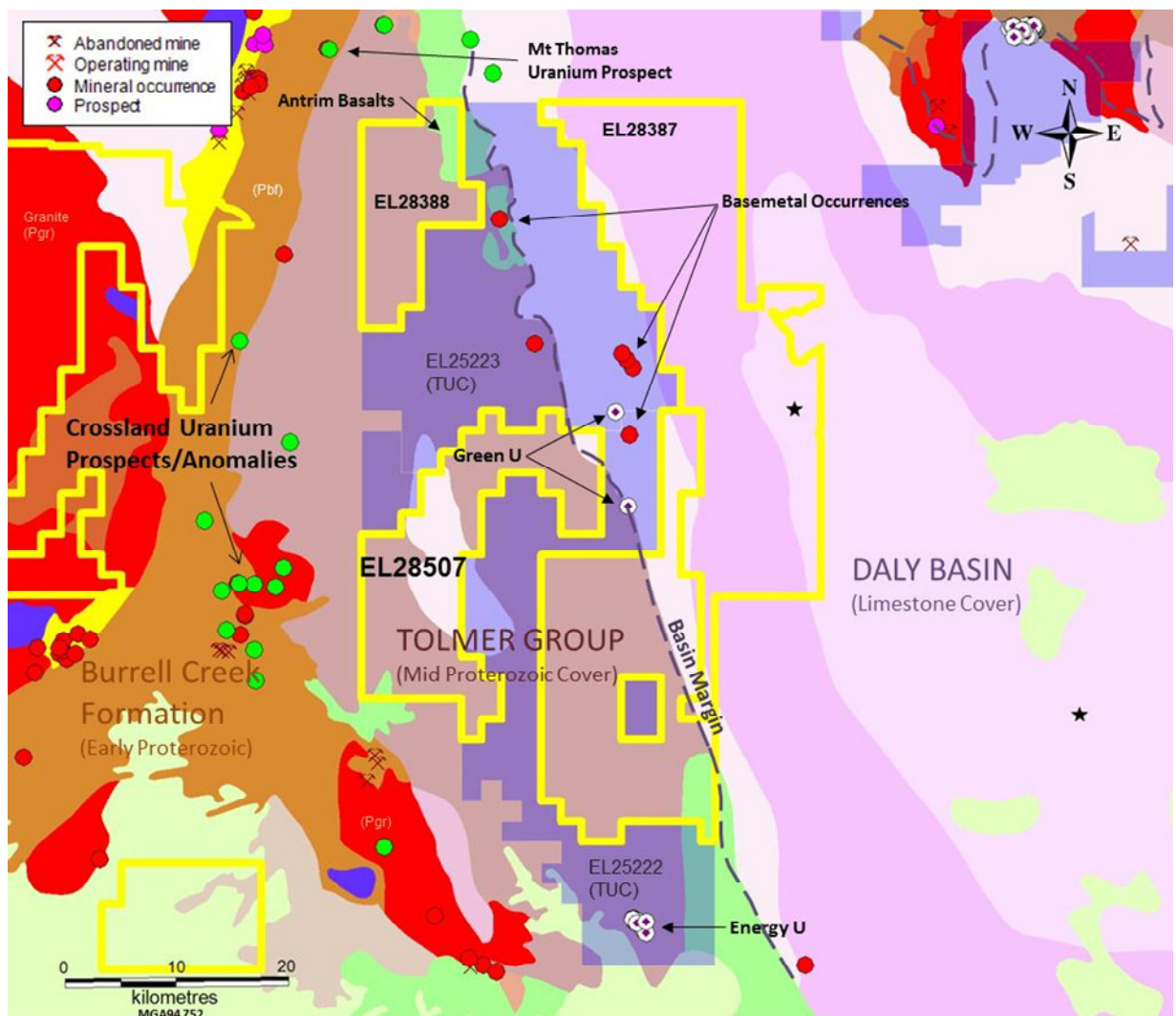


Figure 3 Tenement Geology (1:250K)



## 5. PREVIOUS EXPLORATION

Records of exploration date back to 1967 and AP licence #1682. Exploration phases have included searches for limestone, phosphate, base metals, gold, diamonds and uranium. Most of these programs have had limited success. Companies include IMC Development Corporation, Tipperary Land Corporation, Suttons Motors, Peko Wallsend, BHP, Carpentaria Exploration, Total Mining Australia, PNC Exploration, Newmont and Normandy.

Previous holders TUC Resources undertook exploration for unconformity related uranium mineralisation in the area. They targeted uranium associated with the mid Proterozoic unconformity between the Tolmer sediments and the Finniss River Group (Burrell Creek Formation). TUC only completed a radiometric survey over the portion that is now EL28507.

## 6. EXPLORATION DURING YEAR 1

Exploration was postponed whilst the company re-organised its exploration strategy and land holdings.

Geological review of the tenement highlighted the following:

Recent exploration activity in the area has discovered significant rare earth element and uranium mineralisation (Stromberg, Drax and Quantum – TUC Resources) in the same stratigraphic and structural terrane to that covered by this project (Figure 2). The REE mineralisation at Stromberg has excellent mineralogy (xenotime) with a high heavy rare earth component (the more valuable of the REEs) and is within Tolmer sediments. Stromberg and Scaramanga both have trends striking onto Territory Minerals Tipperary Project (Figure 2). Figure 3 shows the trend of the Energy or Stromberg HREE deposit striking onto EL28507 in a zone of structural complexity.

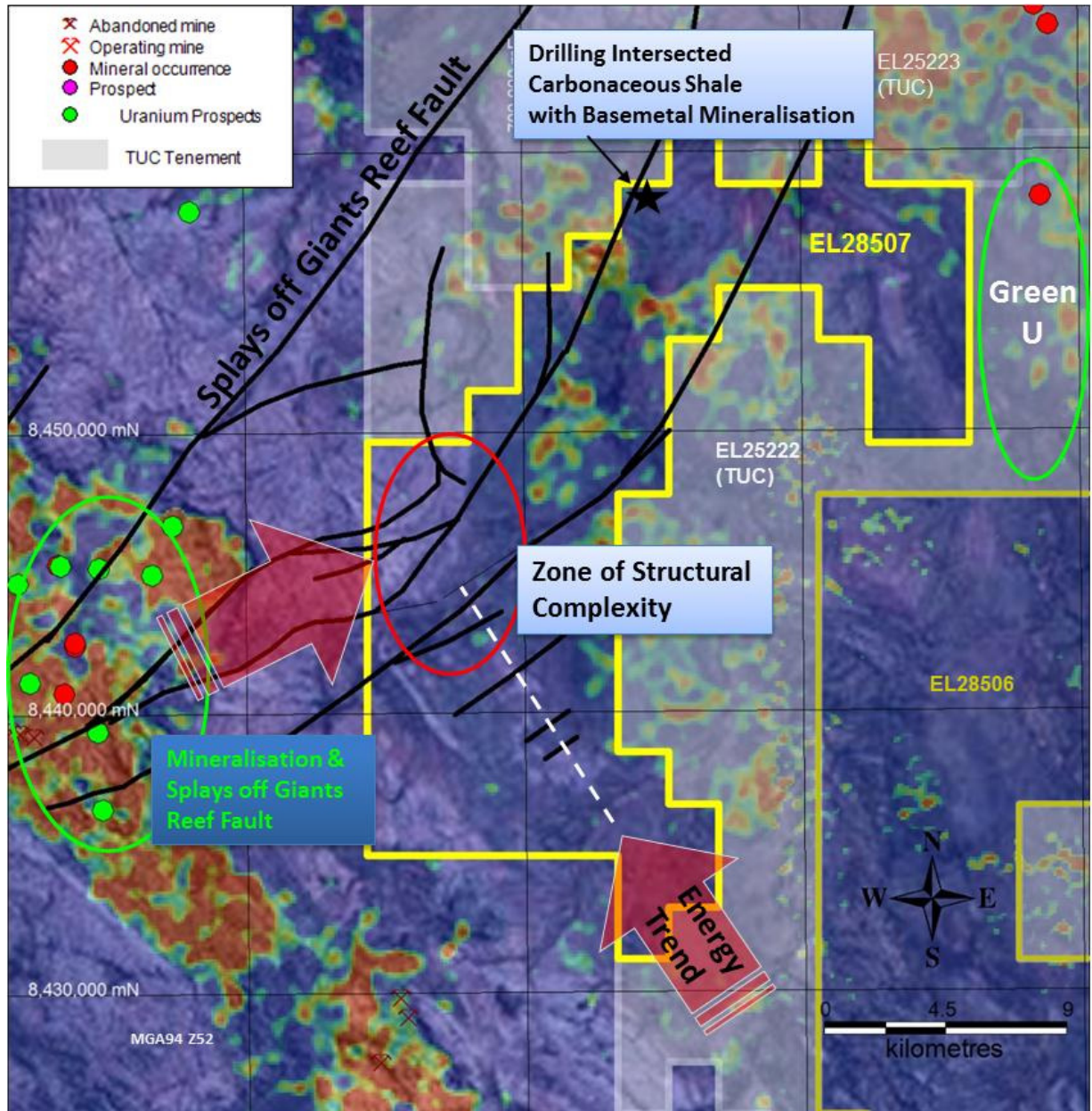


Figure 4 EL28507 Along Strike of TUC HREE Prospects

Exploration targets include:

- Stratabound Mississippi style base metal deposits within the Tolmer and Daly Basin Sequences.
- Unconformity related uranium mineralisation associated with the unconformity between the Lower Proterozoic Burrell Creek Formation and the Tolmer Sequence. In most areas this unconformity is relatively deep, however, at the eastern side of the project (EL28506 and EL28387) these prospective lower Proterozoic units may be within 100m of the surface hidden below the Cambrian Daly Basin cover (based on EM interpretation) – Figure 2. In other areas, zones of structural complexity may have brought this contact closer to the surface (EL28507).

- Carbonaceous shale units prospective for uranium, base-metal and REE mineralisation within the Tolmer Sequence. These carbonaceous units have been identified by historical exploration (on EL28507) and EM geophysics but have not been tested for uranium or REE mineralisation.
- REE mineralisation in similar settings to Stromberg and along regional uranium radiometric trends (eg EL28506, EL28507 and the western margin of EL28387 exposed and beneath shallow parts fo the Daly Basin, Figure 2 and Figure 3).
- A number of major fault structures that originate from the highly prospective Giants Reef Fault cross the project (EL28507) and provide a conduit for mineralising fluids. These structures are mineralised 10km to the SW of the project within Crossland Uraniums ground.

The combination of these factors give new exciting exploration models that have yet to be tested on this tenement.

## **7. EXPLORATION DURING YEAR 2 AND 3**

During 2011 Territory Minerals commenced a reorganizing of its exploration strategies and land holdings with a view to be listed on the ASX in 2012. During this process exploration was postponed on this license.

By October 2011 Territory Minerals had successfully entered into a sale agreement to purchase Republic Gold's Far North Queensland (FNQ) tenements including the Northcote and Tregoora gold deposits which are at bankable feasibility stage. All tenements were transferred into Territory Minerals name.

However due to the deflated financial climate over the past years the listing of Territory Minerals did not progress as quickly as hoped. No exploration was completed during year 3 and the tenement was relinquished.

The figure below summarises an exploration potential review undertaken during year 2 for the tenement; the review demonstrated that the tenement sits along strike of a number of interpreted heavy rare earth (HREE) trends which include HREE prospects recently identified by TUC Resources. The tenement also covers stratigraphic and structural settings similar to that of Stromberg and Skyfall (Upper Hinde Dolomite and Antrim valley basalts).

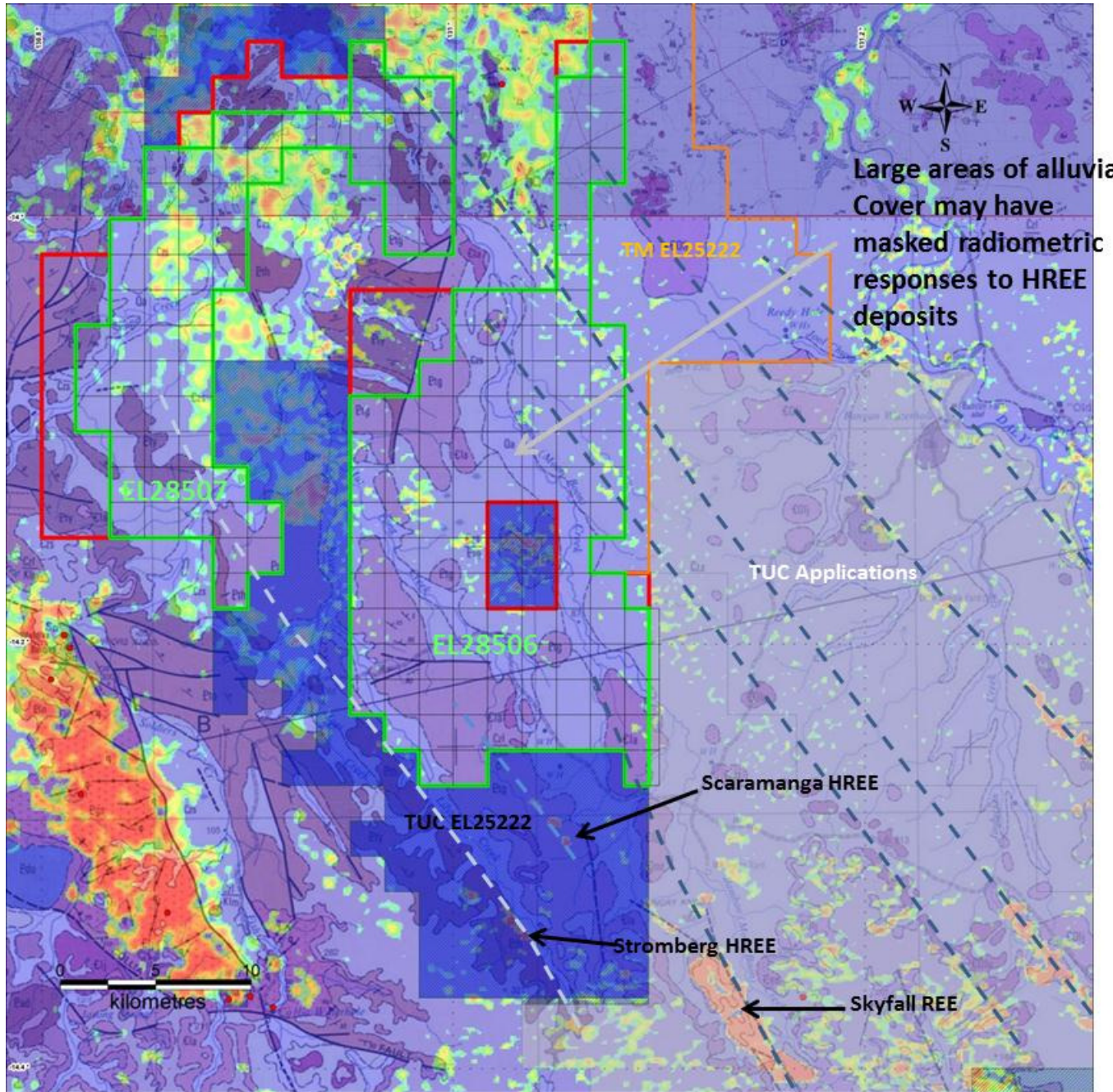


Figure 5 EL28506 Along Strike of TUC HREE Prospects; Radiometrics over geology

## **8. CONCLUSION/RECOMMENDATION**

Due to the difficult financial climate the tenement was relinquished.

## 9. REFERENCES

- Ahmad, M., 1998. Geology and mineral deposits of the Pine Creek Inlier and McArthur Basin, Northern Territory. *AGSO Journal of Australian Geology and Geophysics*, 17(3), pp1-17.
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