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Eclipse Project
EL29906
Partial Surrender Report
10 February 2014 – 27 October 2016

Ngalia Mineral Field
Northern Territory

Authors:	Geoff Beckitt	Exploration Manager	
Tenements:	Exploration License	29906	Napperby North
Map Sheets:	Napperby Hermansburg	SF5309	1:250 000
		SF5313	1:250 000
	Napperby	5452	1:100 000
	Aileron	5552	1:100 000
	Mt Wedge	5352	1:100 000
	Aileron	5552	1:100 000
	Narwietooma	5451	1:100 000
	Anburla	5551	1:100 000
Datum:	GDA94 Z52		
Key Words:	Uranium		

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1. SUMMARY

This is a partial relinquishment report for exploration licence EL29906 which is part of group GR338 Eclipse Project consisting also of exploration licenses EL29905. The tenement was granted to Oz Uranium (NT) Pty Ltd, a wholly owned subsidiary of Rockland Resources Pty Ltd, in 2013-2014. The main work undertaken has been compilation of geophysics, geology, geochemistry and drilling. Integrated targeting has failed to identify any targets in the area to be relinquished.

2. INTRODUCTION

The Eclipse Project tenements were granted to Oz Uranium (NT) Pty Ltd, a wholly owned subsidiary of Rockland Resources Pty Ltd, in 2013-2014. The tenements are located 182 km northwest of Alice Springs and original consisted of EL29905, EL29906 and EL29967; which were granted group reporting status GR338. EL29967 was relinquished in 2016 and both EL29906 and EL29907 have been subjected to partial surrender. The tenements are located within the eastern end of the Ngalia Basin and Whitcherry Basin. The project is adjacent to the Cappers and Napperby calcrete hosted uranium deposits as well as the Malawi and Minerva deposits hosted by the carboniferous Mt Eclipse Sandstone. In addition to these styles of uranium, the area is prospective for Tertiary mineralisation within the Whitcherry Basin and potentially unconformity mineralisation. Nolan's Bore deposit contains uranium of secondary economic significance to rare earth elements (REEs) and phosphate mineralisation, which is hosted within the Arunta Block north east of the project.

All coordinates stated in this report are in GDA 94 Zone 53 system.

3. LOCATION AND ACCESS

The Eclipse Project exploration licence area is located 182 km south west from Alice Springs in the Northern Territory (Figure 1 and Figure 2). Access to the area is provided by the Tanami Road on the Napperby and Narwietooma Pastoral Leases. The vegetation in the area consists of acacia scrubland associated with grasslands and minimally modified pastures in places. Taller eucalypts are present within and along the main drainage systems. The project area includes the northern part of the Lake Lewis salt lake. This lake is fed by two large ephemeral creek systems, the Napperby and Day Creeks which drain southward through the tenement package. A number of smaller less continuous drainages feed the lake along its western margin.

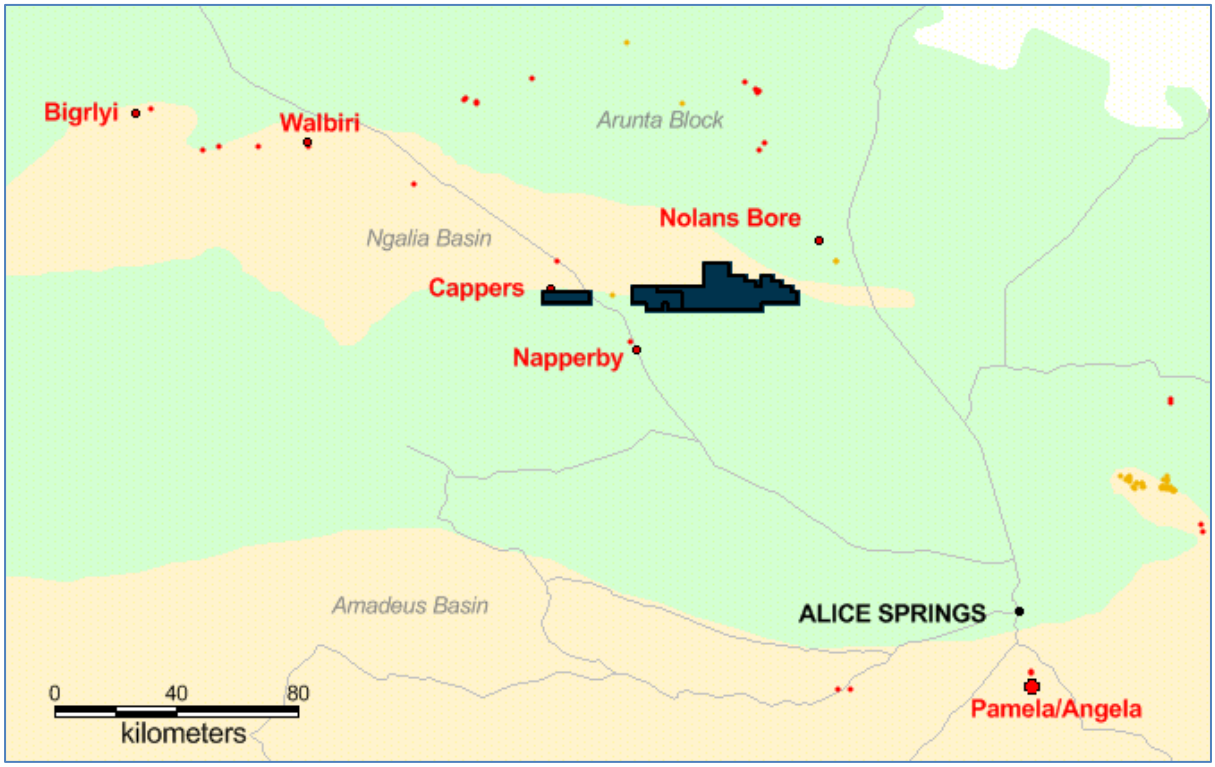

Figure 1 Location of Eclipse Project

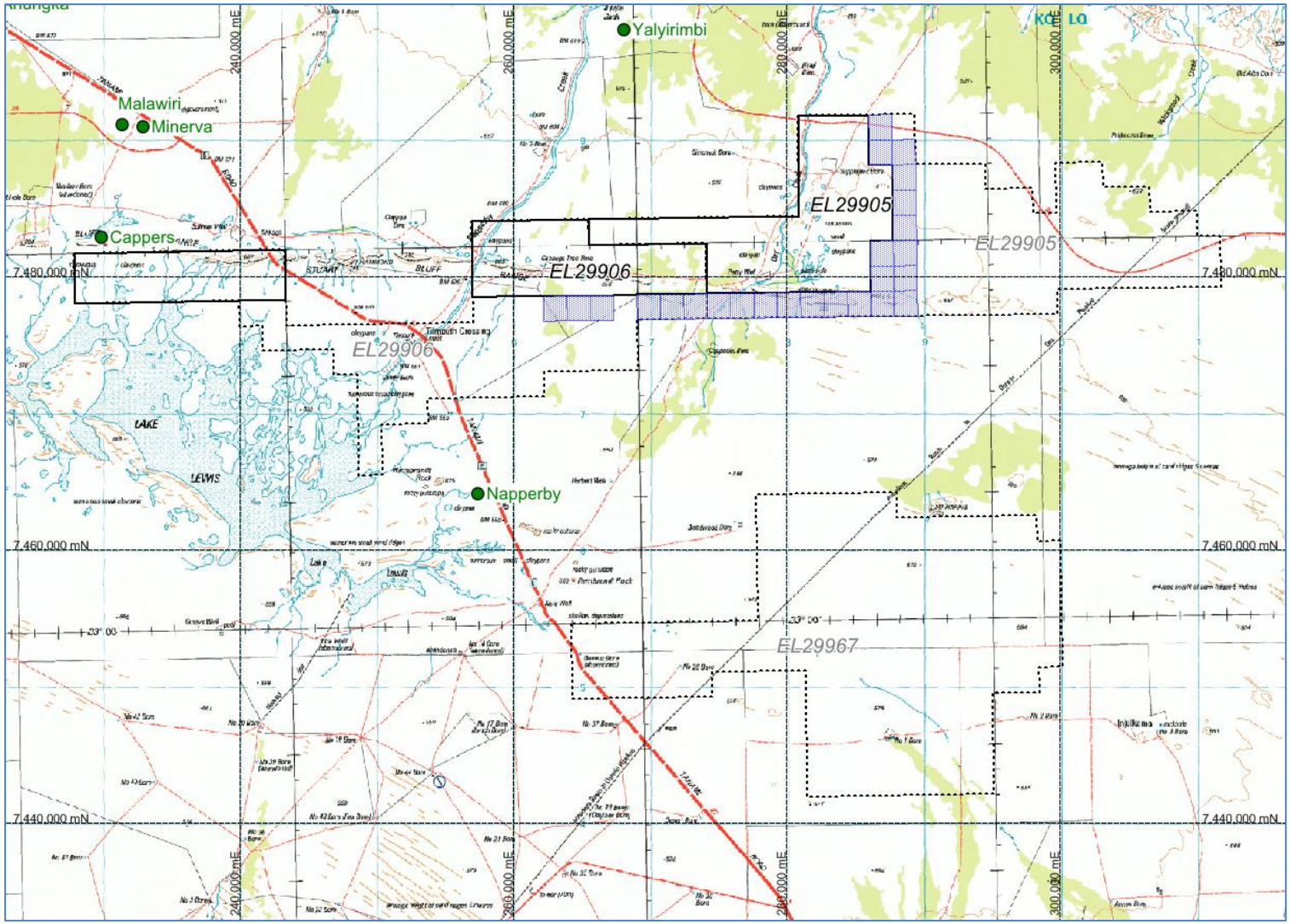

Figure 2 Eclipse Project Location (after Auslig 1:250,000 Topography) with previous relinquished tenure dashed and current relinquishment in blue

4. TENEMENTS

The Eclipse Project tenements were granted to Oz Uranium (NT) Pty Ltd, a wholly owned subsidiary of Rockland Resources Pty Ltd, in 2013 and 2014. The tenements originally consisted of EL29905, EL29906 and EL29967; which were granted group reporting status GR338 ending 31st December. In 2016 the entirety of EL29967 was relinquished; and parts of EL29905 and EL29906 was surrendered.

This report outlines the further relinquishment of 6 blocks from EL29906 as presented in **Error! eference source not found.** where 43 blocks are retained.

The current tenement details are shown in Table 1 below:

Table 1 Tenement Schedule for Eclipse Project

Licence	Name	Licensee	Blocks	KM ^{2}	Permit Period	Grant Date
EL29905	Ngalia East	Oz Uranium (NT) Pty Ltd	41	129.9	6	15.04.2014
EL29906	Napperby North	Oz Uranium (NT) Pty Ltd	43	136.2	6	10.02.2014

The surrendered blocks are shown in Figure 3.

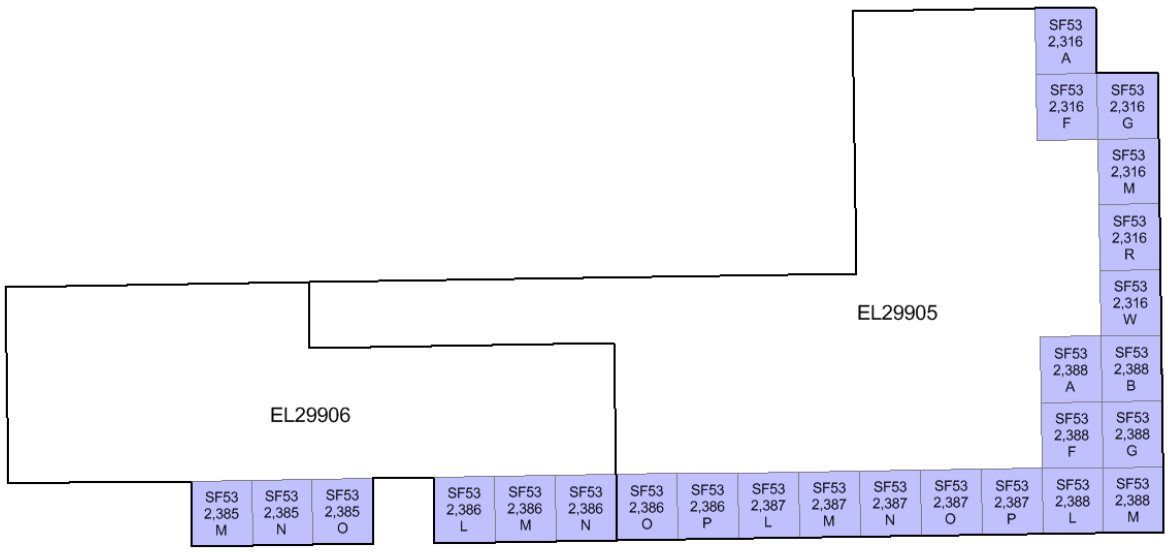

Figure 3 Surrendered tenements

5. GEOLOGY

5.1 Regional Geology

The project covers the eastern part of the Ngalia Basin and parts of the surrounding Arunta Block. The regional geology is best described by Edgoose (2013) but is also described by Stewart (1982), Wells etal. (1983) and Kastellorizos (2013). The Ngalia Basin is a large 300 km long by 70 km wide east west trending intra-cratonic basin, which contains up to 5,000 m of late Proterozoic to Carboniferous aged fluvial and marine sediments. These sediments are derived from the surrounding uranium enriched early to mid-Proterozoic granites and metamorphic rocks of the Arunta Block. The regional geology is largely based on key stratigraphic holes shown in Figure 4.

The Ngalia Basin developed around 900 mya and comprises a succession of basal late Proterozoic continental and possibly marine sediments overlain by continental fluvioglacial sediments. Later sedimentation during the Cambrian and Ordovician resulted in epicontinental sediments including carbonates. Uplift during the Alice Springs Orogeny resulted in the deposition of Devonian to Carboniferous fluvial sediments. Subsequent deformation of the basin has resulted in major thrust faults, strong folding and over turning of lithologies along the northern margin of the basin. Deformation in the south is less intense with only gentle folding along the southern margin according to Freeman etal. (1990), however, Energy Metal (Annual Report 2015) has recently interpreted intense westerly folding and faulting at the Malawiri Project in the south east part of the basin.

The Arunta Block is composed of metamorphic basement lithologies, which have been intruded by later granites. Three areas are recognised, the northern, central and southern provinces. The Ngalia basin sits between the northern and central provinces. Formation of the Arunta Craton is divided into three stages. The earliest phase (2000 mya) comprises mafic, felsic and aluminous granulite and calc-silicate rocks of the Strangways Metamorphic Complex, which comprises most of the Central Province. The second phase of formation is dominant in the northern and southern provinces and comprises aluminous and siliceous sediments with a few mafic flows and sills. The third phase is less extensive and is found as ortho-quartzite outliers scattered around the northern and southern provinces (Shaw 1990).

The Arunta Block underwent deformation and metamorphism during the Proterozoic, including the intrusion of granites, some of which are highly uraniferous, particularly those from around 1750 mya. During the late Devonian and early Carboniferous the Arunta Block was extensively disrupted by thrust faulting, particularly along the boundary between the northern and central provinces (Shaw 1990).

The geological history for the Napperby 1:250,000 scale geology is presented by Stewart (1982):

1) *"Deposition on an Archaean or Early Proterozoic sialic basement of basic and acid volcanic rocks, followed by shale and minor carbonate (Division1).*

2) *Deformation, moderate to high-grade regional metamorphism before 1650 m.y., separation by partial melting of small charnockite plutons. Intrusion of Anmatjira Orthogneiss at around 1800 m.y.*

3) *Deposition of fine to medium-grained micaceous quartz sand, silt, clay, and impure limestone, accompanied by basic lava flows or sills of restricted extent (Division 2).*

4) *Folding, possible intrusion of granite (Mount Airy Orthogneiss) uplift, and erosion.*

5) *Deposition of coarse felspathic sand and cobble gravel, followed by clean quartz sand, mud, and carbonate, forming the Reynolds Range Group (Division 3). These sediments may be the reworked rocks of Division 2.*

6) *Intrusion of acid igneous sills and a lopolith below and into the Reynolds Range Group.*

7) *Folding, metamorphism at or before 1400-1350 m.y. to greenschist facies in the north-central part of area, but rising to granulite facies in the south- east, where overprinting of moderate-grade mineral assemblages by higher- grade assemblages is evident in the Aileron metamorphics (Stewart & others, 1980a); intrusion of granites at about] 500 m.y.; major faulting.*

8) *Thermal disturbance and isotopic homogenisation in the east, and emplacement of the Harverson Granite in the central part of the area at around 900 m.y.*

9) *Episodic deposition from Late Proterozoic to Late Carboniferous of the Vaughan Springs Quartzite, Naburula Formation, Central Mount Stuart Formation, Kerridy Sandstone, and Mt Eclipse Sandstone. The episodes of deposition were preceded and followed by episodes of tectonism of successively greater intensity, resulting in angular unconformities below each formation. The final tectonism-Mt Eclipse Orogeny of Wells & Moss 13 (in press) in the Late Carboniferous or later-also caused faulting, shearing, retrogressive metamorphism and disturbance of mineral isotopes in the Arunta Block, and was followed by planation and quiescence.*

10) *Deep weathering in the Late Cretaceous or Early Tertiary, and formation of ferricrete.*

11) *Uplift in the north-central area, erosion, deposition in the Early Tertiary of thick colluvium flanking the Reynolds Range, and alluvial and lacus- trine deposition of Eocene sand, silt, and clay (some carbonaceous) in the northeast (Tea Tree Basin) and centre of the Sheet area (overlying the Ngalia Basin).*

12) *Mid-Tertiary weathering, formation of a second ferricrete, lithification of colluvium to fanglomerate, and further deposition of Cainozoic alluvial de- posits.*

13) *Further uplift, dissection of fanglomerate, partial stripping of deeply weathered rock, e.g., from interfluve between Napperby Creek and the Wood- forde River to leave an extensive lag gravel of quartz chips, deposition of Quaternary red earth and alluvium from the uplifted area, formation of Quaternary sand plain and dunes, precipitation of calcrete along stream channels and evaporites in playa lakes in the southwest of the Sheet area, and movement of colluvium down present-day hill-slopes"*

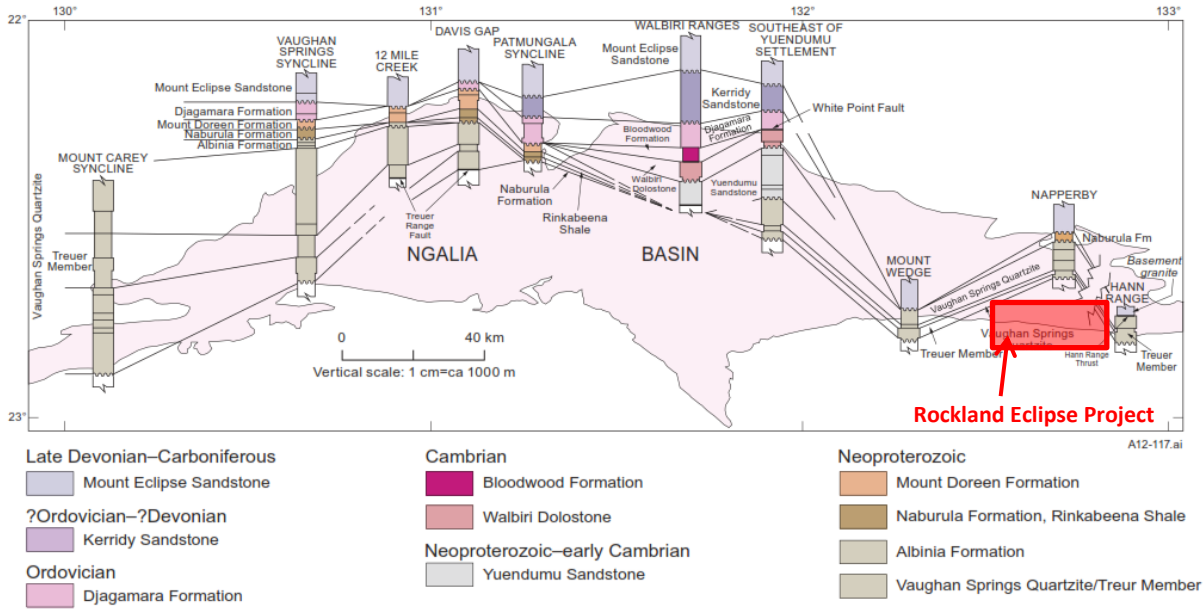

Figure 4 Stratigraphic Columns of selected localities (adapted from Wells and Moss 1983). Midpoint of columns approximately coincide with locations of measured sections (after Edgoose CJ, 2013) and location of Rockland's Eclipse Project.

5.2 Local Geology

The local geology is best summarized by Stewart (1982), Wells etal., (1983) and Kastellorizos (2013). The project area is typified by flat sandy plains with extensive sandy and calcrete soils and very little outcropping geology as depicted by Figure 5. The easterly trending Stuart Bluff Range runs through EL29905 and EL29906, which constitutes the majority of basement outcrop consisting of middle Proterozoic Anmatijira Orthogneiss and late Proterozoic Vaughan Springs Quartzite (generally dipping 20 deg to the north). Elsewhere there are isolated granite hills within the project area, especially in the south east at Mount Harris, which appear to flank a buried salt lake.

The Tertiary age Whitcherry Basin is a poorly known basin that overlies a large area of the Palaeozoic Ngalia Basin and may form paleochannels. It has sometimes been informally referred to as the Currinya Basin. Sedimentation in the basin was contemporaneous with deposition in the Mount Wedge, Lake Lewis and Burt basins, but was in a separate unconnected depocentre. The easterly trending Stuart Bluff Range separates the Whitcherry Basin in the north from the equivalent Lake Lewis Basin in the south. The Whitcherry Basin has no surface exposure, and is only known from water bores and a few stratigraphic holes including hole Napperby No.7 located just north of the project. Summary descriptions are discussed by Senior etal. (1995), English (2012) and Edgoose etal. (2013). The succession mostly consists of sandstone, claystone, silty and clayey sands, ferricrete and calcrete, with minor gravel and pebbly conglomerate. Carbonaceous matter has been found to be reasonably common in the eastern and southern deeper parts of the basin, which may provide a reductant for uranium precipitation. Very limited historical exploration for palaeochannel sandstone hosted uranium has been undertaken, however, there have been some notable results in recent years. In 2012, Thundelarra Pty Ltd encountered up to 7.08 m at 1,408 ppm eU_3O_8 (hole TNG061RC) at the Afghan Swan prospect located 64 km to the west of the Eclipse project. The mineralisation is contained within basal channel sands of the southern Whitcherry Basin. In 2008 NuPower Pty Ltd encountered several holes with weak uranium mineralisation at Yalyirimbi, with up to 130 ppm eU_3O_8 from 149-150 m (hole YR014). The exploration by Thundelarra and NuPower has largely relied on gravity and airborne electromagnetics to identifying palaeochannels and targeting below cover.

The Eclipse project is adjacent to exploration licenses held by Deep Yellow and Energy Metals, which contain the Napperby and Cappers uranium deposits hosted by shallow palaeochannel calcretes. Napperby is owned by Deep Yellow Pty Ltd and has a resource of approximately 15Mt at 400 ppm U_3O_8 for 13.2 mlb U_3O_8 (6000 t U_3O_8) at a 200 ppm cut-off. The Cappers deposit is owned by Energy Metals Pty Ltd and has a resource of 22 Mt averaging 145 ppm U_3O_8 for 7.0 Mlbs U_3O_8 (at a cut-off grade of 100 ppm). At Napperby, anomalous uranium occurs within a north to north east trending palaeochannel, about 15 km long and 1–3 km wide. Mineralisation is hosted by 2–3 m of green calcareous sand, beneath a surface calcrete layer, 1–3 m thick. Carnotite is the principal uranium mineral and occurs in grain interstices with minor tyuyamunite.

The Paleozoic Mt Eclipse Sandstone does not outcrop within Rockland Resources project area but has been intersected by historical drilling. Geoscience Australia rates the Mt Eclipse Sandstone as having very high potential for uranium mineralisation within the Ngalia Basin (Schofield etal., 2012). The main example of this style of mineralisation is the Bigryli deposit located within the Ngalia Basin

147 km to the west of the Eclipse project. The total resource (Indicated and Inferred JORC categories) is 7.5 Mt at 1,255 ppm U_3O_8 for 21.2 Mlb (9600 t) of U_3O_8 (Energy Metals Ltd. Australian Stock Exchange (ASX) announcement, 28 June 2011). The syn-orogenic Mt Eclipse Sandstone at the deposit is dominantly an immature medium- to coarse-grained, sub-arkosic sandstone with common carbonate cement deposited in a braided fluvial environment (Wells and Moss, 1983; Fidler *et al*., 1990; Schmid *et al*., 2012). Deposition occurred during the Mt Eclipse Movement of the Alice Springs Orogeny. It is mainly red, although zones of light to dark grey and yellow-brown sand occur locally. Sedimentary structures are consistent with a source of sediment to the northeast, possibly within the Paleoproterozoic Carrington Suite or the uranium-rich Mesoproterozoic Southwark Suite (including the Yarunganyi Granite which hosts the Crystal Creek magmatic-related uranium occurrence. Fidler *et al*. (1990) considered uranium mineralisation to be associated with carbonaceous material within the Mt Eclipse Sandstone, principally within the informally named 'Unit C'. Minor uranium also occurs in the adjacent Units B and D, and lower uranium grades have been correlated with a decrease in the abundance of carbonaceous material. The association between uranium and carbonaceous material has been questioned by Schmid *et al*. (2012) who proposed an alternate model where primary uranium mineralisation is essentially detrital and uranium deposited in favourable sedimentary environments, followed by secondary remobilisation. In this model, deposition of uranium is controlled by sedimentary facies rather than any reduced/carbonaceous controls.

Minerva and Malawiri are adjacent uranium deposits hosted by the Mt Eclipse Sandstone located 9.6 km north of Rockland's tenement EL29906, which is described by Lally and Bajwah (2006). The deposits demonstrate the potential for this style of mineralisation in the eastern portion of the Ngalia Basin. Minerva is a blind deposit discovered by AGIP Australia Pty Ltd, during reconnaissance drilling of the Mt Eclipse Sandstone in 1978. Detailed drilling during 1978–1980 defined an almost continuous zone of mineralisation over a strike length of 2.7 km, with an apparent width of 50–60 m. Mineralisation was open down-dip and along strike. A resource was estimated at 0.7 Mt of ore, with an average grade of 0.16% U_3O_8 but was considered at the time to be sub-economic (AGIP 1983). Mineralisation extends from Minerva into the neighbouring Malawiri prospect, discovered by Central Pacific Minerals between 1978 and 1983. In 2005 Energy Metals encountered up to 3.3 m @ 7,700ppm U_3O_8 and 2.7 m @ 8,500 ppm U_3O_8 (Jindalee 2005). In general the deposits are hosted by steeply south-dipping to overturned arkosic sandstone and shale, near the base of the Mt Eclipse Sandstone, concealed beneath 80 m of Cenozoic sedimentary rocks. Mineralisation is hosted by coarse to pebbly arkose beds, 10–40 m thick, that are interbedded with thinner shale bands over a total stratigraphic thickness of 100 m. Uraninite occurs close to a boundary between haematitic and reduced grey to white sandstone.

The Naburula Formation is an 8 m thick dark grey shale (minor siltstone, pyrite and dololutite basal tillite), which overlies the Vaughn Springs Quartzite. It does not outcrop within the Napperby 1:250,000 map sheet but has been identified in stratigraphic hole Napperby No.5 (37 km north west of the Eclipse project) and Napperby No.7 (12 km north of the Eclipse Project) as discussed by Stewart (1982). The formation has good potential as a reductant for uranium precipitation and also potential petroleum source rock (Wells etal., 1983). It has been inferred within the project area by Rockland to explain the electromagnetic response north of outcropping Vaughn Spring Quartzite (along the Stuart Bluff Range).

Numerous brecciated hematitic quartz veins cut granitic basement and the overlying Vaughan Springs Quartzite along the southern side of the Stuart Bluff Range. Some contain pyrite and minor fluorite and calcite.

A NNE section for the east part of the Ngalia basin is depicted in Figure 6, which shows the interpreted geology adapted from the section by Stuart and Pillinger in 1982, based largely on seismic due to the lack of outcrop and drilling. Based on gravity and airborne TEMPEST, Rockland has incorporated the Cenozoic Whitcherry Basin and Neoproterozoic Naburula Formation into the section; which provide possible reductants for uranium deposition. Extra faulting is also depicted and in particular an inferred graben like channel along the southern edge of the Ngalia Basin (Stuarts Bluff Range). This channel may consist of the Carboniferous Eclipse Sandstone and/or younger sediments such as those of the Cenozoic Whitcherry Basin. The known uranium deposits and possibly trap sites are also shown in the figure.

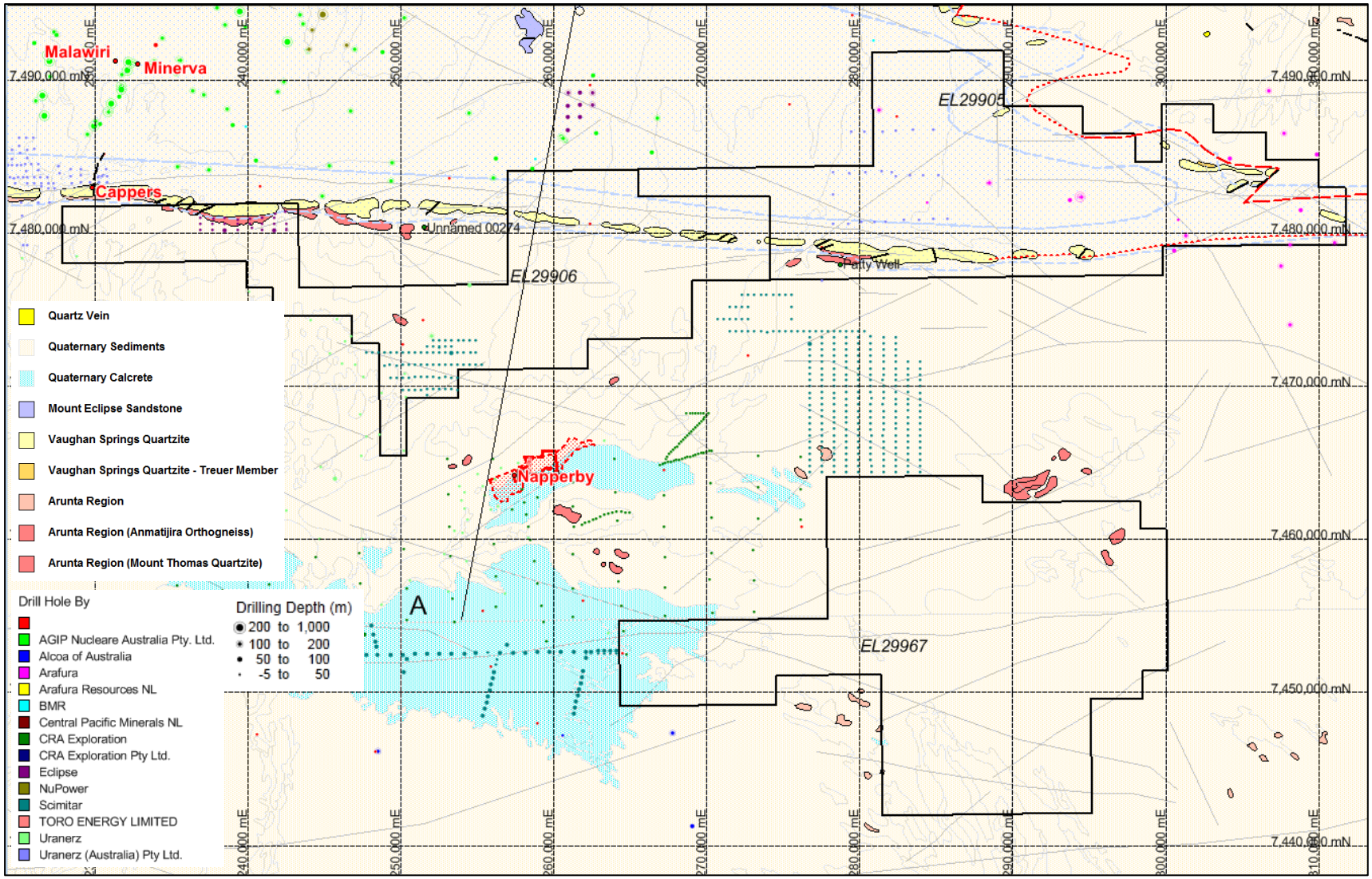

Figure 5 Eclipse Project Geology and Drilling (after 1:250,000 scale Government Napperby Geology)

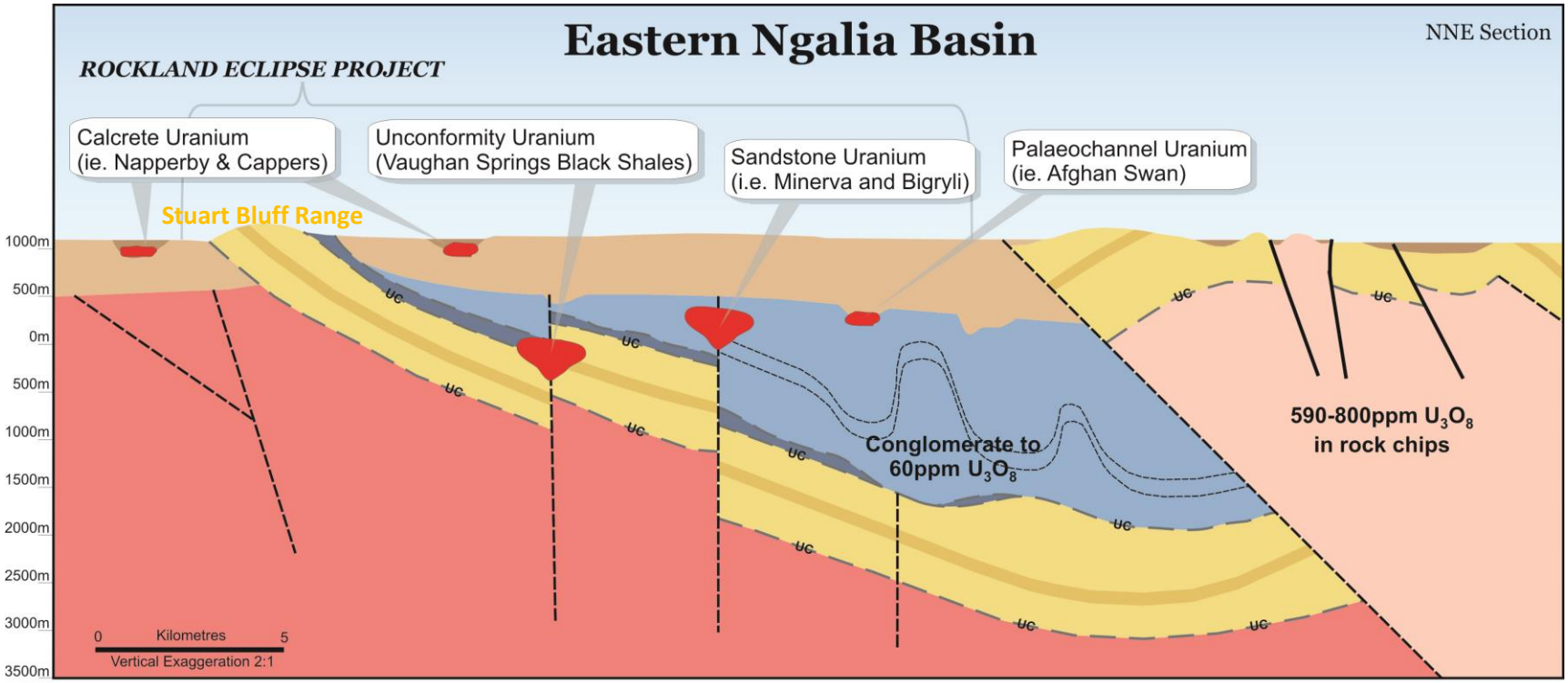

Figure 6 Eastern Ngalia Basin Schematic NNE Cross Section (after 1:250,000 scale Government Napperby Geology) – see previous figure for location.

6. EXPLORATION MODEL

A uranium mineral system framework is proposed by Skirrow etal. (2009) is summarised in Figure 7 as a schematic. Schofield etal. (2012) used this framework to highlight very high uranium potential of the Ngalia Basin. There is some conjecture regarding the genesis of the Bigrlyi Deposit which is the main deposit in the basin. Fidler et al. (1990) suggests the more traditional and widely accepted sandstone tabular model whereby uraniferous fluids shed from nearby granites (i.e Carrington Suite) and then precipitated within the Mt Eclipse Sandstone where there is carbonaceous material to trap and precipitate uranium. However, Schmidt etal. (2012) proposes that uraniferous sediments were originally part of the Eclipse Sandstone (ie. pegmatitic or hydrothermal constituents) which were later remobilised and concentrated locally into receptive sedimentary facies.

As discussed earlier, the basement rocks in the Ngalia region are known to be enriched in uranium which is testified also by the broad range in locations and styles of secondary uranium precipitation. There are a number of target positions within the project related to structures, channels and reductants depicted in the Figure 6. The unconformity or tabular type is where faults act as conduits (and traps) for uraniferous fluids, and especially those that allow interaction with either the Naburula Formation basement, carbonaceous units within the Eclipse Sandstone or reduced fluids/gas (ie. derived from the Naburula). The paleochannel type is where uranium may be deposited at roll-fronts reacting with carbonaceous material within the Cenozoic Whitcherry Basin and/or areas of flux such as abrupt changes in channel direction. Such channels are likely to reflect the easterly faulting along the Stuart Bluff Range. Also, calcrete channels can host uranium as uranium rich fluids interact with vanadium rich fluids in the presence of calcrete. It is noted that current drainage is south towards the Lake Lewis and hence it is possible that the Stuart Bluff Range may act as a significant blockage and/or control of fluid movement.

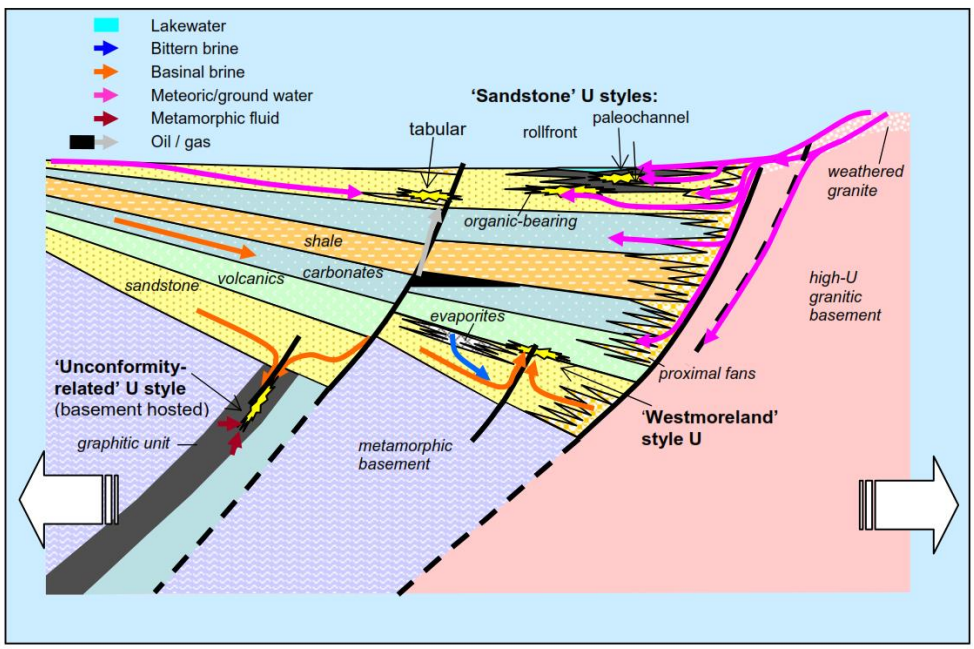

Figure 7 Model of the basin-related uranium mineral systems by Skirrow etal. (2009)

7. PREVIOUS EXPLORATION

7.1 1970 - 1980

Historical work conducted during the 1970's and 1980's involved broadly spaced drilling targeting sandstone and calcrete hosted uranium mineralisation within the Ngalia basin and overlying the granites of the Arunta Block. In 1973, CRA Exploration Ltd. (CRAE) undertook exploration over the north eastern part of Rockland's EL29905, around Mt Harris. A program of mapping and sampling over the outcropping granites indicated that they were uraniferous and hence potential source rocks for secondary uranium mineralisation. Sampling returned values up to 40 ppm U from the granites. Mapping of the surrounding plains failed to locate any suitable sediments or calcrete likely to host secondary uranium mineralization (Hughes 1973).

The most detailed and successful exploration within the immediate project area was carried out by Uranerz at the New Well uranium prospect, adjacent to Cauldrons licenses. Shallow auger drilling conducted during the 1970's identified a mineralised near surface palaeo-drainage system over 20 km long and up to 4 km wide that drains into Lake Lewis along the Day creek. An economic scoping study on the New Well prospect (now called Napperby deposit), indicated that it could contain up to 6,000 tonnes of U_3O_8, based on a grade range of 360-380ppm U_3O_8.

EL1348, EL1658, EL256 and EL257 – Central Pacific 1978

EL1348, EL1658 and EL257 overlap the northern parts of Rockland Resources tenement EL29905, and are discussed by Green (1978a); Green (1978b) and Henstridge (1976) respectively. Resistivity, reconnaissance surveys, water surveys, airborne surveys and track edge were undertaken. Central Pacific holes in Rockland Resources database are all located outside the present tenure to the north east.

EL1614, EL1353 and EL1354 – Uranerz 1977

EL1614, EL1353 and EL1354 covers Rockland Resources tenements as follows: majority of EL29906, southern part of EL29905 and western part of EL29967; these are discussed by Morete (1979) and Uranerz (1982). The project was explored for calcrete uranium with the majority of drilling at the Napperby deposit. It is understood that no uranium anomalies were identified on Rockland Resources ground.

7.2 1980 - 1990

EL2066, EL2184, EL2524, EL1854, EL2523 and EL1199 - AGIP Australia 1970s and 1980s

AGIP Australia (AGIP) undertook extensive exploration in the Ngalia Basin for uranium within the Mt Eclipse Sandstone, some of which overlaps with Rockland Resources EL29905 (western part) and a very small portion of EL29906. Reports include AGIP (1980), AGIP (1981), AGIP (1982abc) and AGIP (1983). The relevant AGIP tenements are: EL2066, EL2184, EL2524, EL1854 and EL1199. Exploration consisted of gravity surveys, radon surveys and drilling. AGIP discovered the Minerva deposit and the tenements covered the Yalyirimbi and Cappers uranium prospects which have been identified in more recent times.

No work was done on EL2066 (Yalyirimbi area) since the gravity did not support major structures and Eclipse sandstone development below cover. There was some stratigraphic drilling on EL2066, however, it was concluded that tertiary sediments on-lapped basement in the east part of the tenement and only thin Eclipse Sandstone is associated with a basement block from gravity in the west part of the tenement. EL1199 is the main AGIP tenement which consolidated the licenses: EL2184, 2524 and 2523. On EL1199, extensive exploration included geophysics (sirotem, gravity and ground resistivity), petrological and palynological studies and drilling (167 holes to 540 m), which is located just north of Rockland Resources tenements.
It was found that the Eclipse Sandstone underlays the central and southern parts of the EL, which is mainly oxidized with only narrow intersections of weak uranium. Some exploration outcomes (AGIP, 1983) include:

- Trial surveys conducted with the NTGS show that basement highs correspond to 1-3 mgal gravity features and can be used to derive the general basin structure. In particular there are several west northwest sub-basins (valley fill) with horst/graben faults. Minerva is located on the southern margin of one of the basement highs and guided initial targeting of the prospect.
- Petrography and geochemistry observations in 1979
    1. Calcite and quartz cements are mainly early diagentic features.
    2. Most sandstone was originally reduced. Oxidation in the siltstones is mainly syndepositional.
    3. Most of the oxidised samples show evidence of diagentic oxidation after deposition of calcite and quartz cements. Most of the iron was probably derived from insitu oxidation of pyrite.
    4. Geochemical analysis confirms the correlation between chromium, vanadium, sodium and lead.
- Some Au analysis was also conducted in 1980 with a few anomalous values but no patterns and most below detection.
- VLF trials in 1980 over Minerva may have detected a credible structure
- Multi-element geochemistry in 1980 showed poor correlation with uranium, that probe data was a good exploration tool and that multi-elements could not determine ore and non-ore mottling. Pb isotopes was of some use at identifying nearby uranium.
- Alteration studies of the oxides in 1980 showed limited potential to vector to ore.
- An ore reserve study for Minerva in 1980 determined 1,100 t contained U3O8 (2.42 Mlb U3O8) from 700,000 t averaging 1,600 ppm U3O8 and utilizing a cut off of 100 ppm.
- In 1981 drilling was reduced. A trial SiROTEM survey was carried out but did not show any significant responses. VLF trials did appear to show shallow and steep dipping Eclipse Sandstone along with known faults.
- Comparison of Minerva and Wyoming deposits indicated in 1982 that Minerva is roll front style.

Most of the AGIP Australia drilling has been located in a database by Rockland Resources, although at the time of writing some cross checking was still required (i.e. EL1199 and EL2184)?

EL2524 – AGIP 1982

EL2524, discussed by AGIP (1982d) is situated just north of Rockland Resources EL29906 and clips the western edge of EL29905. It also covers the Cappers deposit which was not known at the time. AGIP Australia drilled three holes to test for uranium within the Eclipse Sandstone. No anomalous uranium was intersected. The drill hole collars are in in the Rockland Resources database. Just to the north of Rockland Resources ground a number of narrow sub-economic uranium results were recorded, including 0.6m @ 192 ppm.

EL2822 – Alcoa Australia 1981

EL2822 clips the western edge of Rockland's tenement EL29967. Alcoa Australia explored for uranium within the tertiary sequences of the Narwietooma Basin. The work was reasonably comprehensive including ground water geochemistry, resistivity, geochemistry and drilling. Only minor permeable sand units intersected within the Tertiary sequence were entirely oxidised suggesting that oxidising solutions had previously flushed through the sequence dispersing any existing uranium concentrations. The ground was consequently relinquished. The highest result was 2 m @ 7 ppm uranium from hole NA011 (Howard, 1981).

7.3 1990 - 2000

EL5364- Sabminco 1988

EL5364 is a relatively thin west-east oriented tenement along the margin of the Ngalia Basin which overlaps parts of Rocklands EL29906 and EL29905. Part of the focus was on Breccias near Patty Well according to Barrraclough and Glasson (1988). Sabminco searched for gold and base metals but located only minor pyrite and weakly anomalous gold (to 200 ppt) in their basic stream sediment program (did not analyze for uranium).

EL3003 – Yuendumu Mining Company 1984

EL3003 is a thin west-east oriented tenement which overlaps Rockland Resources EL29906 and EL29905. Yuendumu Mining undertook mapping and chip sampling (Gardiner, 1984). Wide spread tungsten was identified in Quartz hematite fluorite lodes south of the Siddley Range but were not sufficient to warrant further work.

7.4 2000 - 2014

EL22461, EL10251, EL10246 - Gutnick

EL22461, EL10251 and EL10246 has been explored by Gutnick Resources for gold and base metals, which covers Rocklands EL29905, EL29906 and the northern half of EL28867. These tenements were part of the large "Rand" project which also consisted of other tenements over other parts of the Ngalia Basin and Amadeus Basin (Washburn, 2004). Exploration was focused on a new genetic model for the Witwatersrand-style sediment-hosted gold and base-metal mineralisation.
The Witwatersrand ore bodies are typically inferred to be fossil placers but studies funded by several major South African producers demonstrated hydrothermal controls on the mineralisation.
These new models suggested that similar and related styles of mineralisation may be present in other sedimentary basins with similar structural and stratigraphic styles to the Witwatersrand.The genetic model and basin selection criteria on which the Rand Project is based are reviewed in Phillips and Law (2000).

"Following a literature and field based review of potential target basins; the Amadeus and Ngalia Basins were selected for exploration as part of the Rand Project. Key geological parameters in the selection of the area include:

- *A broadly upward coarsening stratigraphic profile controlled by foreland-style basin development in an intra-continental setting.*
- *The location of the basins in the footwall to major basin bounding thrust faults that locally overturn the basin margin during the Alice Springs Orogeny.*
- *Gold mineralisation in late stage veins within shear zones of Alice Springs age. This mineralisation is spatially associated with coeval 'greenschist facies' hydrothermal alteration of regional extent.*
- *The presence of widespread uranium mineralisation in the basement granites and molassic sediments at the top of the Amadeus Basin stratigraphic sequence. Gold mineralisation is*

locally associated with uranium at the Minerva deposit in the Ngalia Basin and uranium is an important by-product of many Witwatersrand ore bodies.

- *Evidence for widespread alteration and deformation within the target basins particularly along the northern margins where the basin stratigraphy is deformed by shear zones of Alice Springs age.*
- *Widespread and comprehensive geological data for the region together with very limited gold exploration. The Amadeus Basin sequence has never been the target of a focused gold exploration program except in the vicinity of the shear and vein-hosted mineralisation at Winnecke and Arltunga."*

The Illogwa Creek target located beyond the Eclipse project in the north west edge of the Ngalia (west of Bigrlyi) was selected for early exploration within the Rand Project to test the region for hydrothermal gold mineralisation where hydrothermal fluids involved in the retrogression of older metamorphic rocks in Alice Springs age shear zones interact with the basin sequence. The area is not a classic Witwatersrand target but results from the potential for a wide range of hydrothermal mineralisation styles where basement derived hydrothermal fluids interact with reactive lithologies in the overlying sediments.

The stream sediment and sampling work undertaken by Gutnick was based on orientation assessment of the regolith geochemistry response at the Garland (Winnecke Goldfield) and Edwards Ck deposits located Elsewhere in the NT. Garland is hosted by Quartz-mica +/- feldspar schists. The report found that two main size fractions, namely Au, Bi and W into the coarse fractions, and Au, Cu, Hg, Sand Sb into the fine. Also it was found that there is no significant relationship between Au and Ca, so it is unlikely that the regolith carbonates are pedogenic and calcrete sampling may be inappropriate in this region.

The company focused on stream sediment and chip sampling programs in the north west part of the Ngalia Basin and parts of the Amadeus Basin; with only one sample collected over Rockland's tenements. They identified some anomalies but apparently relinquished the ground before progressing to drill stage. The sample within Rockland ground is not anomalous in any elements. Some of their samples in the north west part of the Ngalia Basis are anomalous in uranium (> 100 ppm) near the Dingos Rest area.

EL27970 – Toro Energy 2012

EL27970 was not actively explored by Toro Energy Pty Ltd. The license was relinquished when the option for the nearby Napperby (New Well) project was not taken up with Deep Yellow (Rawlings and Sullivan, 2010). The tenement is located between Rockland Resources tenements EL29967 and EL29905.

EL22922 - Tanami 2012

The Tanami Exploration NL tenement EL22922 covers the south part of Rockland Resources EL29967 and extends further to the east and west (Rode, 2003). No work was undertaken on the tenement which was being explored for gold.

EL24625, EL24637 – Eclipse Metals and Cauldron Energy to 2013

In 2007, Scimitar Resources were granted EL24625 and EL24637, who later changed their name to Cauldron Energy Pty Ltd. EL29563 was also part of the application which was later amalgamated into EL24625. In 2012 the tenement were spun out into the new ASX listing for Eclipse Uranium Pty Ltd which is now Eclipse Metals Pty Ltd. Rockland Resources EL29905 and EL29906 overlaps the majority of EL24625 and Rockland Resources EL29967 totally overlaps EL24637. Moore (2012) summarizes the work carried out on the ELs.

"Field investigations undertaken by Cauldron have included a number of reconnaissance field trips, three Aircore drilling programs and airborne TEMPEST electromagnetic and radiometric surveys.

An initial Aircore drilling program, comprising sixty-four holes for 1,365 metres, was conducted within EL24625 and EL24637, during early December 2006. The drilling program re-commenced in November 2007. Results from this first phase of drilling returned some encouraging uranium values, with the best result from the 2006 program being 28 ppm U from 24-28m upstream of the New Well deposit.

In July 2007, Fugro Airborne Surveys Pty Ltd undertook a broadly spaced trial airborne TEMPEST electromagnetic survey for Cauldron over part of the Eclipse Project to further define basement topography. This survey was part of a larger survey involving neighbouring explorer, Toro Energy Ltd. The total coverage for the survey amounted to 550 line kilometres, of which 413 line kilometres was over Cauldron's licences. Interpretation of the data from this survey identified additional buried channels and potential target areas for uranium mineralisation.

In November 2007, an airborne radiometric/magnetic survey was completed by UTS Geophysics in November as part of a larger survey conducted in association with neighbouring explorers Toro Energy Ltd and Energy Metals Ltd. The program covered over 1,500 km² and provided detailed magnetic and radiometric data on 100 metre line spacing.

In 2009 Cauldron entered into an agreement with the CSIRO and fellow explorers Energy Metals Ltd. and Thundelarra Exploration Ltd. to undertake the CSIRO-Joint Surveys Uranium, Ngalia Basin Project. This collaborative project aimed to identify the geological, structural, mineralogical, alteration and fluid flow characteristics of uranium mineralisation within the Ngalia basin.

During November and December 2007, a follow up Aircore drilling program, comprising 134 holes for 5,061 metres, was conducted at the Eclipse Project targeting near-surface calcrete hosted uranium mineralisation. This program followed on from the previous year's drilling and focused on three areas within the prospect targeting mineralisation close to the margins of Lake Lewis and extending to the north along the Day Creek Drainage. Results included 55 ppm U from 9-12m in drill hole ECAC 192 and 34 ppm U from 12-15m in drill holes ECAC 190 and 191.

During April and May of 2008, a third Aircore drilling program was conducted over EL24625 and EL24637 comprising a total of 207 holes for 4392 metres. The drilling targeted near surface calcrete hosted uranium mineralisation (similar to the adjacent New Well Uranium Deposit) within a

large regional drainage system and potential targets interpreted from the 2007 TEMPEST electromagnetic survey including buried channels and palaeo-lake margins. Best results from this program included 50 ppm U from 6-9m from drill hole ECAC 199, 44 ppm U from 6-9m in drill holes ECAC 200 and 217, and 42 ppm U from 6-9m from drill hole ECAC 251.

In March 2011 Eclipse completed a drilling program on EL24625 of 35 holes for 1397m. The program targeted two radiometric holes and encountered anomalous values in nine holes, including 1m at 64ppm U_3O_8"

Katellorizos (2013) further explains that in 2011 Eclipse Uranium completed Tempest airborne electromagnetics over its tenements co-founded by the NTGS. Preliminary processing of the data indicated several targets including a potential basement conductor corresponding with the basin margin. However, all the targets were considered too conceptual in nature and the ground was relinquished in 2013 following a negative appraisal by Kastello Geological Consultancy ("KGC").

7.5 Current Neighbouring Activities

EL24246 – Deep Yellow Napperby (New Well)

Mitchell and Thomas (2010) provide a summary of the activities at the Napperby deposit. The deposit has been explored by several companies, including CRA, Uranerz, Deep Yellow and now Toro Energy. Historically Uranerz defined a resource at a 200 ppm cut-off of approximately 15Mt at 400 ppm U_3O_8 for 13.2 mlb U_3O_8 (6000 t U_3O_8). Under an option agreement with Deep Yellow, from 2007-2009 Toro Energy undertook an assessment of the project based on resource definition drilling and a concept study by URS Consulting. The new JORC inferred resource covering approximately 50% of the previous resource compared well with the historical resource.
Toro therefore concluded the original estimate to be a reasonable guide to the ultimate resource in the historic deposit area, albeit at slightly lower grade. Economic analysis found that *"Broadly the Napperby uranium project is uneconomic or marginal at or around current long term prices of US$62/lb U_3O_8 under all development scenarios under consideration. The probability of the project becoming economic is dramatically increased at prices north of US$75/lb U_3O_8"*.

EL24451 – Energy Metals: Cappers / Malawiri / Minerva

The Cappers deposit is owned by Energy Metals Pty Ltd and has a resource of 22 Mt averaging 145 ppm U_3O_8 for 7.0 Mlbs (at a cut-off grade of 100 ppm U_3O_8). It is located immediately adjacent to Rockland Resources ground.

Energy Metals acquired 52% of Malawiri deposit in 2005 and has encountered up to 3.3 m @ 7,700ppm U_3O_8 and 2.7 m @ 8,500 ppm U_3O_8 (Jindalee 2005). In general the deposits are hosted by steeply south-dipping to overturned arkosic sandstone and shale, near the base of the Mt Eclipse Sandstone, concealed beneath 80 m of Cenozoic sedimentary rocks. Mineralisation is hosted by coarse to pebbly arkose beds, 10–40 m thick, that are interbedded with thinner shale bands over a total stratigraphic thickness of 100 m. Uraninite occurs close to a boundary between haematitic and reduced grey to white sandstone.

Minerva and Malawiri are uranium deposited hosted by the Mt Eclipse Sandstone located 9.6 km north of Rockland's tenement EL29906. The deposits demonstrate the potential for this style of mineralisation in the eastern portion of the Ngalia Basin, which is described by Lally and Bajwah (2006). Minerva is a blind deposit discovered by AGIP Australia Pty Ltd, during reconnaissance drilling of the Mt Eclipse Sandstone in 1978. Detailed drilling during 1978–1980 defined an almost continuous zone of mineralisation over a strike length of 2.7 km, with an apparent width of 50–60 m. Mineralisation was open down-dip and along strike. A resource was estimated at 0.7 Mt of ore, with an average grade of 0.16% U_3O_8 for 2.46 Mlb U_3O_8 but was considered at the time to be sub-economic (AGIP 1983). Mineralisation extends from Minerva into the neighbouring Malawiri prospect, discovered by Central Pacific Minerals between 1978 and 1983.

Energy Metals Ltd has recently released exploration results for the nearby Malawiri sandstone uranium deposit (Australian Uranium Conference 2015), which may have implications for Rockland's ground. Recent work involves a) a new geology model of the Eclipse Sandstone involves significant folding and faulting, b) detailed magnetics/radiometrics, c) eucalypt geochemistry, and d) soil geochemistry.

EL25458 – NuPower, Ferrowest

EL25458 is located 9 km north of Rockland Resource's EL29905 and contains the Yalyirimbi Uranium prospect and Yalyirimbi Iron deposit. The tenement is owned by Arafura Resources but was operated by NuPower in 2008 and is currently operated by Ferrowest Ltd.

According to ASX releases by NuPower in 2008 (O'Neill, 2008), 48 holes were drilled at the Aileron Project (4 tenements) which included the Yalyirimbi tenement where 30 holes were drilled. Nine holes intercepted "anomalous gamma" and two holes intersected significant gamma results within holes YR004 and YR014. Hole YR004 is now identified as the Yalyirimibi uranium prospect located 14 km north of Rockland Resources tenements, which intercepted 120 ppm eU_3O_8 from 181-185.5 m. YR014 is 18 km from Rockland Resources tenure and intercepted 130 ppm eU_3O_8 from 149-150 m and 70 ppm eU_3O_8 from 163.5-165.5 m. The holes targeted a westerly trending palaeochannel interpreted from airborne electromagnetics (TEMPEST).

A thick, well-developed sand package was encountered in beneath silcrete and confirms the development of an extensive sand-dominated palaeochannel system. The reduced, carbonaceous, pyritic sands encountered below 178 m also correlate with lignites intersected in stratigraphic drill-hole Napperby 1 by the BMR approximately 5 km to the west. It was concluded that the Tertiary palaeochannel sediments are widespread and well developed. Despite the promising results in 2008 the information at hand suggests no follow up drilling was undertaken. The ASX releases were based on gamma and it is unclear whether negative geochemistry results (i.e. high thorium rather than uranium) could have played a role or change in company focus.

Ferrowest are exploring the Yalyirimbi Haematite deposits occur in the late Proterozoic Vaughan Springs Formation in the Ngalia Basin. The basin is a lens shaped depression in the Arunta inlier with a faulted northern boundary (Thompson 1995). The Ferrowest web site (27 November, 2014) provides the following information about the project:

"In March 2013 Ferrowest acquired the rights to earn a 60% interest in the Yalyirimbi Iron Project located in the Northern Territory on a 787Km^2 Exploration Licence, and in November 2013 secured the right to an initial 51% interest. The Company is now working towards completing the Bankable Feasibility study in order to obtain the remaining 9%.

The project has a combined Inferred and Indicated Mineral Resource of 13.3 million tonnes of haematite at 27.1% Fe, classified and reported in accordance with the JORC Code (2004). The Exploration Target is currently estimated at between 50 million and 70 million tonnes at between 25.1% and 29%Fe$^{\#}$. Early stage test work carried out at Yalyirimbi has demonstrated that with a crush to 100% passing 6mm and gravity upgrading , a haematite fines concentrate of 63.5%Fe with 7.1% SiO_2, 0.84% Al_2O_3 and negligible phosphorus can be produced. The project envisages open cut mining of haematite, before crushing and gravity based upgrading to produce haematite fines concentrate. The haematite will be transported via existing railway to Darwin Port for export.
An in-house scoping study has already been completed which indicates the project is robust and profitable at an assumed long term average iron ore price for 62%Fe fines of A$120 per tonne. Ferrowest is continuing feasibility studies with the aim of preparing a Bankable Feasibility Study in the next 12 months.

The Yalyirimbi Haematite deposits occur in the late Proterozoic Vaughan Springs Formation in the Ngalia Basin. The basin is a lens shaped depression in the Arunta inlier with a faulted northern boundary (Thompson 1995).

According to Dale (2011), at Yalyirimbi the Vaughan Springs quartzite formations have been mapped as the northern limb of a very broad syncline. Massive and specular haematite outcrops in several areas. The two existing drilled areas are very gently dipping at around 3$^{0.}$ Dale (2011) also states that primary haematite mineralisation has been deposited within brecciated quartzites of the Vaughan Springs Formation.

The assumption has been made that these are primary, likely hydrothermal deposits. This has been supported by regional airborne magnetometer surveys and an initial ground magnetic survey. These surveys have demonstrated that the haematite deposits are completely non-magnetic."

8. EXPLORATION DATA

Significant compilation and targeting has been undertaken by Rockland Resources. Reports and data were originally sourced and compiled from the government and in particular the Northern Territory Geological Survey (NTGS) Geoscience Exploration and Mining Information System (GEMIS).

8.1 Historical Drilling

There are 44 historical drill holes within EL19905 and 109 historical holes within EL29906, which is shown in Figure 5 and summarized in Table 2. The majority of these holes are very shallow auger holes and the deepest holes have been drilled by Arafura Resources. There are four water bore holes within EL19905 and EL29906 and there are no BMR stratigraphic holes.

The best historical results are from air-core holes drilled by Scimitar within EL29906 at Timouth Well, which have three times background levels of uranium up to 63 ppm U_3O_8 (hole EULAC004). The weakly elevated uranium at this prospect requires further assessment.

Table 2 Historical Drill Hole Summary Statistics

Licence	Company	Number of Holes	Avg EOHm	Max EOHm
EL29905	Arafura	15	103.992	219
EL29905	Uranerz (Australia) Pty Ltd.	23	16.6957	17.5
EL29905	Unknown	6	0	0
EL29906	Scimitar	62	24.5323	51
EL29906	Scimitar	14	13.2143	27
EL29906	Uranerz	7	33	131
EL29906	Eclipse	26	25.8846	68
EL29967	CRA Exploration	2	17.7	17.7

8.2 Arafura Drilling 2013/2014

During 2013 and 2014, Arafura Resources undertook percussion water bore drilling in the eastern portion of the Ngalia Basin with the objective of securing a water supply for their Nolan's Bore Rare Earth and Uranium development. Of the 24 holes drilled, three holes were undertaken within EL29905 in 2013 and a further 12 holes were drilled within EL29905 in 2014.

Data provided by Arafura has been somewhat incomplete. It is hoped that the remaining outstanding data will be provided in the coming months. Water sampling geochemistry is also understood to have been collected but has not yet been received.

Borehole Wireline completed the down hole geophysics program for Arafura Resources in 2014 who has provided Rockland Resources with some of the data. The tools used during the down hole logging includes: gamma, resistivity, density and direction. The gamma equivalent uranium readings are consistent with background levels and do not exceed 42 ppm eU_3O_8.

A portable X-Ray Fluorescence (pXRF) instrument (modELDP-4050-C in soil mode), has been used to measure the uranium and other elements from 3 m chip samples provided by Arafura Resources. The uranium is generally below detection and does not exceed 15 ppm U_3O_8. Vanadium can be a useful pathfinder but also is considered to be at normal background levels (maximum of 97 ppm V).

8.3 Thermal Satellite Imagery

Rockland Resources has investigated whether palaeochannels within the project can be identified utilizing satellite thermal imagery (Figure 8). Palaeochannels are documented to sometimes be at lower temperatures to the surrounding host rock and sediments. This is because moisture retained in the palaeochannel remains at a cooler temperature and is less conductive to heat than surrounding rocks like sandstone/quartzites etc. Searches to obtain ascending (night time) Landsat scenes were unsuccessful. An option still remains to purchase night time ASTER imagery, however, instead processing has been undertaken utilising early morning Landsat data (approx. 10-11am) by consulting geology D. Harmston.

Within EL29905, several elongate features strike towards north east and join together as they meet Day Ck. It is possible that these features represent palaeochannels. Potentially, the edges of these have been tested by holes RN19030, RN19032 and RN19033 in the east and RN19036 in the west. However, they do not correspond to the gravity or TEMPEST.

8.4 Magnetics and Radiometrics

The Napperby - Hermannsburg airborne magnetic and radiometric survey was flown by the government in 1997 at 400 m line spacing (Figure 9, Figure 10). At this stage four anomalies have been identified for field follow up using the grid data, however, further more specialised interpretation is planned utilizing the raw line data.

It is noted that the magnetic image shows strong north easterly structures coincident with the location and orientation of the Napperby deposit. A north easterly feature is also evident in the Cappers area, however, the specific outline of the Cappers deposit is not known to make a more detailed comparison. In places it appears that these north east features offset easterly and north westerly features in a dextral manner.

It is curious to note that the area with outcropping Anmatijira Orthogneiss are more magnetic along the Stuart Bluff Range in the south east part of the Ngalia Basin versus similar occurrences in the north east.

According to the 2013 Arunta Solid Geology GIS dataset, EL29967 is bisected by undivided gneiss and granites to the north and less magnetic high grade metamorphic rocks to the south, which do not outcrop. The unit may be equivalent to the Narwietooma Metamorphic Complex which outcrops 40 km to the south. A better understanding of this unit and major change in lithology, which is proximal to granites, may provide a better understanding of base metal and precious metal prospectivity.

8.5 Seismic

Seismic line BMR85-1A is oriented north north-east and passes through EL29906. Stewart (1982) explains. *"At Napperby Creek, a single seismic cross-section across the basin (included in cross-section A-B of the map) revealed a northward thickening wedge of sediments of the Ngalia Basin, reaching 4 km depth. The wedge is cut in the south by several small near-vertical faults, and in the north by thrust faults dipping north at around 30·. The southernmost and northernmost of these are the Patty Hill Thrust and Napperby Thrust, respectively, and the block of basement Arunta rock and super-incumbent Ngalia Basin sediment (now largely eroded) is the Patty Hill Anticline. This is a thrust anticline, and its gentle north dip and southward displacement of 6 km qualify it as a thrust nappe."*

8.6 Gravity

Government gravity data is available from Geoscience Australia. In 2008 and 2010 gravity stations were acquired by Geoscience Australia at a spacing of 1-4 km, where the more detailed spacing covers the majority of EL29905 (Figure 11). There is some earlier data collected in 1999 along northerly oriented transects with station spacing of 350 m. However, it is noted that this earlier data does not merge well with the 2008-2010 data. In general within the Ngalia Basin, basement highs correspond to 1-3 mgal gravity features and can be used to derive the general basin structure. In particular there are several west north-west sub-basins (valley fill) with horst/graben faults. The Minerva Prospect is located on the southern margin of one of the basement highs and guided initial targeting of the prospect. It is noted that Cappers and Napperby deposits are not associated with a distinct gravity feature.

As shown in Figure 6 the bouguer gravity first vertical derivative response for the project area excluding pre-2008 stations. A major westerly trending gravity low occurs at the Yalyirimbi prospect and almost certainly relates to the palaeochannel intersected in drilling by NuPower herein named the Yalyirimbi channel. Either side of the low, gravity highs relate to outcropping Vaughn Springs Quartzite and Mt Eclipse Sandstone. Towards the east the gravity splits with part of the low trending south within EL29905 near the Napperby 7 stratigraphic hole. This represents a potential drill target where the centre of the low may represent a palaeochannel and the edges may relate to faulting which could localise fluids for sandstone hosted and unconformity related mineralisation.

The westerly trending Stuart Bluff Range demarks the southern edge of the Ngalia Basin within EL29906 and EL29905. Vaughn Springs Quartzite and Anmatijira Orthogneiss outcrops along the range resulting in a distinct gravity high. However, within 2 km north of the Stuart Bluff Range is a distinct gravity low, which is at least 21 km long and interpreted to be a buried palaeochannel. There are several targets along the channel under consideration which has not been tested by the historical drilling. Another potential target is breaks in the range which may represent breaches for fluid flow towards the south (Lake Lewis). A north trending low located 4 km east of the Napperby 4 stratigraphic hole may also represent a target.

8.7 Airborne Electromagnetics

Several airborne electromagnetic TEMPEST surveys have been flown over the project and surrounding areas:

- Trial lines flown in 2007 for Scimitar over the Rockland Resource tenements;
- Area 1 flown in 2007 for Arafura Resources north of Rockland Resources ground;
- Area 4 flown in 2008 for Arafura Resources over the eastern 20% of EL29905;
- Area 3 flown in 2011 for Eclipse Metals over the western 80% of EL29905;
- Area 7 flown in 2011 for Eclipse Metals over EL29967; and
- Area 8 flown in 2011 for Eclipse Metals over part of EL29967.

The TEMPEST survey by Eclipse Metals in 2011 was co-funded by the NTGS as part of the Bring Forward Discovery program described in the report by Moore (2012). The only TEMPEST flown over a known prospect is Area 1 flown for Arafura Resources. At the time NuPower Resources had the uranium exploration rights to the tenement and utilized the airborne electromagnetics to identify tertiary sandstone palaeochannels.

Rockland Resources has worked with Core Geophysics to better display conductivity depth images (CDIs) in the GIS environment as pseudo-referenced grids. This approach facilitates better integrated targeting with other geology, geophysics and geochemistry datasets. Furthermore the colour ranges can be modified easily to highlight localised features otherwise swamped by the broader variations and also filtering (i.e. sun-angles). Another interpretation method employed by Rockland Resources has been the production of 3D voxel renditions of the CDI data and to extract conductive surfaces. Integrated targeting has been undertaken utilising the historic electromagnetic data.

Shown in Figure 12 the TEMPEST depth to the bottom of the conductor and selected CDIs. One of the main identified features is a westerly trending conductor correlating with the basin margin. Eclipse Uranium thought this was some kind of pooling feature or a structurally driven basin margin target. Broadly the feature corresponds to the abovementioned gravity low and therefore is likely to represent a palaeochannel; however, several dipping portions between Napperby 4 and Patty Well more likely represent a basement conductor. One option is the presence of the Naburula Formation shale, which overlies the Vaughn Springs Quartzite. This interpretation needs to be tested since the Naburula Formation does not outcrop and has not been intersected in the nearby drilling. If present, structural displacements of the shale could represent a reductant trap for oxidised uraniferous fluids. There is a potential basement conductor in the centre of EL29967.

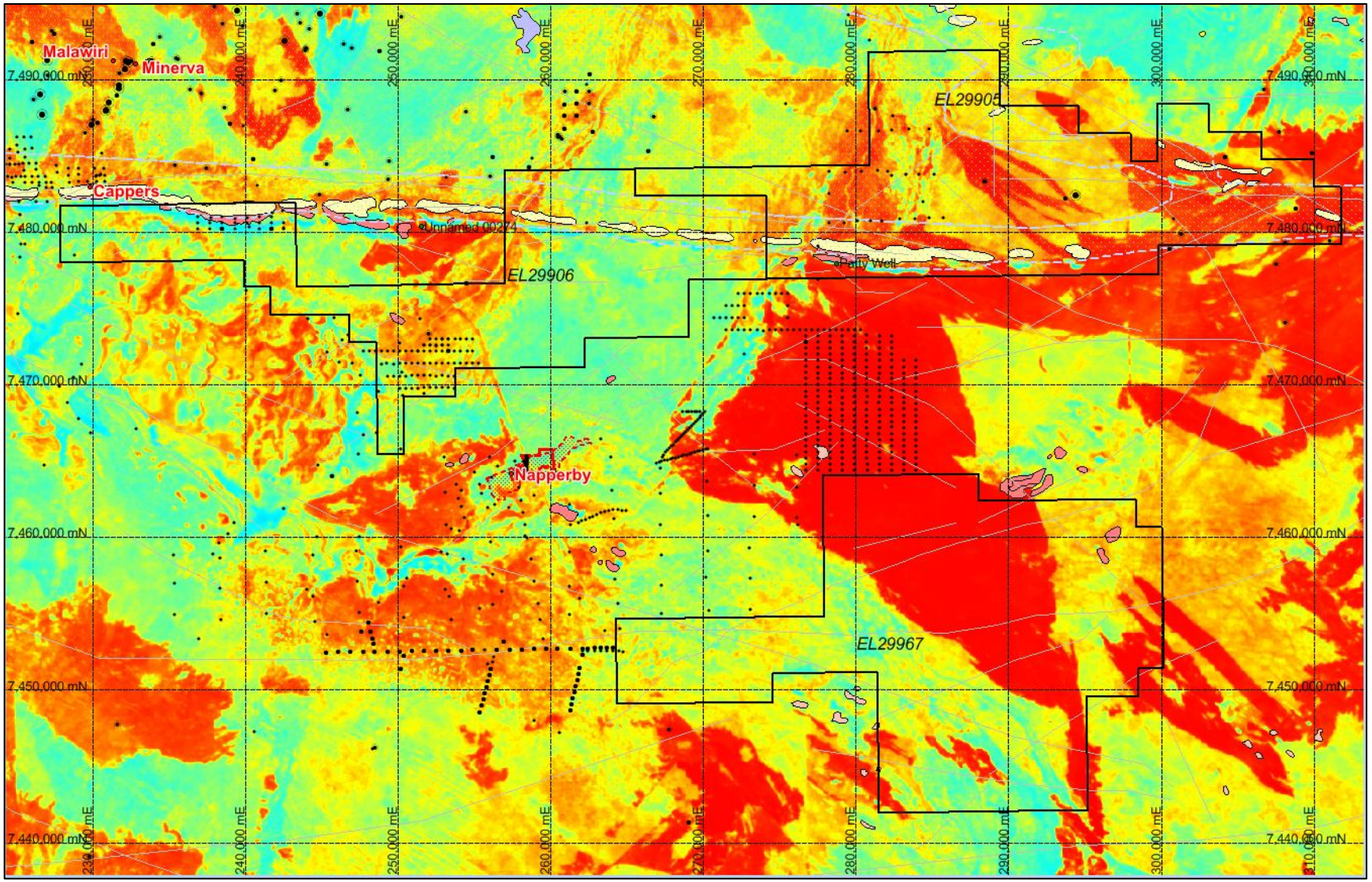

Figure 8 Landsat Thermal Imagery

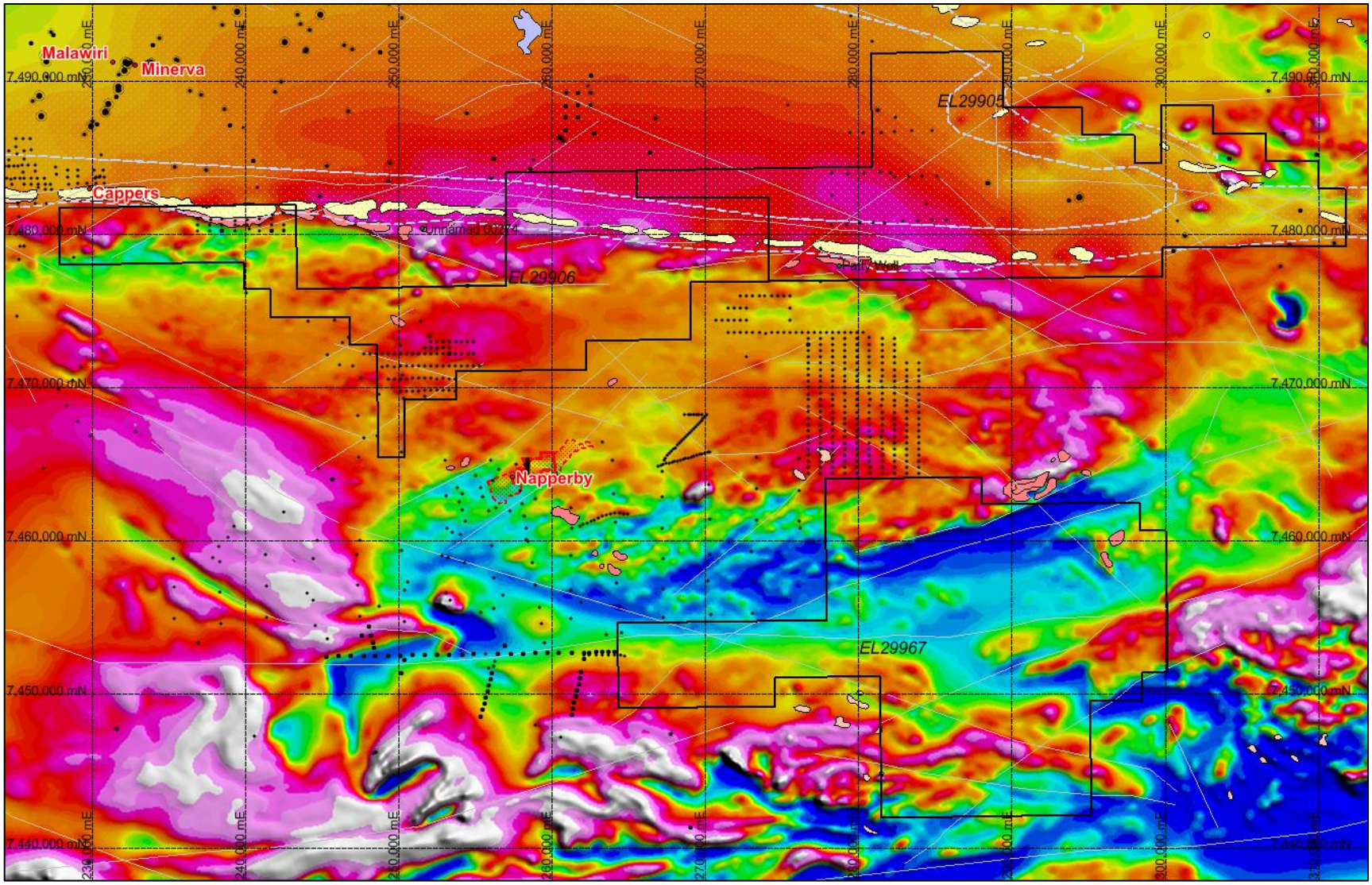

Figure 9 Airborne Magnetics RTP (nT) with Sun Shading

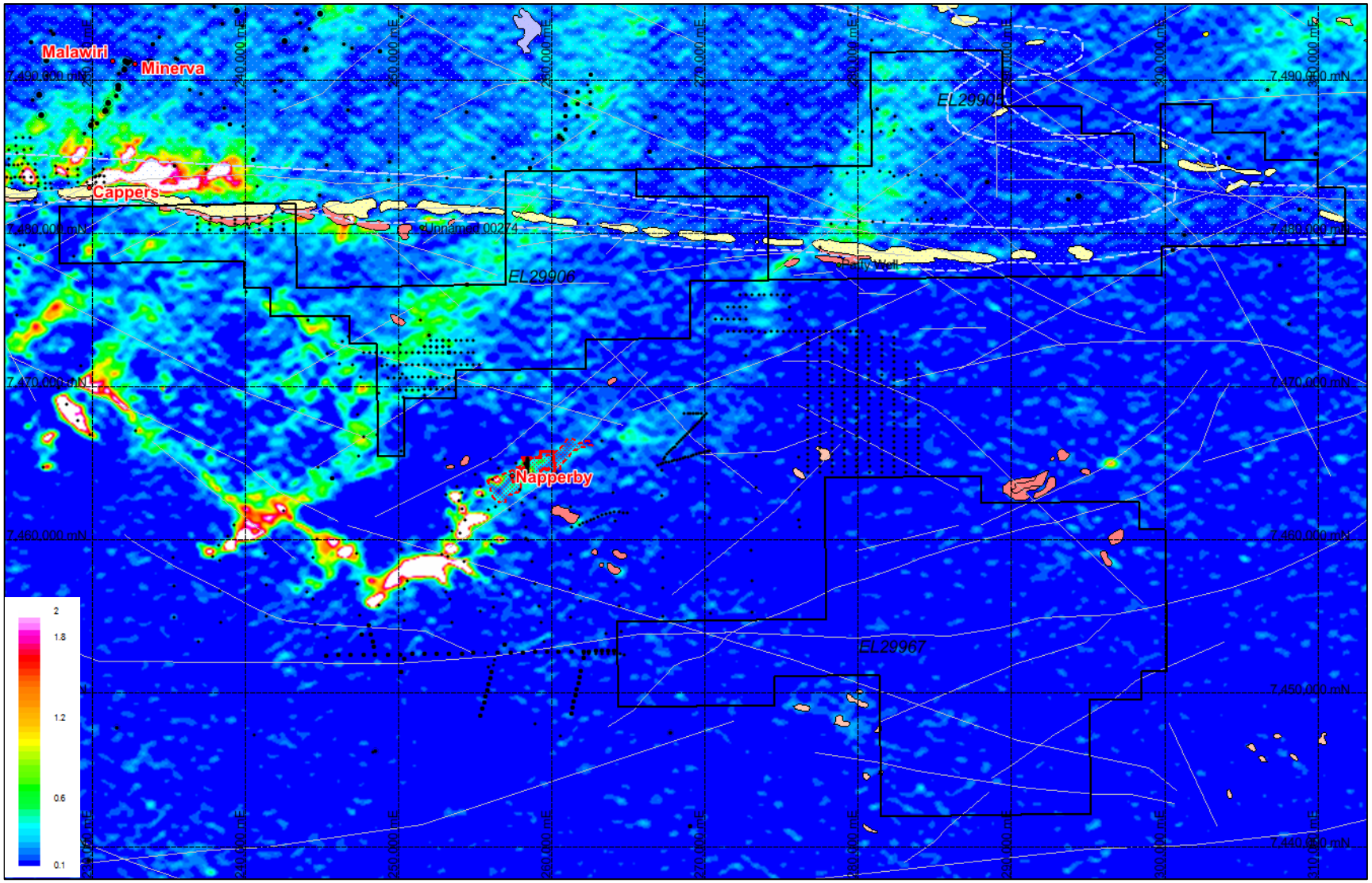

Figure 10 Airborne Radiometrics U/Th

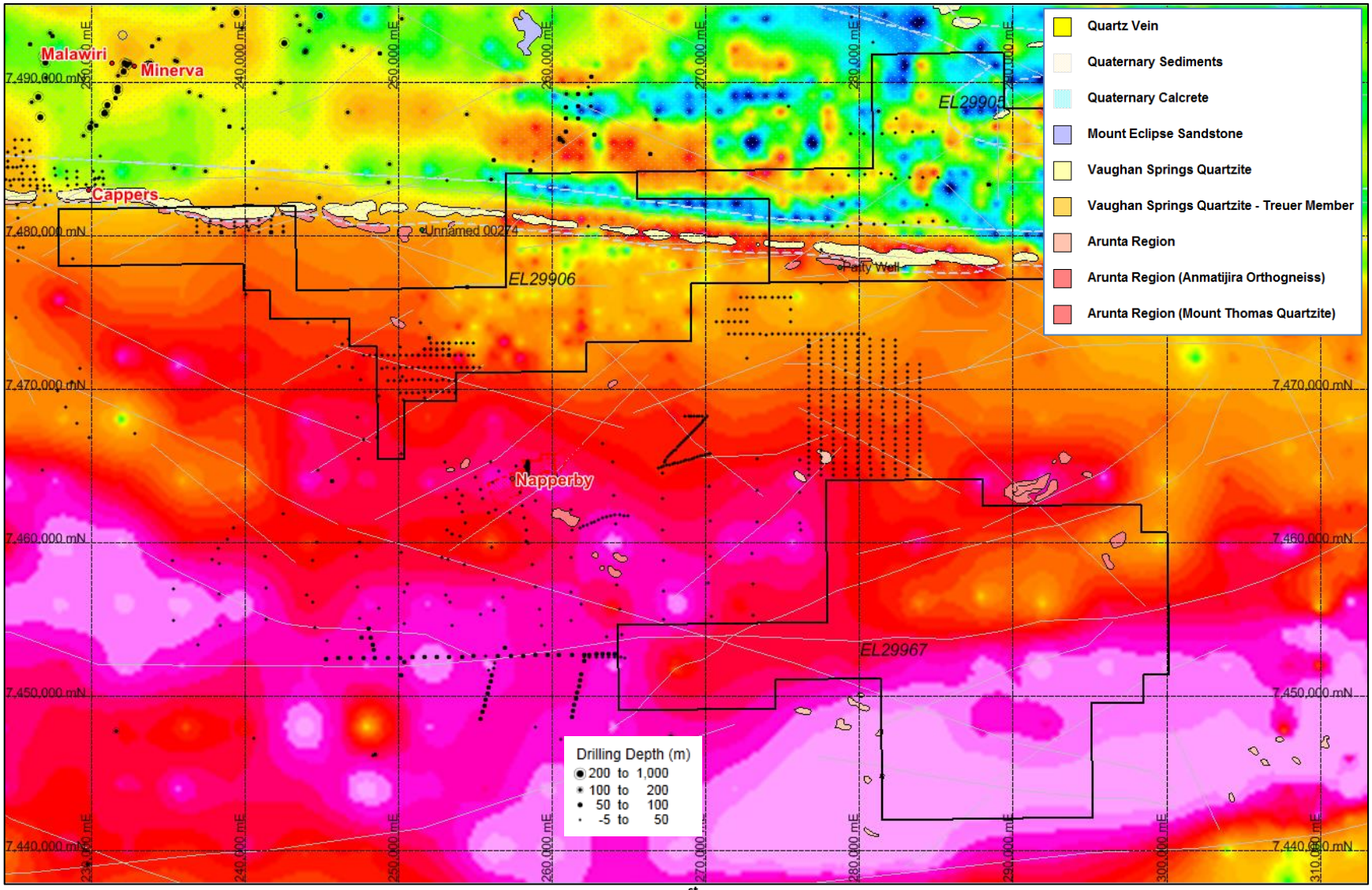

Figure 11 Geoscience Australia Bouger Gravity – 1st Vertical Derivative (excluding pre-2008 stations)

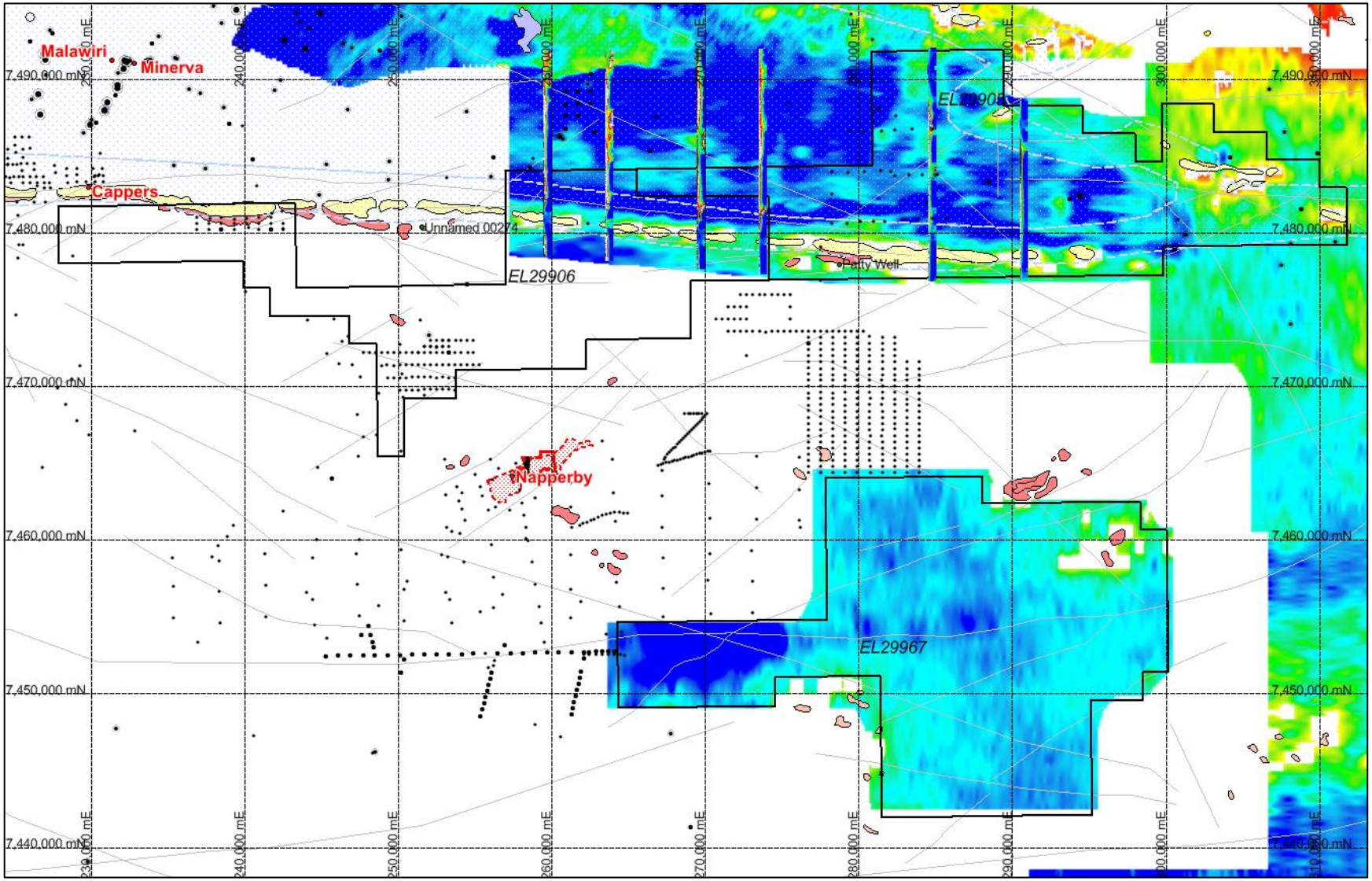

Figure 12 TEMPEST Relative Depth of Conductor Bottom with Selected Z-CDIs

9. CONCLUSIONS & RECOMMENDATIONS

The company has undertaken systematic compilation of historical data and consideration of genetic models for targeting. To date there has been no on ground field activities. The eastern part of the Ngalia Basin Paleozoic sequences are bifurcated by large scale faulting and there has also been significant folding. In places the basin is overlain by younger Tertiary sequences of the Witchery Basin. Granites in the area are known sources of uranium, and nearby calcrete and sandstone deposits testify that secondary uranium deposits can form in the area.

Some of the drilling within the project has tested for sandstone hosted uranium. However, the majority has tested for shallow calcrete mineralisation similar to the nearby Cappers and Napperby deposits. Weakly elevated uranium has been previously identified within Calcretes at Timouth Well (to 63 ppm U_3O_8).

Integrated targeting has failed to identify any targets in the southern part of EL29906 which is now the subject of a partial surrender.

10. REFERENCES

Anon, 1978, Annual Report, CamELFlat North, Annual Report to the Dept. Minerals and Energy, NT. (CR 1978_0069).

AGIP, 1980, Final Report To Northern Territory Department of Mines For EL2184, AGIP

AGIP, 1981, Final Report To Northern Territory Department of Mines For EL1854, AGIP

AGIP, 1982a, Final Report To Northern Territory Department of Mines For EL2066, AGIP

AGIP, 1982b, Final Report To Northern Territory Department of Mines For EL2524, AGIP

AGIP, 1982c, Final Report To Northern Territory Department of Mines For EL1199, AGIP

AGIP, 1982d, Final Report To Northern Territory Department of Mines For EL2524, AGIP

AGIP, 1983, Final Report To Northern Territory Department of Mines and Energy For EL2523, AGIP

Barraclough, D., Glasson, M., 1988, EL5364 Patty Well Final Report, Sabminco NL.

Barnicoat, A., Henderson, I., Knipe, R.J., Yardley, B.W.D., Napier, R.W., Fox, N.P.C., Kenyon, A.K., Muntingh, D.J., Strydom, D., Winkler, K.S., Lawrence, S.R., and Cornford, C., 1997, Hydrothermal gold mineralization in the Witwatersrand Basin: Nature, v. 386, p. 820-824.

Edgoose CJ and Ahmad M, 2013. Chapter 42: Cenozoic geology and regolith: in Ahmad M and Munson TJ (compilers). *'Geology and mineral resources of the Northern Territory'. Northern Territory Geological Survey, Special Publicatio*n 5.

Fidler, R.W., Pope, G.J. and Ivanach, J.F., 1990. Bigrlyi Uranium Deposit: in Hughes FE (editor) Geology of the Mineral Deposits of Australia and Papua New Guinea, Australasian Institute of Mining and Metallurgy, Monograph 15, pp1135 -1138.

Freeman, M.J., Shergold, J.H., Morris, D.G. & Walter, M.R., 1990. Late Proterozoic and Palaeozoic basins of Central and Northern Australia – Regional Geology and Mineralisation, in Geology of the Mineral Deposits of Australia and New Guinea (Ed. F.E Hughes), pp. 1125-1133. The Australasian Institute of Mining and Metallurgy. Melbourne.

French, D.J., Styles, G., Barrett, F., and Rippert, J.C., 1979. Ngalia Basin Annual report, DIN area, January 1979, Annual Report to the Dept. Minerals and Energy, NT. (CR 1979_0028).

Gardiner, R., 1984, Final Report or EL3003, Gardiner and Associates for the Yuendumu Mining Company.

Green, P., 1978, Final Report for EL1348, Central Pacific Minerals NL

Green, P., 1978, Final Report for EL1658, Central Pacific Minerals NL

Mitchel, S., Thomas, D., 2010, Napperby Project Economic Analysis, Project Viability and Options for Project Optimisation. Toro Energy.

Moore, H., 2012, NTGS Bringing Forward Discovery Final Report EL24625, Eclipse Uranium Ltd.

Henstridge, D., 1976, AGMAB EL257 Final Report Assessment of Potential for Uranium Mineralisation and Recommendations for Future Work, Central Pacific NL

Howard, R.W., 1981. Final Report on Exploration in EL2822, Narwietooma Basin, NT, Project Report33. Annual Report to the Dept. Minerals and Energy, NT. Alcoa of Australia. Ltd, Exploration Division.(CR 1982_0011).

Hughes, F.E., 1972. Final Report on EL753, Mount Harris, NT. Annual Report to the Dept. Minerals and Energy, CRA Exploration Ltd. (CR 1973_0121).

Jaireth, S., Clarke, J., Cross, A., Exploration for Sandstone-hosted Uranium Deposits in paleovalleys and palaeochannels. Ausgeo News march 2010 Issue No. 97.

Jindalee, 2005. Jindalee acquires 53% of Bigrlyi uranium deposit, ASX release April 2005. Jindalee Resources Limited.

Kastellorizos, P., 2013, Annual and Final Report over the Eclipse Uranium-Iron Project, Ngalia Mineral Field, NT, Eclipse Project Exploration Licence 24637. Eclipse Metals Ltd.

Lally, J, H., and Bajwah, Z, U., 2006. Uranium deposits of the Northern Territory, Northern Territory Geological Survey, Report 20.

Morete, S., 1979. Final Report on Exploration over Exploration Licence 1614, Napperby Area, Northern Territory. Annual Report to the Dept. Minerals and Energy, NT. Uranerz Australia. Pty/Ltd, (CR 1979_0149).

O'Neill, D., 2008, Aileron Project (N) Yalyirimbi Upgrade, 16 April ASX Announcement

O'Neill, D., 2008, Aileron Project (N) Early Yalyirimbi Drilling Positive, 24 September ASX Announcement

O'Neill, D., 2008, Aileron Project (N) Drilling and Survey Progress, 20 June ASX Announcement

Phillips, G.N., and Law, J.D.M., 1997, Hydrothermal origin for Witwatersrand gold: Society of Economic Geologists Newsletter, v. 31, p. 26-33.

Phillips, G.N. and Law, J.D.M., 2000, Witwatersrand gold fields: geology, genesis and exploration, Society of Economic Geologists Reviews, v. 13, p. 439-500.

Rhode, 2004, First Annual Report EL22922 Burt For Year Ending 22 December 2003. Tanami Exploration NL.

Rawlings, D., and Sullivan, C., 2010, Final Technical Report for period 27th September 2010 to 14th July 2011, EL27970 Bloodwood Bore, Toro Energy Ltd.

Schmid, S. and Cleverley, J., 2011. Characterisation of uranium-vanadium mineralisation at Bigrlyi, Ngalia Basin, Australia. In: Barra, F. *et al*. (eds.), Let's talk ore deposits, Proceedings of the ELeventh Biennial SGA Meeting, Antofagasta, 2011, 950-952.

Schmid, S., Foss, C., Hill, J., Quigley, M., Schaubs, P., Cleverley, J. and Robinson, J., 2012. JSU Ngalia Basin uranium mineral system project. *Northern Territory Geological Survey, Record* 2012-003.

Schofield, A. (ed.), 2012. An assessment of the uranium and geothermal prospectivity of the southern Northern Territory. Record 2012/51. Geoscience Australia: Canberra

Senior, B.R., Truswell, E.M., Idnurm, R.D. & Warren, R.G. 1994. Cainozoic sedimentary basins in the Alice Springs region: records of drilling and reconnaissance geology. *Australian Geological Survey Record* 1994/66.

Senior, B.R., Truswell, E.M., Idnurm, R.D. & Warren, R.G. 1995. Cenozoic sedimentary basins, eastern Arunta Block, Alice Springs region. *AGS0 Journal of Australian Geology and Geophysics* 15: 421-444.

Shaw, R.D., 1990. Arunta Block _ Regional Geology and Mineralisation, in Geology of the Mineral Deposits of Australia and New Guinea (Ed. F.E Hughes), pp. 869-874. The Australasian Institute of Mining and Metallurgy. Melbourne.

Skwarneski and Fraser, 2000, Geochemical Orientation Soil-lag Traverse at the Garland Gold Mine, Winnecke, Northern Territory. CRC LEME 144R / E and M Report 740R

Stewart, A.J., 1982. *Napperby, Northern Territory: 1:250,000 Geological Series - Explanatory Notes*. 1:250 000 geological series - explanatory notes SF5309. Bureau of Mineral Resources, Geology and Geophysics, Canberra.

Uranerz, 1982, Final Report on Exploration Licences 1353 and 1354 Napperby Area, NT, Covering the Period 2 Novermber 1976 to 2 October 1982.

Washburn, C., 2004, EL10239, EL10240, EL10241, EL10246, EL10248, EL10251-53, EL10261, EL10264, EL10266-70, EL10279-80, EL10290-92, EL10294, EL22460-61, & EL22703 – Rand Project Northern Territory, Joint Surrender Report for the Period 28th March 2001 to 23rd July 2003.

Wells, A.T. and Moss, F.J., 1983. The Ngalia Basin, Northern Territory: stratigraphy and structure. BMR Bulletin 212, 88p.

Wyche, S., 1983. Coal and lignite occurrences in the southern part of the Northern Territory. *Northern Territory Geological Survey Record* GS 83114