EXPLORATION REPORT

ON GEOLOGICAL INVESTIGATIONS ON

EXPLORATION LICENCE 25084

KIRKIMBIE, NORTHERN TERRITORY

FOR THE PERIOD ENDING 3RD OCTOBER 2008

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Distribution
Northern Territory Geological Survey
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SUMMARY

Exploration licence 25084 is part of a suite of tenements held in the north west of Northern Territory for the exploration of diamonds and base metals. The licences include Proterozoic to Mesozoic rock types including marine carbonates, tholeiitic basalts and a host of metamorphic rock types blanketed by Recent alluvium. The region in general is considered under-explored and remote location.
Exploration during the report period has been limited to initial reviews of geophysical data and available geological reports; and short field trips for reconnaissance sampling. The results of this activity are given below.

KEYWORDS

Kirkimbie, Limbunya, copper mineralisation, Antrim Plateau Volcanics, Limbunya Group sediments, Precambrian basins, soil sampling, rock chip sampling

MAPSHEET

Birrundudu SE52-11 1:250000
Limbunya SE52-7 1:250000

1 INTRODUCTION

Exploration licence 25084 comprises an area of approximately 1632km^2 in the north west of the Northern Territory. The region is sparsely inhabited with a number of stations and small settlements.

The region is described as sparsely vegetated, undulating to flat with low hills often flat topped with lateritic profiles. Breakaways and steeper slopes occur around the edges of several hills and a thick soil/alluvium cover fills the lower drainage lines. Access is via the Buntine Highway from across the border with Western Australia or from Katherine in the north east. Numerous minor unsealed roads and tracks crisscross the area providing other general access during the dry season.

The tenement was initially granted on 3rd October 2006 to Anthony Martin to test the prospectivity for diamonds and base metals.

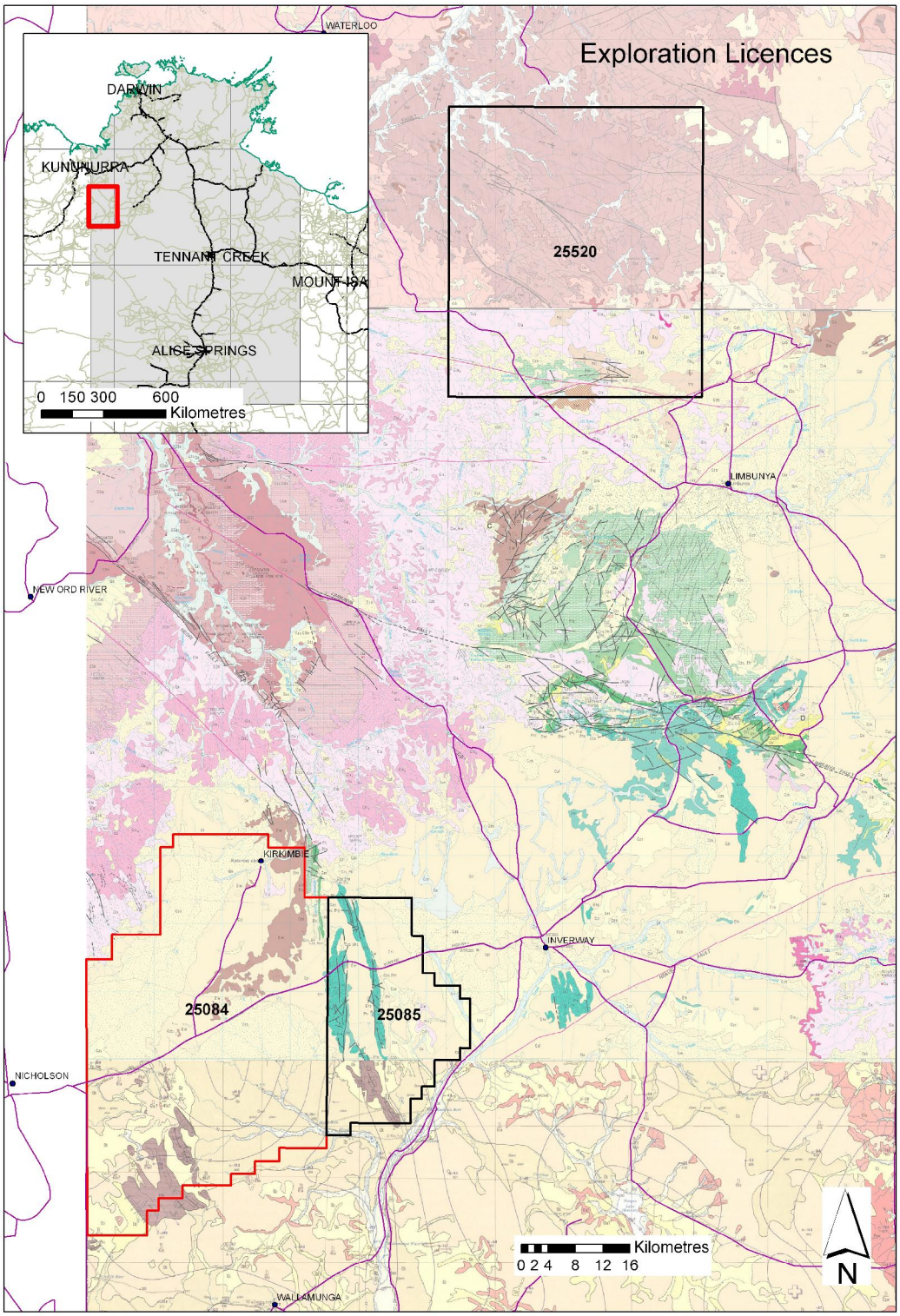

Figure 1 Exploration Licences held. EL 25084 shown in red on the large map.

2 GEOLOGY

Regionally the geological sequence comprises a metamorphic basement, overlain by the carbonate rich Proterozoic Limbunya Group, Wattie Group and Auvergne Group sediments (various dolomitic mudstone, siltstone, sandstone and conglomerate units). Unconformably overlaying this is the regionally significant and generally flat lying Cambrian Antrim Plateau Volcanics, a suite of tholeiitic basalts, breccias and

associated sedimentary beds. Further carbonate rich marine sediments and generally undifferentiated Mesozoic to recent sediments top the sequence.

Within the Proterozoic basins dolostone, sandstone, limestone and shale host minor Pb-Ag mineralisation and have potential for MVT sediment hosted base metal deposits (Cutovinos et al 2002, Morey and Beere, 1985)). The overlying Antrim Volcanics also host small copper occurrences; however the lack of detailed exploration and geochemical sampling has left much of the region under-explored.

3 WORK DONE

The exploration program consisted of a first pass simple interpretation of the available geophysical datasets and available open file reports. The exploration targets included diamonds and base metals. The best starting point for these targets was to examine geophysical datasets such as airborne magnetics and gravity in conjunction with regional geology maps. Some 16 new magnetic targets were identified in the northern half of EL 25084 and three in neighbouring EL 25085 (see Figure 2 and Cherry 2008b for further details). Previous work had also identified 10 similar magnetic/gravity targets in the southern areas of both ELs.

The field season allowed rapid sampling of most of the new sites with rock and soil samples collected at many. The descriptions of the rocks and soils are listed below. Note some samples were collected just outside of the tenement to provide a regional context.

A review of available open file company reports was also made to establish previous exploration history and determine the potential for the target mineralisation. Boxer (2008) provided a succinct appraisal of the diamond potential of this area. A detailed study of the potential for base metals from previous work is yet to be done.

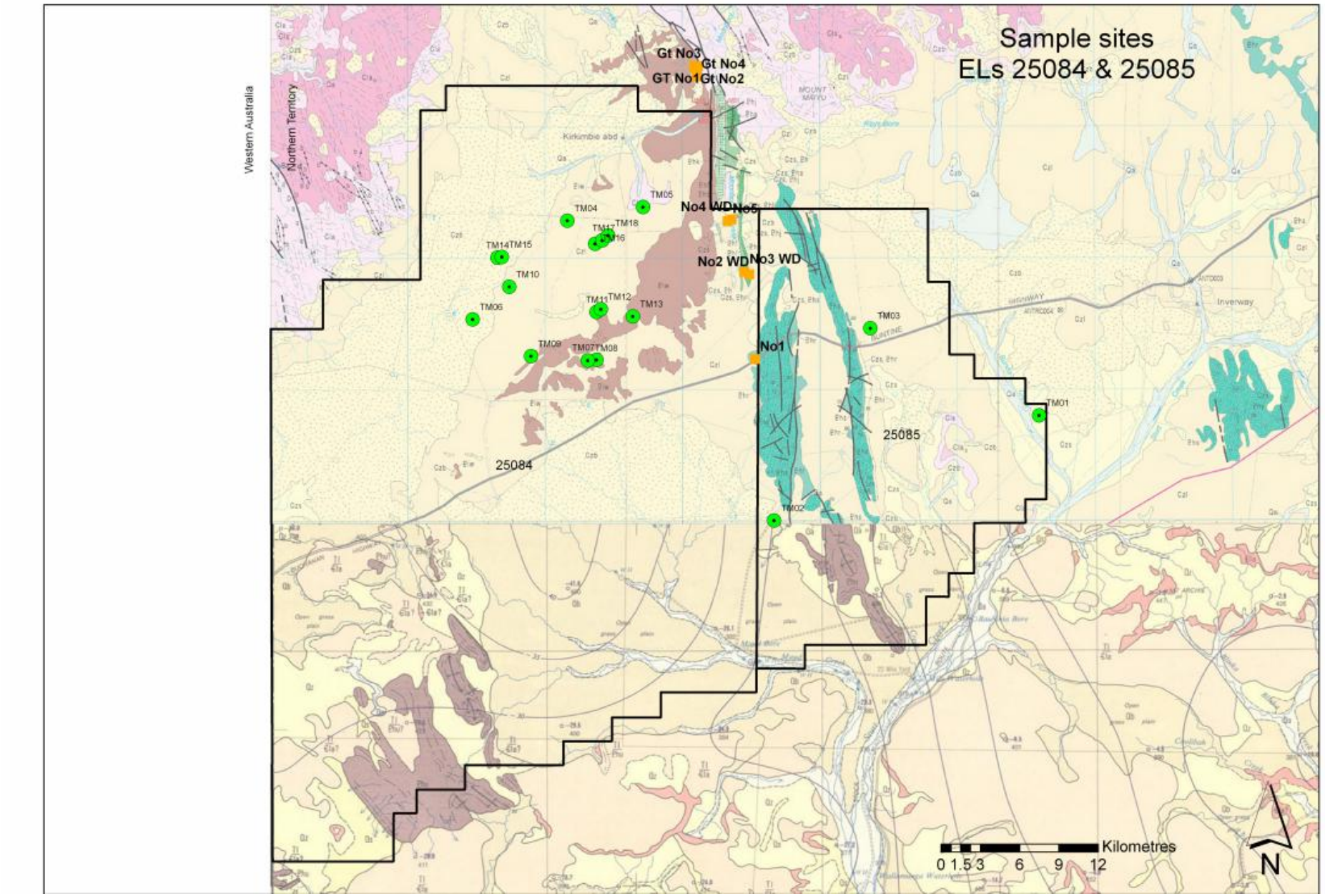

Figure 2. Sample sites in EL 25084 & 25085 over regional geology

Rock samples

The following descriptions are basically a post-field collection description of the rock samples without the aid of outcrop description or detailed mapping. All samples are representative samples of available outcrop and some are actually multiple rock types displaying the range of rock types present at each site.
No thin section descriptions are available. Bolded notation is the field sample number as it appeared on the sample bag. See the map for approximate locations of rock samples.

GT1. Dark fine grained vesicular basalt. Vesicles up to 10mm, elongate and many filled with pale yellow mineral (carbonate?) and pale blue green to bright green mineral (malachite? or epidote?). The bright green mineral, when not completely filling the vesicle is very fine grained and botryoidal in places. The basalt is altered in places and has a pale blue green mineral dissemination of up to 15% throughout the sample.

GT No2 Highly ferruginised fine grained siltstone (or fine volcanic?) with thin quartz vein. One fragment appears vesicular with silica infilling cavities.

GTNo3 Quartz sandstone with high percentage Fe oxide cement. Some transparent quartz vein material, could even be quartzite – silica alteration.

RNo2. Mixed bag. Siliceous (quartz) breccia. Appears to have had acicular or platy mineral replaced by later quartz. Plenty of cavities and a fine grained equigranular distribution of opaque oxides (Fe?) occurring in layers and trails throughout. Mixed bag also contains 1 small piece of weathered vesicular basalt and some chalcedonic quartz.

RN2a. Mixed bag. Dark fine grained vesicular basalt similar to GT1. Exception being the absence of disseminated green mineral. There is however a very fine grained shiny black mineral (hematite?). Some quartz patches contain pseudomorphs after mica. Other samples in bag are mostly chalcedonic quartz.

WD No3. Iron oxide cemented coarse grained sand and gravel, clasts to 6cm.

WD No4. Pink to black, finely laminated siliceous mudstone to siltstone. Black is probably manganese oxide with several patches of “mossy” altered manganese oxide in lighter coloured siltstone. There is a thin quartz vein.

RB No4 mixed bag. Sand to small pebble conglomerate cemented with opaline to chalcedonic silica, clasts well rounded.
Several quartz samples which could be vein or silcrete (weathering product), some amorphous, some crystalline.
Fine grained altered basalt with vesicles filled with pale green mineral (epidote, chlorite or carbonate(?)). Thin quartz veins with chalcedonic (agate like) layers, some parts with thin lining of carbonate or opaline silica.
One sample of silica replacement of a bladed mineral, botryoidal coating of white quartz, original blades at least 2cm long, 6-8mm wide, roughly hexagonal in cross-section. May have been a carbonate (aragonite, calcite(?)) appeared to be zoned also.

One sample of fine grained layered siliceous altered rock, may have been a breccia with original texture of pinkish and black layers. Disseminated with a very fine grained reddish black shiny mineral (maybe Fe oxide after pyrite)

RB No5. Dark purplish very fine grained vesicular basalt with opaline silica in vesicles and veins.

TM05 Silicified fine grained red-brown laminated siltstone. Some evidence of brecciation up to about 6cm clasts, lots of moderate sized cavities between clasts, but there is a ferruginous cement/coating. Many small cavities have lining of silica crystals up to 2mm.

Soil Samples

Eight magnetic anomaly sites were sampled for soil/lag. The samples were basically grab samples of the existing surface soil layer with multiple samples collected for dispatch to assay. See the map for approximate locations of soil samples and Appendix 1 for locations.

4 Sample as above, slightly less iron pisolites
5 Dark chocolate brown soil very fine silty sediments, sand sized peds, low clay content and low organic content.
6 Dark chocolate brown soil very clay rich with low sand percentage
9 Hard brown sandy soil, peds up to 15mm, high vegetation content.
10 Similar to 3 & 4 above, higher content of pisolites, but most are smaller (<4mm)
13 Fine brown sand, very little clay content, some grains stained with Fe oxide
14 Light grey silty loam, high clay content, slimy when wet.
17 Light orange brown rocky soil with iron pisolites, mostly non-magnetic and range in size 1-5mm.

Assay results

Selected rock and soil samples were forwarded to ALS-Chemex for broad element assay (using ME-ICP61) which tests for a range of general elements, has a low detection limit and is cost efficient for grass roots exploration. Due to delays at the lab from a current backlog of samples, results have only become available at the time of writing. Interpretation of the results is therefore limited at this stage.

Nine samples from across all tenements held by Tony Martin were sent for assay. Of these only two specifically lay within the bounds of EL 25084. The others provide a useful regional context and comparison of low level exploration targets.

The 33 element assay included the base metals suite of Cu-Pb-Zn in addition to several other general metals and associated pathfinder elements (eg Ag, As, Bi, Cd, Co, Cr, Mo, Sb, U, V & W). Several other elements are also useful for use as indicators of alteration (Al, Ca, Fe, K, Mg, Mn, Na, S, Ti and Nb).

All samples were below detection in Ag, Cd, Tl and W. Some were just detected through assay at a very low content. While the base metal assays were considered generally very low, they do show variability and metal associations. For example the highest assaying Zn sample also had the highest Pb.

4 INTERPRETATIONS

Initial interpretations of airborne magnetics and gravity surveys have provided many targets for exploration in this hostile terrain. Magnetic peaks targeted for diamond sampling across the northern portion of the titles has allowed field sampling of significant rock types with some interesting features. The small number of rock and soil samples is just a first pass reconnaissance sampling program to gain some initial feeling for the prospectivity of the titles. This has allowed the title holder to gain some presence on the ground to begin the task of locating mineral targets and understanding the geological setting.

All samples with a basaltic description (ie. GT1, RN2a, RBNo4, RBNo5) are likely to belong to the Antrim Plateau Volcanics. These samples are generally only weakly metamorphosed (probably prehnite/pumpellyite grade) with weathering being the main source of many of the clay minerals present. Some samples are undoubtly altered by mineralising fluids and others possibly fractured by faulting or shearing. Later mineralisation such as carbonates, clays or malachite tends to fill only a few of the vesicular samples with many being vacant. Samples with the strongest alteration minerals were originally brecciated or had been structurally modified at some time.

The other samples, mainly mudstones, siltstones, sandstones & conglomerates, are sedimentary in nature and probably belong to the underlying strata; Wickham Formation, Jasper Gorge Sandstone or the Angalarri Sandstone. Some have remnant bedding preserved and many have carbonate, clay or silica cementing. Iron oxide is present in several and this may reflect a lateritising event common across the region. Carbonate sediments are not clearly present in the sample suite although several samples have either a carbonate cement/alteration or are represented by calcite/ankerite veins.

There are possibly some lateritized post-volcanic sediments and some silcrete present in the collection, but this is difficult to tell out of context. There are also many samples of quartz veins, crystals and vugh fillings. There doesn't appear to be any base metal mineralisation associated with these veins.
No sulphides were detected in sample inspections; it is evident that much of the region has undergone some deep weathering to produce a thick regolith.

The assay results were generally disappointing returning low base metal numbers where the rock sample had had apparent copper mineralisation reported. This aspect requires some further investigation. Significant amongst the assays is the support for alteration and element depletion. Sample S17 was included as it appeared to represent the least altered basalt in the sample collection. On comparison with the other basaltic samples GT1 has had significant enrichment of Ba, while not suffering any notable changes in any other element. Sample RN2a however has had significant alteration with the halving of Al, Ca, Mg and Ti with noticeable reduction in Fe, K and Mn. These changes reflect some hydrothermal fluid movement although probably of a low temperature.

5 CONCLUSIONS AND RECOMMENDATIONS

The rock suite is generally weakly metamorphosed and only a few show any evidence of alteration or mineralisation. The general coarseness of mapping and past reporting for the geology of the area has not provided any significant intelligence of the area, but the presence of alteration in the rocks and some past reporting of minor copper, lead and zinc occurrences is encouraging. The regional mapping has shown the presence of significant faulting through the area which could also prove interesting for mineralisation.

Future exploration will return to sampling of rock outcrops which will be identified from further interpretation of the assay results and rocks already collected. A significant number of magnetic dipole targets exist in this tenement clustering in the north(current interpretation) and south (past explorer). Further targeting from geophysical interpretation will also occur (Figure 3). Sampling will follow a systematic process with regular sampling a long a baseline across interesting terrain. This will enable better interpretation of results and provide for future exploration expansion.

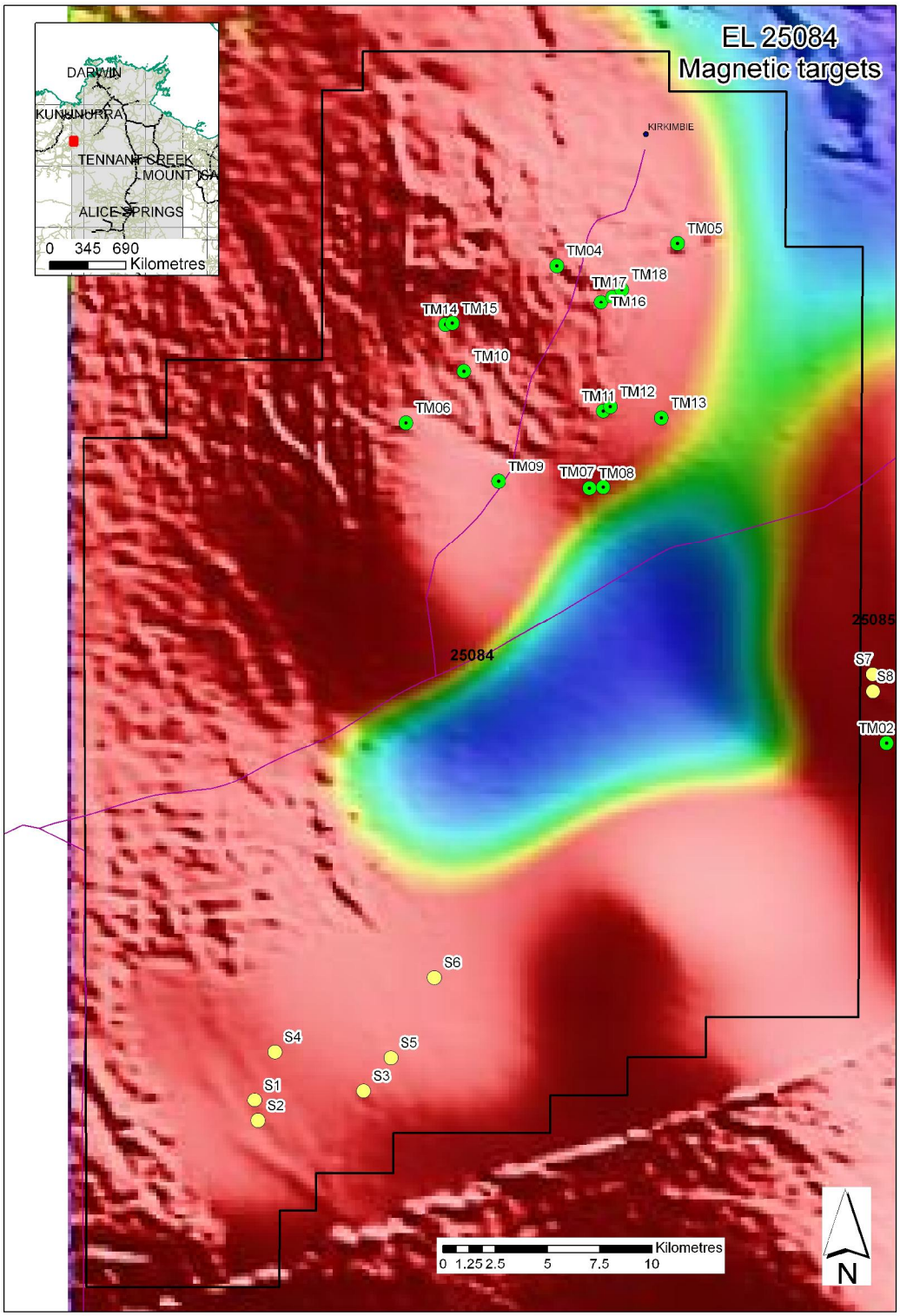

Figure 3 Airborne magnetics used in creating exploration targets.

6 REFERENCES

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Cutovinos A, Beier PR, Kruse Pd, Abbot ST, Dunster JN and Brescianini RF, 2002. Limbunya, Northern Territory, Sheet SE 52-07, 1:250 000 geological map series and explanatory notes, NTGS

Morey AG and Beere GM, 1985. Palaeozoic stratigraphy of the Ord Basin in Western Australia. WA Geological Survey Bulletin 134.

7 APPENDIX 1 – sample sites and targets

Magnetic anomalies identified during exploration on EL 25084

Soil sample	Longitude	Latitude
TM01	129.528000	-17.925300
TM02	129.346000	-17.997600
TM03	129.412000	-17.865300
TM04	129.204000	-17.791500
TM05	129.256000	-17.782000
TM06	129.139000	-17.859300
TM07	129.224000	-17.887100
TM08	129.218000	-17.887600
TM09	129.179000	-17.884600
TM10	129.164000	-17.836900
TM11	129.224000	-17.854300
TM12	129.227000	-17.852400
TM13	129.249000	-17.857200
TM14	129.156000	-17.816900
TM15	129.159000	-17.816400
TM16	129.223000	-17.807300
TM17	129.228000	-17.804900
TM18	129.232000	-17.801700
TM19	129.637000	-16.985400

Magnetic anomalies identified by previous explorers

Site	Longitude	Latitude
S1	129.07385911600	-18.15160622930
S2	129.07525832500	-18.16044377480
S3	129.12077748800	-18.14758034340
S4	129.08257081400	-18.13092486850
S5	129.13253518600	-18.13334154250
S6	129.15122295100	-18.09871041490
S7	129.33999881300	-17.96777404870
S8	129.34001282000	-17.97509521340
S9	129.36829101800	-17.94810888570
S10	129.42032320600	-17.98804355730

Rock Sample sites

Rock sample site	Longitude	Latitude
No1	129.332850	-17.886517
No2 WD	129.328967	-17.828350
No3 WD	129.325633	-17.826433
No4 WD	129.316650	-17.790417
No5	129.314000	-17.791767
GT No1	129.290933	-17.685250
Gt No2	129.291733	-17.685700
Gt No3	129.293817	-17.685100
Gt No4	129.292500	-17.692200
RB No1	129.889317	-17.208017
Rb No2	129.881583	-17.184333
RB No3	129.872483	-17.171900
RB No4	129.866550	-17.159883
RB No5	129.864267	-17.156033