

**Kentor Minerals (NT) Pty. Ltd.**

(a wholly owned subsidiary of KGL Resources)

**EL28271 – BALD HILL  
EL28340 – BUSHY PARK**

**YAMBAH PROJECT**

**(Group Report 218)**

**Annual Report**

**for the reporting period**

**1 October 2015 to 30 September 2016**

Project Name: Yambah

Map Sheets: Alice Springs SF5314, 1:250,000

Commodities: Copper, Silver, Lead, Zinc, Gold

Licensee: Kentor Minerals (NT)

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## SUMMARY

Kentor Minerals (NT) acquired the Yambah Project from Mithril Resources in April 2015. The project lies within the Aileron Province of the Arunta Region. Outcropping basement geology is comprised of the Palaeoproterozoic (1.8–1.7 Ga) Strangways Metamorphic Complex (SMC) and mafic intrusives. Known base-metal occurrences (Cu-Zn-Pb±Ag±Au) are stratabound and have largely experienced the same metamorphic history as their host rocks of the SMC. Numerous companies and individuals have explored in the general area covered by the Yambah Project for metamorphosed polymetallic (Cu-Pb-Zn-Ag-Au) massive sulfide deposits. KGL acquired the project because of similarities between the sedimentary packages and mineralisation at the Kentor Minerals (NT) Jervois polymetallic project and Yambah.

A literature review and data compilation was conducted to supplement information provided by Mithril. The data was compiled in a GIS platform and interpreted to generate priority targets for field inspection. In mid-July the key prospects and occurrences were visited and diamond core from the NTGS core library in Alice Springs was viewed. Further geological reconnaissance of the main prospect areas was undertaken as well as addition regional and prospect scale soil and rock chip sampling.

## 1.0 INTRODUCTION

In April 2015 Kentor Minerals (NT) a wholly owned subsidiary of Brisbane based KGL Resources acquired Bald Hill (EL28271) and Bushy Park (EL28340) from Mithril Resources. These tenements formerly comprised part of Mithril’s Yambah Project. The tenements are located to the north and north east of Alice Springs, as shown in Figure 1.

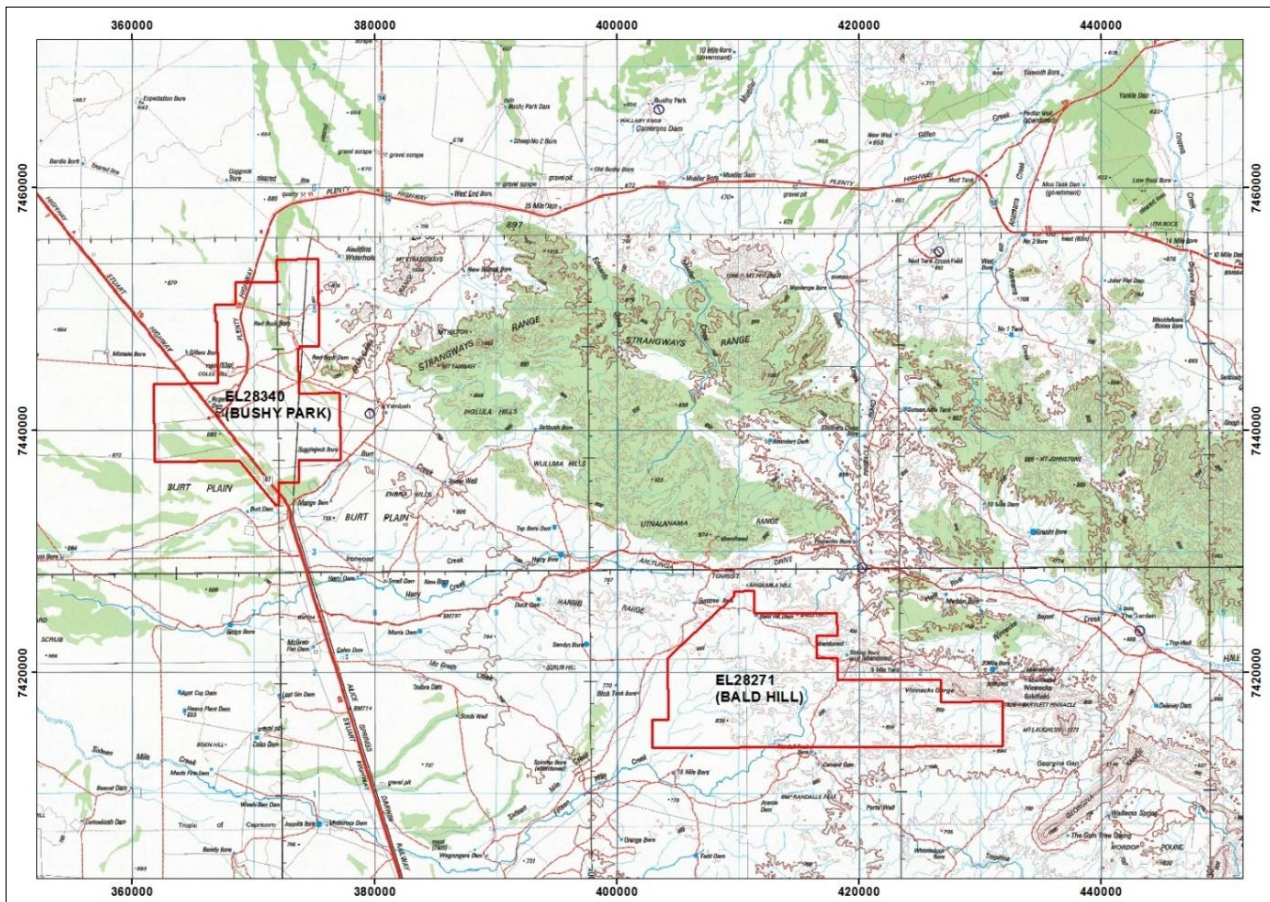


Figure 1. Location of Yambah Project

## 2.0 LOCATION and ACCESS

Access to the tenements is via the Stuart and Plenty Highways, the Arltunga Tourist Drive and good station-tracks. The terrain varies from grassy and scrubby flats and plains to rugged hills rising some 300m above the surrounding plains, most of which cannot be traversed by vehicle. The tenements cover parts of the Yambah, Bond Springs and Garden pastoral stations

## 3.0 TENURE

Tenure of the Yambah Project is summarised in Table 1.

Name	EL Number	Title Holder	Grant Blocks	Grant area (km <sup>2</sup> )	Grant Date
Bald Hill	28271	Kentor Minerals (NT)	75	219	6/4/2011
Bushy Park	28340	Kentor Minerals (NT)	58	290	4/7/2011

Table 1. Summary of Yambah Project Tenure

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## 4.0 GEOLOGY

The Yambah Project lies within the Aileron Province of the Arunta Region. Outcropping and interpreted basement geology is comprised of the Palaeoproterozoic (1.8–1.7 Ga) Strangways Metamorphic Complex (SMC) and mafic intrusives. The SMC consists of felsic and mafic granulites, orthogneiss, paragneiss, minor calc silicates, iron formations, and granitoids. Retrograde schists and mylonites are found in high-strain zones formed during the Palaeozoic Alice Springs Orogeny. Quaternary aeolian sands, alluvium, and calcrete generally cover low-lying areas and plains.

Known base-metal occurrences (Cu-Zn-Pb±Ag±Au) are stratabound and have largely experienced the same metamorphic history as their host rocks of the SMC. The protoliths to the host rocks are mostly considered to have been volcanics and there is evidence that the mineralisation was syngenetic (Hussey *et al.*, 2006). Details of the known mineralisation can be found in Hussey *et al.* (2006).

Surface expressions of mineralisation vary from localised copper-carbonate coatings on joint surfaces to lode-horizons (±alteration) 1-20m thick with a strike length of a kilometre or more (e.g., Rankins, Red Rock Bore). Mineralisation intersected in drill holes at Red Rock Bore occurs as sulphides in veins and disseminations (Hussey *et al.*, 2006).

## 5.0 PREVIOUS EXPLORATION

Numerous companies and individuals have explored in the general area covered by the Yambah Project. Previous exploration has been undertaken for metamorphosed polymetallic (Cu-Pb-Zn-Ag-Au) massive sulfide deposits, while more recently, the potential for iron oxide copper gold (IOCG) mineralisation in the area has been recognised. The following summary is taken from the Mithril Resources 2014 Annual Report for the Yambah Project (Mizow, D. 2014).

### 5.1 Bushy Park EL28340

- Mid 1960s: Northern Territory Mines Branch drilled three diamond holes into the Coles Hill Prospect. Disseminated Zn-Pb-Cu mineralisation was intersected.
- Mid 1970s: Planet Mining NL targeted the Coles Hill Prospect with geo-chemical surveys, costeaning, a ground magnetic survey and an Induced Polarisation survey.
- 1988: McMahon Construction completed a ground electromagnetic survey of the Coles Hill Prospect. Weak anomalies were defined. Some were tested with costeaning only.
- 1995-1997: Roebuck Resources and Pasmaenco Exploration completed lag/ soil (MMI)/ stream sediment sampling and RAB drilling. 28 drill holes were drilled into the Coles Hill Prospect, including 2 diamond holes. Sub-economic Zn-Pb-Ag mineralisation was intersected over 1km of strike.
- 2002: Teck / BHP conducted a single line of Ground EM over a discrete magnetic anomaly north of the Coles Hill Prospect. A potential basement conductor was detected at the southern margin of this magnetic anomaly.
- 2011-2014: Mithril conducted data compilation and acquired Aster data. Ground magnetic data was acquired at the Red Rock Bore prospect which was followed by an orientation soil sampling program. Four RC holes (YBRC006-10) were drilled to test the western extension of the Red Rock Bore prospect.

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## **5.2 Bald Hill EL28271**

### **5.2.1 Rankins Cu-Au Prospect**

This prospect covers two separate base metal areas, separated by 300m. The local host sequence consists of quartz-magnetite rock, chlorite schist and calc-silicates.

Timeline of Previous Exploration:

- 1969-73: Central Pacific Minerals pitted for secondary copper mineralisation and tested Rankins with an IP survey. Chargeable anomalies were detected, some coinciding with outcropping mineralised iron formations. The southern area was drilled with two holes but weak mineralisation was encountered only. The northern occurrence was tested with one percussion hole: 1.9m @ 2.5% Pb, 1.2% Zn with up to 20% magnetite + pyrite + galena + sphalerite.
- 1985: Aurotech assayed a suite of samples from Rankins with up to 0.4ppm Au in quartz-hematite rock.
- 2007: Maximus completed a HoisTEM survey and defined early to mid-time anomalies. These were followed up with three lines of GEM by Minotaur Exploration. Minotaur also completed a gravity survey over the tenement package, which included Rankins.

### **5.2.2 Gecko Prospect**

- Gossans are associated with chert-hematite-carbonate horizons within amphibolitic schists, which are bounded by quartz-feldspar gneisses. Mineralisation is stratabound.
- Timeline of Previous Exploration:
- 1971: Central Pacific Minerals drilled five percussion holes into the prospect and intersected low grade zinc and disseminated pyrite. Drill logs are not available.
- 2003: Tanami Gold completed a measured geological section and a ground magnetic survey. The ground magnetic survey showed mineralisation is related to magnetization.
- 2007: Maximus completed a HoisTEM survey that identified a number of early to mid-time anomalies.

### **5.2.3 Turners Prospect**

- 2011-2014: Mithril conducted data compilation and acquired Aster data. Geological mapping and soil sampling was conducted at the Turners prospect. Grab sampling of mullock from old workings gave a best result of 11.85% Cu, 34.4g/t Ag and 36.8g/t Au

### **5.2.4 Regional Exploration**

- 1980s: BHP conducted a large stream sediment survey over the tenement. Little follow up of anomalous areas was conducted.

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## 6.0 WORK DONE DURING THE YEAR

The Yambah project was acquired from Mithril Resources because of similarities between the sedimentary packages and mineralisation at KGL's Jervois polymetallic project and Yambah. Work by the NTGS has correlated the Bonya Metamorphics at Jervois with the Strangways Metamorphic Complex at Yambah. The Strangways Metamorphics is at a higher metamorphic grade but otherwise resembles the metamorphosed siltstones, sandstones and limestone at Jervois. Recent research by CSIRO and the NTGS has determined that Jervois is a hybrid SEDEX-VMS system. This suggests that Jervois has similarities with the base-metal prospects at Yambah that have been described as lead-zinc VMS.

KGLs exploration rationale is to explore for hybrid SEDEX-VMS mineralisation at Yambah using techniques that have been developed and proven successful at Jervois. The research at Jervois has improved the understanding of the geological and structural setting of Jervois and the alteration patterns that can be directly applied to exploration at Yambah.

Rock chip, soil and petrology samples have been taken during the regional exploration programs and have been presented in Figure 2.

Results for the sampling are pending and will be presented as a supplement to this report as they are received.

### 6.1 Data Compilation

A literature review and data compilation continued during the year to supplement information provided by Mithril. The data was added to the existing GIS platform and interpreted to generate priority targets for field inspection.

Topographic information is available in the public domain and 1:250,000/ 1:100,000 scale geological mapping and mineral occurrence data is available from the NT Geological Survey. Historic company reports are available on GEMIS the NTGS digital library.

### 6.2 EL28271 (Bald Hill)

Previous exploration has identified three main prospects called Gecko, Rankins and Turners. A field investigation of these prospects was conducted in mid-July and mid-August. Good access is provided by an east west station track between Gumtree Well and Sliding Rock Bore south of Bald Hill but access tracks to the prospects are heavily overgrown and no longer passable. For this reason only the Rankins and Gecko prospects were visited.

At **Rankins** there is a small copper working on a ferruginous/ gossanous ridge that has been drilled previously. Other ferruginous exposures were located but have not been drill tested. A HoisTEM survey conducted by Maximus generated a small mid-time conductor. At the surface the conductor is associated with a steeply dipping horizon of coarse grained magnetite within amphibolite. Malachite sheets the margin of the magnetite. The magnetite may be of orthomagmatic origin rather than having a stratabound, synsedimentary origin based on field relations.

The **Gecko** prospect comprises several small gossans and ferruginous/ siliceous horizons hosted by gneiss scattered over an area of several hundred metres squared. Collars and pads from four historic drillholes are still visible at the site.

The **Turners** prospect is several kilometres from the nearest track in rugged terrain and was not visited.



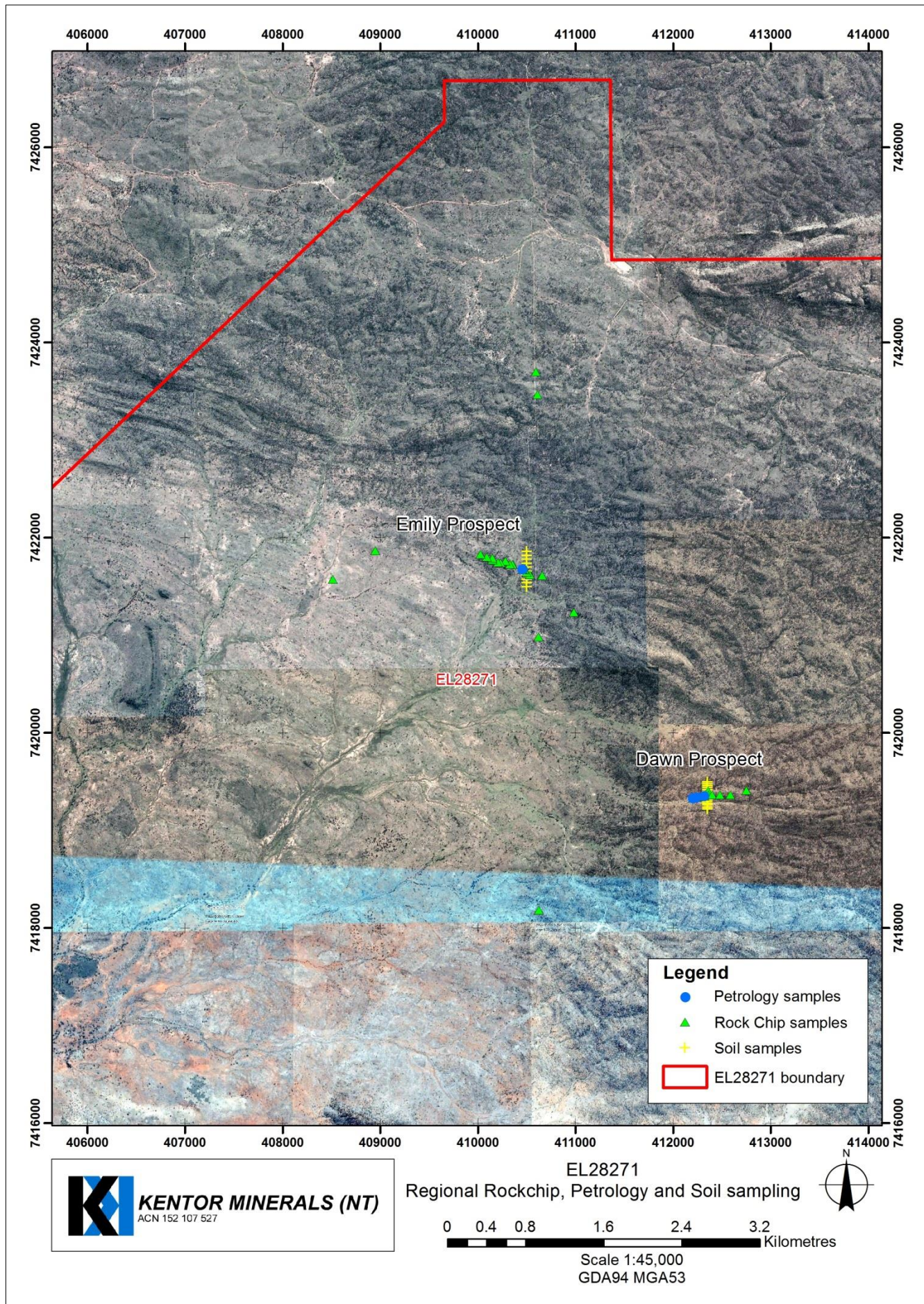


Figure 2. Regional Rock chip, Petrology and Soil sampling



On EL28271 two new base metal prospects were discovered and summarised as;

- Copper and lead-zinc occurrences extend for over 500m
- Rock chips return assays of up to 1.5% Zn, 0.89% Pb, 0.58% Cu
- No previous exploration or drilling.

The Dawn and Emily prospects (Figure 2 & 3) were discovered during reconnaissance mapping on the Bald Hill tenement (EL28271).

At Emily, ironstones, gossans and magnetite quartzite units in marble and calc-silicate with malachite (copper) occurrences extend for 800m. Samples of marble and ironstone returned assays of up to 1.5% Zn, 0.58% Cu and 0.12% Pb. Compilation of previous exploration has revealed that no previous exploration or drilling has been conducted to test these prospects (Figure 4).

At Dawn, the mineralized trend comprising gossans and ironstone hosted by limestone, calc-silicate and skarnoid units extends for over 500m. Rock chip results returned assays of up to 0.89% Pb, 0.15% Zn and 0.13% W (Figure 5).

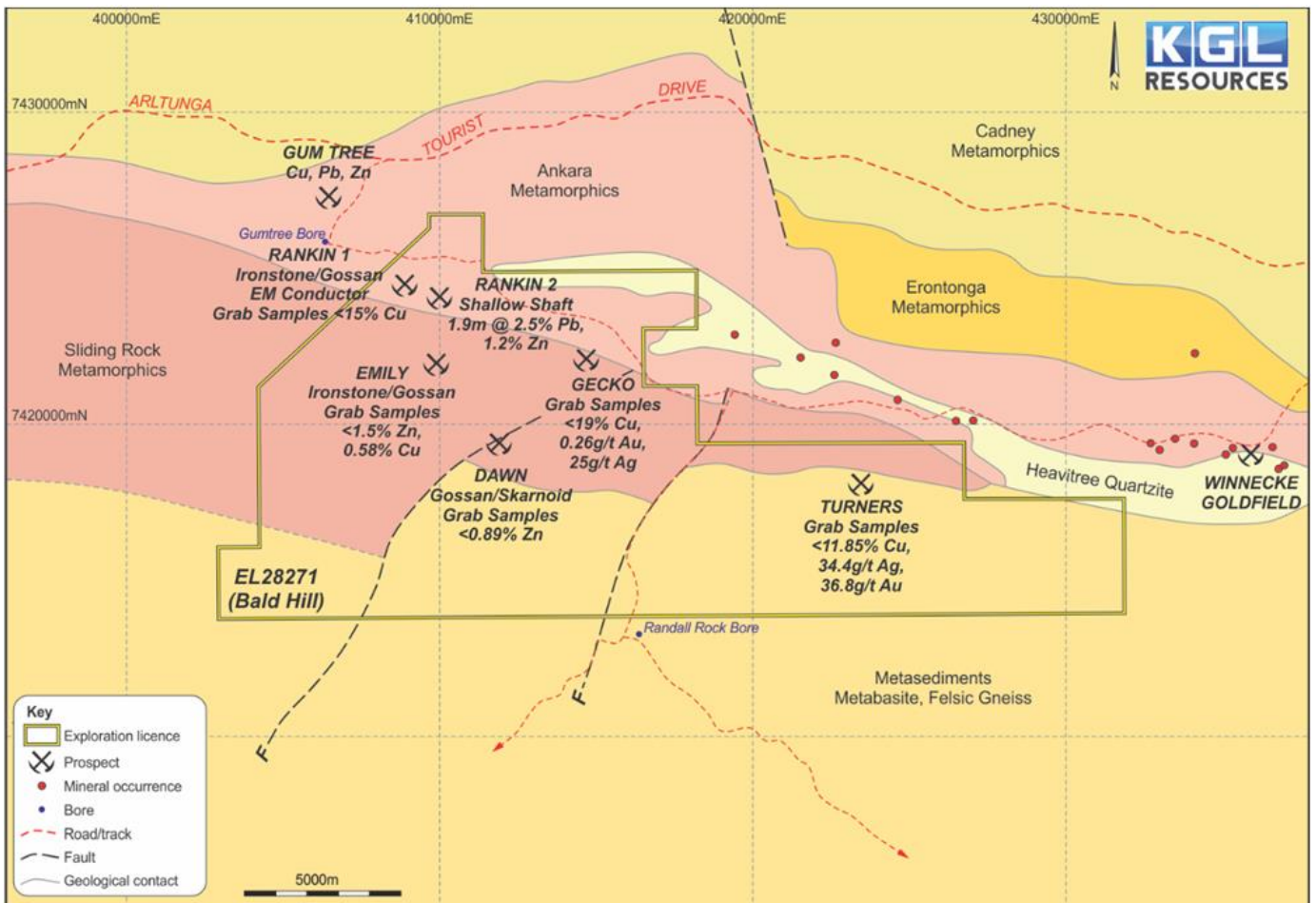


Figure 3. EL28271 (Bald Hill) showing location of base metal prospects.





**Figure 4. Malachite stained clac-silicate at Emily Prospect.**



**Figure 5. Calc-silicate / gossanous ridge at Dawn Prospect.**

## 6.2 EL28340 (Bushy Park)

Field reconnaissance work was undertaken during the reporting period to inspect the key prospects and mineral occurrences on EL28340 (labeled incorrectly in Figure 1 as EL28175) and to introduce the holding to key KGL personnel. The main prospect is Red Rock Bore that was formerly called the Coles Hill prospect where drilling has previously taken place by Pasminco (Figure 6).

Mineralisation is hosted by magnetite quartzite that has a strike length of over 1km. The best intersection was 13.35m @ 3.3% Zn, 0.5% Pb from 131m in hole RRK031 including 1m @ 13.6% Zn from 132.3m.

A low rubbly ridge of siliceous rock marks the location of the prospect. Evidence of previous drilling programs and trenching can still be seen at the site.

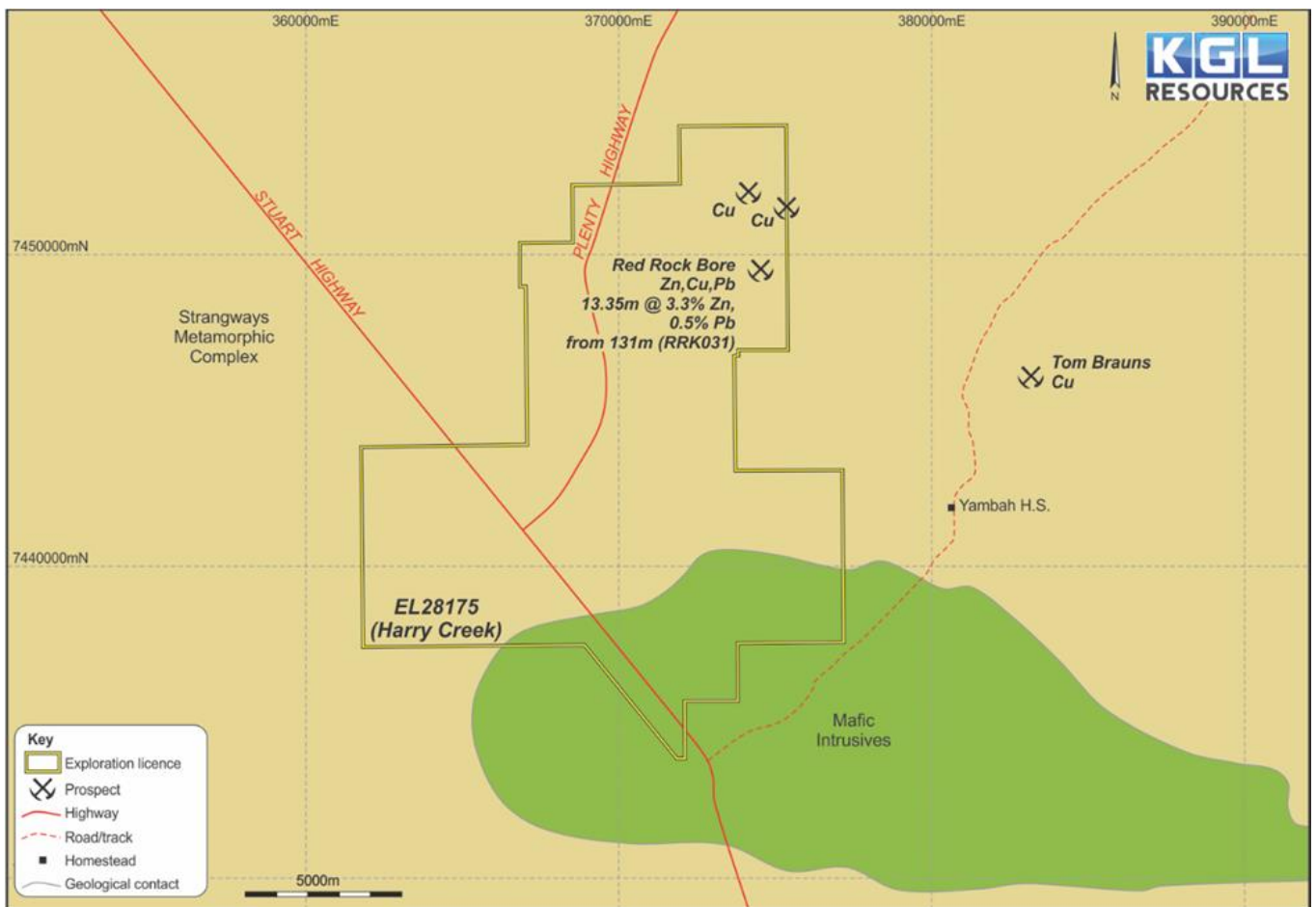


Figure 6. EL28340 showing location of Red Rock Bore Prospect.

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## 7.0 WORK PLANNED

The exploration program planned for EL28340 and EL28271 at the Yambah project is as follows:

- Continue and expand detailed mapping of the main prospects and reconnaissance level mapping of the entire tenement.
- Further rock chip sampling of new occurrences discovered during mapping.
- Regional and prospect scale soil and stream sediment sampling.
- Acquisition of SAM geophysical data over the main prospects as required.
- Selection and prioritisation of targets for RC drill testing. This will include electromagnetic targets generated by previous exploration companies that have not been tested.

Initial compilation of stream sediment sample results reported by BHP in 1985-7 (*Walters, S.G. and Bunting, F., 1986, Skrzeczynski, R., 1987.*) reveal a coincident lead, zinc and copper anomaly to the southwest of the Gecko prospect. BHP reported a 'mineralised marble' in the area but no other work appears to have been taken. This target will be a priority area for follow up.

## 8.0 CONCLUSIONS AND RECOMMENDATIONS

Initial compilation and interpretation of previous exploration data and fieldwork suggests the Yambah project is prospective for hybrid sediment-hosted/ VMS style mineralization similar to mineralization at KGLs Jervois project. The main difference is the grade of the metamorphism which is high at Yambah (granulite-amphibolite) and upper greenschist to amphibolite grade at Jervois.

Previous exploration has identified four main prospects on the Yambah project, some of which have been tested with geophysics and drilling.

With the discovery of the Emily and Dawn Prospects during recent field activities, there is a strong indication that potential remains for additional discoveries. Stream sediment sampling by BHP has identified anomalies that have not been followed up adequately.

Further work is planned at the main prospects applying knowledge gained from exploration at Jervois. Additional reconnaissance exploration will be conducted with a focus on in-fill stream sediment sampling, soil sampling and geological mapping.

## 9.0 REFERENCES

Mizow, D. 2014. Yambah Project Year 4 Annual Report. Mithril Resources unpublished company report.

Skrzeczynski, R., 1987. 1986 Annual Report and Final Report on Exploration Licence 4723, Ankala, Northern Territory. BHP Minerals unpublished company report. Northern Territory Geological Survey, Report CR87/73.

Walters, S.G. and Bunting, F., 1986. Annual Report, Exploration Licence 4723, Ankala, Northern Territory. BHP Minerals unpublished company report. Northern Territory Geological Survey, Report CR86/139.



## APPENDIX 1: Tabulated Sample Sites

SN	Prospect	Easting	Northing	Description
YDW001	Dawn	412350	7419500	Low hill. Subcrop and float of gniess. Quartz vein float. Red brown soil.
YDW002	Dawn	412350	7419480	Low hill. Subcrop and float of gniess. Quartz vein float. Red brown soil.
YDW003	Dawn	412350	7419460	Gentle slope to creek. Exposure of gniess. Quartz vein float. Red brown soil.
YDW004	Dawn	412350	7419440	Slope to creek. Exposure of gniess. Quartz vein float. Red brown soil.
YDW005	Dawn	412350	7419420	Slope to creek. Exposure of gniess and dark brown ironstone/calcsilicate float.
YDW006	Dawn	412350	7419400	Top of low hill. 5m up dip of ferruginous calcsilicate outcrop. Red brown soil.
YDW007	Dawn	412350	7419380	Hill slope, 10m below ferruginous calcsilicate exposure, red brown soil.
YDW008	Dawn	412350	7419360	Calcsilicate exposure, gniess and quartz vein. Red brown soil.
YDW009	Dawn	412350	7419340	Hill slope, exposure of dark grey gniess and epidote calcsilicate.
YDW010	Dawn	412350	7419320	Subcrop of gniess and epidote calcsilicate, red brown soil.
YDW011	Dawn	412350	7419300	Subcrop of gniess and epidote calcsilicate, red brown soil.
YDW012	Dawn	412350	7419280	Felsic gniess, down slope of calcsilicate ridge, red brown soil.
YDW013	Dawn	412350	7419265	Creek edge, down slope from calcsilicate ridge. Thin soil.
YDW014	Dawn	412350	7419240	Slope just above creek. Thin soil between gniess exposures.
YDW015	Dawn	412350	7419220	Banded gniess exposure, up slope from cvreek. Red brown soil.
YEM001	Emily	410500	7421500	Grey biotite gniess float, minor quartz. Red brown soil.
YEM002	Emily	410500	7421540	Medium grain biotite grey gniess exposure.
YEM003	Emily	410500	7421575	Edge of creek, gniess exposure, red brown sandy soil.
YEM004	Emily	410500	7421620	Gniess float, epidote calcsilicate, downslope of marble/ calcsilicate.
YEM005	Emily	410500	7421660	Top of ridge, 10m from ferruginous marble/calcsilicate, quartz float, red brown soil.
YEM006	Emily	410500	7421700	Grey green gniess subcrop and float, down slope of marble. Quartz float red brown soil.
YEM007	Emily	410500	7421740	Calcrete float, grey green gniess exposure. Brown soil.
YEM008	Emily	410500	7421780	Shallow depression, with alluvium. Brown sandy soil.
YEM009	Emily	410500	7421820	Shallow slope, gniess exposure, soil contains charcoal chips.
YEM010	Emily	410500	7421860	Gret green gniess float, red brown soil.

SN	Prospect	Easting	Northing	Description
120185	Recon	410594	7423700	white pegmatite, pink feldspars + qtz + aplite?
120186	Recon	410608	7423470	occ. garnet xls intensely fe altered in a calc silicate mtx.
120187	Recon	410625	7418184	calc silicate veining with a dolerite host. Carbonate alteration on fract surfaces. Biotite xls disseminated within host rock.
120188	Recon	410982	7421238	amphibolite. Crs hornblende xls. Amphibolite trending into large qtz outcrop.
120189	Recon	410619	7420985	biotite + qtz + carbonate in shear zone
120190	Recon	408948	7421868	gossanous veining with remnant garnet xls. altered to fe. Biotite + muscovite in parts.
120191	Recon	408514	7421575	qtz boudin in laminated qtz/dolerite. Crs grained in part.
120192	Dawn	412356	7419406	Purple brown ironstone/ gossan.
120193	Dawn	412200	7419333	Bladed yellow calcsilicate rock.
120194	Dawn	412240	7419340	Bladed yellow calcsilicate rock.
120195	Dawn	412280	7419347	Bladed yellow calcsilicate rock.
120196	Dawn	412320	7419355	Bladed yellow calcsilicate rock.
120197	Dawn	412360	7419365	Bladed yellow/green calcsilicate rock.
120198	Dawn	412400	7419367	Calcsilicate, schist and gneiss.
120199	Dawn	412480	7419366	Limestone, amphibolite and calcsilicate.
120200	Dawn	412587	7419367	Poddy exposure of yellow brown calcsilicate. Manganese rich zones.
120201	Dawn	412751	7419413	Very coarse calcsilicate with ironstone bands.
120202	Emily	410660	7421614	Small subcrop of epidote calcsilicate in biotite schist.
120203	Emily	410534	7421621	Marble/limestone exposure. White staining - smithsonite?
120204	Emily	410499	7421646	Ferruginous limestone/ marble, white staining - smithsonite?
120205	Emily	410476	7421674	Large exposure of ferruginous limestone/ marble.
120206	Emily	410457	7421679	Large exposure, ridges cap, bladed calc silicate and green coarse calc silicate.
120207	Emily	410357	7421728	Siliceous calc silicate ridge.
120208	Emily	410353	7421726	Calc silicate with malachite and azurite.
120209	Emily	410327	7421726	Siliceous calc silicate ridge.
120210	Emily	410328	7421728	Malachite stained calc silicate.
120211	Emily	410283	7421761	Dark subcrop of calcsilicate.
120212	Emily	410230	7421743	Ferruginous siliceous rock and calc silicate.
120213	Emily	410206	7421747	Siliceous and ferruginous calc silicate with malachite.
120214	Emily	410149	7421774	Calc silicate outcrop. Composite traverse.
120215	Emily	410149	7421774	High grade malachite-chalcocite stained calc silicate.
120216	Emily	410149	7421792	Ferruginous calc silicate. Composite traverse.
120217	Emily	410091	7421805	Ferruginous and siliceous calc silicate. Composite traverse.
120218	Emily	410026	7421829	Calc silicate, chlorite amphibolite rock. Composite traverse.
120219	Recon	403141	7422985	Black biotite schist and gneiss.

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<b>SN</b>	<b>Prospect</b>	<b>Easting</b>	<b>Northing</b>	<b>Description</b>
120193P	Dawn	412200	7419333	Coarse grained green calc silicate.
120194P	Dawn	412240	7419340	Bladed pinkish calc silicate rock.
120196P	Dawn	412320	7419355	Bladed pinkish calc silicate rock.
120206PA	Emily	410457	7421679	Bladed pinkish calc silicate rock.
120206PB	Emily	410457	7421679	Medium grained green calc silicate.