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## Golden Forty Group

MCC's 66 – 67 and MLC's 4, 5, 32, 35 – 37, 53 – 56, 127, 129 – 144, 146 – 149, 343 – 347, 352 – 355, 576 – 577, 584 – 586 & 598

## MINERAL TITLES ACT COMPLIANCE REPORT

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## 1. SUMMARY

This report details the review of the Golden Forty Group of tenements MCC's 66 – 67 and MLC's 4, 5, 32, 35 – 37, 53 – 56, 127, 129 – 144, 146 – 149, 343 – 347, 352 – 355, 576 – 577, 584 – 586 & 598, the titles cover the Golden Forty, Great Eastern, Black Snake, Three Thirty and Golden Kangaroo historical Mines, as detailed in table 2 and seven prospects Golden Kangaroo East, Golden Kangaroo 2, Golden Kangaroo 3, Brolga, Peko East, Golden Hind, Kestrel and R20. The aim of this report is to identify, reassess and review historical work conducted of the titles to make a determination on the prospectivity of the title, identify the presence of any anomalous zones or deposits and then make a determination on the validity of the titles and then a recommendation to the DME on the compliance of the titles to the Mineral Titles Act.

It is recommended that Emmerson amalgamate all 48 titles into a single title and renew the title for future resource definition and exploration activities to explore in more detail the identified deposits and anomalous zones to determine its potential to host economic deposits, as detailed below.

The Golden Forty Group of leases contains the historical Golden Forty, Golden Kangaroo and Black Snake Mines and other clearly identified anomalous zones warranting further exploration and detailed follow-up and also non JORC compliant resources that require further work to increase their confidence and promote them to JORC compliant and eventual mining and production. Current calculated non JORC compliant resource estimates for the Golden Forty Group are as detailed below;

Resources	Tonnes	gold grade g/t	copper grade %	contained gold oz's	contained copper (t)
<b>Golden 40 (remnants)</b>	85,000	11	1	30,061	850
<b>Golden 40 East</b>	10,000	9		2,894	
<b>Blake Snake</b>	18,700	12		7,200	
<b>Golden Kangaroo East</b>	17,240	7.3		4,046	
<b>Golden Kangaroo</b>	158,718	3.1		15,819	
<b>TOTAL</b>	<b>120,940</b>			<b>41,307</b>	<b>850</b>

Emmerson considers the Golden Forty Group to be of high value for its identified insitu resources and further exploration potential.

Further to this and following the success and leaps in knowledge acquired from the 'Proof of Concept' drilling at Gecko the Golden Forty Group requires re-evaluation with the aim of identifying further drill targets for testing and evaluation.

## 2. INTRODUCTION

This report details the review of the Golden Forty Group of tenements MCC's 66 – 67 and MLC's 4, 5, 32, 35 – 37, 53 – 56, 127, 129 – 144, 146 – 149, 343 – 347, 352 – 355, 576 – 577, 584 – 586 & 598, the titles cover the Golden Forty, Great Eastern, Black Snake, Three Thirty and Golden Kangaroo historical Mines, as detailed in table 2 and seven prospects Golden Kangaroo East, Golden Kangaroo 2, Golden Kangaroo 3, Brolga, Peko East, Golden Hind, Kestrel and R20. The aim of this report is to identify, reassess and review historical work conducted of the titles to make a determination on the prospectivity of the title, identify the presence of any anomalous zones or deposits and then make a determination on the validity of the titles and then a recommendation to the DME on the compliance of the titles to the Mineral Titles Act.

Figure 1 shows the location of the Golden Forty Group with respect to the Tennant Creek Township and figure 2 details the tenure of the Golden Forty Group.

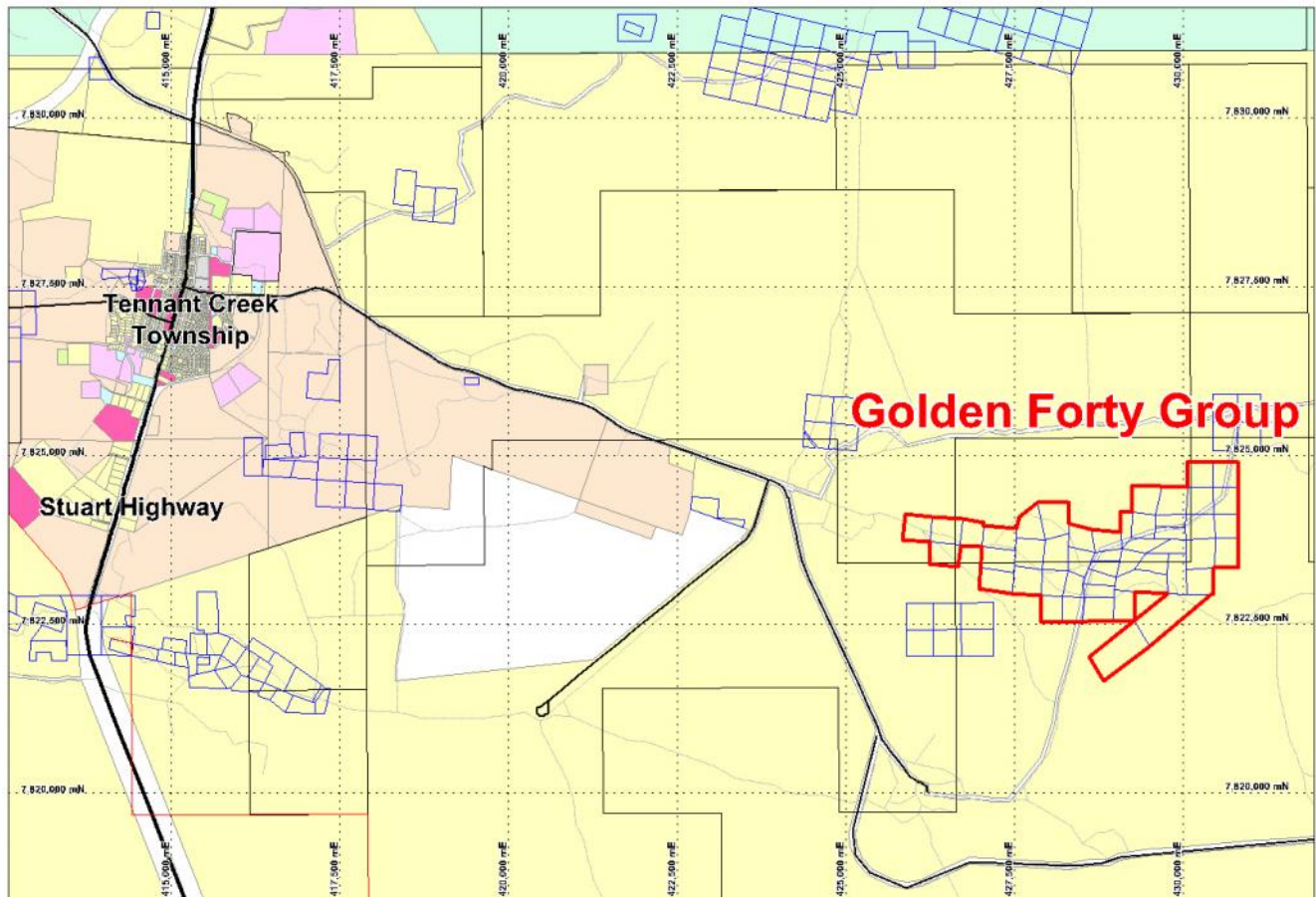
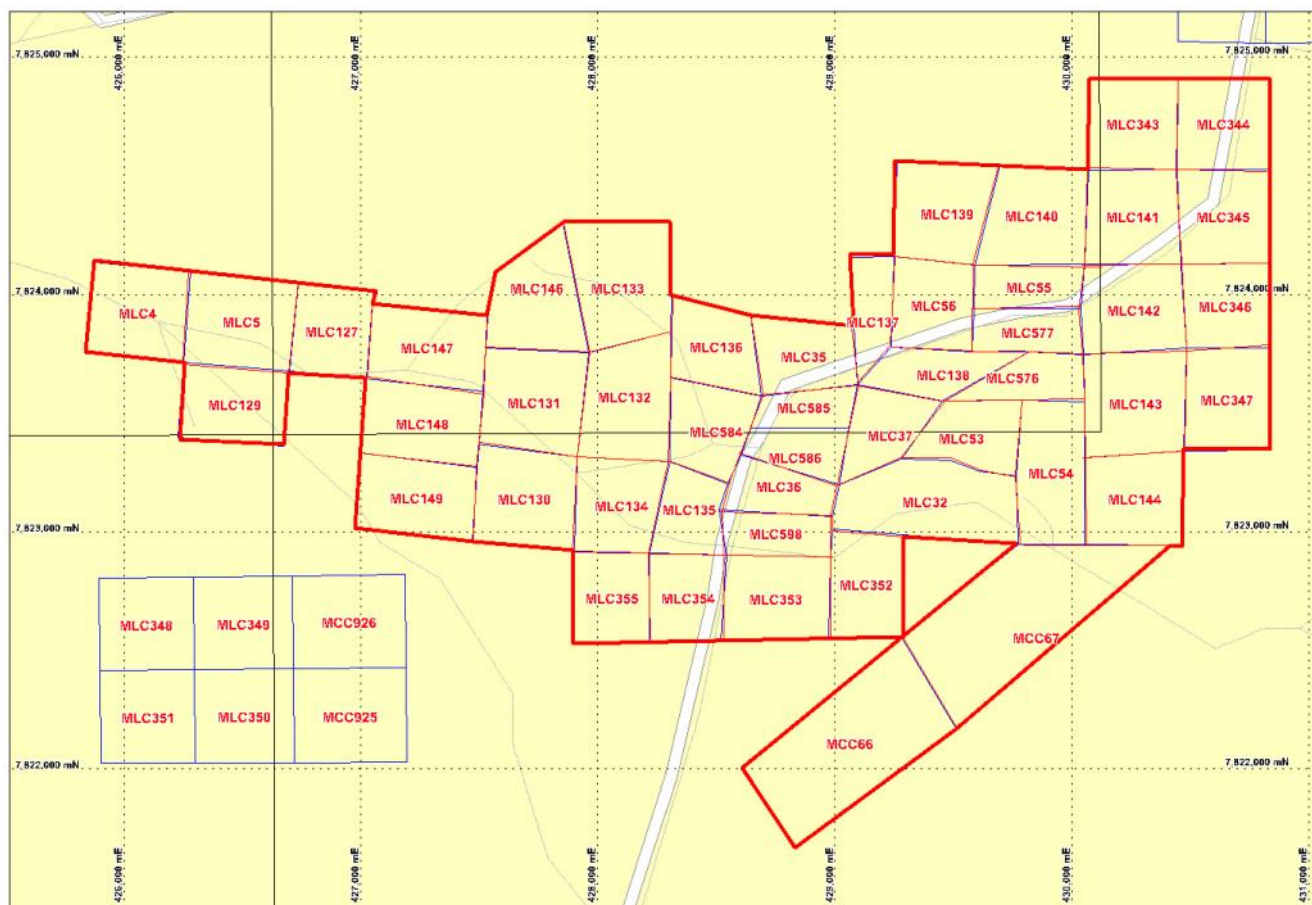


Figure 1: Location of Golden Forty Group with respect to the Tennant Creek Township



### 3. LOCATION

Access to the Peko Leases Tenure is gained east via the Peko Mine Road then east via a series of 4WD tracks, or alternatively to continue south along the Peko Mine Road to the Nobles Nob Mine and following the track around to the Golden Forty Mine. Further access to the area is via a series of unsealed, 4x4 and fence line tracks, which during and immediately after rain the area is generally inaccessible.

Figures 1 and 2 further display access and location.

## 4. TENURE

The tenure details of the Golden Forty Group are detailed in the following table;

Tenement ID	Tenement Name	Holder	Interest	Grant Date	Effective Date	Expiry Date	Area (Ha)
MCC66	Golden Forty	San	100	30/12/1983	30/12/1983	29/12/2011	33
MCC67	Golden Forty	San	100	30/12/1983	30/12/1983	29/12/2011	33
MLC127	Peko East Ext 4	San	100	7/04/1972	7/04/1972	31/12/2017	12
MLC129	Peko Sth- East	San	100	7/04/1972	7/04/1972	31/12/2017	14
MLC130	Golden Forty	San	100	4/01/1973	4/01/1973	31/12/2028	17
MLC131	Golden Forty	San	100	4/01/1973	4/01/1973	31/12/2028	17
MLC132	Golden Forty	San	100	4/01/1973	4/01/1973	31/12/2028	17
MLC133	Golden Forty	San	100	4/01/1973	4/01/1973	31/12/2028	17
MLC134	Golden Forty	San	100	4/01/1973	4/01/1973	31/12/2028	13
MLC135	Golden Forty	San	100	4/01/1973	4/01/1973	31/12/2028	12
MLC136	Golden Forty	San	100	4/01/1973	4/01/1973	31/12/2028	9
MLC137	Golden Forty	San	100	4/01/1973	4/01/1973	31/12/2028	17
MLC138	Golden Forty	San	100	4/01/1973	4/01/1973	31/12/2028	17
MLC139	Golden Forty	San	100	4/01/1973	4/01/1973	31/12/2028	17
MLC140	Golden Forty	San	100	4/01/1973	4/01/1973	31/12/2028	17
MLC141	Golden Forty	San	100	4/01/1973	4/01/1973	31/12/2028	17
MLC142	Golden Forty	San	100	4/01/1973	4/01/1973	31/12/2028	17
MLC143	Golden Forty	San	100	4/01/1973	4/01/1973	31/12/2028	17
MLC144	Golden Forty	San	100	4/01/1973	4/01/1973	31/12/2028	17
MLC146	Golden Forty	San	100	13/06/1972	13/06/1972	31/12/2013	15
MLC147	Golden Forty	San	100	13/06/1972	13/06/1972	31/12/2013	16
MLC148	Golden Forty	San	100	13/06/1972	13/06/1972	31/12/2013	16
MLC149	Golden Forty	San	100	13/06/1972	13/06/1972	31/12/2013	15
MLC32	Golden Forty	San	100	2/09/1959	2/09/1959	31/12/2025	17
MLC343	Rocky Range	San	100	2/08/1977	2/08/1977	31/12/2027	16
MLC344	Rocky Range	San	100	2/08/1977	2/08/1977	31/12/2027	16

MLC345	Rocky Range	San	100	2/08/1977	2/08/1977	31/12/2027	16
MLC346	Rocky Range	San	100	2/08/1977	2/08/1977	31/12/2027	16
MLC347	Rocky Range	San	100	2/08/1977	2/08/1977	31/12/2027	16
MLC35	Golden Forty	San	100	2/01/1962	1/01/2008	31/12/2012	9
MLC352	Golden Forty	San	100	2/08/1977	2/08/1977	31/12/2018	13
MLC353	Golden Forty	San	100	2/08/1977	2/08/1977	31/12/2018	15
MLC354	Golden Forty	San	100	2/08/1977	2/08/1977	31/12/2018	12
MLC355	Golden Forty	San	100	2/08/1977	2/08/1977	31/12/2018	12
MLC36	Golden Forty	San	100	2/01/1962	1/01/2008	31/12/2012	11
MLC37	Golden Forty	San	100	2/01/1962	1/01/2008	31/12/2012	12
MLC4	Peko Extended	San	100	7/05/1951	7/05/1951	31/12/2017	17
MLC5	Peko Extended	San	100	7/05/1951	7/05/1951	31/12/2017	17
MLC53	Golden Forty	San	100	3/06/1966	3/06/1966	31/12/2024	13
MLC54	Golden Forty	San	100	3/06/1966	3/06/1966	31/12/2024	16
MLC55	Golden Forty	San	100	8/06/1966	8/06/1966	31/12/2024	10
MLC56	Golden Forty	San	100	8/06/1966	8/06/1966	31/12/2024	15
MLC576	Golden Forty	San	100	3/06/1965	3/06/1965	31/12/2020	6
MLC577	Golden Forty	San	100	8/07/1966	8/07/1966	31/12/2020	8.15
MLC584	Golden Forty	San	100	4/01/1973	4/01/1973	31/12/2028	9
MLC585	Golden Forty	San	100	4/01/1973	4/01/1973	31/12/2028	9
MLC586	Golden Forty	San	100	4/01/1973	4/01/1973	31/12/2028	9
MLC598	Golden Forty	San	100	2/08/1977	2/08/1977	31/12/2018	8

Table 1: Golden Forty Group Tenure Details

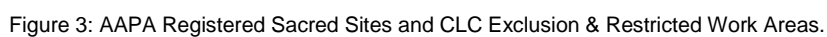
The Golden Forty Group comprises 2 granted Mineral Claims and 46 granted Mineral Leases, refer to figure 2 and table 1, covering an area of 710.15 hectares.

The leases are located on –

- NT Parcel 03735, Aboriginal Freehold Land, held in trust by the Warumungu Aboriginal Land Trust

The Golden Forty Group has three CLC Exclusion Areas within the area as displayed in figure 3 and detailed below;



Table 2: Registered Sacred Sites

## 5. GEOLOGY

### 5.1 Regional Geology

The reader is referred to AusIMM Monograph 14 (Geology of the Mineral Deposits of Australia and Papua New Guinea), Volume 1, pp. 829-861, to gain a good introduction to the regional geology and styles of gold-copper mineralisation of the area.

In 1995 the Northern Territory Geological Survey released a geological map and explanatory notes for the Tennant Creek 1:100,000 sheet, which covers the area of the Golden Forty Group.

The rocks of the Warramunga Formation host most of the orebodies in the region and underlie most of the Exploration Licenses.

### 5.2 Local Geology

The tenure is located in the south eastern region of the Tennant Creek Province. The geology includes sporadic outcrops of siltstones and greywacke of the Palaeoproterozoic Warramunga Formation. Outcrops of lithic and volcanic arenite of the Yungkulungu Formation (Flynn Sub-group) occur, and numerous outcropping ironstone bodies have been mapped. Most of the low lying plains in the Licence are covered by Cainozoic alluvium and colluvium.

The tenure area and the immediate surrounding area contains a number of small prospects including the Golden Forty (148,530 Au oz), Great Eastern (842 Au oz), Golden Kangaroo (50 Au oz) and Three Thirty (1730 Au oz).

In 1995 the Northern Territory Geological Survey released geological maps and explanatory notes for the Tennant Creek 1:250,000 sheet, and the Tennant Creek (5758) 1:100 000 sheet, which covers the area of the tenure.

### 5.3 Mine Geology

The Golden Forty Group contains a number of historical mine workings as detailed in the table below;

Mine Name	Operating Period/s	Production	Grade	Produced Metal
Golden Forty	1934 – 50 & 1969 – 84	148,530t	11.9g/t	56,640oz Au
Great Eastern	1935 – 50	842.3t	15.2g/t	410.4oz Au
Three Thirty	1937 – 47	1,730.4t	14.7g/t	817.5oz Au
Golden Kangaroo	1938 – 39 & 1967 – 68	50t	32g/t	51.4oz Au

Table 3: Historical Mines of the Golden Forty Group

Briefly, the geology and mineralization over the main Golden Forty orebody can be characterized as:

- West – plunging, steeply north-dipping ironstone-hosted Au mineralization.
- The central core of the orebody is dominantly chlorite magnetite. The highest grades are within the chlorite magnetite core (Figure 1).
- A shell of quartz magnetite surrounds the chlorite magnetite shell. The quartz magnetite shell has economic grades but not as consistently high as those in the central chlorite magnetite core
- Talc-altered lithologies are less common than chlorite-magnetite and quartz magnetite. Talc-altered lithologies (such as talc-chlorite or talc-magnetite) tend to have higher Cu and base metal values
- A thrust fault offsets the lower root zone of the chlorite-magnetite and quartz magnetite lithologies (Figure 1 inset). The thrust fault dips 20° towards 310° (ie; shallow north-dipping)
- At depth (directly under the G40 orebody) the roots of the orezone has alternating sediment and magnetite-quartz-chlorite lithologies
- The G40 orebody is dominantly magnetite, with minor hematite and has a strong magnetic susceptibility. Hematite has been logged in intervals with oxidized lithologies, but rarely logged below the level of oxidation
- Several ironstone bodies have been mapped on the surface. It appears that the Golden Forty area has several ironstone bodies, rather than one or two large ironstones. It is possible that several of the ironstone bodies are, in fact, a larger body that has been offset by faulting.
- Au is spatially related to Bi mineralization. Cu mineralization is related to talc alteration, so only occurs in pockets of talc magnetite / talc chlorite within the main G40 orebody. There is minor base metal mineralization also associated with the talc and dolomite lithologies (mainly at Golden Forty East and Golden Forty South).

## **6. EXPLORATION**

### **6.1 Historical Exploration**

The initial discovery of the Golden Forty area was by the National Lead Company with a 200ppm Cu assay within a talcose schist. Following the initial discovery a 140 geochemical sample regolith survey was conducted, defining an anomaly more than 700 metres by 300 metres in size with up to 800ppm Cu recorded. Diamond drilling into the paired regolith and magnetic anomaly continued the elevated Cu zones to 66 metres depth (Crohn, et. al., 1964).

In the late 1980s, EL 2535 held by GeoPeko covered all the Peko, Argo, Juno, Golden Forty and Golden Kangaroo areas. During that period GeoPeko completed the following work: compilation of data from the Juno and Peko Mines; compilation of topographic, geological and geophysical information onto 1:50,000 scale plans; drilling;

low level airborne magnetic and gravity surveys in 1984; ground magnetic surveys over four anomalies identified from the 1984 survey and compilation of a regional geological map (Love, 1987). All results are presented in Duke (1982, 1983), Duke & Hoschke (1983), Love & Balind (1985), Balind (1986), Love (1985, 1987).

The majority of exploration activity has occurred in areas around the old Golden Forty Mine which produced 146,000 tones of ore at 11.9 g/t Au in the 1970s. PosGold conducted detailed ground magnetic, gravity and geochemical surveys in the early 1990s. These surveys have been complemented by regional aeromagnetic surveys in 1984 and 1989 and more recently by a large-scale gravity survey. Several drilling programs were also undertaken (Evans, 1993).

Exploration conducted within the Golden Forty tenure during the 1 October 1996 to 30 September 1997 period included a three lines electromagnetic (EM) survey, in order to gain greater geological understanding of the mineralisation at the Golden Forty prospect. The survey involved the use of the POS-EM; a Normandy designed proprietary EM survey instrument. Three EM lines were established at 28800E, 28600E, 28400E (22600-23400N) with sample stations marked every fifty metres. Measurements were read into a data recorder for later down-loading to a computer for processing. The data was processed to define conductor strength and is presented in Ward (1997).

Exploration conducted over the tenements during the period 1 October 1997 to 25 February 1999 included a high resolution aeromagnetics survey, the signing of the agreement to access Warrumungu Land Trust areas and rehabilitation activities.

**Airborne Magnetics Survey** - The survey was flown by Kevron in October 1998. Survey specifications were 40m sensor height, 50m line spacing on a north – south line orientation with 7m in line sample spacing. Elevation recordings were recorded every seventh sample for digital terrain modelling.

Initial review of this data indicated a greater level of structural detail can be delineated than from the earlier 1984 GeoPeko airborne magnetic survey.

Reserves (NOT resource) of 20,000 tons @ 20dwt/ton (approximately 30,000 oz) were published by Wolff (1969). Other notes indicated this was on a strike length of approximately 150 ft (45m).

Byles (1974) reported the Golden Forty Ore Reserves as:

Surface Stockpile:	7,500tons @13dwt/ton	for 4,389oz
Above 380RL	69,700tons @ 9.0dwt/ton	for 28,229oz
Below 380RL	40,000tons @ 5dwt/ton	for 9,000oz
TOTAL: 41,618 oz, with scheduled mine production until 1977/78		

Production from Golden Forty as of 30th June 1977 was 32,288oz Au (Reveleigh, 1977). The Emmerson Prospectus notes production at G40 of 148,530t @ 11.9g/t Au for 56,640oz Au until the mine closure in 1983. The mine was closed due to

deteriorating ground conditions in December 1983 and the amount of remnant resource material was unknown.

The spatial extent of the Golden Forty ore zone roughly 90m x 30m x 12m (approximately 32,400m<sup>3</sup>).

Records of exploration and mine production are missing from around the mid-1970's until mine closure in 1983. The ore boundary outline appeared 'fixed' from the mid-1970's. A number of assumptions have been made due to the lack of data from the mid-1970's to the mine closure in 1983 including;

- a) no further exploration was carried out during the mine life;
- b) no additional areas were mined apart from those shown within ore outlines; or
- c) all the ore within the ore boundary outline was mined.

These assumptions impact upon the proposed exploration for Golden Forty. Firstly, if all the ore within the ore boundary outlines was mined, then the residual resource left at Golden Forty is minimal (using the high historic lower cutoff grades). However, if the mine closed (due to poor ground conditions) and there was residual ore within the ore boundaries then there may be a significant residual resource. Secondly, if no further exploration was carried out at Golden Forty then targets outlined using the historic drilling data remain untested. Thirdly, the ore boundaries were outlined during the early 1970's, using harsh lower cut-offs as historic mining concentrated on higher grades. There may be significant residual ore that was left as during the 1970's it was deemed sub economic, but may be economic by today's standards.

With these assumptions, the current dataset indicates that Golden Forty has several areas of untested potential that require drilling. In conjunction, old mine records are being sourced to determine the extent of mining, particularly between 1977 and 1983.

Emmerson 2008 drilling consisted of 10 RC holes for a combined total of 2.214m during early June to test mineralization down dip and lateral of Golden Forty mine and to test shallow magnetic targets in Golden Forty South.

3 RC holes (GFRC026, GFRC027 and GFRC035) for a total of 529m were drilled to test potential economic down dip mineralization below and along strike of the Golden Forty mine workings. GFRC026 intersected 2m @ 3.54 g/t Au from 118 m and had to be stopped at 123m as it broke into a development drive. GFRC027, which was drilled 60m down dip of GFRC026 returned 1m @ 4.05 g/t Au from 154m and 5m @ 7.03 g/t Au from 158m incl. 3m @ 10.1 g/t Au from 158m. GFRC035, which was drilled 26m east of GFRC026 intersected 4m @ 5.96 g/t Au from 100m incl. 1m @ 15.4 g/t Au from, 101m.

The remaining 7 RC holes (GFRC028 to GFRC034) for a total of 1,685m were drilled to test shallow magnetic targets in Golden Forty South. Drilling intersected variable thicknesses of chlorite-talc-magnetite alteration, which is interpreted to represent the modelled magnetic body. Anomalous Au mineralization is recorded in 3 of the 7 holes however economic grades are yet to be established. Of particular note is hole GFRC032 which intersected high grade Cu mineralization including 5m @ 3.48% Cu and 0.52 g/t Au from 110m incl. 2m @ 6.65% Cu and 0.85 g/t Au from 110m.

Another 4 RC holes (GFRC036 to GFRC039) were drilled in mid-August for a total of 788m to test potential for along strike extension of the Golden Forty mine. GFRC036 failed to drill through mineralization as the hole was stopped at 233m, due to a shanked bit. GFRC036 returned 1m @ 0.28 g/t Au from 232m.

Drillholes GFRC037 and GFRC038 intersected broad zones of ironstone and associated chloritic alteration down dip of historical mine developments and previous drilling. Shallow mineralization exists up dip to both holes, highlighting the potential for near surface gold mineralization. Step out drilling and assay results returned from GFRC039 confirm the strike continuation to the east with Au mineralization remaining open. Assay results for GFRC037 to GFRC039 are summarized below:

- 4m @ 9.12g/t Au from 134m including 1m @ 31.2g/t Au from 134m (GFRC037);
- 4m @ 15.3g/t Au from 121m including 2m @ 28.6g/t Au from 122m (GFRC038);
- 3m @ 4.04g/t Au from 80m including 1m @ 8.49g/t Au from 80m (GFRC039); and
- 5m @ 4.59g/t Au from 109m including 1m @ 17.0g/t Au from 109m (GFRC039).

Emmerson continued drilling during 2009 following encouraging drill results from the 2008 drill program at Golden Forty, an additional ten RC holes for a total of 2,062 metres were completed. Assay results returned for these holes have significantly increased the geological understanding of the targeted down-plunge mineralisation. Best results summarised below:

- 2m @ 17.7g/t Au, 0.14% Cu from 135m (GFRC043);
- 1m @ 9.62g/t Au from 113m and 1m @ 1.44g/t Au from 138m (GFRC044)
- 7m @ 1.91g/t Au from 54m (GFRC045) and;
- 1m @ 6.48g/t Au, 0.36% Cu from 138m (GFRC048).

Drill hole GFRC043 returned an encouraging assay result of 2m @ 17.7g/t Au, 0.14% Cu from 135m approximately 25m down-dip of last year's drill hole GRFC038 (4m @ 5.9g/t Au from 100m including 1m @ 15.4g/t Au from 101m).

The above gold mineralisation is north dipping and occurs within a brecciated chlorite-magnetite iron-oxide assemblage which remains open at depth. However drilling of the shallow up plunge extent returned only patchy - discontinuous low grade results (GFRC045, 046 & 047).

Emmerson continued work with geophysics which modelled 6 shallow, north dipping forward aeromagnetic bodies, which were initially proposed to explain the magnetic anomaly over the Golden Forty area in which 4 out of the 6 bodies were tested by RC drilling. The other 2 untested bodies are within CLC exclusion zones. 3 out of the 4 tested bodies intersected ironstone with associated mineralization. Downhole magnetics indicate shallow off hole anomalies from the holes probed.

Magnetic and gravity inversion models were provided by Spinifex geophysics in 2011. The gravity inversion clearly shows a second order anticline which was previously unrecognized.

Multiple inversion models of the magnetic data were provided, and each dataset indicates a massive magnetic source in Golden Forty South. Inversion of the TMI ground magnetics indicate an untested 0.4 to 0.45 SI body underneath the quartz-porphry intersections of ADL334 and ADL538.

Inversions done by Spinifex and IVA's on the VRMI data show an overlap of the southern limb of Spinifex's 0.05 SI and IVA's 0.011 SI shell close to the TMI ground magnetic's 0.4 to 0.45 SI shell.

Another inversion of the TMI aeromag data resulted to a 0.08 SI spheroid coincident with the southern limb of Spinifex's VRMI 0.05 SI and IVA's VRMI 0.011 SI shells.

The VRMI and TMI aeromag inversion models show the second order anticline as observed from the gravity inversion models.

Re-assessment of the Golden Forty drilling and geological mapping reveals the presence of a previously unrecognised second order anticline. The existing Golden Forty mine is on the northern limb of this anticline and Golden Forty south anomaly is on the southern limb of this anticline. The anticline has a spaced series of axial planar cleavages.

The Golden Forty mine ironstone is simply zoned from the barren quartz-magnetite cap through mineralised chlorite-magnetite ironstone to basal chlorite-magnetite altered siltstone. Mineralisation is located within the chlorite-magnetite ironstone and persists within the basal stringer zone but the quartz-magnetite cap is barren. Au mineralisation (>5g/t) plunges 20° towards 284° which is close to the direction of movement on the mine thrust fault which dips 20° towards 310°. The thrust throw is 24 m towards 130° and the area below the thrust has been drilled tested intersecting only basal stringer zone. It appears the thrust developed at the contact between the ironstone and the basal stringer zone.

A desk top study for open pit mining of the Black Snake deposit was completed. Pit optimisation and design resulted in a 35m deep open pit with a waste/ore strip ratio of 7.5:1, ore c.20kt for total Ozs of approximately 7,000 (10,000 Ozs uncut).

Four angled RC holes (BSRC13-16) were drilled for a total of 160 meters. One meter sample splits were collected. These holes were drilled on 5 to 10 meter sections, as infill and confirmatory drilling to previous RAB drill holes. Single meter re-split results from the current program yielded the following significant results:

Hole#	From	Width	Au ppm	Cu ppm
BSRC013	16	10	9.88	25
BSRC014	9	18	6.52	37
BSRC015	20	10	2.74	17
BSRC016	9	9	2.39	40

All RC drill holes were mag-probed to confirm drillhole position and to search for potential nearby geophysical targets. Mat Cooper reviewed the mag-probe and ground magnetic data held for the Black Snake Prospect area. Other weak magnetic targets occur along strike, which are of similar magnitude to Black Snake.

Cross sections and plans were updated and plotted in Micromine for prospect assessment.

Seven angled RC holes were drilled for a total of 403 meters. One meter sample splits were collected. These holes were drilled on 5 to 10 meter sections, as infill and confirmatory drilling to previous RAB drill holes. Single meter re-split results from the current program yielded the following significant results:

Hole#	From	Width	Au ppm	Cu ppm	Lens
BSRC006	3	24	7.15	57	N&S
BSRC011	4	20	8.56	35	N&S

These results indicate that the interpreted northern EW lens merges with the southern EW lens in the central part of the ore zone. Both lenses have possible shallow plunges to the east and west.

The Golden Kangaroo East prospect, was evaluated for an initial resource calculation. The Global Resource was estimated based on three (3) mineralisation domains:

1. Oxidised Haematitic Shale (HSH),
2. Oxidised Haematitic Sandstone and Siltstone (HSS),
3. Shear Zone (SHZ).

The estimation was deemed to be of a low confidence level due to the drill hole density, sample length and density, accuracy of sample points, discontinuity of mineralisation and overall data quality, further exploration work will be required prior to confirming a resource.

Current calculated non JORC compliant resource estimates for the Golden Forty Group are as detailed below;

Resources	Tonnes	gold grade g/t	copper grade %	contained gold oz's	contained copper (t)
<b>Golden 40 (remnants)</b>	85,000	11	1	30,061	850
<b>Golden 40 East</b>	10,000	9		2,894	
<b>Blake Snake</b>	18,700	12		7,200	
<b>Golden Kangaroo East</b>	17,240	7.3		4,046	
<b>Golden Kangaroo</b>	158,718	3.1		15,819	
<b>TOTAL</b>	<b>120,940</b>			<b>41,307</b>	<b>850</b>

Table 4: Golden Forty Group non JORC compliant resources



During 2010 Emmerson and contract geophysical consultants, Spinifex Geophysics, further developed a processing technology, Vector Residual Magnetic Intensity (VRMI) aimed at existing magnetic data from Emmerson's Tennant Creek tenure package, figures 4 (pre-VRMI) & 5 (VRMI) represent the success of the VRMI technology. Immediate identification of highly prospective VRMI targets reprioritised Emmerson's target matrix, the Red Bluff Area in Emmerson's Western Project Area became the No. 1 priority area for exploration activities. Drilling during 2010 at Red Bluff confirmed the VRMI technology with significant intercepts of thick ironstones, although assay results were mixed, the successful ironstone intercepts were evidence to support the development and use of VRMI technology. VRMI assessment of the Golden Forty Group clearly displays the prospectivity of the group with significantly subdued VRMI anomalism dominant over the area and strong VRMI anomalies associated with the immediate Golden Forty and Golden Kangaroo areas, refer to figure 6.

During 2011 Emmerson Resources Ltd (Emmerson) flew a Heli-TEM survey over a number of areas to firstly orientate the survey over known deposits and secondly to fly over the highest priority VRMI target areas. Heli-TEM is a helicopter mounted system capable of measuring the conductivity of the rocks to significant depth and will utilise the world's most powerful airborne, time-domain electromagnetic system. A breakthrough during late 2010 and early 2011 has been the recognition that drill core from the mineralised portions of Tennant Creek's historic deposits is conductive up to

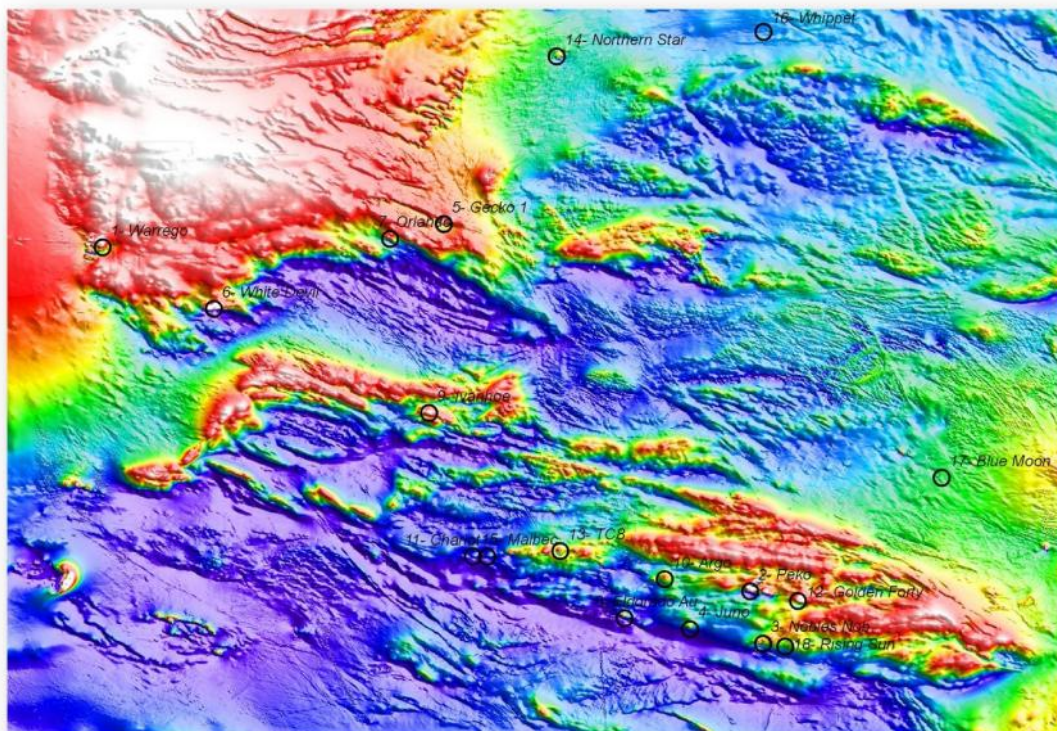


Figure 4: Conventional Magnetics

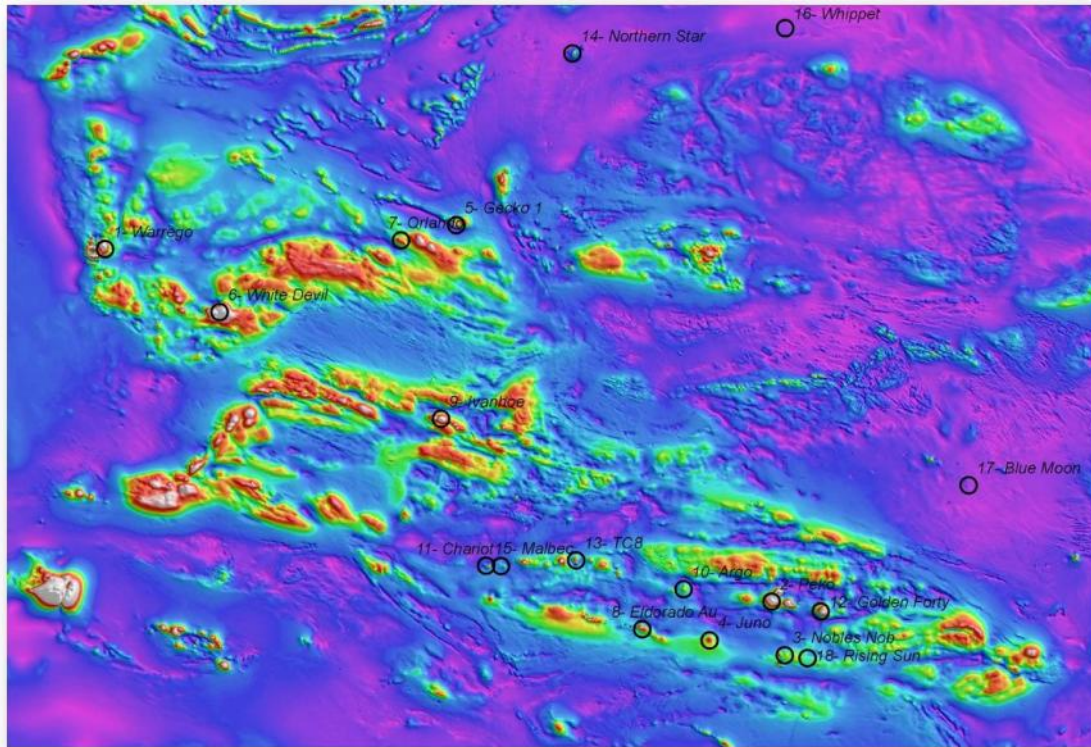


Figure 5: VRMI

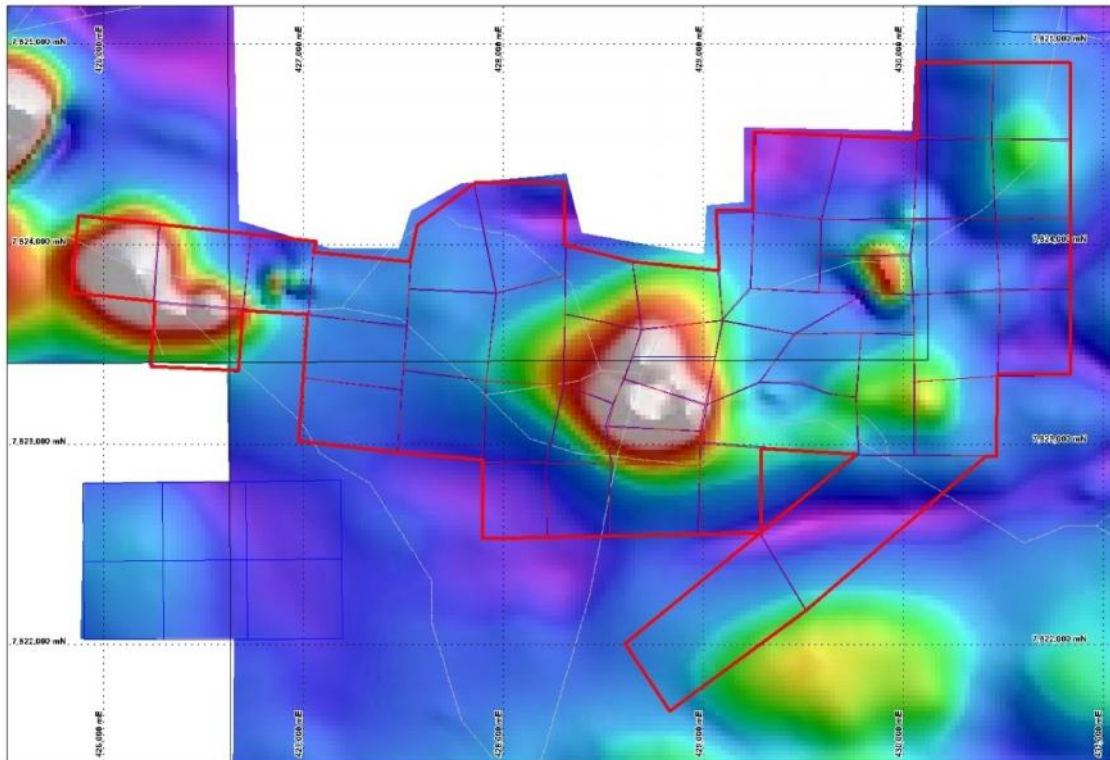


Figure 6: VRMI anomaly displayed at the Golden Forty Group.



80times the background levels. Emmerson hopes that encouraging results from the Heli-TEM survey will further refine the exploration search workspace within recognised VRMI targets areas.

Emmerson has flown this first survey over one area of interest in the EPA, more precisely over the Golden Forty and Peko areas (known deposits, Block 5), refer to figure 7. Exploration and a 'proof of concept' drilling program was initially focused in the Northern Project Area (NPA) around the Gecko area. Results from this drilling to date have been very successful with intersections of both high grade gold and copper from two new discoveries, Goanna and Monitor, located either side of the historical Gecko Mine Area. Induced polarisation (IP) surveys have also recently been conducted to further define the identified anomalies and help in refining the drill targets.

The drilling of HeliTEM targets at Gecko (the 'Proof of Concept' drilling) has provided the most significant and new exploration breakthrough for exploration in the Tennant Creek Mineral Field for decades. This breakthrough has been the application and drilling of HeliTEM targets at the Goanna and Monitor discoveries (in the Gecko Area) occurs in subdued magnetic signatures, therefore confirming that magnetic anomalies are not the only potential hosts for economic mineralisation in the Tennant Creek Field. Figure 8 below shows the magnetic image (VRMI) of the Gecko Corridor, it can be seen that the drilling at both Monitor and Goanna has focused on the 'blue' area (magnetic low), compare this with the HeliTEM image in figure 9 and it can be seen that the drilling has focused on a HeliTEM anomaly not seen in the magnetics, this has vast implications for exploration in the rest of the field, in particular the Golden Forty Group.

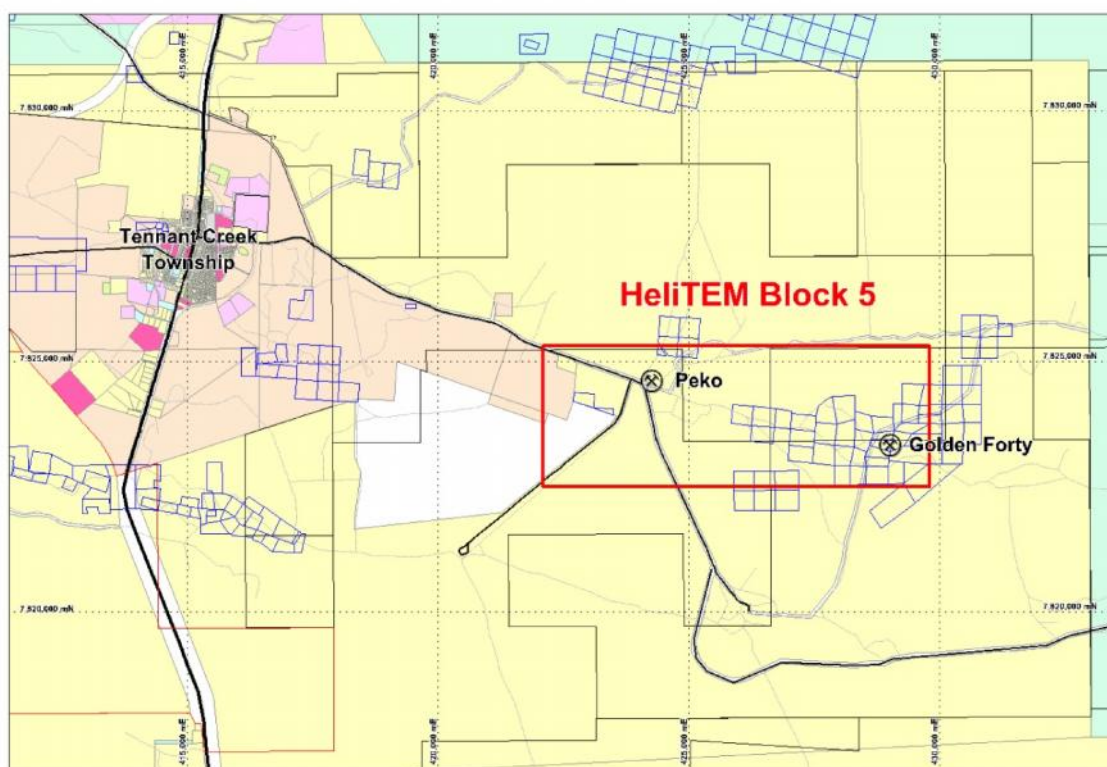


Figure 7: HeliTEM Survey Block 5

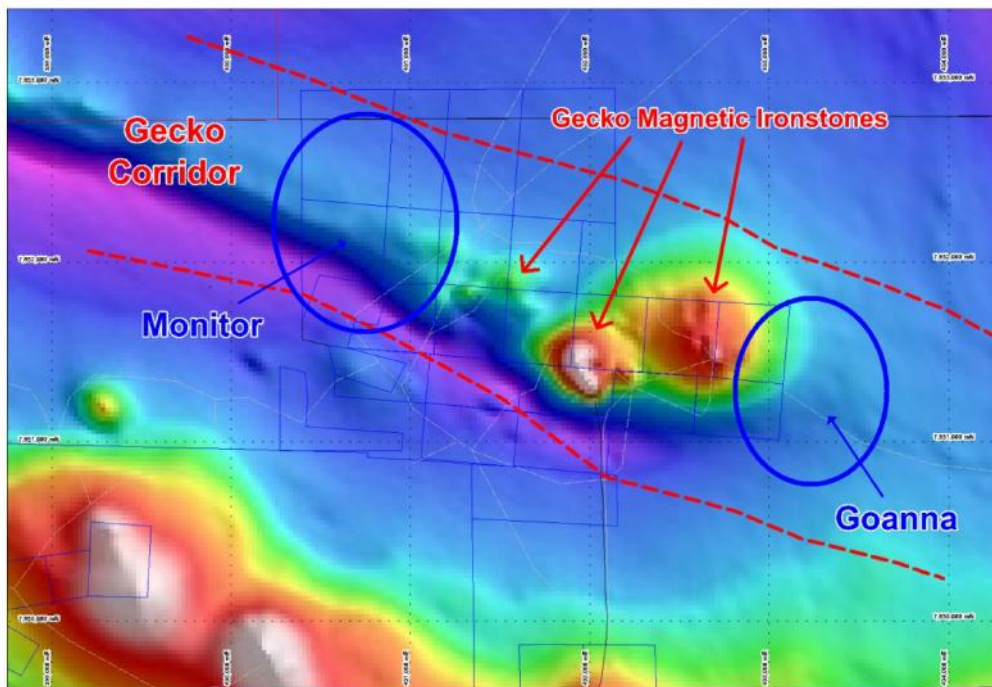


Figure 8: Gecko Corridor vs. VRMI

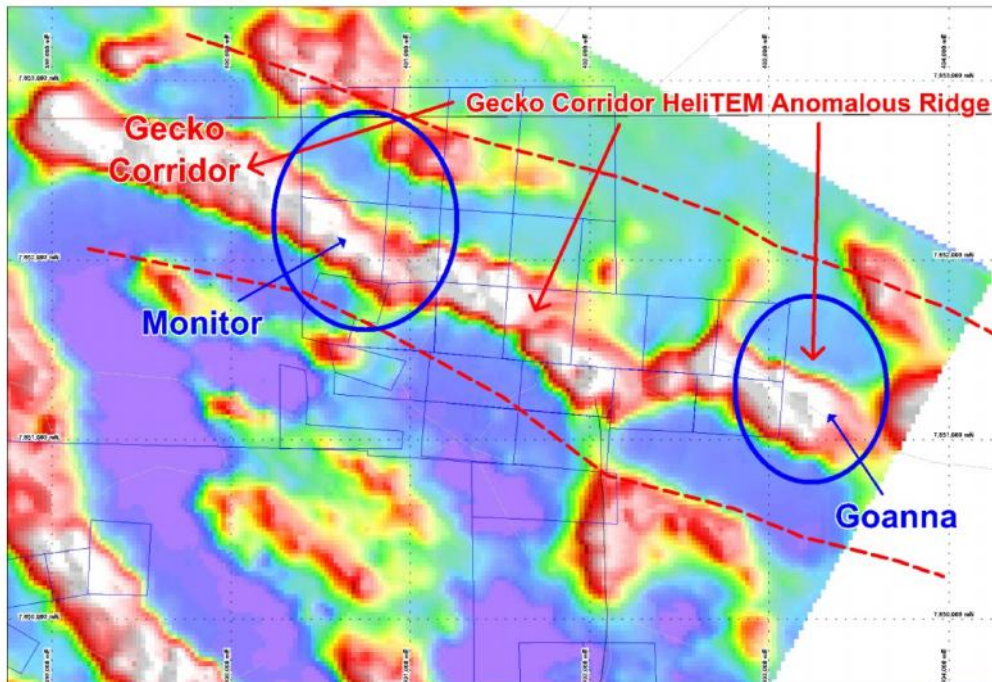


Figure 9: Gecko Corridor vs. HeliTEM (depth Slice at 350m below surface)

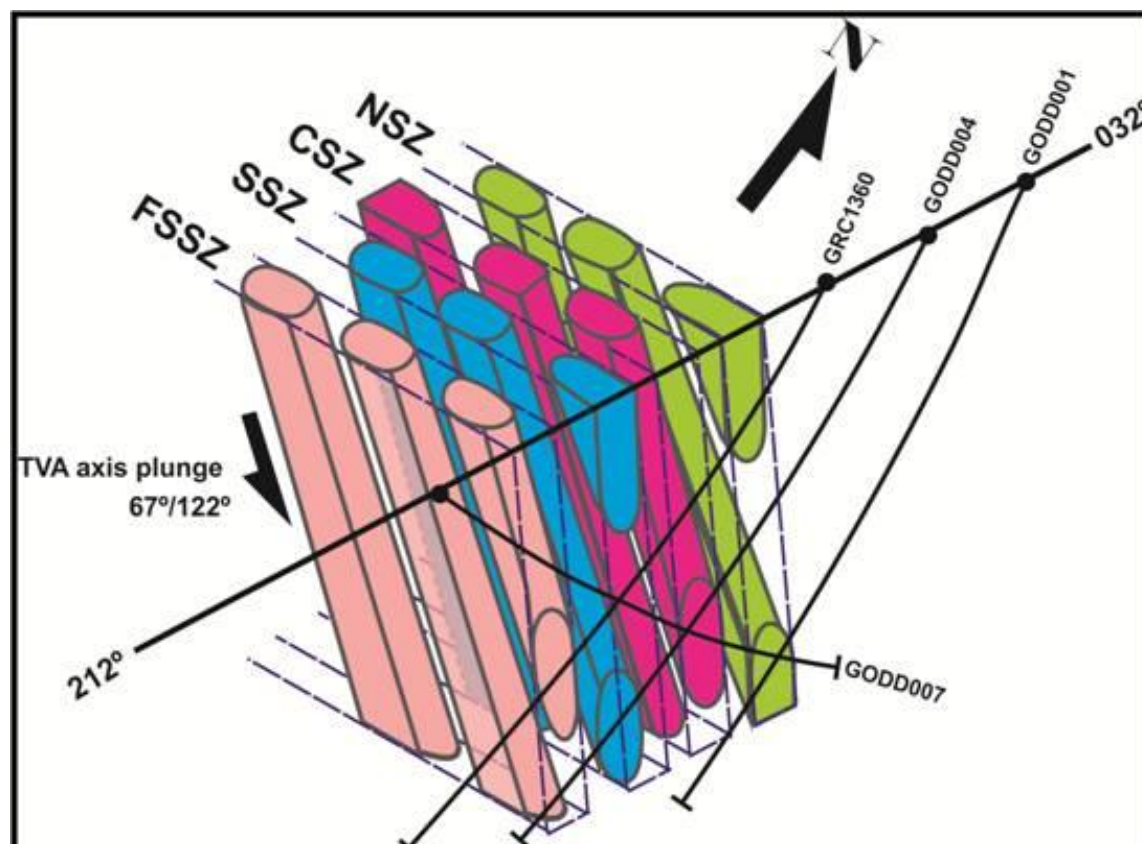


Figure 10: Identified Shear Zones at Goanna and the plunge pipelike mineralisation bodies, within the shear zones.

Emmerson commenced drilling in a perpendicular to strike of the identified structural orientation, this drilling identified four shear zones, which has subsequently increased to five shear zones (termed northern, central, southern, far southern and far northern shears) through subsequent drilling, as well as defining shear zones the drilling intersected significant mineralisation. Drilling continued in this perpendicular orientation until it was realised that structurally the mineralisation had a plunge component and was likely to occur as pipe like bodies within the shear zones, as displayed in figure 10. Following this realisation the drilling orientation was changed to drill parallel (GODD007 in figure 10) which gives a higher chance of intersecting the mineralisation but also a closer to true thickness.

The preliminary interpretation and analysis of HeliTEM data over the Golden Forty Block has further highlighted the Peko to Golden Forty trend, as can be seen in figure 11 below the HeliTEM anomalism (small dots) clearly defines the Peko Porphyry, outlined in yellow.

Previous exploration at Golden Forty by Emmerson has yielded little success and had been lowered in priority, although the exploration has yet to account for the magnetic anomalism, the HeliTEM data requires further and more detailed study. Which will be prioritised following further work at Goanna.

This identification of a new mineralisation style that is blind to magnetics has huge implications to explore ground previously thought non-prospective due to lack of



magnetic anomalism in both the brownfields (near mine) and greenfields environments in the entire Tennant Creek Field and hence the EPA and the Golden Forty Group.

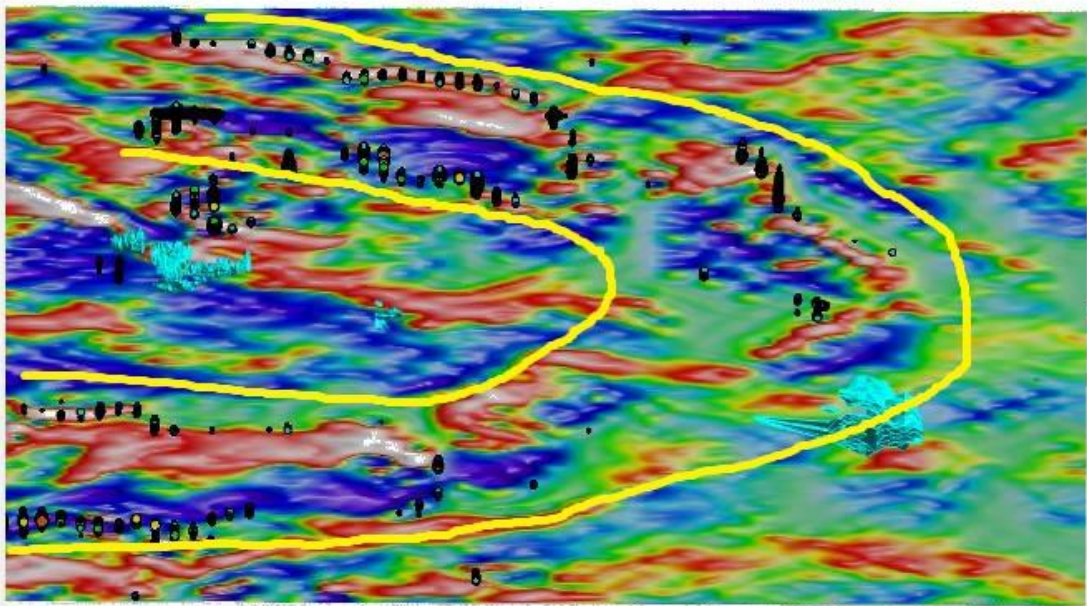


Figure 11: HeliTEM Block 5 (East Peko to Golden Forty)

## 7. CONCLUSIONS

As described above the Golden Forty Group of leases contains the historical Golden Forty, Golden Kangaroo and Black Snake Mines and other clearly identified anomalous zones warranting further exploration and detailed follow-up and also non JORC compliant resources that require further work to increase their confidence and promote them to JORC compliant and eventual mining and production. Current calculated non JORC compliant resource estimates for the Golden Forty Group are as detailed below;

Resources	Tonnes	gold grade g/t	copper grade %	contained gold oz's	contained copper (t)
Golden 40 (remnants)	85,000	11	1	30,061	850
Golden 40 East	10,000	9		2,894	
Blake Snake	18,700	12		7,200	
Golden Kangaroo East	17,240	7.3		4,046	
Golden Kangaroo	158,718	3.1		15,819	
<b>TOTAL</b>	<b>120,940</b>			<b>41,307</b>	<b>850</b>

Emmerson considers the Golden Forty Group to be of high value for its identified insitu resources and further exploration potential.

Further to this and following the success and leaps in knowledge acquired from the 'Proof of Concept' drilling at Gecko the Golden Forty Group requires re-evaluation with the aim of identifying further drill targets for testing and evaluation.

## **8. MTA COMPLIANCE RECOMMENDATION**

It is recommended that Emmerson amalgamate all 48 titles into a single title and renew the title for future resource definition and exploration activities to explore in more detail the identified deposits and anomalous zones to determine its potential to host economic deposits, as detailed above.

Planned future activities will be aimed at the following;

- Detailed assessment for suitability for an airborne EM survey.
- Detailed reassessment of drill core for reinterpretation of the structural environment.
- Detailed interpretation and analysis of the HeliTEM data
- Where positive result conduct geophysical surveys such as deep IP.
- Drill testing by RC and/or DDH.
- Continue to operate with best practises to demonstrate a clear track record with the aim of increasing the possibility of redefining sensitive areas.

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