Report ARU-17/005

ANNUAL REPORT FOR THE YEAR ENDING 5 NOVEMBER 2017 EL 29701 (JERVOIS) NT, AUSTRALIA.

By

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11 December 2017

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REPORTING DETAILS

Titleholder	Arafura Resources Limited
Operator (if different from above)	Rox Resources Limited
Titles/tenements	EL 29701
Tenement Manager	Arafura Resources Limited
Mine/Project Name	Bonya/Jervois project
Report Title	Annual Report for the year ending 5 November 2017, EL 29701 (Jervois) NT, Australia.
Personal author(s)	Richard Brescianini BSc (Hons) MAIG
Corporate author(s)	Arafura Resources Limited
Target commodities	Cu-Au, base-metals, Mo-W, Fe-Ti-V
Date of report	11 December 2017
Datum/zone	GDA94/Zone 53
250 000 K mapsheets	Huckitta (SF53-11)
100 000 K mapsheets	Jervois Range (6152), Jinka (6052)
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SUMMARY

EL 29701 (Jervois) is a replacement tenement that combined and supersedes Arafura's EL 10215 and EL 26812. EL 29701 was initially granted to Arafura Resources Limited ("Arafura") on 6 November 2012.

The project area is located in the Jervois district and mostly within the eastern part of the Aileron Province in the Arunta Region. The geology of the project area predominantly consists of greenschist to amphibole facies metamorphosed Palaeoproterozoic sedimentary and igneous rocks. The metamorphosed basement rocks are unconformably overlain by weakly metamorphosed Neoproterozoic-Palaeozoic sedimentary units of the Georgina Basin. A prolonged sequence of Ordovician-Carboniferous deformation has resulted in block-faulting with minor open folds and localised subvertical to overturned bedding in the Georgina Basin units adjacent to the fault zones.

The basement rocks of the Aileron Province have potential to host numerous mineralisation styles akin to those found in the Jervois district, including metamorphosed polymetallic base-metal deposits, as well as W and Mo skarn and vein-style deposits, and the Fe-Ti-V oxide deposits.

Metamorphosed orthomagmatic Fe-Ti-V oxide deposits with localised(?) anomalous Au-Pt-Pd mineralisation occur in northeast EL 29701. A number of these oxide prospects were drilled and evaluated by Arafura while under EL 10215. Some interesting Fe-V prospects with good grades have been identified but additional drilling is required to better understand the potential of these resources. At this stage, the Cu-Au and base-metal opportunities are considered more important to evaluate and they received attention in 2012-13.

Rox Resources Limited ("Rox") entered into a Farm-in and Joint Venture Agreement with Arafura Resources in the latter part of 2012 on EL 29701 and commenced exploration activities soon after, principally focusing on base and precious metal opportunities. Visible copper mineralisation is evident at a number of historic prospects and abandoned mines within the project area. Rox is systematically exploring these areas, which includes drilling of promising targets. The best results obtained to date are from the Bonya Mine prospect, where wide intervals of high-grade, copper-enriched massive sulphides have been intersected.

During the reporting period Rox undertook ground gravity surveys and rehabilitation activities.

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INTRODUCTION

LOCATION AND ACCESS

Exploration Licence 29701 is located approximately 260 kilometres east north-east of Alice Springs (Figure 1) in the Jervois district. The tenement area lies to the north of the Jervois Stock Route that passes through the Jervois pastoral property. EL 29701 is largely within the Arunta Province, but also includes parts of the Georgina Basin.

Access to the general area is via the well-formed but mostly unsealed Plenty Highway that intersects the Stuart Highway about 68 kilometres north of Alice Springs. The road distance from Alice Springs to the furthest reaches of the project area is almost 400 kilometres. Following heavy rain, the Plenty Highway can be closed to all traffic or have weight provisions applied.

Well-formed dirt roads exist to Baikal and the nearby Bonya aboriginal community, and to Lucy Creek pastoral property, north of EL 29701, via the abandoned Jervois mine site. Vehicular access within the licence is generally restricted to a few station tracks servicing bores and fence lines. Vehicular movement away from these tracks is difficult in the western half of EL 29701 due to the hilly and rocky nature of the land but relatively easy in the eastern part where shallow aeolian sand blankets reasonably flat ground.

Active dirt airstrips are located near the Jervois and Lucy Creek homesteads and near Baikal. An infrequently used airstrip is also located at the abandoned Jervois mine site.

CLIMATE

The climate in the licence area is best described as mainly dry all year round with hot summers and cool to cold winters. Official observations for the Bureau of Meteorology have been recorded at Jervois since 1966. Average annual rainfall is 296 millimetres, of which about two-thirds falls in the period December to March. January is the hottest month with average minimum and maximum temperatures of 22.7°C and 38.5°C degrees while July is the coldest at 5.2°C and 22.7°C, respectively. Overnight frosts are common some winters. Winds are predominantly from the southeast and monthly averages for the 9:00 am wind speed are 9-16 km/hr.

Average annual evaporation is approximately 2,900 millimetres.

TOPOGRAPHY

The Jervois Range runs northeast-southwest through the general area of EL 29701 creating a significant drainage divide (Figure 1). Numerous ephemeral gullies and deeply incised creeks drain the hilly parts. South of the Jervois Range most drainages contribute to the Bonya Creek and the Plenty and Marshall Rivers that flow (intermittently) to the east and southeast, and ultimately to the Simpson Desert. North and west of the Jervois Range the main drainage is provided by Arthur Creek which also drains ultimately to the Simpson Desert in the southeast. There are no permanent rivers and only a few significant water holes in the region.

The topography within the licence area falls into two main categories that generally

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correspond to the geology.

- Extensive flat or gently sloping sandy areas dissected by river systems and associated with the flood plains. These contain small isolated low-relief hills in parts and dominate the east of the tenement.

- Steep-sided incised ranges that rise up to 250 metres above the surrounding plains. These are related to metamorphic and igneous rocks of the Arunta Region in the Bonya Hills in the western parts of EL 29701, and to sedimentary rocks of the Georgina Basin in the Jervois Range.

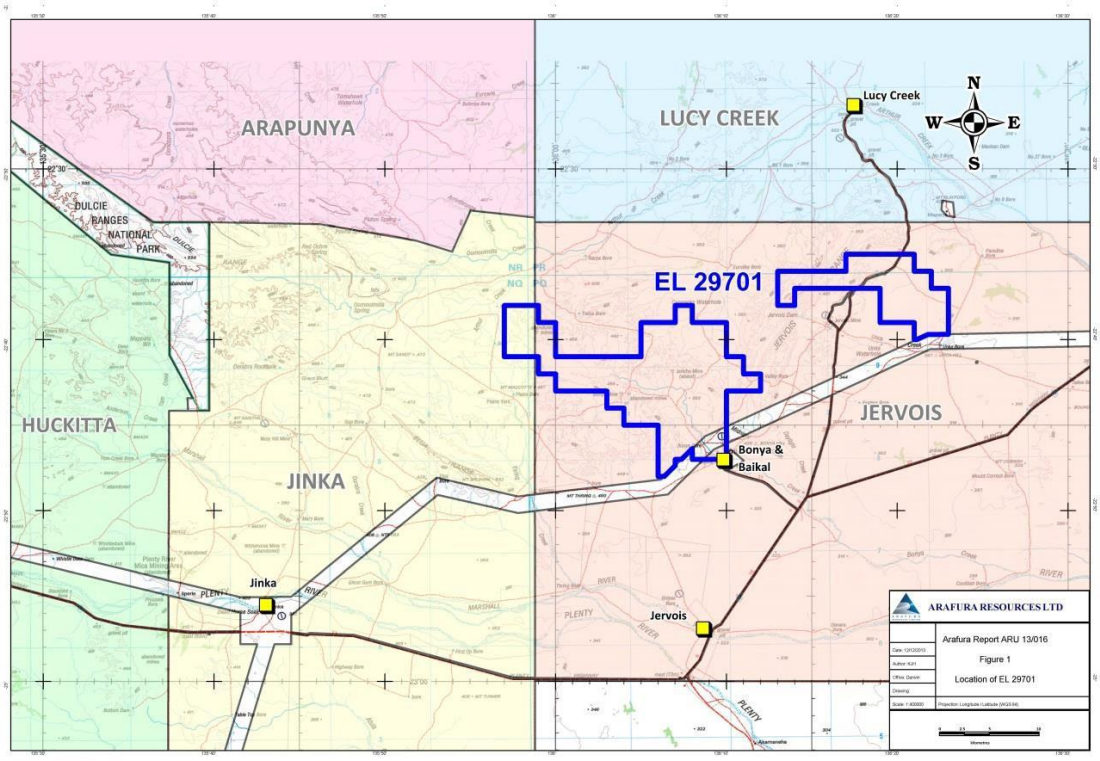

Figure 1: Location of Jervois/Bonya project area with EL 29701 in blue.

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TENURE

Exploration Licence 29701 (Jervois) was granted 100% to Arafura Resources Limited (ACN 080 933 455) as 89 blocks (279.03 km^2) on 6 November 2012 for a period of two years, since renewed for a further two years expiring 5 November 2016. EL 29701 is a replacement tenement that combines and supersedes ELs 10215 and 26812.

The tenement covers parts of two perpetual pastoral leases (PPL).
These are:

- PPL 962 Jervois Pastoral Company
  Jervois Pastoral Company PMB 36, Alice Springs NT 0871
- PPL 1119 Jinka Station
  Broad, M.J PMB 36, Alice Springs NT 0871

The tenement also covers a small part of the Jervois Stock Route near Baikal and Bonya (Figure 1).

Rox Resources Limited ("Rox") entered into a Farm-in and Joint Venture Agreement with Arafura in the latter part of 2012 on EL 29701. Rox has since expended the necessary funds on the tenement to have earned a 51% interest in the tenement's copper, lead, zinc, silver, gold, bismuth and PGE mineral rights.

NATIVE TITLE

There are no registered Native Title claims over the land which is the subject of the licence. In the absence of instructions to the Central Land Council (CLC) from potential native title claimants in the area, the licence is not subject to an existing Native Title Exploration Agreement between Arafura Resources and the CLC in respect of exploration titles in other areas of the Northern Territory.

In the absence of an Exploration Agreement, Native Title issues are addressed in accordance with Item 18 of the Schedule 2 Conditions which attach to the grant documents for the licence. This requires that Arafura convene a meeting with registered native title claimants before commencing exploration activities other than reconnaissance. As there are no registered native title claimants at present there is no compulsion to convene such a meeting.

The Jervois Stock Route is the subject of Aboriginal Land Claim 82.

ABORIGINAL SACRED SITES

The Sacred Site register of the Aboriginal Areas Protection Authority was queried by Capricorn Mapping and Mining Title Services Pty Ltd on 15 May 2005, for the area of all of Arafura's titles and applications on the Jervois 100,000 map sheet. This was prior to the Company undertaking reconnaissance activities in the area in 2005 while under EL 10215.

No exploration was conducted in the vicinity of the sites identified in the register.

In May 2006, Arafura commissioned the Aboriginal Areas Protection Authority to conduct a

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clearance of an area of interest surrounding the Lucy Creek and Unca Prospects that was, at that time, likely to be affected by drilling and earth moving operations and to provide Arafura with a Work Authority Certificate covering all activities in these areas. Arafura was granted Authority Certificate C2006/080 in August 2006.

GEOLOGY

REGIONAL SETTING

The Arunta Region contains more than 200,000 km^2 of metamorphic rocks in the southern parts of the NT and has been subdivided into three distinct geological regions by the NTGS, the Ailerion, Warumpi and Irindina Provinces (Figure 2).

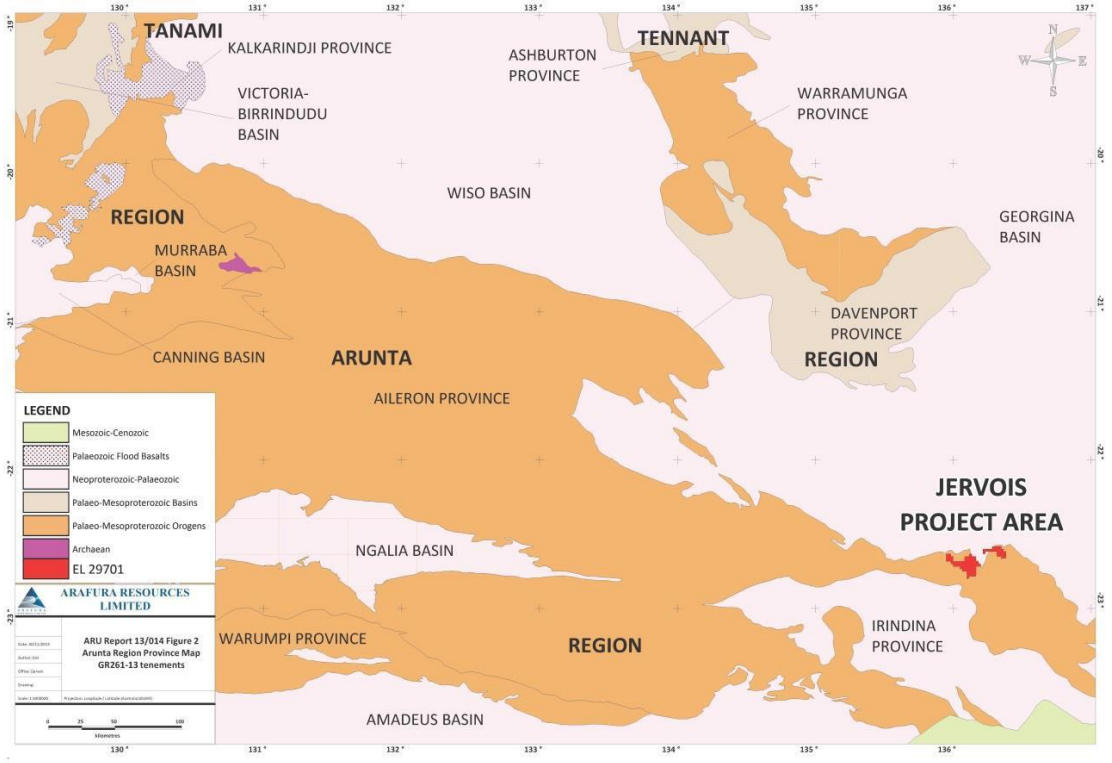

Figure 2: Geological provinces of the central-southern Northern Territory showing the location EL 29701 in red.

The Aileron Province predominantly consists of Proterozoic (1865-1500 Ma) sedimentary and igneous rocks that have undergone greenschist to granulite facies metamorphism. The majority of the preserved metasedimentary and igneous rock units in this region were deposited or emplaced prior to the 1740-1690 Ma Strangways Orogeny (*e.g*. Scrimgeour 2003, Hussey *et al* 2005, Claoué-Long *et al* 2008a, 2008b). This event appears to have affected the entire Aileron Province to some degree, as opposed to the 1590-1570 Ma Chewings Event which appears to be localised within the central and southern(?) parts of Aileron Province (*e.g.* Hand and Buick 2001; Fraser, 2004). The 1810-1800 Ma Stafford and 1790-1770 Ma Yambah Events also appear to be present throughout the Aileron Province, with extensive bimodal igneous activity, associated sedimentation and localised low pressure-high temperature metamorphism.

Most of the eastern parts of the Aileron Province, including the Jervois district, were

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metamorphosed at upper greenschist or lower amphibolite facies conditions during the Strangways Orogeny, with an apparent abundance of 1810-1700 Ma igneous activity and deformation. Regions of the Aileron Province have also been subject to younger (1640-1500 Ma) periods of magmatism but this is not known in the eastern Aileron Province.

Current views on the depositional and tectonic setting of the Aileron Province are based on recent geochemical, isotopic and igneous studies and the contained mineral systems. These favour a rifted continental crust or evolving backarc setting in the early parts of the depositional history (*eg.* Hussey *et al* 2005; Hoatson *et al* 2005), with a rolonged tectonothermal convergent event in the Strangways Orogeny. Hussey *et al* (2005) and Hoatson *et al* (2005) argue for contiguous sedimentation and bimodal igneous activity during Stafford Event. This Event is thought to be responsible for the development of localised(?) deep-marine basins in the Arunta Region, as opposed to contemporaneous subaerial to shallow-water volcanism and sedimentation in the adjacent Davenport Province. Bimodal igneous activity is also evident in the Jervois district during the Yambah Event.

The Aileron Province contains contemporary equivalents of the gold-bearing Granites-Tanami and Tennant Creek Regions and regional aeromagnetic data indicate lateral continuity between these Regions. The Aileron Province is therefore regarded as part of the North Australian Craton, however, localised facies variations and differences in sedimentary environments are evident.

The Warumpi Province in the south and southeast of the Arunta Region (Figure 2) contains a younger package of metasedimentary and volcanic rock types with protoliths in the range 1690-1600 Ma (Scrimgeour *et al.,* 2003). The Province was variably metamorphosed in the 1640 Ma Leibig Orogeny, 1570 Ma Chewings and the 1150 Ma Teapot Events.

Unmetamorphosed Neoproterozoic to Palaeozoic marine and terrestrial sedimentary rocks of the Georgina, Ngalia and Amadeus Basins surround the Arunta Region and unconformably overly the Aileron and Warumpi Province. Contemporaneous Neoproterozic to Cambrian strata of the Harts Range Group (Buick *et al* 2001; Maidment *et al* 2004; Buick *et al* 2005) are also caught up within the eastern parts of the Arunta Region in the Irindina Province (Scrimgeour 2003). This revision and reinterpretation of the Arunta Region has significant geological implications and has come about largely as a result of several extensive chronological, metamorphic and metallogenic studies in the eastern Arunta Region (eg Miller *et al* 1998; Mawby *et al* 1998, 1999; Hand *et al* 1999a, 1999b; Buick *et al* 2001; Scrimgeour and Raith, 2001; Hussey 2003; Maidment *et al* 2004; Buick *et al* 2005; Claoué-Long and Hoatson 2005; Close *et al* 2005; Hussey *et al* 2005).

Geochronological and metamorphic studies have shown that the rocks of the Harts Range Group in the Irindina Province are variably metamorphosed to transitional granulite facies in the (480-450 Ma) Ordovician Larapinta Event. This high-grade event is followed by lower-grade Devonian to Carboniferous deformation and granite and pegmatite intrusion. Interestingly, the high-grade Larapinta Event appears to have had little influence on the thermal history of the surrounding rocks of the Aileron Province, and apart from rare exceptions appears to be largely restricted to the Irindina Province (Maidment 2004, Close *et al* 2005, Hussey *et al* 2005; Claoué-Long and Hoatson 2005).

Many of the fault bounded contacts between the various units within the Arunta and surrounding regions are attributed to localised Ordovician-Carboniferous (450-300 Ma) deformation. Most of the fault movements within the Georgina Basin also appear to be related to the Ordovician Larapinta Event and Devonian-Carboniferous Alice Springs Orogeny.

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LOCAL GEOLOGY

The reader is referred to Freeman (1986), Freeman *et al* (1989), Zhao and Bennet (1995), Maidment (2004), Hoatson *et al* (2005), Claoué-Long and Hoatson (2005), Dunster *et al* (2006) for details on the geology and geochronology of the region. In the absence of more detailed recent publications which describe the geology of the Jervois region, Freeman (1986) and Freeman *et al* (1989) will be relied on to provide an insight to the local geology and nomenclature. Arafura's Hussey was part of an NTGS team working on mineral deposits of the Arunta region in 2000-2004 and has drawn on previous mapping experience and unpublished data.

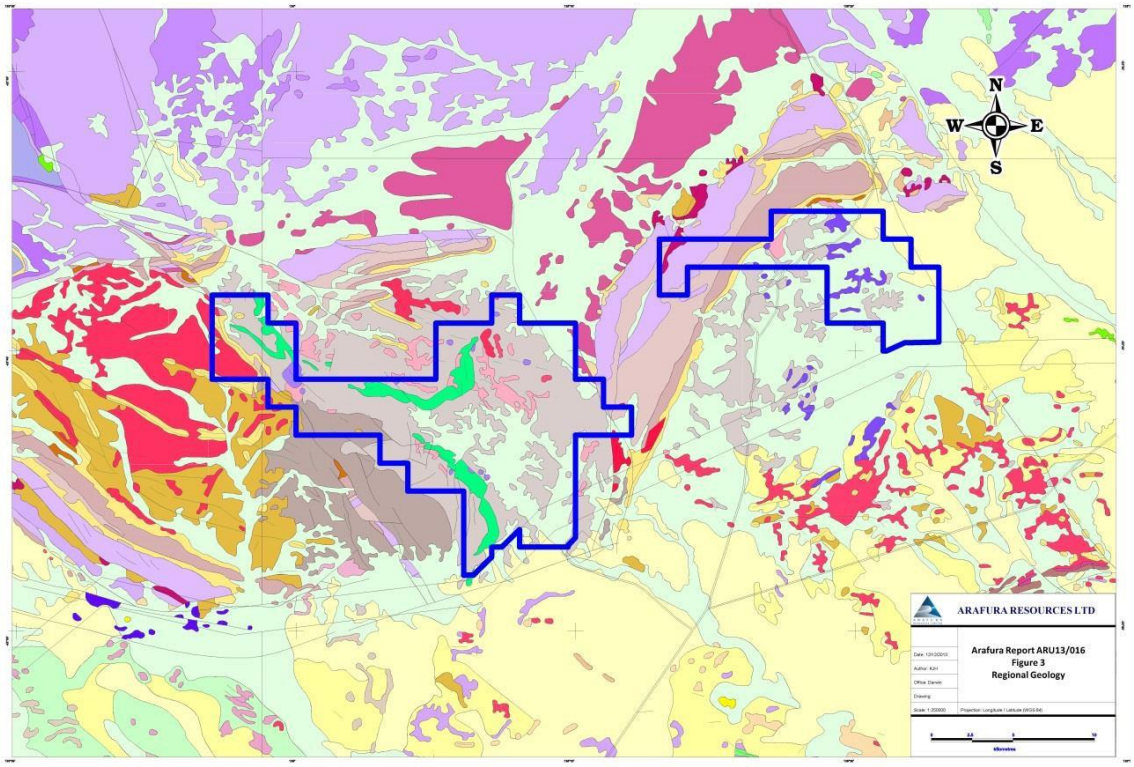

Figure 3 Regional geology of EL 29701. The geology is based on the digital edition of the HUCKITTA 1:250 000 Geological Map Sheet (Freeman 1986) from Geoscience Australia and covers an area slightly larger than the Jervois 1:100 000 Map Sheet.

Arafura's original titles in the Jervois Region (EL 10214 and 10215) encompassed parts of the Aileron and Irindina Provinces and the Georgina Basin. EL 29701 supersedes EL 10215 and only includes elements of the Aileron Province and the Georgina Basin (Figures 2 and 3).

Previously, the Arunta Province (domain/inlier/block) was divided into three major subdivisions based on coarse structural and stratigraphic considerations (Stewart *et al* 1984, Shaw *et al* 1984). The three structural provinces were divided into the Northern, Central and Southern Domains, separated by major east-west tectonic zones. In the eastern parts of HUCKITTA near the licence area, the Delny-Mount Sainthill Fault Zone was used to separate the Northern from the Central Tectonic Domain (Freeman 1986). The Delny-Mount Sainthill Fault Zone is now used in part to separate the Aileron Province in the north from the Irindina Province in the south (Figure 2). The rocks of the Harts Range Group in the south have been metamorphosed to transitional granulite facies in the

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Ordovician Larapinta Event (Hand *et al* 1999a, 1999b; Buick *et al* 2001, 2005; Maidment 2004) while the contemporaneous units in the Georgina Basin that unconformably overlie greenschist to amphibolite facies rock units of the Aileron Province immediately north of this fault zone are essentially unmetamorphosed. Claoué-Long and Hoatson (2005) found localised thermal affects coeval with the Larapinta Event in the Attura Metagabbro region. Larapinta-aged thermal effects have also been observed in xenotime from the Molyhil Mo-W skarn deposit (David Huston, *pers comm,* 2007) which occurs just to the north of the Delny-Mount Sainthill Fault Zone.

The Bonya Schist (-pCo) is the dominant outcropping Palaeoproterozoic unit within the tenement area. It is a polydeformed composite unit that is predominantly composed of pelitic, psammopelitic and calcareous metasedimentary rocks, with subordinate psammitic and quartzite units, and felsic and mafic igneous rocks, all metamorphosed at upper greenschist to lower amphibolite facies conditions. Rare preserved sedimentary structures in the psammitic and quartzite units in the Bonya Hills indicate that at least parts of the Bonya Schist were deposited in high-energy shallow-water environments. Sedimentary structures have been obliterated in the pelitic units that host the base metal occurrences in the Jervois Mining District.

Unpublished NTGS mapping (by Kelvin Hussey and Max Frater) found that some of the mafic and felsic igneous units within the Bonya Schist, as it is currently mapped (Freeman 1986 and Freeman *et al* 1989), are clearly discordant intrusive units whilst others are extrusive units. Large intrusive bodies of granite-granodiorite are also present throughout the region. Many of these have been differentiated and named based on their localised distribution. The granite-granodiorite bodies clearly intrude the Bonya Schist as plutons or as high-level sills/laccoliths. Field and petrological evidence indicates that most have been deformed and metamorphosed, probably in the Strangways Event.

The granitic units are poorly exposed in the eastern and southern parts of the licence area with isolated hills protruding above the plain, but geophysical data indicates they dominate the region. Unnamed metamorphic units, currently mapped as unit pCd, are also present in these areas; these are thought to be similar to parts of the Bonya Schist, based on their geophysical expression. However, differences are evident.

The Bonya Schist has a variable magnetic character depending on the rock types. Most of the mafic igneous rocks in the Bonya Schist have a low magnetic response in comparison to the distinct highly magnetic package that hosts the deposits of Jervois Mining District. This essentially corresponds to a package of magnetite-bearing andalusite and muscovite-biotite schists, with subordinate calc-silicate rocks and localised magnetite bodies. The psammitic and calc-silicate-rich parts of the Bonya Schist in the Bonya Hill have a different geophysical expression to the others mentioned above. A similar geophysical expression is seen elsewhere within the licence areas.

The Attutra Metagabbro (-Pda) outcrops to the east of the Jervois Mining District as a series of low hills. The unit is described as altered gabbro, dolerite, norite and magnetite rock. The mineral potential of this igneous body was highlighted by Hoatson *et al* (2005).

The named granites in the vicinity of the licence areas include the Jervois (-Pge), Unca (- Pgu) and Xanten (-Pgx) Granites. These range from biotite granodiorite to highly fractionated leucogranite. Outcrops of unnamed or undifferentiated granitoids also occur throughout the Jervois region; these units are thought to be more or less coeval with the named granites noted above. The Samarkand Pegmatite (Pps) has also been differentiated within the Bonya Hills.

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Until recently, there was little in the way of precise geochronological constraints in this region. A pelitic unit from a non-magnetic part of the Bonya Schist several kilometres northeast of the Jervois Mining District has a maximum SHRIMP U-Pb age of 1807 Ma (Claoué-Long and Hoatson, 2005). This unit was sampled near the margin of the 1786 Ma Attutra Metagabbro which also contains 1775 Ma intrusive tonalite bodies (Claoué-Long and Hoatson, 2005). Similarly aged felsic magmas are present elsewhere; for example, Zhao and Bennett (1995) found that the Jervois Granite was about 1770 Ma and a rhyolitic intrusive unit sample by Hussey in the Bonya Hills is about 1785 Ma (Jon Claoué-Long, *pers comm*, 2004).

Hussey studied the nearby Molyhil Mo-W skarn deposit as part of a joint NTGS/GA mineral deposit analysis. This project included a small geochronology component which yielded more or less consistent 1720 Ma ages for amphibole (Ar-Ar) and molybdenite (Re-Os) in mineralised skarn assemblages and for zircon (U-Pb) in the nearby granite (David Huston, *pers comm,* 2007). This result is consistent with high-level granite emplacement and skarn mineralisation during the Strangways Event. However it should be noted xenotime from the skarn assemblage yielded a Larapinta Event age. The regional Mo-W mineralisation therefore appears to be related to more fractionated granites and the associated pegmatites during the Strangways Orogeny. Scheelite±fluorite veins truncate early fabrics and folds, and also appear to be related to these mineralising systems. Furthermore the boron metasomatism (tourmaline alteration) which is observed in some parts of the Jervois project area clearly overprint fabrics and replace pre-existing metamorphic assemblages and seems to also be related to this event. Cartwright *et al* (1997) however documented evidence for a meteoric fluid component in calcsilicate rocks from the Bonya Hills during the Strangways Event. A better understanding of the igneous and meteoric fluid interaction is clearly important to understanding the mineral deposit potential.

The Neoproterozoic Mopunga Group unconformably overlies the metamorphic rocks of the Arunta Region throughout most of the Jervois region, forming the spine of the Jervois Range (Figures 1 and 3). The Mopunga Group consists of the Elyuah Formation (-Pae, shale and silty sandstone), the Grant Bluff Formation (-Pag, quartz arenite and quartz-wacke), and the Elkera Formation (-Pak, siltstone, sandstone and dolostone). Freeman (1986) indicates that the Neoproterozic Mopunga Group was deposited as relatively even-thickness sheet-like units following localised tectonic movements. The Oorabra Arkose (-Pao) also unconformably overlies the Arunta basement rocks in the Jervois region, and is preserved in localised half grabens beneath the Mopunga Group (Freeman 1986).

Dunster *et al*., (2006) indicates the Mopunga Group is disconformably overlain by the early Cambrian Shadow Group (Mount Baldwin Formation and Red Heart Dolomite) which is in turn disconformably overlain by the middle Cambrian Narpa Group (Thorntonia Limestone, Arthur Creek Formation and Steamboat Sandstone).

The distribution of the Red Heart Dolomite, Thorntonia Limestone and Steamboat Sandstone are not indicated on existing published geological maps of this region (*i.e.,* Freeman, 1986 or Freeman *et al.,* 1989). However in a recent revision of the Georgina Basin stratigraphy, Dunster *et al.,* (2006) recognised these units in a nearby cored drill hole (Huc 1). In contrast to the intense surface weathering in the Jervois Range outcrops, Huc 1 intersected fresh unweathered units. As such these new units are most probably exposed in the Jervois Range and elsewhere nearby, although their boundaries and distribution are yet to be fully delineated.

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Based on limited reconnaissance mapping in EL 10215 during 2006, the deeply weathered and silicified interval that contains phosphate-rich units (predominantly wavellite but also including minor turquoise) occurs above a red-brown mudstone/siltstone package is Red Heart Dolomite. Apart from one possible archaeocyathid, no other fossils were identified within this unit. These units occur at the top of a fining upwards cycle above the Baldwin Formation. These units were mapped as Errarra Formation by Freeman (1986) and Freeman *et al.,* (1989) but have since been assigned to the Red Heart Dolomite (Dunster *et al.,* 2006). Some of the silicified laminated chert/mudstone/siltstone units that overlie this unit could be Thorntonia Limestone?, as defined by Dunster *et al.,* (2006) in Huc 1, rather than Arthur Creek Formation (Freeman, 1986; Freeman *et al.,* 1989).

A series of northeast trending monoclines are present throughout the Jervois Range in the Lucy Creek prospect area. A subvertical north trending faultzone is also present in the southern part of the Lucy Creek prospect. As indicated on existing geological maps, this fault appears to curve into a north-northwest trend in the central part of the Lucy Creek prospect near the western edge of the Range. The relative movement on this fault is west side up (*i.e.* reverse).

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PREVIOUS INVESTIGATIONS

REGIONAL

A detailed investigation of the previously completed exploration in the Jervois project area on ELs 10214 and 10215 was compiled by Andrew Drummond and Associates as part of the Independent Geologist's Report included in the prospectus for Arafura Resources' IPO in 2003. The relevant part of Drummond's original detailed report is reproduced here as in Lindsay-Park (2005). An abbreviated version appeared in the final IPO prospectus document.

Drummond reported as follows (edited):

Exploration programs and results relevant to an appraisal of Arafura's Jervois area are as follows.

Central Pacific Minerals N L (1970-1972) ATP 2283 & 3156. CR1972-013, CR1978-104

Tenements overlaid the north-western part of the Jinka Granite and generally west of EL10215. Work was concentrated at the Nabarloo North fluorite prospect, which lies about 15 km west of EL10215, where a resource (pre JORC) of 360 000 short tons (326 000t) at 40% fluorite to a depth of 30 metres was estimated - and apparently open under cover to the east. A later estimate of 123 000t @ 44.5% CaF_2 is presented in the NTGS Huckitta Mineral Deposit Data Series (Prospect 54). They indicate the potential for the hosting of bodies in the eastern Jinka Granite within EL10215, where it is generally concealed under alluvial cover. A separate report on the Bonya Bore area gives a good description of the geology of the various deposits in the Bonya field in EL10215 - including notes on the mineralisation, alteration, structure and a genetic model. However size, grade and resource data are too limited to obtain an impression of potential for a discovery of sufficient size to be economic for Arafura.

Dampier Mining Co Ltd (1976-1977) EL1118. CR1977-064

The tenement covered the north-eastern part of EL10215 - the latter consisting of reasonably well outcropping Neoproterozoic and Cambrian sediments of the Georgina Basin. The target was lead-zinc mineralisation in the Cambrian units. Cores and cuttings from previous BMR and oil exploration drilling were examined and some Pb and Zn mineralisation was noted. Surface reconnaissance defined favourable sediments and structures. However there is no available record of any follow-up work.

Otter Exploration N L (1977-1980) EL1583. CR1980-174, CR1978-116

That tenement covered the western halves of Arafura's tenements including the Bonya Tungsten Field. The licence area was originally considered to be prospective for W and Mo mineralisation. Copper and scheelite shows are located to the north of the licence area, and the Molyhil W-Mo deposit was being mined to the west of the licence area at that time.

Subsequently it was realised that the licence area was also prospective for U mineralisation. Traces of uraninite mineralisation were discovered at Molyhil in 1977, and a number of strong anomalies were recorded in the course of a reconnaissance radiometric survey, including one recorded near Thring Bore in the south-west part of the licence area.

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Work carried out included additional airborne reconnaissance radiometric surveys, ground reconnaissance mapping and scintillometer surveys, and detailed mapping and sampling. Results were discouraging and the tenement was relinquished.

Otter Exploration N L (1977 - 1980) EL1584. CR1978-117, CR1980-121

The tenement covered the eastern half of EL10114, except for its north-eastern corner: it is an area mapped as underlain by granites and Georgina Basin sediments. As for EL1583, Otter's exploration began for Molyhil style tungsten and molybdenum, but was expanded to uranium. A detailed radiometric survey delineated anomalism near Mt Cornish. Ground follow-up revealed that they were associated with ferruginous and silicified zones in weathered granite near the unconformity with the Neoproterozoic Georgina Basin sediments. The zones may represent a regolith, or fossil soil profile, associated with a pre-Georgina weathering event. The radiometric anomalies were found to be due to Th minerals in the basement granites.

Otter Exploration N L (1977 - 1980) EL1585. CR1980-252

The tenement covered the north-eastern section of EL10214 and the eastern half of EL10215. It included the Jervois Mine area, exclusive of the claims pegged over the actual deposits.

Systematic airborne spectrometer surveying revealed 24 anomalies. A follow-up field work programme included evaluation of 22 of them, scintillometer traversing of the Arunta Basement/Georgina Basin unconformity, orientation work in the Jervois Mines area, reconnaissance mapping and sampling for U and scheelite mineralisation, and evaluation of selected scheelite prospects. Two of the anomalies proved to be due to concentrations of uranium.

Orientation work in the Jervois Mines area resulted in the discovery of some coffinite U mineralisation in a core sample obtained from the Marshall deposit. Scintillometer work in the Mines area and creek sediment sampling throughout the north-west of the licence area failed to disclose any additional U mineralisation. Several scheelite shows situated outside the main mineralised zone at Jervois (the 'J' structure), were evaluated by means of sampling and magnetometer surveys but results were considered disappointing. Samples (rock and creek sediment) were also analysed for Cu and Zn. An area of apparently fault controlled Zn, W and Cu anomalism was located north of the Jervois Mines. The anomaly lies within the area around the mines excluded from Arafura's tenements, but indicates the applicability of the method.

Hunter Resources Ltd (1987 - 1989) EL5171. CR1989-630

The tenement was taken out to cover the Attutra Metagabbro, a mafic intrusive which outcrops irregularly over a 20x10km area east of the Jervois Mine in both Arafura leases. Work included mapping, an orientation geochemical survey, stream and rock chip sampling and ground magnetics. Sampling was biased towards magnetite-rich rocks and metapyroxenite lenses, as they were considered to have had the best potential to have accumulated PGEs.

Although much of the target area is overlain by younger alluvials, Hunter considered that the cumulate phases which could host PGEs seemed to be only size-restricted lenses unlikely to hold large bodies of ore grade platiniferous rock. Drummond notes that although maximum Pt assay was only 28 ppb, palladium assayed to 215 ppb and so is considerably more encouraging, especially considering its current strong price. Follow-up of magnetic anomalies generated by the NTGS airborne survey may be a worthwhile avenue for Arafura.

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Rosequartz Mining N L and Zapopan N L (to 1991) EL6260. CR1989-816

The tenement essentially covered the Bonya Schists west of the Jervois Mine and hence much of the western half of EL10215. It was acquired because the area had not previously been explored for Au despite it having been noted at the Jervois Mine and the Bonya workings, and because it was considered to have potential for Broken Hill-style Pb-Zn mineralisation. It covers the Bonya Tungsten Field.

The main exploration technique was stream sediment sampling for BLEG Au and for base metals, together with rock chips and geological traverses. Zapopan's mapping indicated that mineralisation in the licence area was evident at two stratigraphic levels: Cu-mineralisation was located lower in the sequence associated with garnet quartzites, calc-silicates and quartz flooding; W-mineralisation was located higher in the sequence associated with amphibolites and calc-silicates. Neither seems likely to host an economic deposit. Lead-zinc values were uniformly low. The drainage values highlighted three principal areas of anomalous Au. The two strongest anomalies also have coincident drainage Cu anomalies and elevated Zn.

Drummond considers that the BLEG results are moderately encouraging in that the anomalous values are explicable and average sample spacing is very wide. However the absolute level of anomalism is low as the maximum result from 60 samples was only 0.51 ppb Au. The sampled area has a high degree of outcrop and relatively high topographic relief contrast. It is considered that a major outcropping Au deposit should exhibit a greater BLEG response.

Johannsen (1988 - 1989) EL6326. CR1990-221

The tenement was located in the south-western Bonya Hills and hence in the south-western part of EL10215. Johannsen aimed to find apatite-hosted REE mineralisation. Two occurrences of apatite were located by traversing, but the REE assays are too low to be of interest. Nonetheless, Drummond considers the results do indicate potential in that district. Arafura's intended study of the recently flown NTGS airborne radiometrics seems well justified.

Normandy Exploration Ltd (1990 - 1996) ELs 6993, 7287 and 7505. CR1992-367, CR1993-169, CR1994-111, CR1995-108, CR1995-253, CR1995-313, CR1996-283

The northern sector of EL6993 essentially covered those parts of ELs 10214 and 10215 which lie east of the Jervois Mine. The southern sector covered interpreted Arunta Block metamorphics under widespread alluvial cover in south-eastern EL10214. The western part of EL7287 covered the eastern-most salient of EL10214. EL7505 covered Bonya Schist around the Bonya Tungsten Field.

Normandy applied for the tenements to target sediment-hosted Broken Hill style mineralisation within Division 2 of the Proterozoic Arunta Group.

The exploration highlighted the Hamburger Hill area where Cu, Pb, Zn and Ag mineralisation was intersected. It lies 3-4km east of the Jervois workings, but outside EL10215. Normandy spent $1.4 million on its project, of which it seems about half was expended on ground now the subject of Arafura's applications. A massive data base has been created, and Drummond considers that a rigorous appraisal of it by Arafura, in combination with other data available to it, should indicate anomalous areas worthy of follow-up. The Normandy programmes and results away from Hamburger Hill are summarised below, with comments where appropriate on apparent avenues for Arafura.

During 1990, a reconnaissance trip was made to assess the area and determine the most appropriate sampling methods. A series of soil and rock traverses were conducted over areas of shallow sand/soil cover and outcrop. These traverses were located over magnetically high areas or geologically interesting or complex areas. Soil sample traverses were conducted along roads and tracks to assess the suitability of this method in areas of transported cover.

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In 1991, a bedrock auger drilling programme was conducted along a series of traverses over similar areas to the initial reconnaissance. The three areas targeted for auger drilling were: east of Jervois Mines in south-east EL10215; south of the Plenty Highway in eastern EL10214; and north of Jervois Homestead in EL10214. The aim of the programme was to test the bedrock beneath variable thicknesses of sand/soil cover. In addition to the auger traverses, rock chip samples were collected during general reconnaissance of the area. Stream development was sufficient for representative stream samples to be collected in south-western EL10215, the Bonya Bore area.

Two areas were targeted for lag sampling; east of the Jervois Mine Leases, over outcropping and sub-cropping Bonya Schist rocks; and between Bonya Creek and Marshall River over outcropping and sub-cropping gneiss. The lag sampling was confined to the hills and ridges and areas of isolated outcrop. East of Jervois Mine the sample grid extended approximately 20 km north-south and averaged 4-5 km east-west: the length of individual lines depended on the landform. Evaluation of the lag sample results highlighted a coincident Cu, Pb, Zn, Ag, Cd, Co, As and Mo anomaly which defined Hamburger Hill. Drummond notes that although follow-up was concentrated upon this major anomaly, other anomalous areas were also indicated: they have received less intense follow-up.

In western EL10215, there are numerous Cu and W mineral occurrences and old mines. The majority of the mineralisation is hosted within or near the Kings Legend Amphibolite Member of the Bonya Schist and in the pegmatites. The aim of Normandy's programme there was to detect mineralisation outside the known prospects. The target area was the contact zone between the Mascotte Gneiss and Bonya Schist. Normandy's tenement was sampled with a total of 250 samples collected from second and third order streams. Assessment of the data did highlight any anomalous areas requiring follow-up.

An airborne EM survey was flown over selected areas. Anomalies were ground checked and soil sampled, with one area returning a Cu anomaly. A vacuum drilling programme was taken over two prospects 6 km south-east of the Jervois Mine, and within eastern EL10215.

In 1994, regional RAB drilling was completed in the Mt Cornish area of EL10214. The holes were drilled on a 1x1 km grid. The aim of the programme was to provide information on bedrock and to delineate prospective rock types, namely schists or mafic gneisses. The holes intersected granite, quartzo-feldspathic gneiss, amphibolite and unmetamorphosed Mt Cornish Formation sediments. A major NNW-SSE trending magnetic feature also runs through the area and was tested by a line of close spaced holes. RAB drilling was also carried out over anomalies defined by earlier investigations.

A further EM and magnetic survey was flown in 1994 covering Bonya Schist east of the Jervois Mine area and around the Bonya Tungsten Field. Anomalies were interpreted at the former and tested by vacuum drilling. Earlier airborne EM anomalies were followed up by a ground SIROTEM survey and then by RAB drilling in 1995. That drilling programme also tested anomalies which Normandy considered had not been assessed previously.

Drummond re-iterates that Arafura has yet to process and re-interpret the wealth of Normandy's data submitted to the NTDME, and it is beyond a reasonable scope for this Report to do so. However, given the geological setting; the extent of known mineralisation and of cover; the areal limits of several aspects of Normandy's exploration; and Normandy's justified concentration upon its Hamburger Hill discovery, Drummond would be reasonably confident of Arafura's ability to sift out some areas worthy of follow-up from the data it now has at hand.

Aztec/Normandy (to 1993) Various Mineral Leases and Claims. CR93-234, CR1994-160, CR1994-161, CR1994-203

***Mineral Lease S71 (1973 - 1993**) The lease covered a small molybdenum and tungsten show, of the Bonya Hills skarn type, located about 6 km east of the Jervois Mine. Although no substantial work was done*

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on it, Aztec considered it had no potential. Drummond considers its significance is as a further indicator of mineralisation beyond the main J curve of old workings.

Mineral Lease S14 (1947 - 1993) *The lease covered the old Bonya Mine workings. It was considered that the general host, a calc-silicate unit, is the same as that which hosts the Jervois workings. It was estimated for Aztec that there was a potential for 10 000t of secondary Cu ores and chalcopyrite in a quartz reef structure. Grade was not indicated. Apparently no confirmatory work was undertaken, and Drummond stresses that this tonnage figure cannot be regarded as a JORC resource estimate.*

Mineral Claims S1-5 (1983-1993) *These leases covered some of the old Bonya Hills Cu-tungsten workings. Work seems to have been confined to inspection of the old workings contained therein.*

CRA Exploration Pty Ltd (1993 - 1994) EL8116. CR1994-588

The tenement covered the Georgina Basin sediments in the central and north-eastern part of EL10215. CRA considered it prospective for unconformity hosted Cu-U-phosphate mineralisation. During the period of tenure the following exploration programmes were undertaken:

- *Airborne radiometric and TM Imagery data acquisition, processing and interpretation.*
- *Collection and multi-element analysis of 42 reconnaissance rock chip samples.*
- *Geological mapping and air photo interpretation.*
- *Drilling of six scout percussion holes (aggregate metreage of 530 metres) 500 metres apart.*
- *Multi-element analysis of percussion drill samples.*

CRA concluded that:

- *Airborne radiometric and TM anomalies delineate the phosphatic, organic-rich Arthur Creek Formation/Mount Baldwin Formation Middle Cambrian disconformity.*
- *Reconnaissance rock chip sampling of that disconformity surface reported assay values of up to 2.08% Cu, 100 ppm U and 11.4% P along a 4 km strike length of turquoise mineralisation.*
- *Wide spaced scout drill testing of the gently dipping disconformity surface returned no significant assay values.*
- *A 10-15 metre thick calcareous unit, weakly anomalous in Zn (up to 520 ppm), delineates the base of Arthur Creek Formation.*
- *The Mount Baldwin Formation is characterised by low order base metal values and has limited potential for stratabound Cu mineralisation.*

Drill testing of the disconformity (six percussion holes for a total of 530 metres, drilled 500 metres apart) failed to suggest the presence of substantive zones of Cu-U phosphate mineralisation. Drummond views the work as being essentially first pass, localised and reasonably encouraging.

Solbec Pharmaceuticals (previously Britannia Gold NL)/MIM Exploration Pty Ltd. Jervois Mines Leases, EL9518 and ELa10419. 2000-2003.

This joint venture has been exploring the tenements which host the known Jervois mining field and its principal known trend of mineralisation - the J structure. Its public reports via Solbec/Britannia indicates the following results of relevance to Arafura.

- *While there has previously been an exploration model based on an association between magnetite and base metal mineralisation, Mobile Metal Ion geochemical surveys has indicated potential for deeper mineralisation not associated with magnetite.*

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- *A proprietary MIM Induced Polarity geophysical technique generated new drill targets away from known areas of mineralisation.*

- *Drilling adjacent to and below old mining areas has returned encouraging results and Britannia noted that at the Marshall-Reward lode that mineralisation was increasing at depth. The mineralisation is apparently more extensive along strike and at depth than had previously been known. This enhances the possibility of the eventual discovery of a large deposit.*

- *Drilling of the new geophysical targets which had no surface expression has generated success, e.g. hole J3 was reported as intersecting the following copper mineralisation:*

4m @ 2.32%	*from*	*202m downhole*
2m @ 1.49%	*from*	*252m downhole*
9m @ 0.46%	*from*	*261m to bottom of the hole*

- *While Cu is presumed to be the main target, the drilling has returned interesting levels of Au, Pb, Zn and Ag which may lead to eventually more favourable economics.*

ARAFURA RESOURCES, EL 10215

Arafura's previous work on EL 10215 is detailed in Hussey (2013) and references therein. A summary of Arafura's previous work is presented below.

Arafura's exploration efforts largely focussed on assessing the Fe-Ti-V resources of the Unca prospects within the Palaeoproterozoic Attutra Metagabbro. The Unca magnetite- hosted Fe-Ti-V prospects occur as a number of discrete magnetic bodies and are regarded as metamorphosed orthomagmatic deposits. Outcropping magnetite mineralisation occurs as cm-dm layers or as larger massive coarse grained bodies. Exploration activities included reconnaissance mapping and surface sampling, the acquisition of a detailed airborne geophysical survey to guide undercover exploration and two RC drilling campaigns with associated assaying and DTR test work. Arafura also sponsored a BSc Hons project which involved potential field modelling of detailed gravity and a ground magnetic survey data collected over a number of magnetic targets concentrating on the Casper magnetic anomaly. A total of 5,774 metres of RC drilling was completed in 60 vertical or inclined holes with hole depths varying from 25-120 metres. One of these shallow holes was drilled to supply water for the 2008 base camp. All other holes were drilled to test the near surface Fe-V mineralisation potential of various magnetic anomalies. A number of named magnetic anomalies have been more extensively drilled; these include the Casper, Coco, and Misty anomalies. The results are summarised in Table 1 below.

Exploration RC drilling demonstrated significant Fe-V grades with moderate to good Fe-V recovery in processed magnetite concentrates from mineralised drill intercepts that are up to at least 77 metres thick in the more massive magnetite-rich zones. At Casper, a number of composited RC assay samples approach a maximum of 1.1% V_2O_5 but more commonly assay samples contain 0.3-0.8% V_2O_5. Laboratory testing using 100% passing 75µm typically shows DTR concentrate grades of 61-69% Fe and 1-2% V_2O_5. The most strongly mineralised assay samples are from Casper and yield DTR concentrates containing up to 2.5% V_2O_5. As shown in the table below, drilling results from the Coco and Misty magnetic anomalies yield slightly lower V_2O_5 and higher Fe grades than Casper. A number of the 2006 RC drilling program magnetic targets yielded lower grade DTR concentrates with <1% V_2O_5 and have not been evaluated further.

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Table 1: Summary of results for the Unca Fe-V prospects.

Magnetic target	Total assayed mineralisation interval (m)	Whole rock assay (Head)			DTR Magnetic Concentrate				Metal recovery in concentrate		
		Fe%	TiO_2%	V_2O_5%	Rec%	Fe%	TiO_2%	V_2O_5%	Fe%	TiO_2%	V_2O_5%
CASPER	741	22.7	5.1	0.51	21	64.1	5.0	1.7	55	19	68
COCO	301	21.9	5.0	0.44	21	65.1	4.2	1.5	60	18	69
MISTY	95	21.5	4.4	0.34	17	69.1	1.2	1.3	53	4	63
ALL	1295	23.5	5.2	0.47	22	64.8	4.5	1.6	57	19	69

It is suspected that the Unca Fe-V prospects may eventually be considered for economic development. This is because the Fe-V grades of the magnetite-rich mineralisation at Unca and its DTR concentrates are globally significant results with moderate to good recoveries for a relatively coarse grind. Higher grade concentrates and better recoveries might be possible at finer grind sizes but this would need to be optimised through further drilling and test work. While the geometry and size of the Fe-V magnetite resources are yet to be fully evaluated, the remoteness of these prospects and lack of infrastructure in the Jervois area are limiting factors.

The Au-Pt-Pd potential of selected mineralised intervals from the 2008 drill program at Casper, Coco and Misty were evaluated because orthomagmatic oxide-type deposits such as these are may host substantial Au-Pt-Pd mineralisation. The best assayed interval was from Casper with 47 metres @ 0.57 ppm Au+Pt+Pd. This included 4 metres at 1.37 ppm Au+Pt+Pd. While this and other anomalous Au-Pt-Pd intervals were identified, the results are considered too low-grade and are typical of results from known orthomagmatic Fe-V deposits within Australia. Hence the Au-Pt-Pd economic potential of the magnetite-rich Unca prospects is low. However hydrothermal and/or vein deposits associated with these intrusions cannot be discounted.

Arafura focussed some of its early exploration efforts on assessing the uranium potential of the Lucy Creek prospect. A large radiometric anomaly was found to be coincident with strongly weathered and oxidised Fe-enriched units that coincide with the phosphatic Cambrian Red Heart Dolomite of the Georgina Basin and adjacent units. Historic exploration by CRAE demonstrated some potential for low-grade uranium mineralisation within this phosphatic unit and hence targeted shallow exploration drilling was conducted to evaluate the outcropping and near surface units. Most of Arafura's exploration activity occurred on the adjoining EL 24716. EL 24716 was transferred to Arafura's uranium spin-off company, NuPower Resources who concentrated their efforts on the adjoining EL 24716 exploring the P and U resources. Exploration drilling at the Lucy Creek prospect on EL 10215 found anomalous uranium mineralisation in this interval but the grades were localised and disappointing. The maximum assay was 133.5 ppm U and the average 23.5 ppm U.

Both of the above exploration prospects were previously known to a limited extent based on regional mapping and historic exploration. The areal size of the Unca prospects has been greatly expanded from a few small outcropping prospects. Arafura was the first company to report drilling results from the Unca prospect and more targets remain to be tested.

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CURRENT INVESTIGATIONS

ROX RESOURCES, EL 29701

Work completed by Rox during 2013-2016 inclusive as part of its Farm-in and Joint Venture Agreement with Arafura on EL 29701 is documented in Belbin and Mulholland (2013), and Belbin (2014; 2015; 2016).

Rox's report detailing its exploration activities for the current reporting period is attached as Appendix 1.

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APPENDIX 1

ROX RESOURCES REPORT FOR YEAR ENDING 5 NOVEMBER 2017

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EL 29701 Annual Technical Report

Bonya Copper Project

December 2017

Author: **W.Belbin**

Copies: **Rox Resources Limited**
Arafura Resources Limited
NT Department of Mines & Energy

1:100,000 – Jervois Range 6152
1:250,000 - Huckitta SF53-11

SUMMARY

The Bonya Project in the Northern Territory is located 350km east of Alice Springs (Figure 1). The area is highly prospective for base metals, with known occurrences of copper, gold and tungsten.

The Bonya Copper Project is held by Arafura Resources Limited, with Rox Resources currently owning 51% interest in copper, lead, zinc, silver, gold, bismuth and PGE.

This report covers work done on EL29701 from 6th November 2016 to 5th November 2017.

Work completed on EL 29701 during the reporting period includes ground gravity surveying and rehabilitation activities.

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Introduction

Rox Resources Limited "Rox" is earning-in to the Bonya project tenement EL 29701 via a Farm-in and Joint Venture Agreement with Arafura Resources Limited ("Arafura"). Rox has earned a 51% interest by expenditure of $500,000 between 10th December 2012 and 10th December 2014. Rox elected to continue to earn-in to the project and can increase its interest to 70% by expenditure of a further $1,000,000 by 10th December 2017.

Under the terms of the agreement, Rox can earn an interest in the copper, lead, zinc, silver, gold, bismuth and PGE mineral rights (Cu-Pb-Zn-Ag-Au-Bi-PGE) in the tenement.

The project is located approximately 350 km by road east of Alice Springs, with road access via the Stuart and Plenty Highways to Jervois Station and station tracks thereafter (Figure 1).

The tenement is adjacent to the old mining centre of Jervois where a Mineral Resource of 30.5 million tonnes grading 1.07% Cu and 23.0 g/t Ag has been defined.

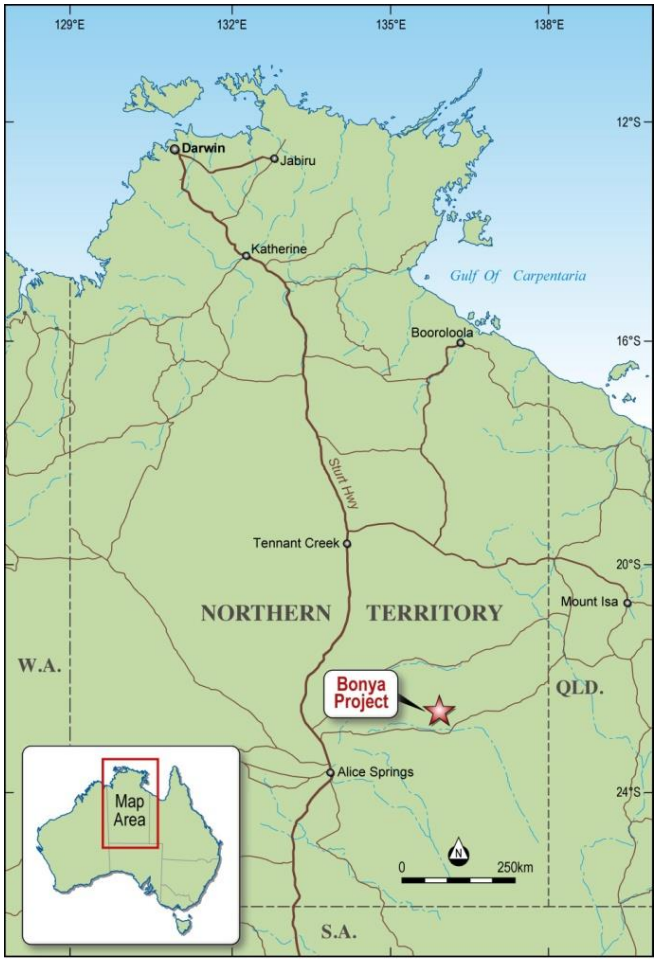

Figure 1: Project Location

Tenement Status

EL 29701 was granted to Arafura Resources on 6th November 2012. This report covers the period of the fifth year of the tenement to 5th November 2017. Work was conducted by Rox under a farm-in agreement with Arafura (see above).

EL 29701 covers an area of 279.03 km^2 or 89 sub-blocks (Figure 2). The expenditure covenant on the tenement for year 5 is $46,000.

Table 1. Tenement details

Tenement	Registered Holder	Interest	Grant Date	Expiry Date	Area (km2)	Minimum Expenditure
EL 29701	Arafura Resources Limited	100%	6-Nov-12	5-Nov-16	279	$46,000

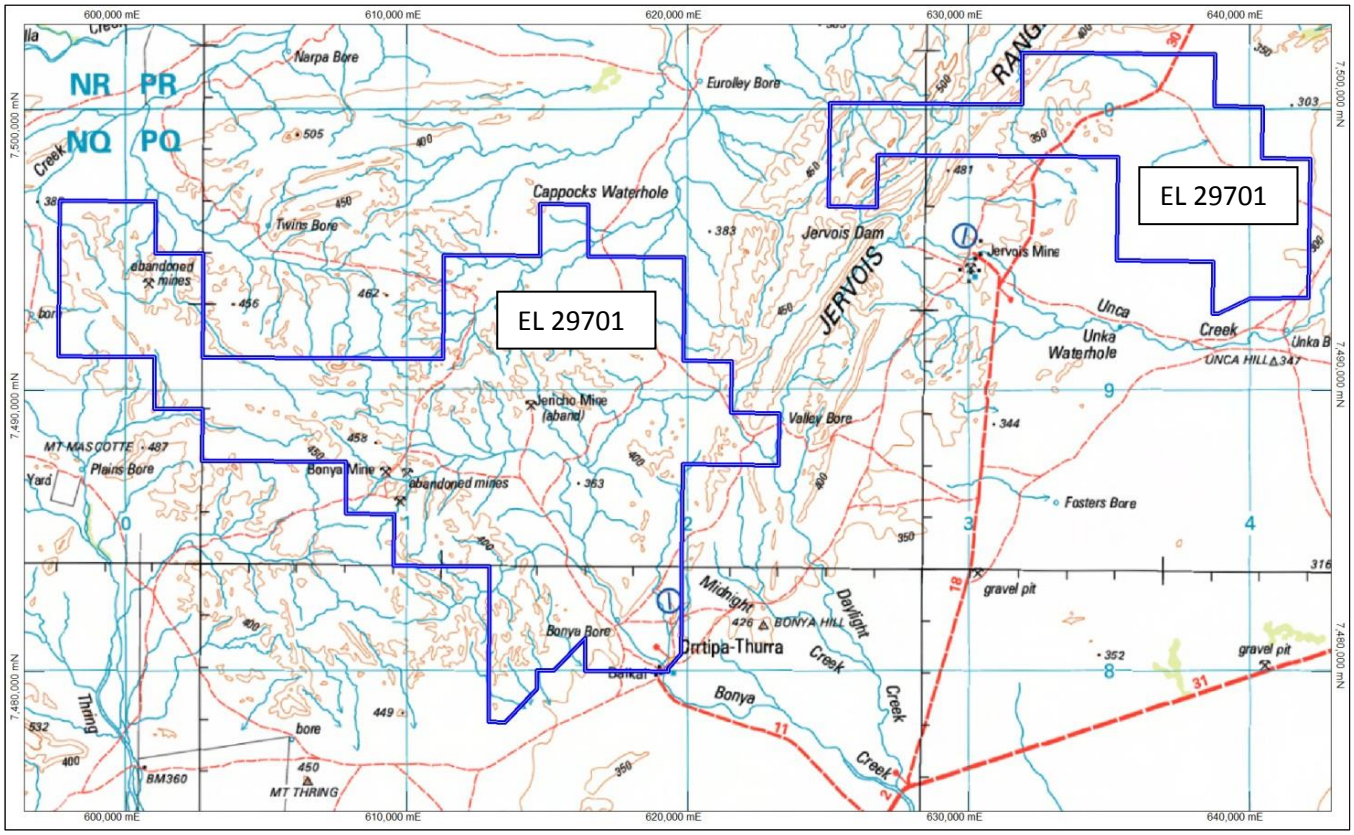

Figure 2: Tenement Plan

Geology

Regional Geology

The geology of the Bonya Project is summarised in the Huckitta 1:250,000 sheet Explanatory Notes (Freeman, 1986). The tenement area covers mainly outcrop and sub-crop of Bonya Schist (since renamed the Bonya Metamorphics) which is the host unit of the copper mineralisation at Jervois and Bonya. Freeman describes the Bonya Schist as follows.

"The Bonya Schist, which occurs within the Bonya Hills and E of the Jervois Range in the Bonya and Jervois structural blocks, overlies the Mascotte Gneiss Complex with a transitional contact.

The formation, defined in Shaw, Warren and Freeman (1985), is divided into five informal units and one formal member, the Kings Legend Amphibolite Member…

The Bonya Schist consists mainly of muscovite schist and two-mica schist with local occurrences of cordierite, sillimanite, garnet and ?andalusite (Dobos, 1975). Amphibolite is common as thick sequences, such as the Kings Legend Amphibolite Member, or as smaller lenses. Calc-silicate rock is widespread. Metaquartzite beds which occur mainly in the upper part of the formation are locally cross-bedded (Plate 2). Tourmaline is very common and layered quartz-tourmalinite occurs as concordant layers up to 0.3m wide. In the Jervois area Cu-Pb-Zn-Ag mineralisation is associated with magnetite-bearing layers which range in thickness upwards from millimetre scale (Morgan, 1959).

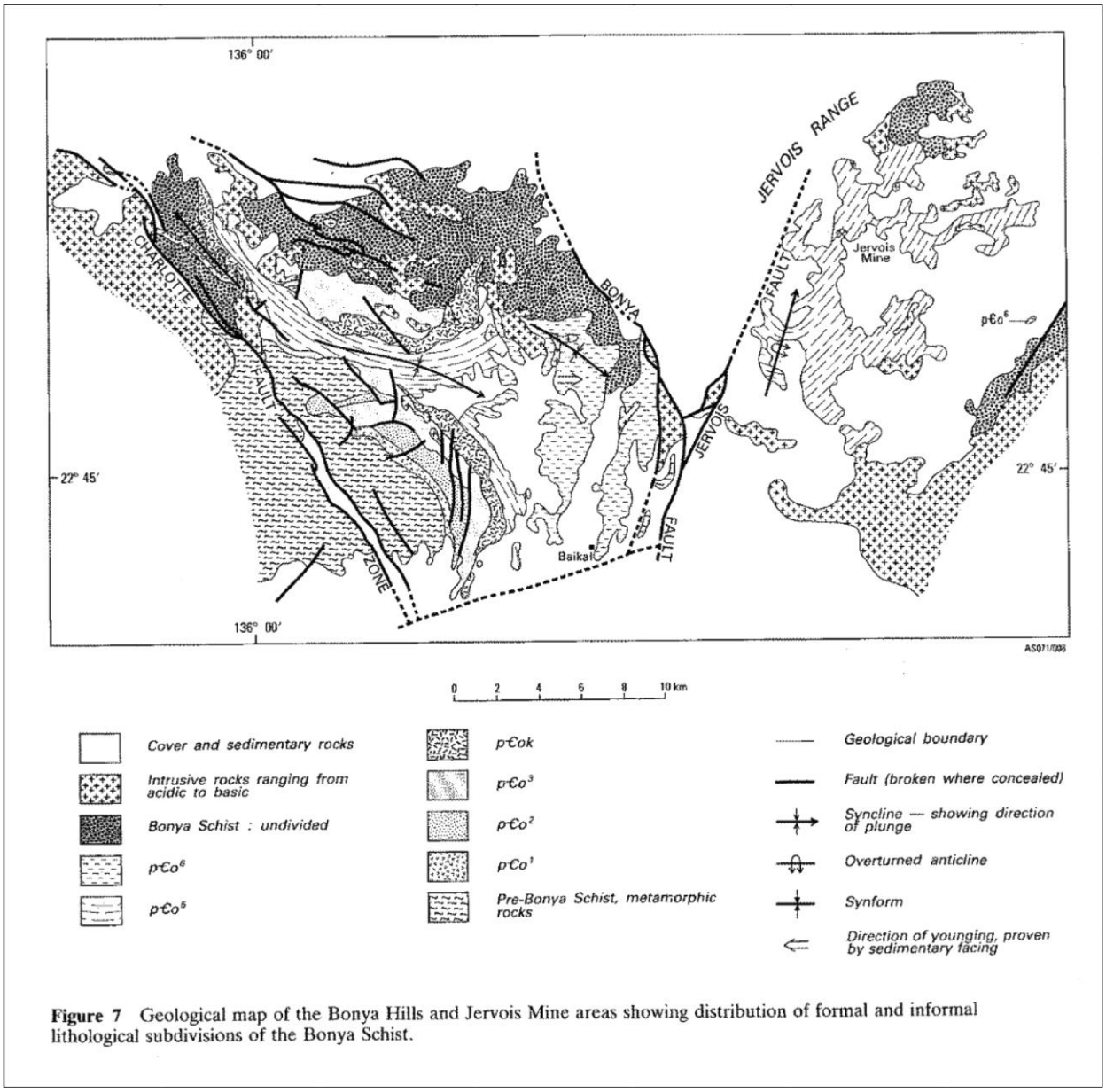

Figure 7 Geological map of the Bonya Hills and Jervois Mine areas showing distribution of formal and informal lithological subdivisions of the Bonya Schist.

Figure 3: From Freeman, 1986 showing the sub units of the Bonya Schist

There are a number of intrusive granites and pegmatites which intrude the Bonya Schist sequence, and seem to be located in areas of structural weakness (e.g. fold noses), so are thought to be later intrusive events. The pegmatites often contain scheelite mineralisation. The granites are not thought to be the cause of the regional metamorphism, but were probably intruded during the regional metamorphic event.

Figure 4: Cordierite observed in outcrop in the immediate FW at Bonya, also elongated along bedding

Economic Geology

Copper was produced from open pit mining at Jervois in two periods; a) before World War II (Figure 5), and b) in the early 1980's. Oxide copper was also mined at Bonya before WWII (Figure 6). The oxide copper was packed into drums and transported to Mount Isa where it was used in the smelter as a flux.

In 1983 a resource of 3.66 Mt @ 2.8% Cu, 60 g/t Ag was identified at Jervois, along with 0.3 Mt @ 9.0% Pb, 3.0% Zn. Bismuth concentrations of up to 0.01% were reported. The ore occurred in several bodies (Reward, Attutra, Marshall, Green Parrot, Hanlon, Sykes) along a strike length of approximately 1.2km and a width of 600m. The Jervois mineral resource was recently updated to 30.1 Mt @ 1.07% Cu, 23.0 g/t Ag (KGL ASX announcement 29th July 2015).

The ore is hosted in the Bonya Metamorphics unit, in the noses of isoclinal folds which were subsequently re-folded. Because the limbs of the folds are attenuated and because of the re-folding, many of the ore bodies at Jervois appear unrelated to each other.

The copper mineralisation at Jervois is associated with magnetite-bearing schist layers which grade into magnetite-quartzite layers (banded iron formation). This enabled magnetics to be used to locate other mineralisation. The total strike length of the mineralised zone at Jervois is about 12km and is folded to define a major regional anticline known as the "J-fold".

At the far SW end of the mineralised zone oxide copper has been mined at the bellbird deposit. Here the primary zone consists of massive chalcopyrite-bornite-pyrite-pyrrhotite disseminations in magnetite-bearing schist and quartzite.

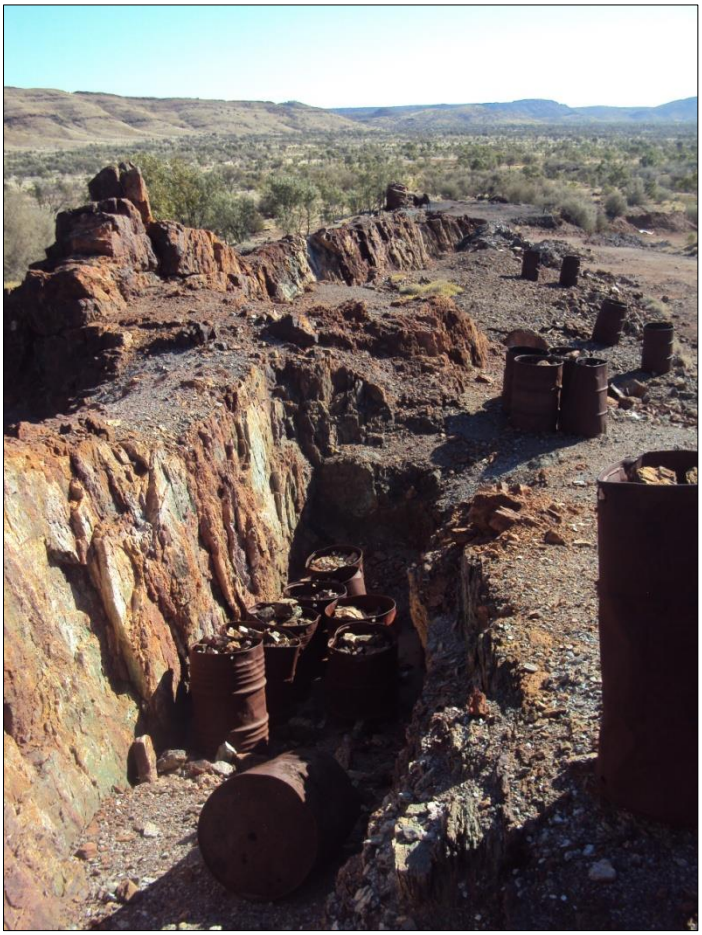

Figure 5: Historic Mining at Jervois. The drums contain copper oxide mineralisation

Figure 6: Stockpiled oxide copper in drums at Bonya

The lead-zinc mineralisation at Jervois is localised in a calc-silicate rock which appears skarn-like. The minerals observed include galena, sphalerite, bornite, pyrite, and scheelite contained in a quartz-epidote-garnet-diopside-amphibole-fluorite gangue.

Tourmalinite, layers of fine grained tourmaline-quartz rock, is common within and around the mineralised rocks.

Intrusive granites and pegmatites often host scheelite mineralisation, and this is the other main economic mineral in the area. Arafura have retained the rights to Mo-W, and may deal these to a third party sometime in the future.

The Jervois Fault (Figure 3) is not thought to be related to mineralisation in any way. Instead it is just thought to be the edge of the on-lapping Cambrian age Georgina Basin rocks. The Bonya Metamorphics may continue under the overlying Georgina Basin rocks to the north through the tenement to the north of Jervois. Certainly this area is a target for the northern extension of the Jervois mineralisation.

Previous Exploration

The Bonya project tenements have only had limited exploration for base-metals. A simplified geological and tenement map showing the location of the main copper prosects is shown below as Figure 7.

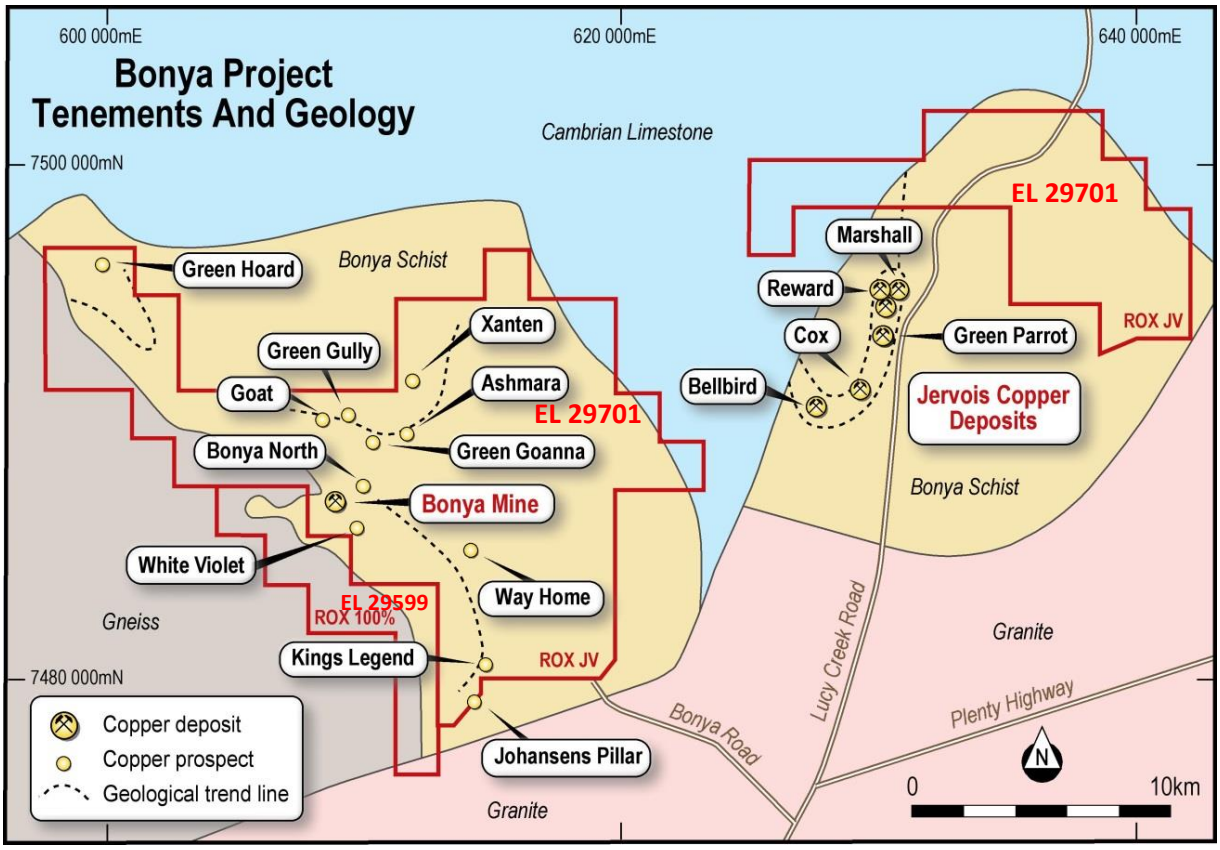

Figure 7: Simplified Bonya Geology & Tenement Map

All the occurrences of known Cu mineralisation are outcropping and have been identified by early prospectors. Previous explorers observe that a considerable number of small copper outcrops and deposits are present however it is attested that all are uneconomic due to their small and/or discontinuous size. However, historically no significant drilling has tested this hypothesis. Data has been compiled by Rox into MapInfo datasets from historic open file company reports.

Summary of Previous Work Completed

- Majority of explorers have done little more than prospecting and surface geochemistry.
- Fairly comprehensive geological work undertaken. Detailed prospect mapping by Central Pacific.
- Normandy completed geochemistry, RAB and Auger drilling in an attempt to locate any mineralisation outside known areas (subsequently located *Hamburger Hill* – Cu prospect ~4km NE of Jervois mine, outside Arafura tenements).
- Small tonnage potential only recognised from outcropping Cu showings.
- No new discoveries located (by geochemistry or geophysics) within tenements EL 29701 and EL 29599.

Rock chip sampling has been widespread and returned results above 0.5% Cu from a number of areas. The best results on EL 29701 come from Bonya and Xanten. Not surprisingly the Jervois trend is well defined.

Stream sediment sampling has not been very widespread, and because of the largely residual soil cover could not be expected to produce any better results than rock chips or soils.

Soil sampling has only taken place in the eastern part of the tenement area and hasn't defined any copper anomalies over the Arafura tenements. Jervois is indicated however.

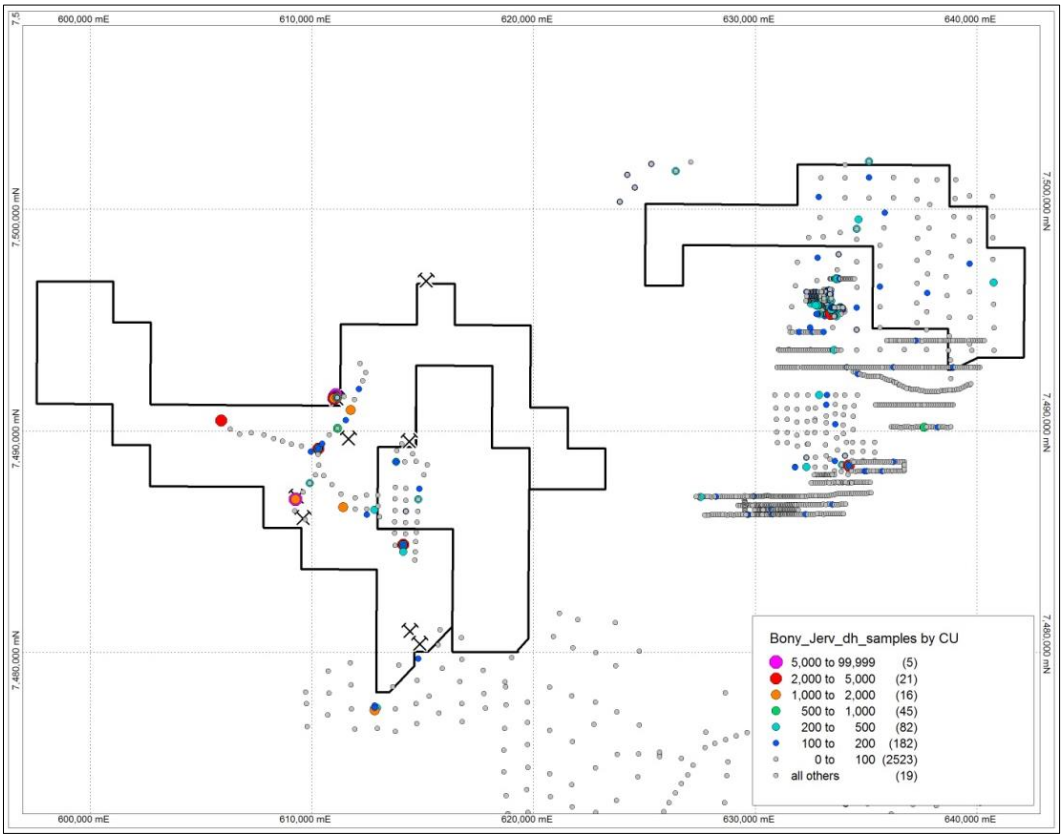

Figure 8: Historic Drilling Results showing max Cu

Historic drilling (Figure 8) has largely been shallow RAB and Auger drilling over the Bonya area, with RC only drilled at Jervois. On EL 29701 RAB drilling by Normandy followed tracks and didn't really specifically target any outcrops or mineralised units.

To the north of Jervois, the drilling has been shallow vertical auger which would have limited effectiveness.

The NTGS magnetics (Figure 9) is very coarse and does not show a lot of detail. The radiometrics flown as part of that NTGS survey do not show any features of discernible interest.

Detailed magnetics and radiometrics were flown by Arafura over an area in the NE part of the tenement area where they were exploring for intrusive (Gabbro) related Fe-V-Ti mineralisation. This fairly recently flown airborne magnetics shows much better detail than the coarse NTGS magnetics. More detailed aeromagnetics would be a potentially useful tool in exploring the western Bonya tenements and is recommended as part of a continued exploration work programme.

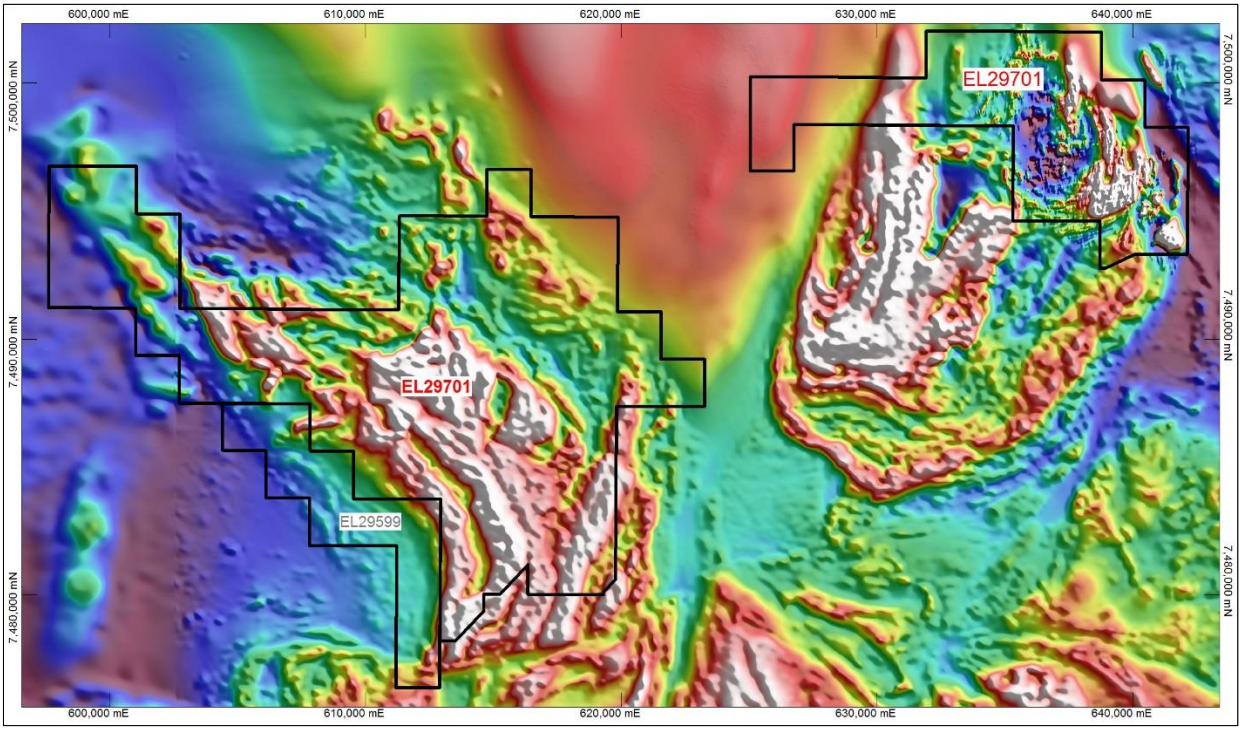

Figure 9: Bonya Project RTP Magnetics

At Jervois an airborne MMR survey (Figure 10) was used to great effect to define the various stratigraphic units.

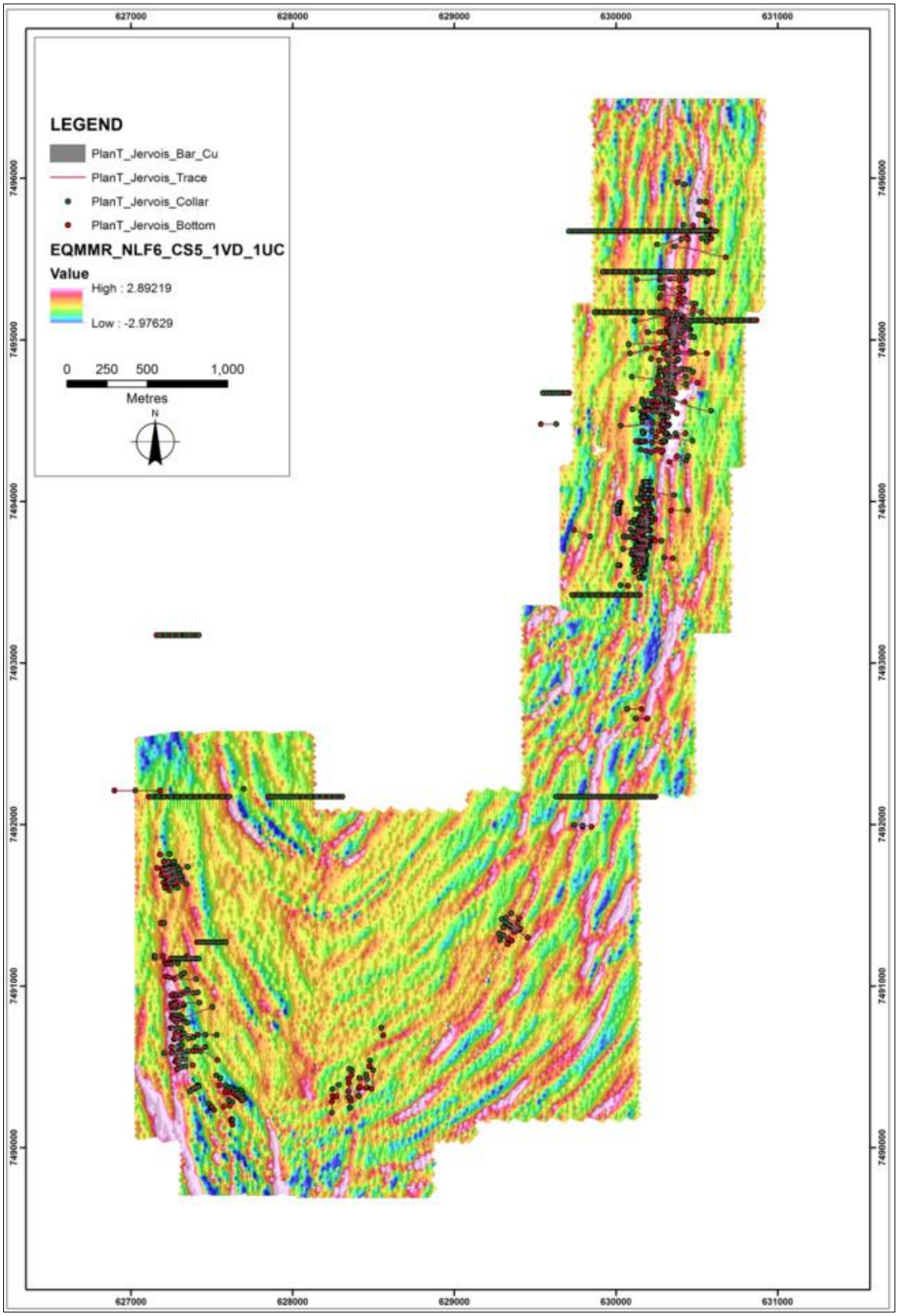

Figure 10: Jervois MMR Survey (From KGL website)

Exploration Potential

Recent work by the NTGS has defined at least two different mineralisation events *(McGloin and Weisheit 2015);*

1. Early Sediment-hosted polymetallic mineralisation at Jervois formed during a syn-depositional to epigenetic process at ca 1790 to 1770 Ma. A hybrid model of mineralisation between SEDEX and volcanic-associated massive sulfide deposit is proposed.
2. Later vein related Cu-only and Cu-W mineralisation at ca 1705 Ma.

Recent exploration by Rox Resources suggests the mineralisation at the Bonya Mine prospect is late-stage structurally controlled or remobilised quartz-hosted copper. This type of mineralisation is the primary target for copper exploration on EL 29701.

Exploration during Year 1

Exploration during year 1 of EL29701 consisted of:

a) Soil and Sampling and Field Mapping (November 2012)
b) Acquisition and re-processing of existing regional geophysics data (November 2013 – March 2013)
c) Acquisition and processing of new VTEM data (October – November 2013).

Soil Sampling and Field Mapping

Since acquiring an interest in the Bonya-Jervois Copper project, in November 2012 Rox conducted soil sampling and prospecting activities at various prospects within EL 29701.

Historical Copper workings and mapped outcrops (some of these not previously located by Rox) were located and inspected. Prospects identified as priorities by Rox geologists included Bonya Mine, Green Hoard and Fat Green Gully/Fat Cow (previously named Marakesh).

Niton XRF soil sampling was conducted at Bonya Mine, Bonya North, Green Hoard and north along strike of Jervois Mine. Soil samples were taken on 100m x 25m and 200m x 25m spaced grids.

The soil program detected only very weakly anomalous levels of elements other than copper, including Pb and Zn. It is likely that the effect of metamorphism has resulted in localised deposit styles with high grade copper sulphide mineralisation and a lack of, or low grade, mineralised haloes. The results of rock chip and soil sampling suggests that any future copper discovery made within the surveyed Bonya project area has a strong potential of being primarily a copper-only deposit.

VTEM Survey

An airborne Versatile Time Domain Electro-Magnetic (VTEM) survey was flown in October 2013 covering prospective portions of the tenement (Figure 11). The aim was to identify conductive zones that may represent semi to massive sulphide (e.g. pyrite-chalcopyrite) mineralisation. Two orientation lines were flown over the Marshall-Reward zone at Jervois with the permission of KGL Resources.

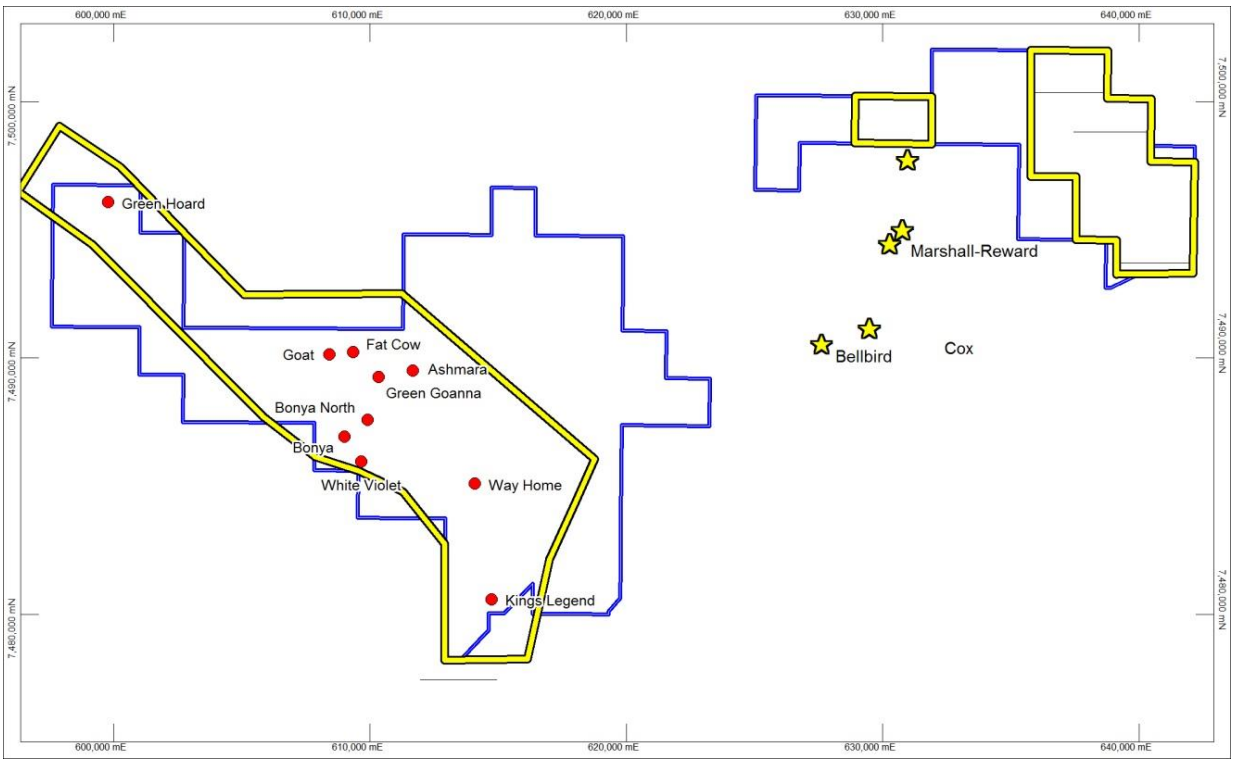

Figure 11: VTEM Survey Plan

Exploration during year 2

VTEM Survey Interpretation

The greater part of the survey was covering tenement EL 29701 which includes the small but significant historic Bonya Copper mine.

Discussion and Results

Several late-time conductors were identified on EL 29701 (shown on Figure 12 below). A field visit in March 2014 identified a small occurrence of outcropping copper (malachite) mineralisation coincident with a conductor on EL 29599 but did not find any coincident outcropping mineralisation on any of the other VTEM conductors inspected.

Subsequent planning of follow-up ground EM was carried out over three of the stronger anomalies, all located reasonably close to Bonya Mine prospect (ie. BVTEM_03, 04 and 05, Figure 13 below). There was no VTEM response associated with the Bonya Mine workings.

The complete VTEM survey data and report has been posted as a data disc to the NT department of Mines and Energy.

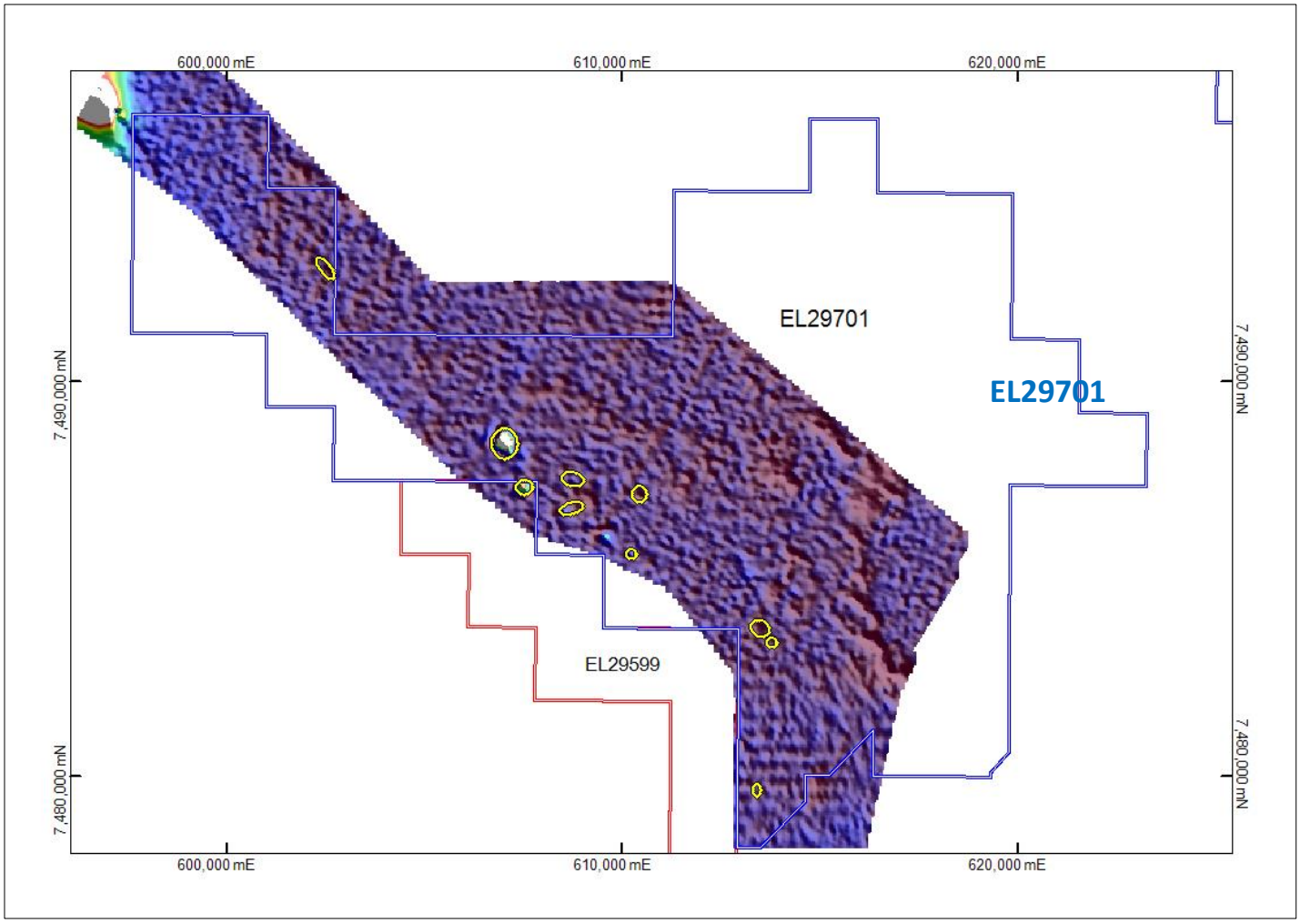

Figure 12: VTEM channel 30 NE shade, targets highlighted in yellow

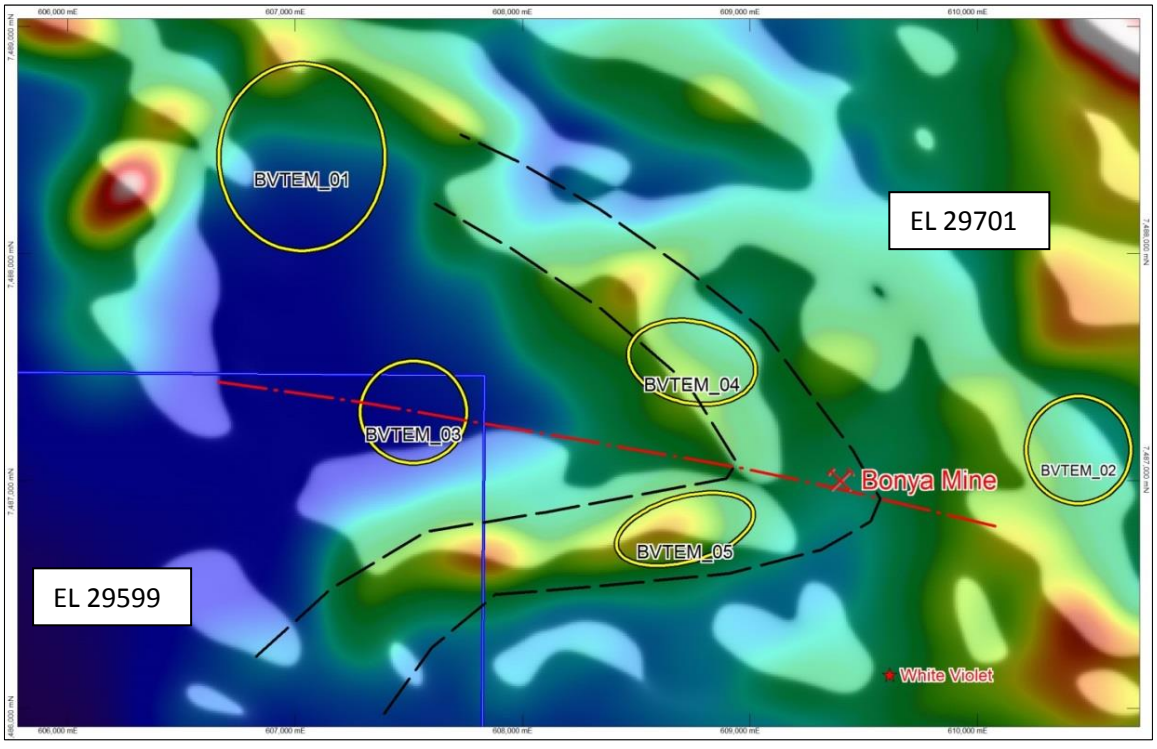

Figure 13. Bonya Mine location and proximal VTEM targets over Aeromagnetics

Ground Electromagnetics

Fixed loop ground EM (FLTEM) surveys were carried out to better define the conductors identified by the airborne VTEM surveys. Three (3) loops each approximately 400x 600m were placed over the VTEM targets (shown in Figure 14). The westernmost loop is located mostly on EL 29599.

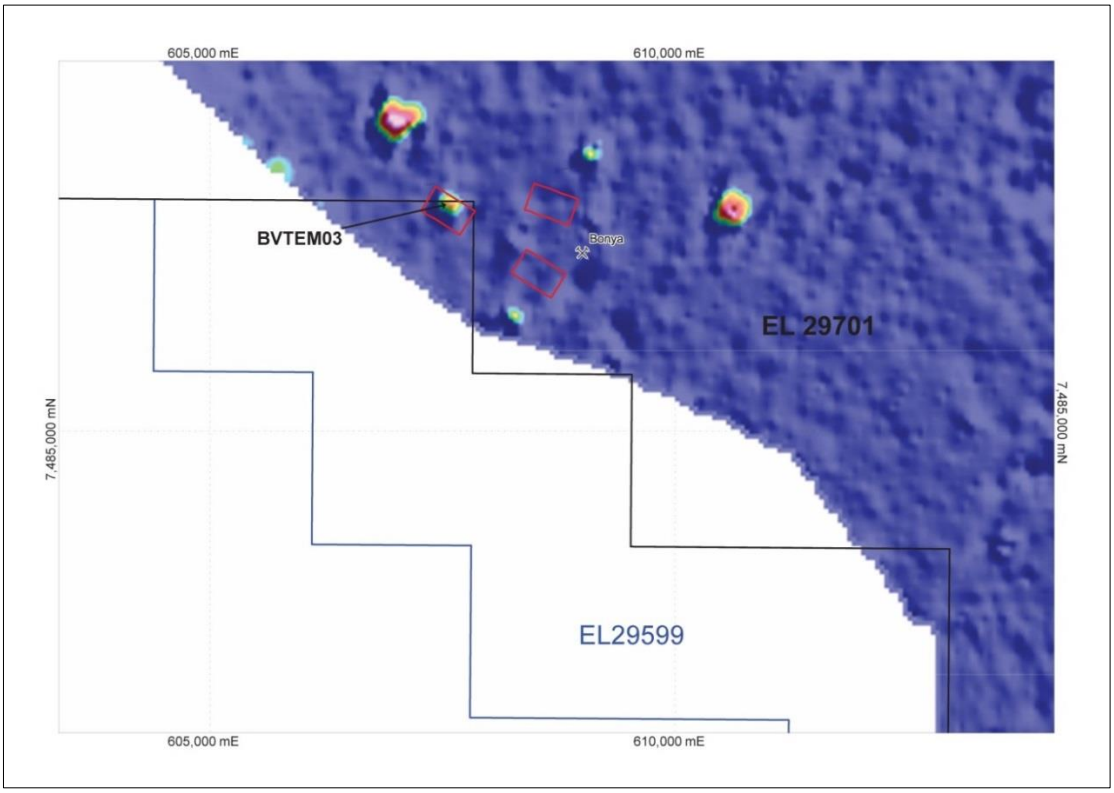

Figure 14. Fixed loop locations over VTEM Channel 23

Discussion and Results

Each of the fixed loop surveys confirmed the presence of conductors and follow-up drilling was designed.

RC drilling

The first of 2 RC drilling campaigns commenced in late September 2014 with 10 holes drilled for 903m on EL 29701. Hole depths ranged from 41m to 177m.

EM targets BVTEM_04 and BVTEM_05 were tested with only weak mineralisation intercepted at BVTEM_04 (BYRC001; 1m @ 0.98% Cu) and BVTEM_05 (BYRC006; 1m @ 0.55% Cu). It would appear that both conductors have been adequately tested.

RC drilling at the Bonya Mine prospect intersected significant high-grade copper mineralisation with results such as;

BYRC008:	**11m @ 4.4% Cu** from 30m
BYRC009:	**38m @ 4.4% Cu** from 60m, including
	6m @ 8.8% Cu from 60m, and
	8m @ 7.9% Cu from 82m

BYRC012: **9m @ 3.8% Cu** from 97m, including
3m @ 8.2% Cu from 97m

An amendment was made to the Bonya MMP and a second phase of drilling began in November with a total of 7 holes for 848m drilled (all of these at the Bonya Mine prospect). Highlights from the second phase of RC included;

BYRC014: **8m @ 7.6% Cu** from 97m, including
3m @ 12.0% Cu from 101m, and
13m @ 5.4% Cu from 111m

BYRC018: **5m @ 9.1% Cu** from 109m, including
3m @ 13.4% Cu from 109m, and
11m @ 3.9% Cu from 121m, and
4m @ 1.9% Cu from 139m

Mineralisation is east-west striking and sub-vertical to north dipping and is comprised of predominantly quartz veining with chalcopyrite, with patchy hematite staining.

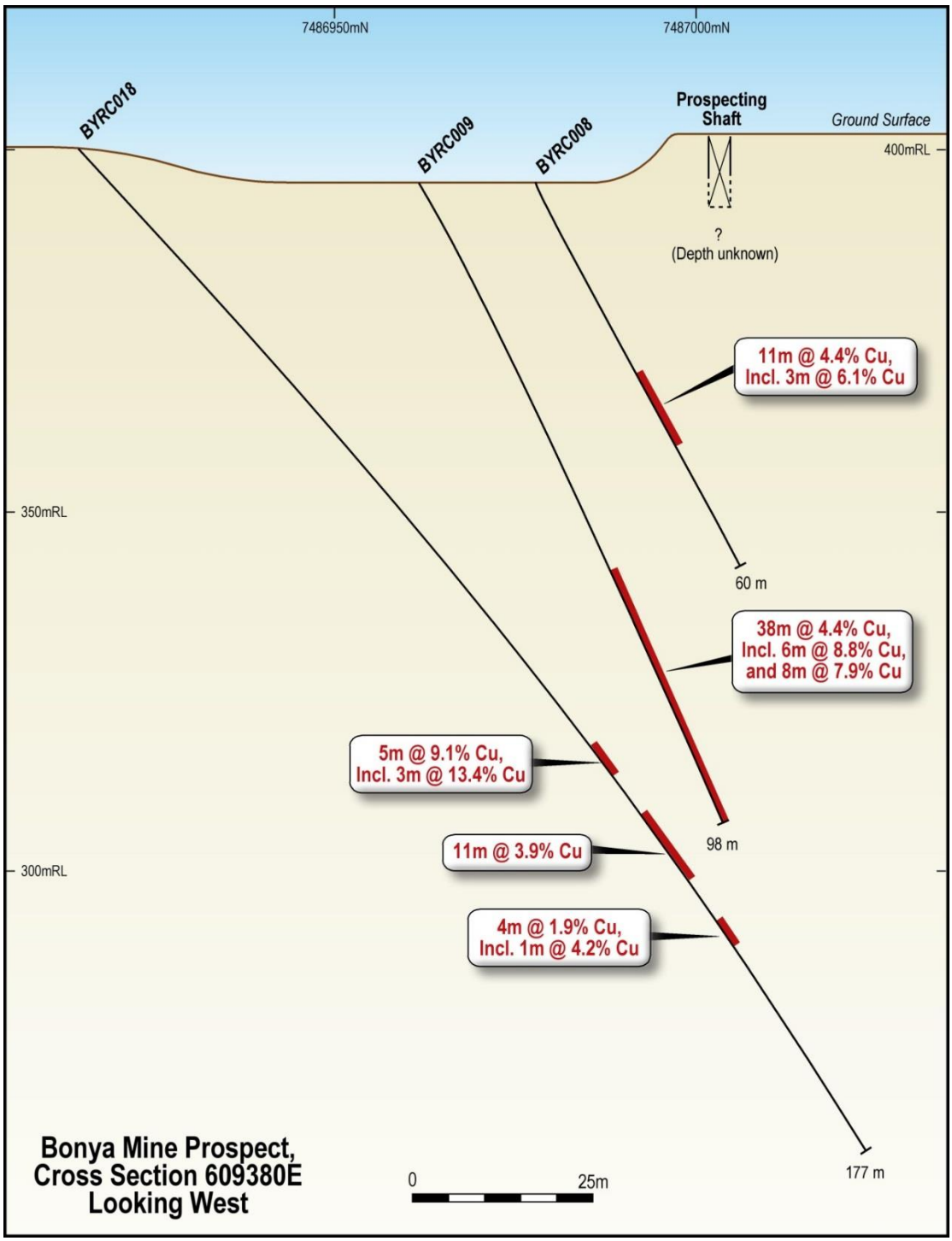

Figure 15. Bonya Mine prospect cross-section

Discussion

Mineralisation at the Bonya Mine is hosted in a stockwork-like zone of strong hematite-alteration and quartz-veining located at a fold hinge/nose of the Bonya Schist. Bonya mineralisation is predominantly Cu (absent Zn and Pb) with only minor Ag and low Au values returned. Mineralisation is localised and is of much higher grade than most of the stratabound Jervois mineralisation.

Exploration during year 3

Exploration carried out at the project included diamond drilling, structural interpretation, regional and prospect scale targeting, and rehabilitation activities.

Downhole Electromagnetics – Processing and Results

DHEM was carried out at the end of the 2014 reporting period (drillholes BYRC13, 17 and 18), and did not detect any conductive response associated with mineralisation. The data from all three holes showed that the rocks are highly resistive. This means that any conductor present would show up well. The lacking conductive response of DHEM at Bonya can be attributable to the brecciated style of mineralisation. DHEM is therefore not a suitable exploration tool for this type of mineralisation.

Diamond Drilling

Diamond drilling commenced at the Bonya mine prospect in December 2014.

Two holes were drilled (BYD001 and BYD002) for 500.5m. Both holes intersected thin zones of copper mineralisation. BYD001 was a re-entry of an RC hole (previously named BYRC019) and intersected 0.7m @ 1.5% Cu from 175.3m. BYD002 intersected 0.3m @ 2.2% Cu from 153.8m and 0.6m @ 2.1% Cu from 156.6m.

Diamond hole intersection points are shown in long-section on Figure 16.

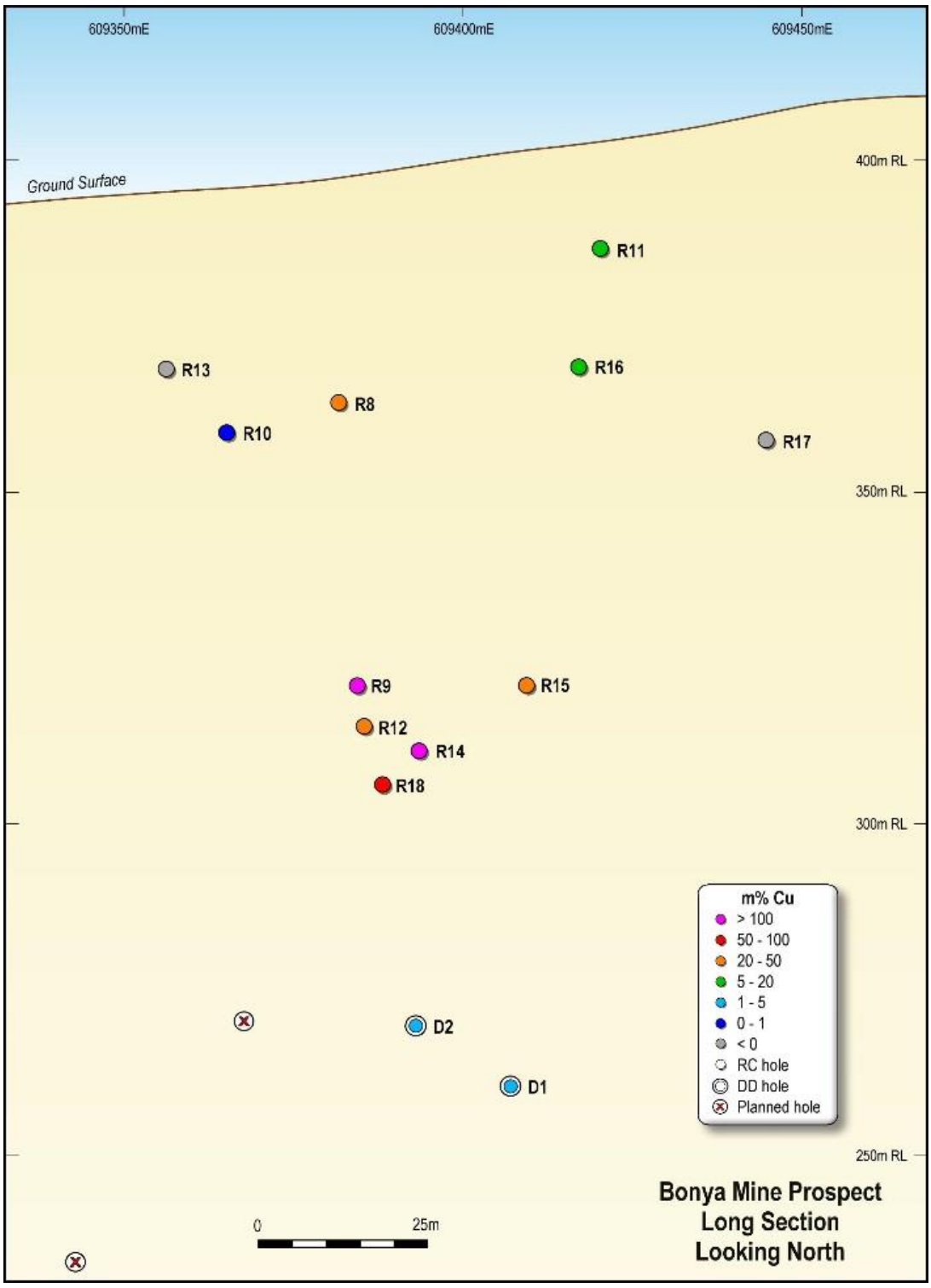

Figure 16. Bonya Mine prospect Long Section, follow-up targets marked with a red cross

Results and Discussion

Although the diamond drilling at the Bonya Mine prospect did not successfully intersect the central high-grade copper zone seen in the RC drilling, observations of rock textures, alteration and mineralisation are consistent with a late-stage of mineralisation. Chalcopyrite veins and disseminations are primarily associated with quartz veining oblique-to and cross-cutting regional foliation. Strong hematite alteration is seen in the

core; although its direct association with copper mineralisation is uncertain at this stage. The results show that copper mineralisation does extend at depth although the strike length of the main high-grade zone is probably limited.

A structural review was undertaken to generate a suitable geological model to assist in understanding the structural setting and controls on the known mineralisation. Outcropping stratigraphy at the Bonya Mine was mapped with GPS, indicating a fold with a hinge zone located approximately 40m west of the mine shaft. (Figure 17). Structural measurements from diamond core logging were plotted on stereonets using both Micromine and Stereonet 9 software. Analysis of the data identified a trend of 264° and plunge -65° for the fold axis.

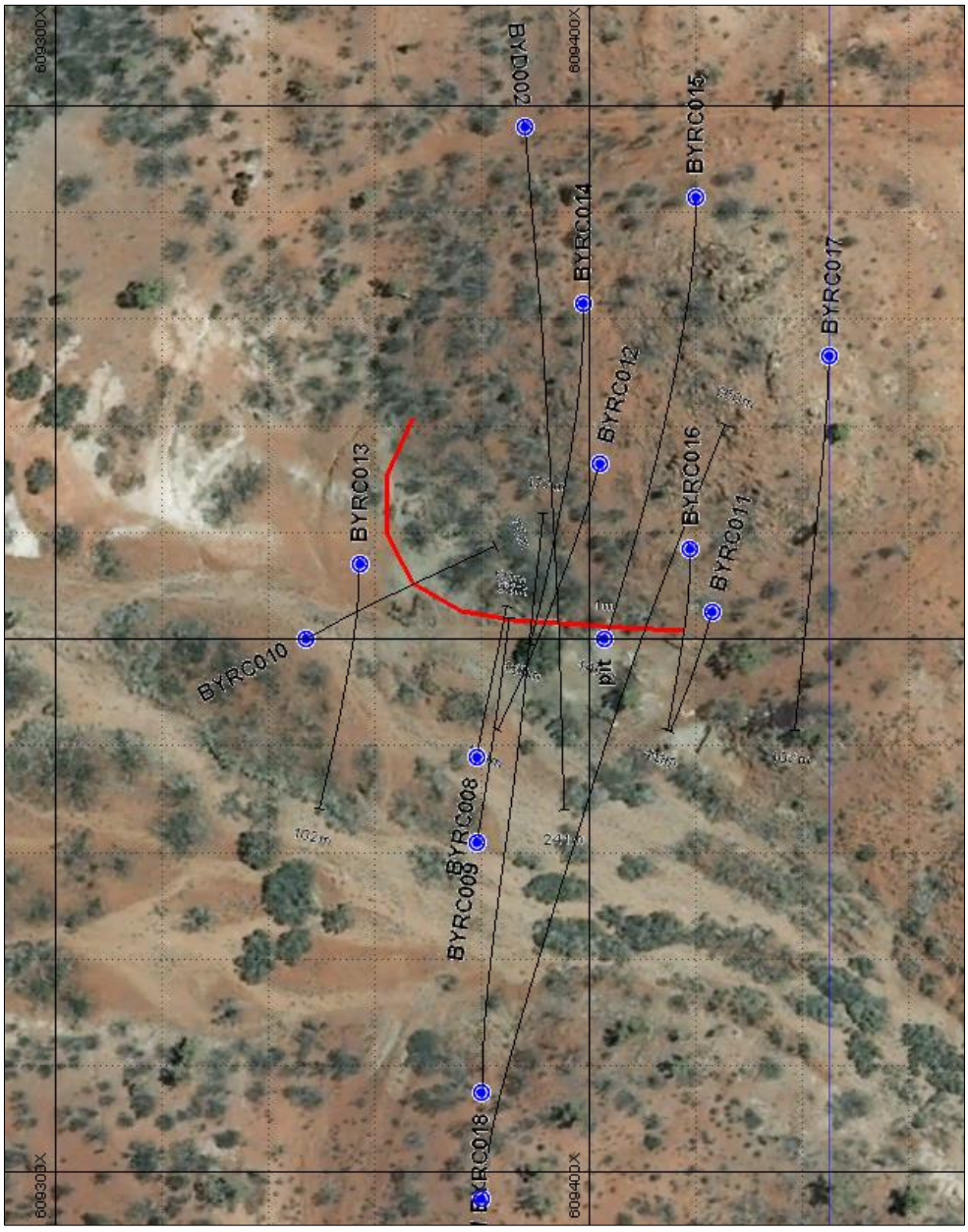

Figure 17. Bonya mapped surficial trend

Rehabilitation

Rehabilitation of RC drilling was undertaken in late 2014 (following drilling) and also in March 2015.

Exploration during year 4

Exploration carried out at the project included RC drilling, regional and prospect scale targeting, rockchip sampling and rehabilitation activities.

RC Drilling

(8 holes drilled for 694m)

RC drilling was carried out at regional prospects Green Hoard and Green Gully, targeting Bonya-style high-grade copper mineralisation. Two holes were also drilled at the Bonya Mine prospect.

Three holes drilled at Green Hoard failed to intersect any mineralisation.

Three shallow RC holes were drilled at Green Gully to test an outcropping zone of copper oxide mineralisation. The best result was received from GGRC001 which returned **2m @ 3.2% Cu** from 29m.

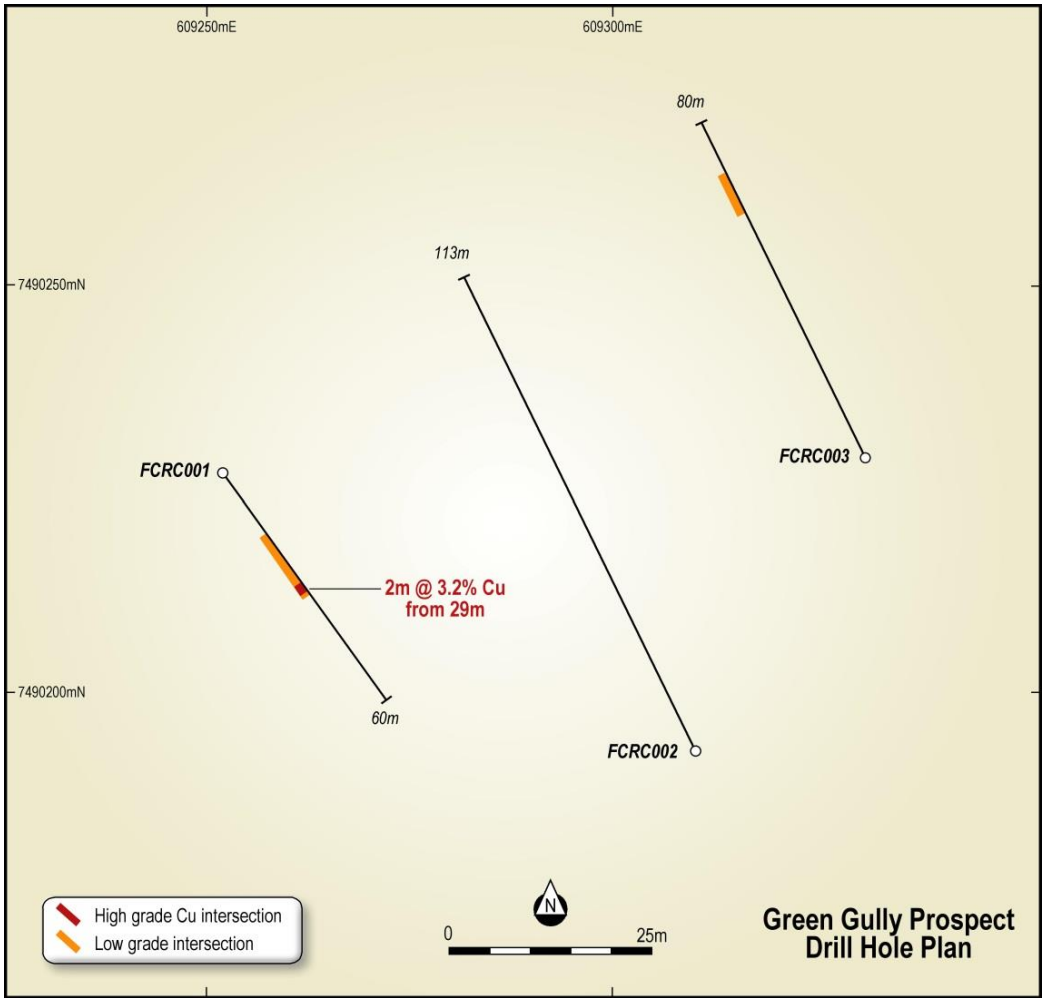

Figure 18. Green Gully prospect – drill plan

At the Bonya Mine prospect, BYRC020 was drilled at -60° the east; targeting an interpreted fold hinge position based on mapping and structural diamond core logging. The hole did not intersect copper mineralisation through the targeted position, however the RC hole may be re-used as a pre-collar at a later date with the aim to intersect deeper mineralisation through the main copper mineralised zone.

BYRC021 was drilled down-plunge to mineralisation at the Bonya Mine prospect and returned mineralised intersections throughout the entire length of the drill hole which ended in mineralisation (see Table 2 below).

Table 2. RC drilling results from November 2015

Hole	East	North	RL	Depth (m)	Dip	Azimuth	From (m)	To (m)	Interval	Cu%	Prospect
GGRC001	609252	7490227	424	60	-55	144	29	31	2	3.24	Green Gully
GGRC002	609310	7490193	416	113	-55	334	NSR				Green Gully
GGRC003	609331	7490229	414	80	-55	334	NSR				Green Gully
GHRC001	599762	7496104	400	60	-60	69	NSR				Green Hoard
GHRC002	599773	7496068	400	54	-60	69	NSR				Green Hoard
GHRC003	599750	7496136	400	54	-60	69	NSR				Green Hoard
BYRC020	609430	7487005	407	150	-65	261	17	18	1	1.58	Bonya Mine
And							22	24	2	1.15	
And							31	32	1	1.38	
And							43	45	2	1.79	
And							60	61	1	1.98	
And							79	84	5	1.64	
And							87	91	4	1.79	
And							97	98	1	3.79	
And							110	111	1	3.34	
And							120	121	1	1.27	
And							125	129	4	2.28	
And							140	146	6	2.6	
BYRC019	609313	7487071	405	123	-60	150	NSR				Bonya Mine

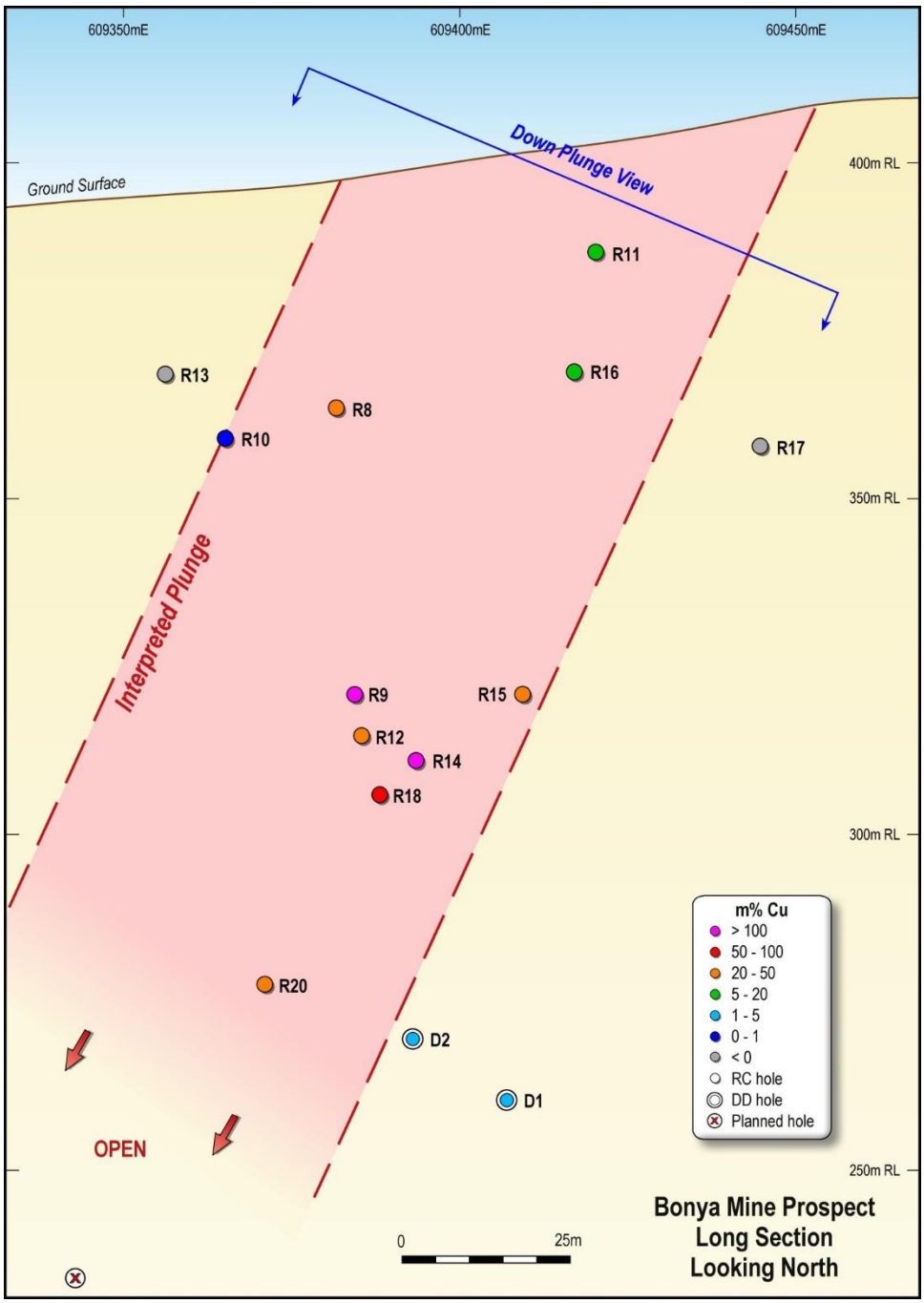

Figure 19. Bonya Mine prospect - Long section looking north

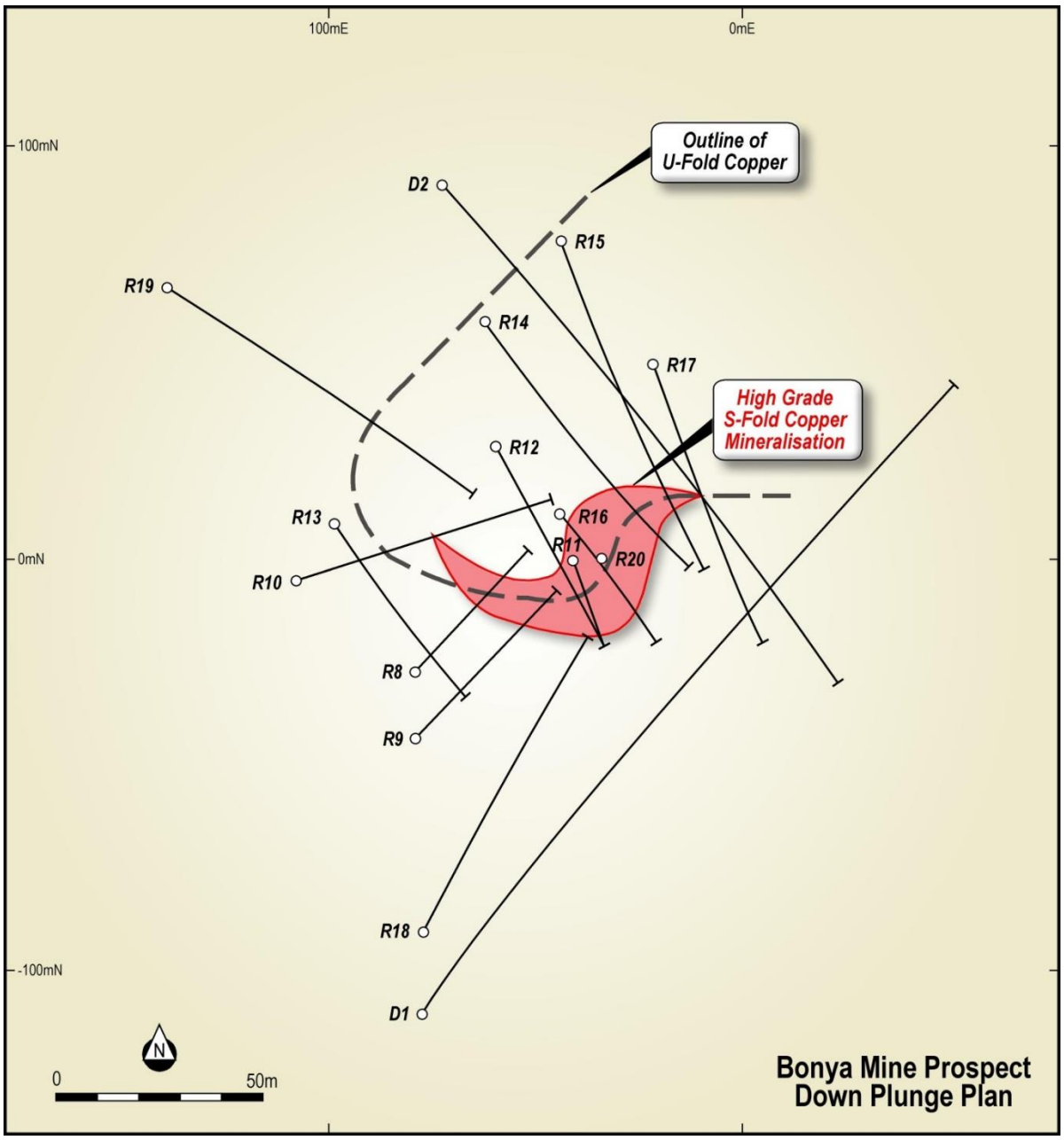

Figure 20. Bonya mine - plan view looking down plunge to mineralisation

Exploration during year 5 – current reporting year

Ground Gravity Survey

A ground gravity survey was completed in June 2017 by Haines Surveys. A total 593 stations were taken, of which 504 were on EL 29701. The areas surveyed included the Bonya Mine area and the Jervois North zone, an extension of prospective stratigraphy north of KGL Resources Marshall-Reward project.

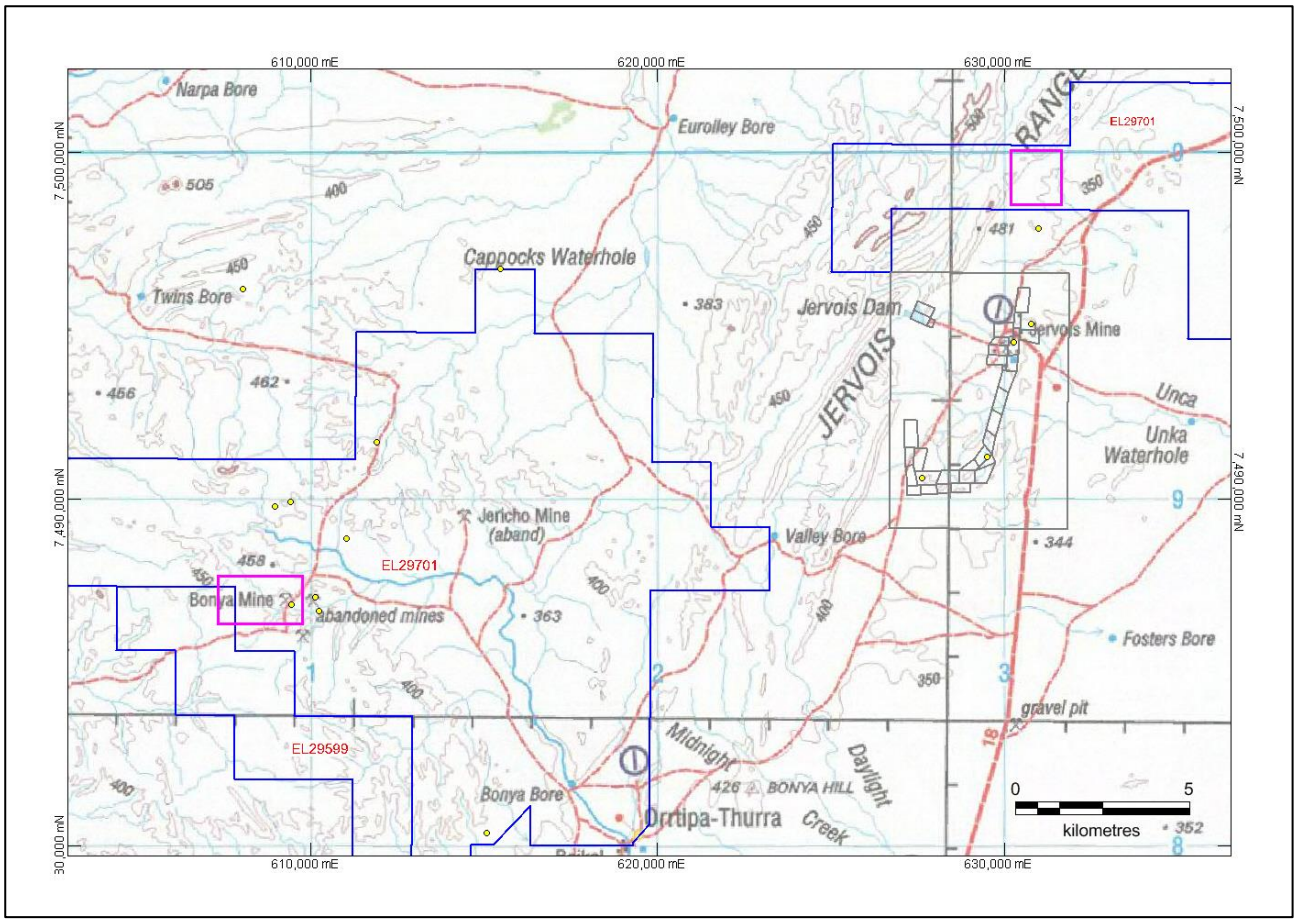

Figure 21. Ground Gravity survey areas shown in pink

Figure 22 below shows that the Bonya Mine appears to be situated in a gravity low. This could be due to alteration of the mineralised zone and or a structural zone of dilation within the regional fold nose.

The survey at Jervois North (or Bonya East) outlined a potential fold structure as a target for remobilised copper mineralisation. However, the stations were fairly wide-spaced (400m x 50m) and an infill survey would be justified to better define these structures.

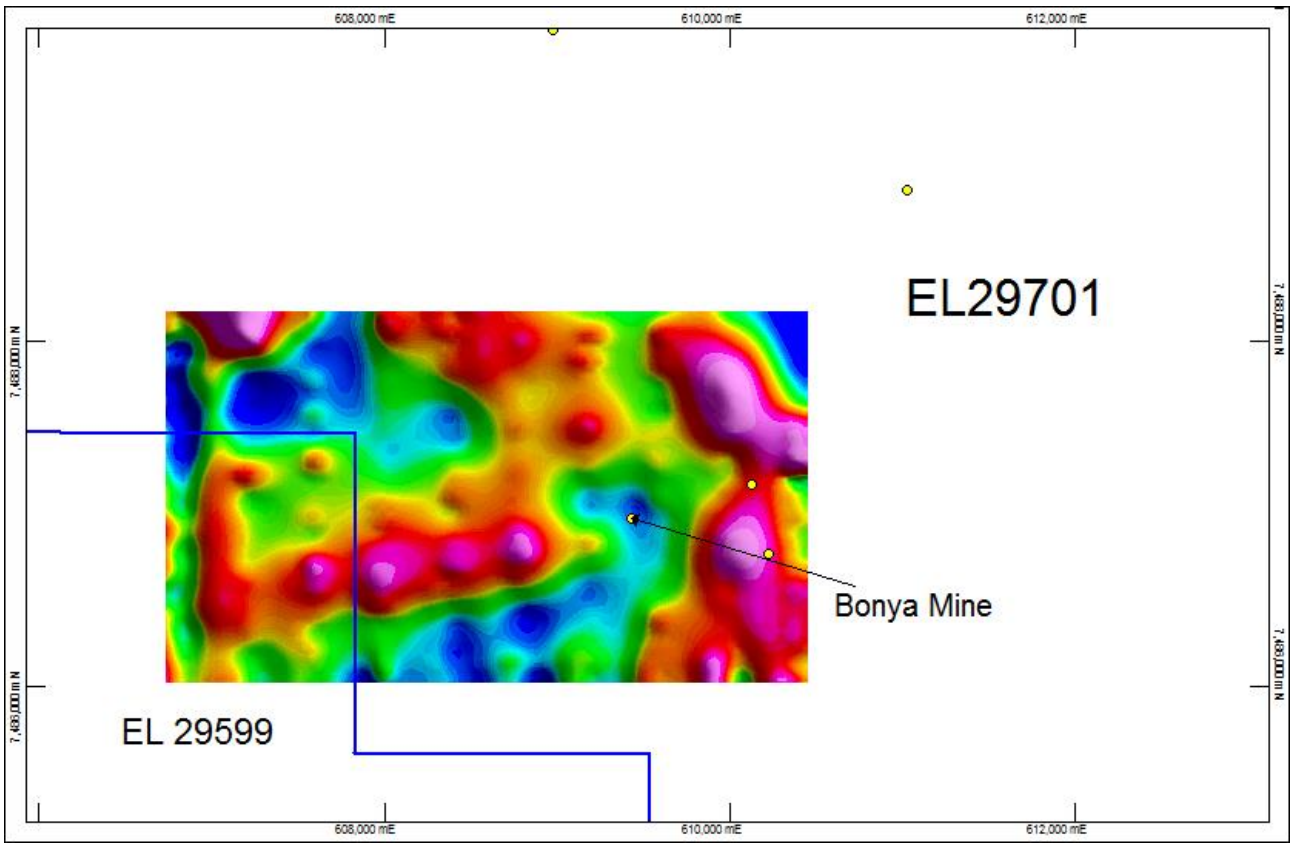

Figure 22. Bonya West Gravity – residual gravity image BG267

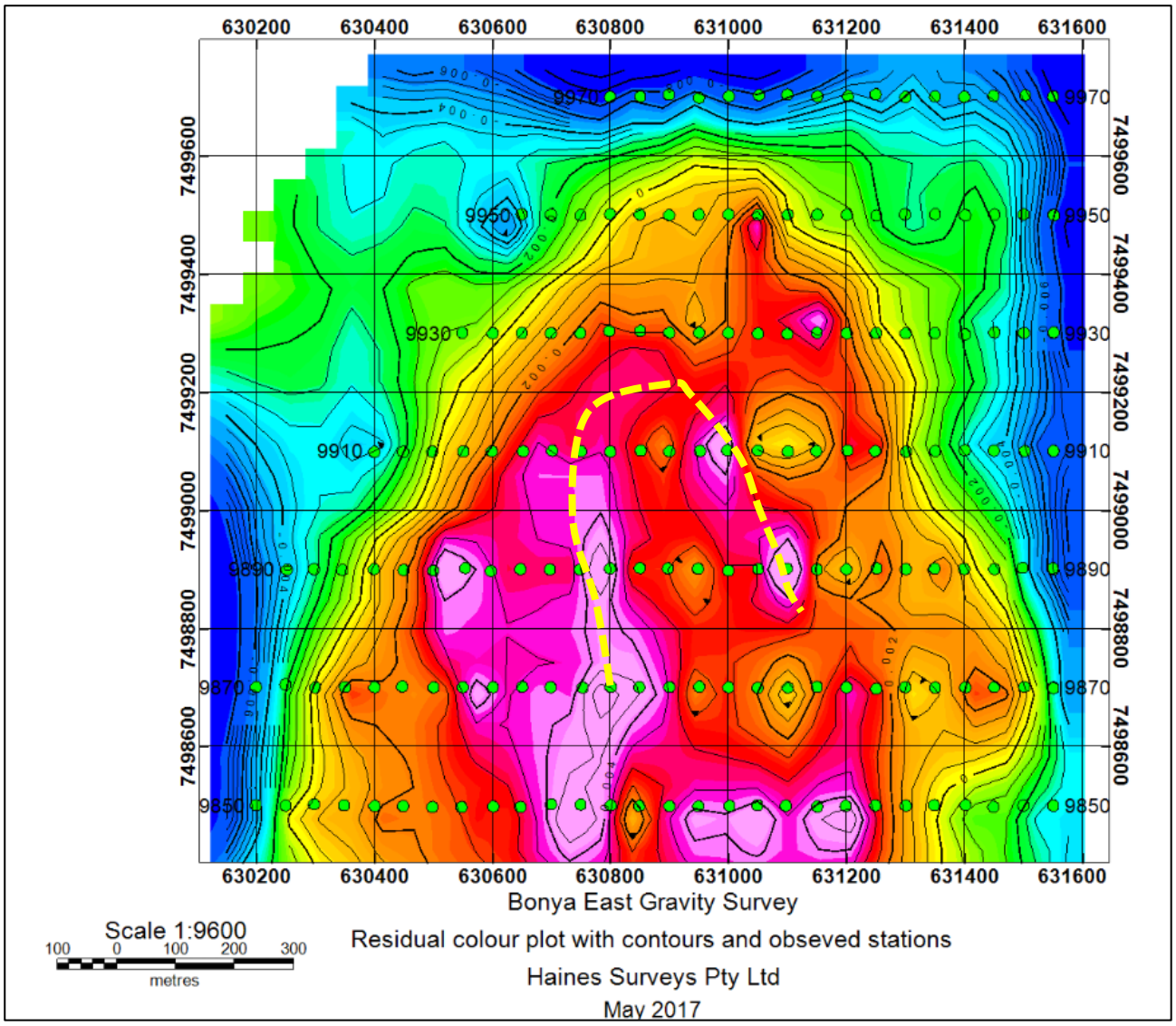

Figure 23. Jervois North – residual gravity image, with potential fold shown in yellow

Rehabilitation

Rehabilitation activities were carried out in October 2017. Several drillhole collars at Bonya Mine prospect are capped and have been preserved for possible re-entry. All sites and sumps have now been rehabilitated. The Bonya Mine Shaft has been blocked/secured.

Conclusions and Recommendations

The ground gravity survey completed in 2017 provided encouragement for further regional exploration. Infill gravity north of Jervois would be worthwhile, as well as follow-up regional soil sampling across prospective stratigraphy.

Further rehabilitation monitoring will be undertaken in 2018.

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