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EL 2417

HOLOWILENA

PROGRESS AND SURRENDER REPORTS FOR THE PERIOD 21/8/97 TO 11/2/2001

Submitted by

Pima Mining NL and Rasp Resources NL
2000

Enquiries: Customer Services
Ground Floor
101 Grenfell Street, Adelaide 5000

Telephone: (08) 8463 3000
Facsimile: (08) 8204 1880

PRIMARY INDUSTRIES AND RESOURCES SA

Exploration Licence 2417 – Holowilena Final Report

Period ending April 1999

Prepared by
Rebekah Szmidel Bsc. (Hons).

January 2000

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1 INTRODUCTION

Exploration Licence (EL) 2417, Holowilena was acquired by RASP Resources NL, as part of a package of tenements, including EL's 2320, 2322, 2323, 2330 and ELA 657/96. Pima Mining NL entered into a Farm-in Agreement on all of these tenements, agreeing to spend $505, 000 in the first year to earn a 51% interest in each tenement.

EL 2417 was considered a strategic acquisition by Pima Mining NL as it adjoined the eastern side of EL 2520, Mount Craig. The tenement covers the eastern part of the Worumba Diapir and the Black Hill Dome, which is a similar structure to the Bibliando Dome.

Aeromagnetic data was used to identify possible structural targets and magnetic anomalies for a reconnaisance geochemical sampling program. The primary target in EL 2417 was a large magnetic and gravity high in the northern region of the tenement within the vicinity of historical mine workings.

Reconnaissance geochemical sampling identified several anomalous copper values surrounding historical workings.

Significant structural features remain untested with the potential for possible large-scale economic copper mineralisation, in addition to the possibility of gold and uranium deposits.

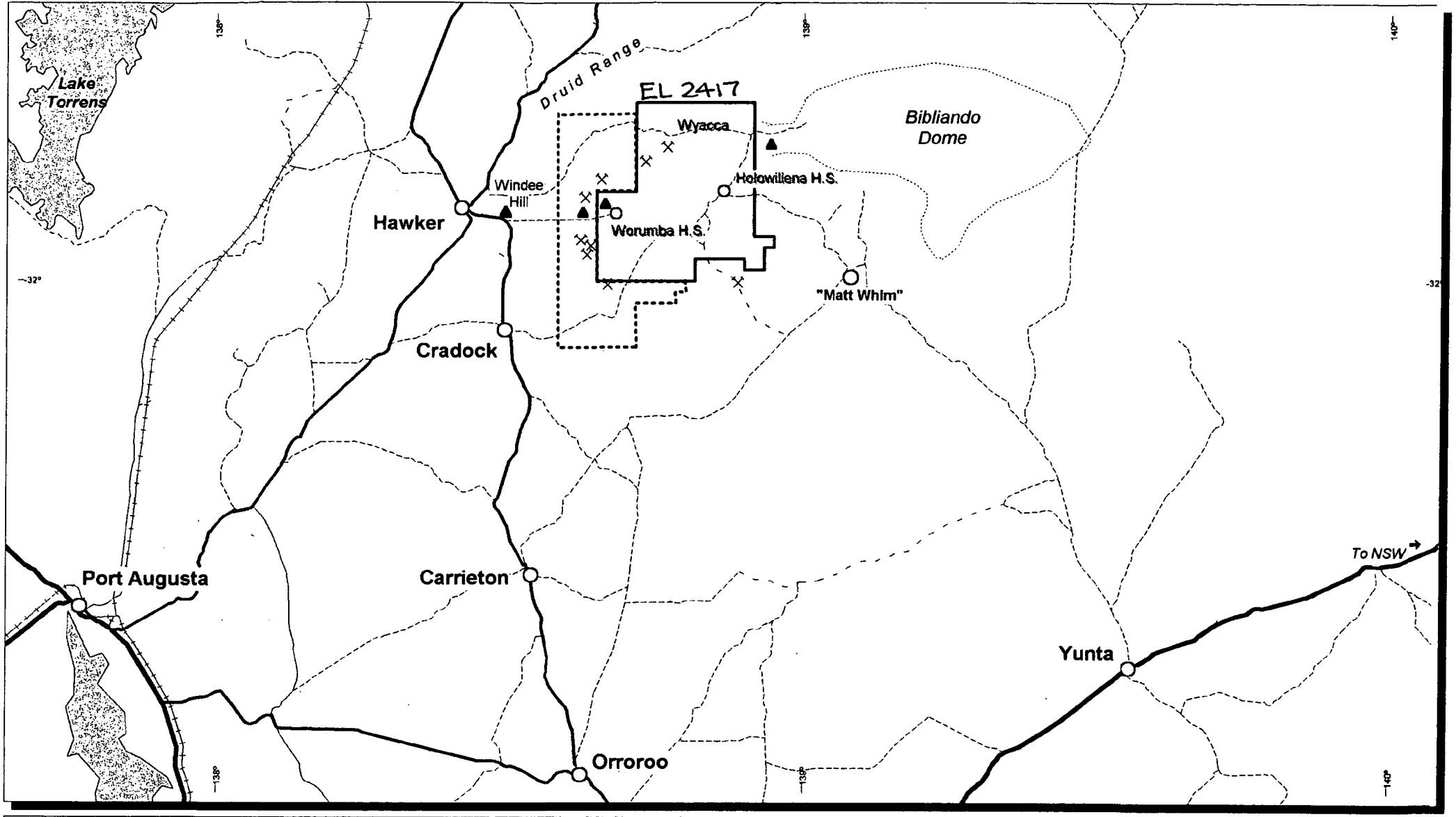
Pima Mining NL has decided to refocus its exploration and developments on magnesium deposits, and has therefore withdrawn from the Farm-in Agreement.

2 LOCATION and ACCESS

Exploration Licence (EL) 2417, Holowilena is located 90 kilometres north of the township of Orroroo (266 kilometres north of Adelaide). Access to the lease is via the Cradock-Holowilena H.S. unsealed road, 44km north of Carrieton.

Alternative access is along the Carrieton-Hawker unsealed road to Windee Hill (8kms southeast of Hawker), then 10 kilometres northeast via unsealed roads to Wyacca Mine (Figure 1). Other alternative access tracks run due east off the unsealed Carrieton-Hawker road to Worumba Homestead.

Holowilena is located on the Parachilna (SH 54-13) 1:250 000 scale map sheet and Wilpena (6634) 1:100 000 scale map sheet.



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EL 2417 - HOLOWILENA
Location of EL 2417 within the Flinders Ranges

EL 2417 — EL 2417 Boundary

EL 2520 Boundary

Spot Height

Mine

NORTH

FIGURE 1

3 MINERAL and LAND TENURE

EL 2417 was granted to RASP Resources NL by The Minister for Mines and Energy under Section 28 of the Mining Act 1971, for the term of one year commencing on the thirtieth day of April 1997 (Figure 2 & 3).

A Farm-in Agreement between RASP Resources NL, Kelaray Pty Ltd, Pima Mining NL, and Musgrave Mining Pty Limited was signed on the first day of December 1998. Under the terms of this agreement a minimum expenditure of $505, 000 was required to be spent by Kelaray (Kelaray: the operating subsidiary of Pima Mining NL) on EL's 2320, 2322, 2323, 2330, 2417 and ELA 657/96, in order to earn a 51% interest in each of the tenements. Minimum expenditure was not met within the first year.

Native title claimants covering EL 2417 include SC95/4 Kuyani #2, SC96/4 Barngarla, SC96/5 Nukunu, SC97/1 Anderson/Adnyamathanha and SC97/2 Adnyamathanha.

Exploration licence 2417 is located over the Shaggy Ridge, Holowilena, Worumba, and Mattawarangala Pastoral Leases.

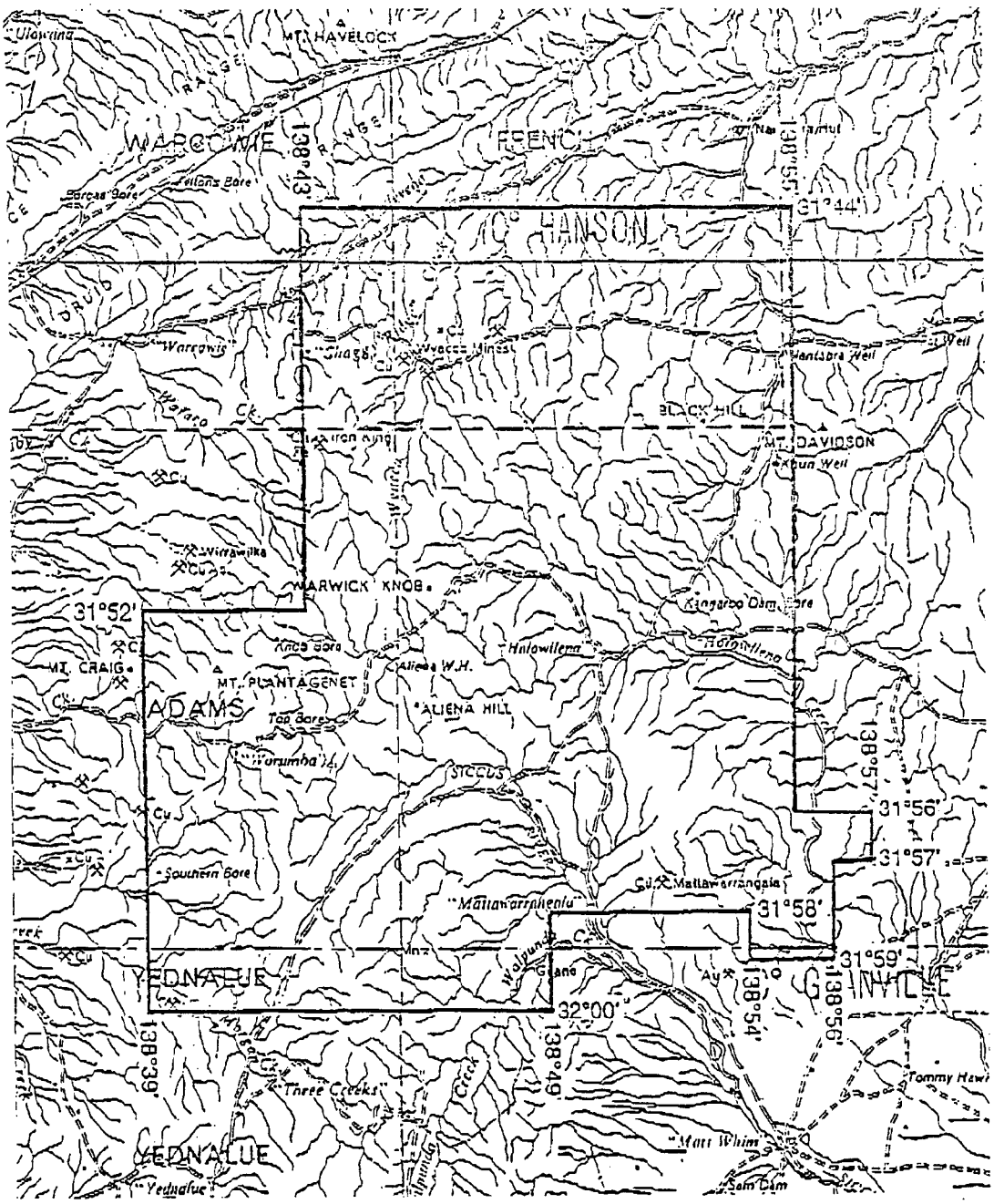
4 PHYSIOGRAPHY

4.1 Climate

Climatic conditions within the region are classes as semi-arid. Hot dry conditions prevail in the summer months with average temperatures exceeding 33°C. Mean maximum daily temperatures range from 33.2°C in January to 16.1°C in July. The mean annual temperature is between 17°C and 20°C (Specht, 1972).

Mean annual rainfall is less than 350mm in comparison to the mean winter rainfall, which is less than 80mm within the region. Mean summer rainfall is generally between 50-60mm. The lowest annual rainfall of 85mm was recorded in 1940, and the highest annual rainfall recorded in 1920 was 677mm in the Hawker region (Schwerdtfeger & Curran, 1996).

Mean annual evaporation between 2400mm and 2700mm (Preiss, 1985) significantly exceeds annual rainfall. Subsequently there are no naturally occurring permanent surface waters in the region.



5 0 5 10 15 20 25

KILOMETRES

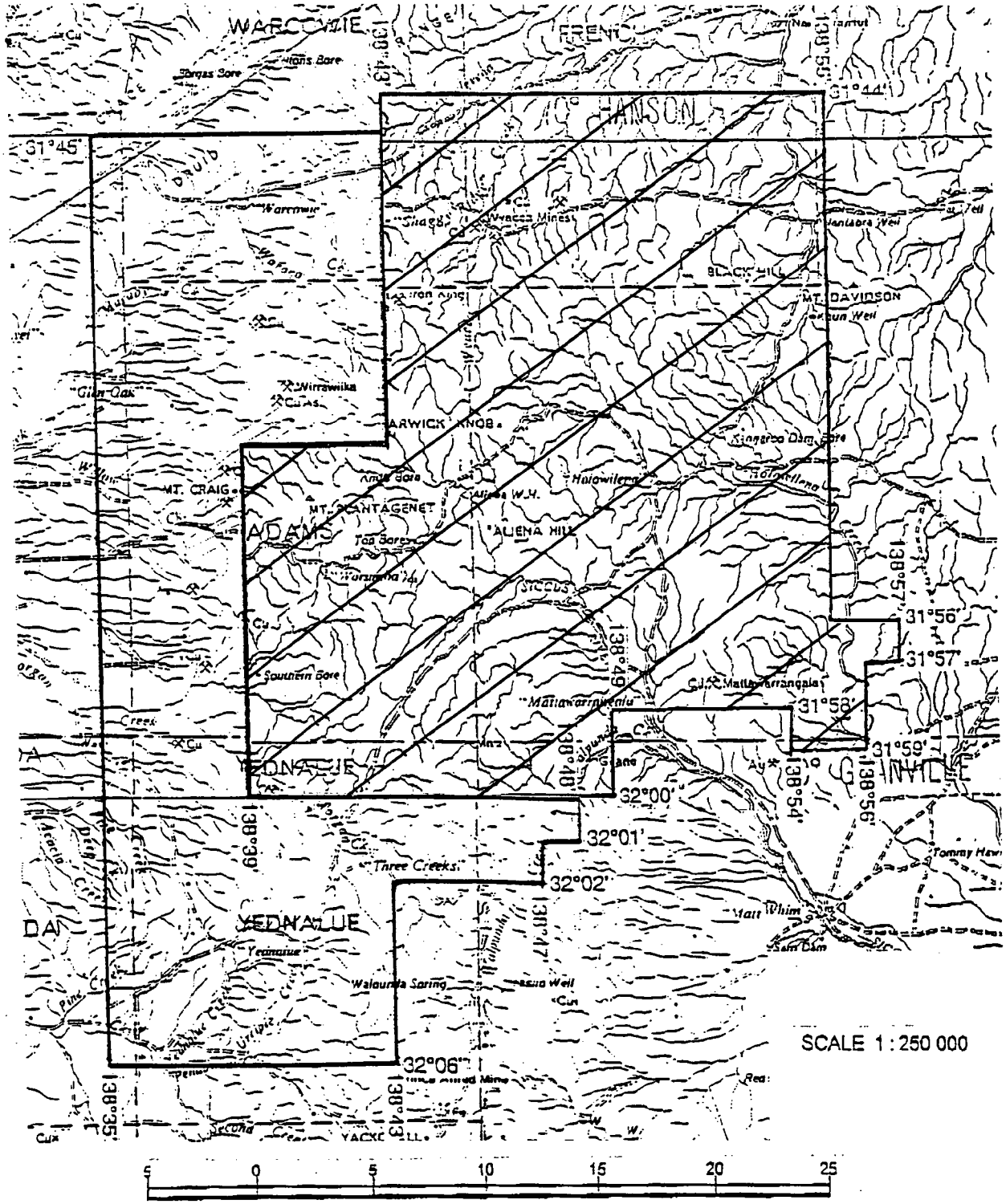
NOTE: There is no warranty that the boundary of this Exploration Licence is correct in relation to the other features on the map. The boundary is to be ascertained by reference to the Australian Geodetic Datum.

FIGURE 2

PIMA MINING N.L.

Boundary of EL 2417 - HOLOWILENA
Granted by the Minister of Mines and Energy

NORTH



NOTE: There is no warranty that the boundary of this Exploration Licence is correct in relation to the other features on the map. The boundary is to be ascertained by reference to the Australian Geodetic Datum.

FIGURE 3

PIMA MINING N.L.

Boundary of EL 2417 - HOLOWILENA
with adjacent EL 2520
Granted by the Minister of Mines and Energy

EL 2417 EL 2520

NORTH

4.2 Landform

The present landform of valleys, ridges and ranges are represented by the Trezona, Elatina, Etina, Sunderland and Wilyerpa Formations. Significant relief surrounds areas of outcrop and dissipates into a distal alluvial fan to the west.

Minor Quaternary sedimentation has filled intervening valleys, and in some areas recent talus and downwash cover the Neoproterozoic sediments.

Out crop of the Worumba Anticline forming a prominent ridge transects the western boundary of the licence with the Worumba Diapir in the southwest. Sediments forming the Holowilena Syncline dominate the central and southern regions of the tenement.

The highest hills in the area are Mount Plantagenet (950m) and Mount Craig (746m). Elevation of the plain to the west of Worumba station is about 400m, rising to 500, at the foot of a well defined scarp.

4.3 Soils

Soils covering the ranges within the region are typically shallow, reddish, dense, loamy soils with weak pedologic development (Preiss, 1999). Intervening undulating hills are dominated by shallow, reddish, powdery, calcareous loam with outcropping shale and quartzite. Foot slopes are hard, pedal duplex soils with low-angle scree and talus deposits of unconsolidated angular rock fragments, grit, sand and silt.

Quaternary soils of alluvium, cobbles, gravel, sand, silt and clay are often poorly sorted. Consolidated and dissected terrace and distal sand deposits; may have incipient soil horizons, often with gibber spreads and gypseous materials.

4.4 Drainage

Drainage systems within the region "flow" west-northwest into Lake Torrens, northerly and south easterly dissipating into lake deposits of gypseous clay, saline silt and quartz sand. Major tributaries include Wonoka Creek, Morgan Creek, Waraco Creek, Wyacca Creek, Woolshed Creek, Holowilena Creek, Arcoota Creek and Siccus River.

Permanent surface water is restricted to small springs along Willow Creek and several minor creeks in the north.

4.5 Vegetation

Plant communities containing semi-succulent shrubs of *Acacia sowdenii* (Myall) are common in calcareous desert soils within the region. Low shrub land communities of

Atriplex vesicaria (Bladder saltbush), *Kochia brevifolia* and *Kochia sedifolia* (Bluebush) are associated with both stony desert tableland soils and calcareous desert soils (Specht, 1972).

Cleared areas on low ridges and footslopes bear widespread grasses and introduced species including *Echium lycopsis* (Salvation Jane) and *Rumex vesicarius* (Wild Hops).

5 PREVIOUS INVESTIGATIONS

Previous exploration over the current Holowilena exploration licence (2417) is summarised below. Information was obtained through Primary Industries and Resources South Australia, open file envelopes.

5.1 PIRSA Open File Env. 9144

BHP Minerals Pty Ltd – Final Report for the Period Ending 15th November 1997 (M.W. Rennison & A.J. Rutley).

Mount Craig Exploration Licence 2085 (523km^2) overlies the southern boundary of EL 2417. Granted to BHP Minerals Pty Ltd on the 16th May 1995, exploration focussed on copper oxide and sulphide mineralisation associated with diapirs in the Adelaide Geosyncline. Exploration was directed towards a supergene enriched Cu oxide/sulphide blanket developed on a Cu mineralised raft within the Callanna Beds.

A total of 270-line kms was flown in an east-west orientation, with TEM readings taken every 500m. Four anomalies were selected for follow up with ground loop TEM. Site four covering EL 2417. 52 line kms of TEM by Solo Geophysics detected magnetic sources between 15 and 95m, with susceptibilities ranging from 0.031SI to 0.37SI.

116 soil samples were taken (1 within EL 2417) from four east west orientated lines centred over magnetic anomalies. 2kg samples of –2mm meshy fraction were collected every 100m and sent to Analabs in Perth. Samples were analysed for Cu, Pb, Zn and Cd. Small Cu anomalies were detected, and three samples were collected for petrology.

5.2 PIRSA Open File Env. 4572

UTAH Development Company – Final Report on Exploration EL 956, Worumba (Jarvis et al).

Exploration Licence 956 was granted to UTAH Development Company on the 8th of January 1983. Exploration focussed on gold and base metals with initial detailed ground geological mapping the focus.

An aeromagnetic survey by BRM in 1965 was followed up with a heliborne regional gravity survey in 1970.

In total 2124 geochemical samples from 4 regions including Mount Plantagenet and Wyacca Mine, were sampled in 25 and 10m intervals and analysed for Cu, Pb, Zn, Co, V, Ag, Au by AAS and As by XRF. 29 samples were sent for petrography. 5 diamond drill holes for 937.1m and 8 percussion drill holes for 768m were drilled over the anomalous areas. There were minor Cu, Pb, Zn and Co anomalies within the Kirwan siltstone. Twenty nine 20kg heavy mineral stream sediment samples were analysed by Comlabs for As, Ba, La, Ce, Nb, Zr, Cu, Pb, Zn, Ni, Co and Cr. No kimberlitic indicator minerals were identified. 72 vertical profile traverses were geochemically samples at 25m intervals; no anomalous results were recorded.

5.3 PIRSA Open File Env. 4799

Freeport of Australia Incorporated & Swan Resources Ltd – Exploration Licence 992 Orroroo Region, South Australia – Relinquishment Report (W.T. Marx).

Exploration Licence 992 (146km^2) was granted to Freeport of Australia Inc. and Swan Resources Ltd on the 12th of April 1982. 7, 25kg stream sediment samples of –1/4" material were analysed by microprobe analysis. Two samples are located along Arcoota Creek. No kimberlitic minerals were found

5.4 PIRSA Open File Env. 1341 & 1590

Gold Copper Exploration Ltd – Special Mining Lease Number 376. Progress Reports on Mount Plantagenet, South Australia (Rowan I.S. & Brown A.G.).

Exploration focused on the examination of old workings with the potential for copper gold mineralisation. Initial work included 4772 stream sediment samples (23 samples per square mile). Four of these are located around Wyacca Mine. All samples were analysed for Cu, Pb, Zn, Mn, Ba and Ag by AAS. 106 stream sediment samples were analysed for 26 elements; no data is available on these samples.

In total 17 percussion drill holes were drilled with results indicating that mineralisation is disseminated chalcopyrite within limestone, and malachite within shales.

A detailed examination of the old workings including Napoleon Mine and Wirrawilka mine is given in detail, including the type and extent of mineralisation, including rock chip samples.

5.5 PIRSA Open File Env. 1094

CAMS Leases Pty Ltd – Worumba Diapir area. Progress report for the period 1/12/68 – 30/11/69 (P.R. Donovan et al).

SML 140, Worumba was granted to CAM Leases Pty Ltd in 1966 (1629km^2). Exploration was aimed at the search for a large base metal deposit in the shales of the Tapley Hill Formation.

Outcrop samples were analysed for Cu, Pb, Zn, Co, Ni and Ag at Iron King (7 samples), Wirrawilka (9 samples), Mount Craig (12 samples) and New Burra (5 samples). All anomalies were traced back to recognisable surface exposures containing secondary Cu mineralisation, thus representing little opportunity for the development of sizeable disseminated deposits of Cu.

5.6 PIRSA Open File Env. 0954

CAMS Leases Pty Ltd – Worumba Stream Sediment Survey. Progress Report for the Period ending 1st December 1966 – 1st June 1967 SML 140 Worumba (R.W. Fidler).

SML 140 - Worumba was granted to CAM Leases Pty Ltd in 1966 (1629km^2). Exploration was aimed at the search for a large base metal deposit in the shales of the Tapley Hill Formation, particularly surrounding Wyacca Mine.

An IP survey around the main mine workings at Wyacca, was carried out by M^{c}Phar Geophysics. Anomalous zones identified the presence of massive sulphides.

130, -80 mesh stream sediment samples were analysed for Cu, Pb and Zn, over 12m^2. 8 anomalous Cu values and 1 anomalous Pb value was detected.

11 vertical percussion drill holes for 976m were drilled by Gold Copper. Several anomalous Cu zones were identified with a maximum anomaly of 220ppm Cu.

5 REGIONAL GEOLOGY

Stratigraphy

The northwest extension of the Adelaide Geosyncline comprises inliers of folded and fractured Proterozoic sedimentary rocks (Forbes, 1989). The Adelaidean is divided into four chronostratigraphic units: Willouran, Torrensian, Sturtian and Marinoan. The oldest rocks of the Adelaide Geosyncline, the Callanna Group, are subdivided into the Arkaroola and Curdimurka Subgroups. Exposure of these units can be seen along the western boundary of the tenement: as the Worumba Anticline (Figure 5).

In the Worumba Anticline the stratigraphy of the Curdimurka Subgroup is largely intact, with the succession totalling 1950m. The Wirrawilka Beds, Niggly Gap Beds, Arkaba Hill Beds, Kirwan Siltstone, Waraco Limestone and Worumba Dolomite Beds form the main stratigraphic sequence (Figure 4). Widespread small scale copper mineralisation is associated with the Curdimurka Subgroup. Copper mineralisation within the Kirwan Siltstone (Kirwan Mine) to the west of the tenement, is associated with carbonaceous siltstone deposited under reducing conditions (Figure 4). Other copper occurrences are found within the Niggly Gap Beds and Dunn Mines Limestone, equivalent to the Wirrawilka Beds. Preiss (1993) suggests minor copper mineralisation is also associated with some dolerite bodies, especially near their contacts with diapiric breccia.

Deposition of the Burra Group during the Torrensian was confined to a wider rift zone compared to the Callanna Group. Outcrop of the Burra Group is restricted to the units of Skillogalee Dolomite (Figure 4). Fault blocks of the Burra Group were locally tilted up to 90° and eroded to various stratigraphic levels forming the current topography. The Burra Group is host to some significant mineral deposits, including gold, silver-lead, micaceous haematite, magnesite, talc, clay and dolomite and quartzite aggregate.

The Umberatana Group encompasses glacial deposits of Sturtian to early Marinoan age. The thickness of the Umberatana Group is usually about 4000m, but increases to around 9000m in the Mount Painter region. Units of Pualco Tillite, Holowilena Ironstone, Wilyerpa Formation, Tapley Hill Formation, Sunderland Formation, Etina Formation, Trezona Formation and Elatina Formation form the Holowilena Syncline in the southern and central region of the tenement (Figure 4 & 5).

Stratigraphic Units of EL 2417

Age/ Group	Stratigraphic Unit	Lithology Description
MARINOAN / WILPENA GROUP	Wonoka Formation	Storm-dominated mixed carbonate-siliclastic sequence. *Lower Unit*: interbedded maroon mudstone and sharp-based, fine-grained calcareous and dolomitic sandstone, commonly with sole marks, graded bedding, combined-flow ripples and hummocky cross-stratification. *Middle Unit:* finely laminate reddish calcareous mudstone with varying proportions of thinly bedded cyclic, micritic limestone. *Upper Unit:* finely laminated green siltstone, medium to thickly bedded limestone and calcareous sandstone with planar bedding, hummocky cross-stratification and climbing ripples.
	Bunyeroo Formation	Brick-red shale with thin, light green bands and reduction spots. 10-30mm thick layer with sub-rounded fragments of felsic volcanics, ~60m above base.
	ABC Range Quartzite	White, heavy-mineral laminated cross-bedded quartzite with ripple marks, mudcracks and mud clasts. Prograding, diachronous, shallow marine sequence which commonly consists of four or five upward-coarsening cycles capped with orthoquartzite.
	Brachina Formation	Red-brown and grey-green siltstone and sandstone.
	Nuccaleena Formation	Laminated to well-bedded pink, cream to buff-yellow, fine-grained dolomicrite. Cyclic purple shale interbeds in upper part. Disconformable base.
STURTIAN / UMBERATANA GROUP	Elatina Formation	Red-brown medium-grained arkosic sandstone and red, pebbly, sandy siltstone of glacial origin. Lower slumped sandstone with granule trains; a middle siltstone with dropstones and common interbeds of dropstone diamictite, and an upper ripple cross-laminated sandstone and current reworked diamictite. Cobble to boulder-size clasts, occasionally glacially smoothed and striated; clasts of altered basalt, dolerite, crystal tuff and dolomite. Disconformable base.
	Trezona Formation	Cycles of laminated greenish grey calcareous shale and siltstone grading to pale red and grey, fine-grained stromatolitic, oolitic and intraclastic harsh breccia limestone.
	Etina Formation	Cycles of thick, grey, oolitic and stromatolitic limestone with intervening grey-green siltstone. Limestone is commonly sandy with trough cross bedding.
	Sunderland Formation	Grey-green calcareous siltstone and fine to medium-grained sandstone with coarse-grained to pebbly sandstone and/or oolitic limestone, commonly conglomeratic with large clasts of stromatolitic limestone and siltstone, overlying basal disconformity. Slumping and flaser bedding common in upper part.
	Tapley Hill Formation	Finely laminated grey-green siltstone to fine lithic sandstone cycles
	Wilyerpa Formation	Green siltstone. Lower third is fine grained and includes intervals of glacial dropstones; middle unit is medium to coarse-grained sandstone; upper unit is siltstone with minor sandstone. Included discrete dropstone intervals and storm derived thick sandstone and glacial conglomerate.
	Holowilena Ironstone	Dark red, thinly laminated iron-rich siltstone; includes medium to coarse-grained gritty sandstone and glacially derived pebbly siltstone
	Pualco Tillite	Blue-grey gritty siltstone and minor thin sandstone with pebble to boulder-sized glacial clasts; matrix-supported diamictite. Unconformable base.
TORRESIAN / BURRA Group	Skillogalee Dolomite	*Lower Member*: grey-green siltstone, pale grey to pink dolomite and feldspathic sandstone; ripple marks, mudcracks. *Upper Member:* blue-grey dolomite, partly stromatolitic, with black chert; magnesite conglomerate; dolomitic siltstone and sandstone; mudcracks, intraclasts
WILLOURAN / CALLANNA	Waraco Limestone	Pale grey to cream stromatolitic dolomite and calcitic and dolomitic marble overlying blue-grey, flaggy to massive limestone with black chert and slumped stromatolites; dark grey, partly laminated siltstone at top.
	Arkaba Hill Beds	Laminated stromatolitic dolomite and limestone, local fenestral fabrics and gypsum pseudomorphs; interbedded micaceous siltstone, fine sandstone. Dark grey, laminated, carbonaceous, locally silicified siltstone in lower part.
	Niggly Gap Beds	Grey, micaceous siltstone and fine-grained sandstone partly with halite casts, heavy-mineral-laminated sandstone, minor dolomite; locally cupriferous
	Wirrawilka Beds	Pale grey to buff laminated dolomitic limestone overlying dark grey, finely laminated siltstone, locally silicified.
	Siltstone	Undifferentiated micaceous siltstone with minor dolomite, shale and sandstone; abundant salt casts; tuffaceous in part. Largely equivalent to the Niggly Gap Beds.
	Dolomite	Commonly cryptalgal laminated or stromatolitic, with dolomitic siltstone interbeds.

WILLOURAN GROUP	Shale	Khaki-green to light grey, finely laminated micaceous shale and fine dolomitic mudstone; rare pseudomorphs after halite and occasional mudcracks.
	Sandstone	Medium to coarse-grained sandstone and clean mature quartzite. Well bedded, commonly with heavy-mineral lamination, occasional ripples and micro-trough cross-bedding, halite casts and rare rosetees possibly pseudomorphing barite. Minor interbedded siltstone dolomite.
	Unnamed Volcanics	Altered dark purple to grey-green, haematitic amygdaloidal basalt.
	Undifferentiated Basic Intrusives	Fine to coarse-grained, dark green, uralitised dolerite, locally intrusive into the Callanna Group
	Diapiric Breccia	Massive to flow-banded, pink to buff, carbonate-cemented breccia with wide size range of dolomite, siltstone and micaceous sandstone clasts

Figure 4 Stratigraphic units of the Holowilena Exploration Licence 2417.

In the northern part of the Worumba Anticline, the Umberatana Group unconformably overlies disrupted Callanna Group and intrusive carbonate breccia (Coats & Preiss, 1987). The Curdimurka Subgroup was folded into an ancestral anticline, and subsequently thrusted and overturned. These features suggest that deformation by gravity sliding and diapirism occurred in the early Sturtian.

The Wilpena Group is the youngest subdivision of the Adelaidean succession, including units of Nuccaleena Formation, Brachina Formation, ABC Range Quartzite, Bunyeroo Formation and Wonoka Formation (Figure 4). The Wilpena Group is the most widespread of all rock groups in the Adelaide Geosyncline with units of ABC Range Quartzite forming prominent ridges.

Diapirs

At least 180 breccia bodies are exposed in the Adelaide Geosyncline. Preiss (1987) believes that the Curdimurka Subgroup is the main source of incompetent carbonate, clastic and evaporitic sediments that contributed to the formation of diapiric breccia. Preiss (1987) further suggested that brecciation took place in fault zones, fold hinges and along stratiform, possibly originally evaporite-bearing layers. In the case of the Worumba Anticline, the first deformation of the Callanna Group was shown to be pre- to early Sturtian. This involved gravity driven folding, thrusting and overturning as well as the formation of diapiric breccia.

Lemon (1996) however, has described the Worumba Anticline as a 'fossil' diapir: insoluble remnants brought to the surface by low density, halite-rich evaporite sequences separated from the salt by surface dissoloution. Some of the features core large anticlines, such as the Worumba Anticline, which show growth during the deposition of surrounding sediments.

Delamerian Orogeny

The early Palaeozoic age of the major deformation of the Proterozoic and Cambrian rocks of the Adelaide Geosyncline is known as the Delamerian Orogeny. Two separate events are recognised in the Flinders Ranges. An early event produced by east-west compression produced linear north-south folds. A later stage of dominantly north-south compression produced strong east-west folds.

Generally, only mild, very low-grade metamorphism accompanies the Delamerian folding. Low-pressure, intermediate to high-temperature metamorphism, generally not exceeding greenschist facies.

Mineralisation

Sulphides are commonly disseminated throughout the Willouran units in the core complex of the Worumba Anticline. Pyrite, the most common sulphide, is observed in dark thinly laminated siltstone of the Wirrawilka Beds, lower Arkaba Hill Beds, Kirwan Siltstone and Worumba Dolomite Beds, either as microscopic framboids or as euhedral crystals (Preiss, 1985). The presence of copper-bearing sulphides in many carbonate horizons is suggested by the widespread malachite staining on joint planes and disrupted zones in which copper was concentrated, possibly during conditions of subaerial weathering.

Mineralisation within the Worumba area was described in general terms by Spry. Barite was recorded along the great north-south fault west of Worumba and at Morgan Well. He considered the sedimentary magnesite of the Skillogalee Dolomite and the Wirreanda Dolomite, as being insufficient for economic exploitation.

Mines and Mineral Occurrences within the Region.

Name	***Easting***	***Northing***	***Mineral***
Willow Creek Workings	275000	6468300	Malachite
Kirwan Mine	275960	6462490	Malachite, Azurite
Mine in block of Niggly Gap Beds	275180	6465740	Malachite
Cupriferous dolomite in Niggly Gap Beds	275180	6465740	Dolomite, Pyrite
Mine in Arkaba Hill Beds	277770	6462810	Dolomite
Mine in Wirrawilka Beds	277680	6464920	Copper
Mine in block of Wirrawilka Beds	277300	6465930	Malachite

Pit in dolerite	273950	6465940	Malachite, copper
Mine in ironstone	274390	6466840	No mineralisation seen
Napoleon Mine	276610	6470130	Malachite, Azurite
Mount Craig Mines	277000	6471000	Feldspar-rich dolerite
Wirrawilka Workings	278700	6473900	Chalcopyrite
Mine in Waracowie Dolomite Member	279370	6470400	Malachite
Shafts in Wilyerpa Formation	280880	6467180	Manganese
Iron King Mine	284650	6478250	Gold, Silver, Copper, Nickel, Lead, Zinc
Bottle Dump Prospect	278380	6476970	Chalcopyrite
Copper prospect near Morgan Creek	278360	6457200	Malachite, Cuprite, Copper

Preiss (1985)

7 EXPLORATION ACTIVITIES and RESULTS

The following exploration by Pima Mining NL focussed on the potential for gold and basemetal mineralisation within the Flinders Ranges.

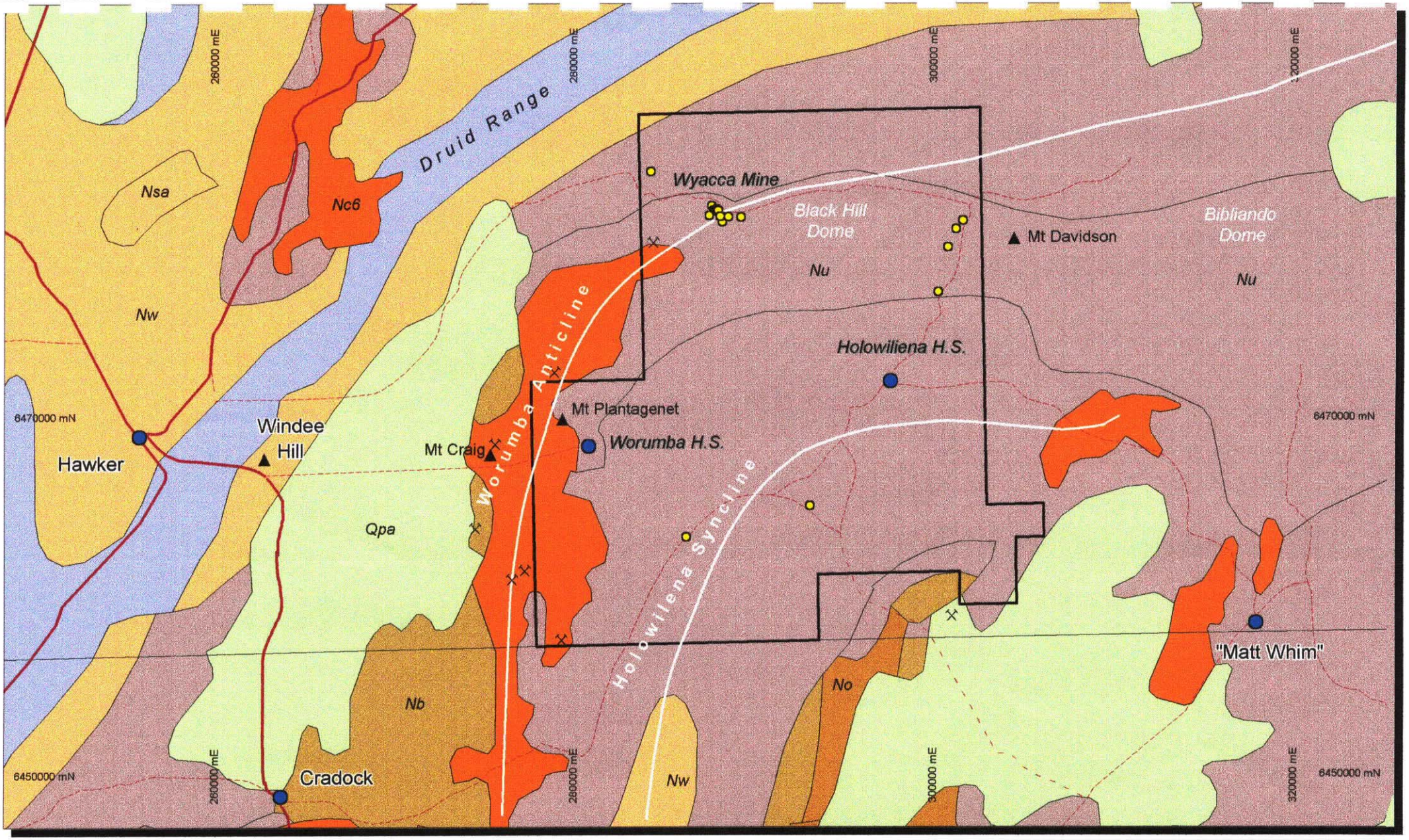
- Reconnaissance geological investigation
- Geophysical interpretations
- 9 Rock chip samples
- 11 Stream sediment samples

7.1 Geophysics

Aeromagnetic data was flown by World Geoscience Corporation on behalf of the South Australian Government as part of the South Australian Exploration Initiative (S.A.E.I.). Flight line direction was north south with a nominal spacing of 400m, and tie lines east west with a nominal spacing of 4000m. Mean terrain clearance was approximately 80m.

A large coincident magnetic and gravity high underlies much of the northern half of the tenement and hosts numerous copper/gold workings (Figure 6). The Black Hill Dome is considered to be similar in structural setting to the Bibliando Dome to the east, where Minotaur Gold reported 26m @ 2.5g/t, 3m @ 18.0g/t, 11m @ 7.7g/t and 5m @ 6.7g/t gold.

Structural features within this proximity were considered prime exploration targets particularly within the vicinity of Wyacca Historical Mine.



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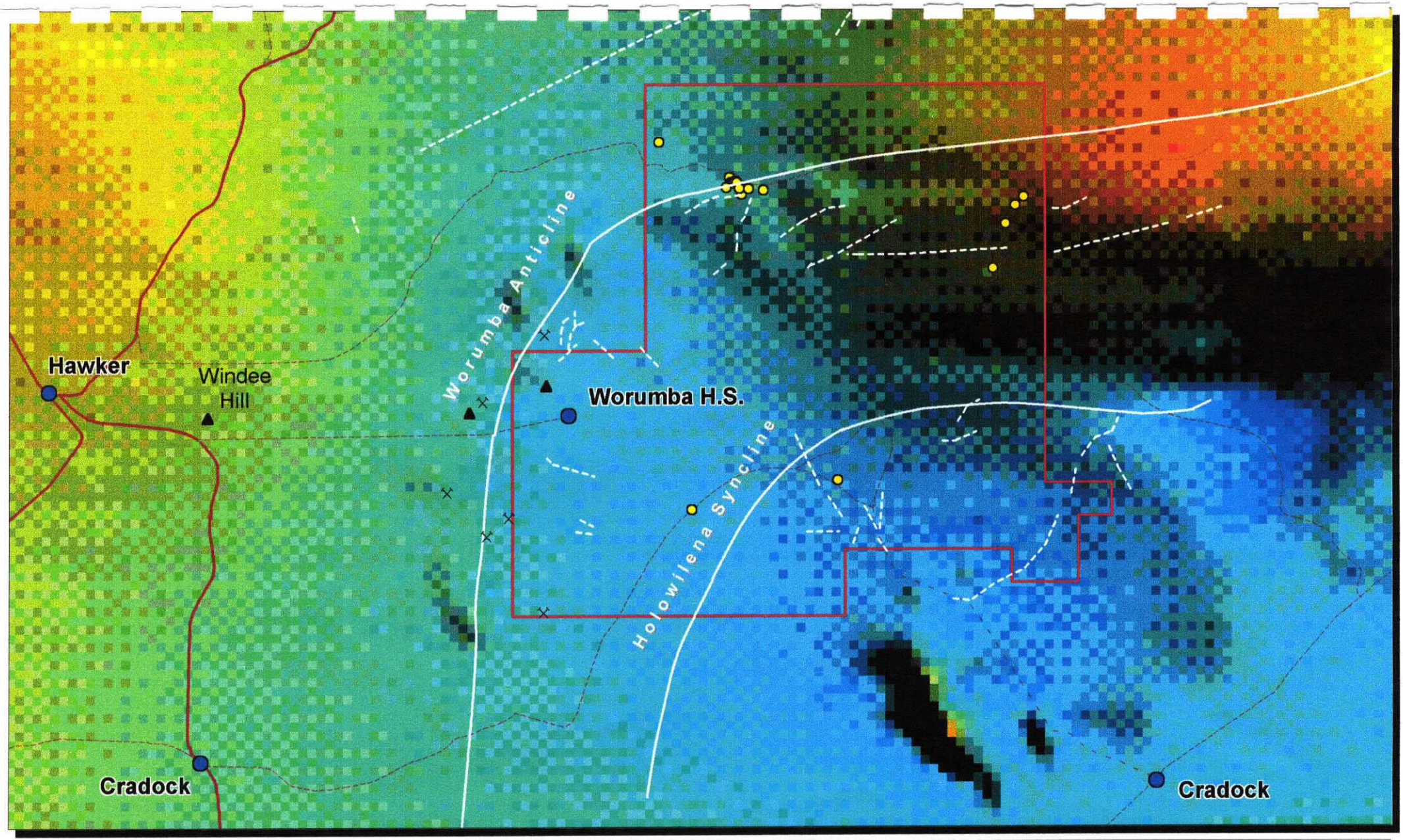
EL 2417 - HOLOWILENA
Generalised geology and location points of geochemical sampling

FIGURE 5

Qpa	Scree and talus deposits	Nu	Umberatana Group
Eo3	Hawker Group	No	Burra Group
Nw	Wilpena Group	Nb	Emeroo Subgroup
Nsa	ABC Range Quartzite	Nc6	Callanna Group

EL 2417
Anticline/syncline
Sample locations
Mine locations
Spot heights

NORTH



PIMA MINING N.L.

EL 2417 - HOLOWILENA
Geochemical Results overlain
State SAEI TMI Aeromagnetic Image

Faults
Spot Heights
Sample locations
Mine locations

NORTH

FIGURE 6

7.2 Surface Geochemical Sampling

Seven rock chip samples were collected in the vicinity of Wyacca Copper Mine. Sample locations were positioned using a Garmin 45 Global Positioning System (GPS), with an accuracy ± 50m (Appendix 1).

1-2kg samples were collected and placed in calico bags. Each calico was subsequently placed in a plastic bag with an accompanying ticket number. All five plastic bags were placed into a single polyweave bag.

Samples were analysed at Amdel Laboratories in Adelaide for Au by aqua regia digest with a graphite finish (AA9) and Ca, Cr, Fe, K, Mg, Mn, Na, Ag, As, Bi, Cd, Ce, Co, Cs, Cu, Ga, In, La, Mo, Nb, Ni, Pb, Rb, Sb, Se, Sr, Te, Th, P, Ti, V, Tl, U, W, Y and Zn by Optical-ICP (mixed acid digest) (Appendix 1).

Two rock chip samples were collected in the south of the tenement for possible magnesium mineralisation within the Skillogalee dolomite. Sample locations were positioned using a Garmin 45 Global Positioning System (GPS), with an accuracy ± 50m (Appendix 1).

1-2kg samples were collected and placed in calico bags. Each calico was subsequently placed in a plastic bag with an accompanying ticket number. Two plastic bags were placed into a single polyweave bag.

Samples were analysed at Amdel Laboratories in Adelaide for Al_2O^3, CaO, Fe_2O^3, K_2O, MgO, MnO, Na_2O, P_2O^5, SiO_2, TiO_2 by Total Digest (Whole rock analysis – IC4) and LOI by Gravimetric Analysis (loss on ignition-GRAV7) (Appendix 1).

Eleven stream sediment samples were taken in the northeast and surrounding Wyacca Mine. Sample locations were positioned using a Garmin 45 Global Positioning System (GPS), with an accuracy ± 50m (Appendix 1).

1-2kg samples were collected and placed in calico bags. Each calico was subsequently placed in a plastic bag with an accompanying ticket number. Five plastic bags were placed into a single polyweave bag.

Samples were divided in equal proportions and screened at –80 and +80 mesh size for Au by aqua regia digest with a graphite finish (AA9), Ag, As, Bi, Cd, Co, Cs, Cu, Ga, In, Mo, Ni, Pb, Rb, Sb, Se, Te, Th, Tl, U, Y and Zn by ICP-Mass Spectrometry (IC2M) and Cr, Fe and Mn by Optical-ICP (mixed acid digest) (Appendix 1).

7.3 Geochemical Sampling Results

Several anomalous Cu values of 2.61%, 7400ppm, 3200ppm, 1800ppm and 650ppm were identified from rock chip samples in the Wyacca Mine Area (Figure 7). Minor

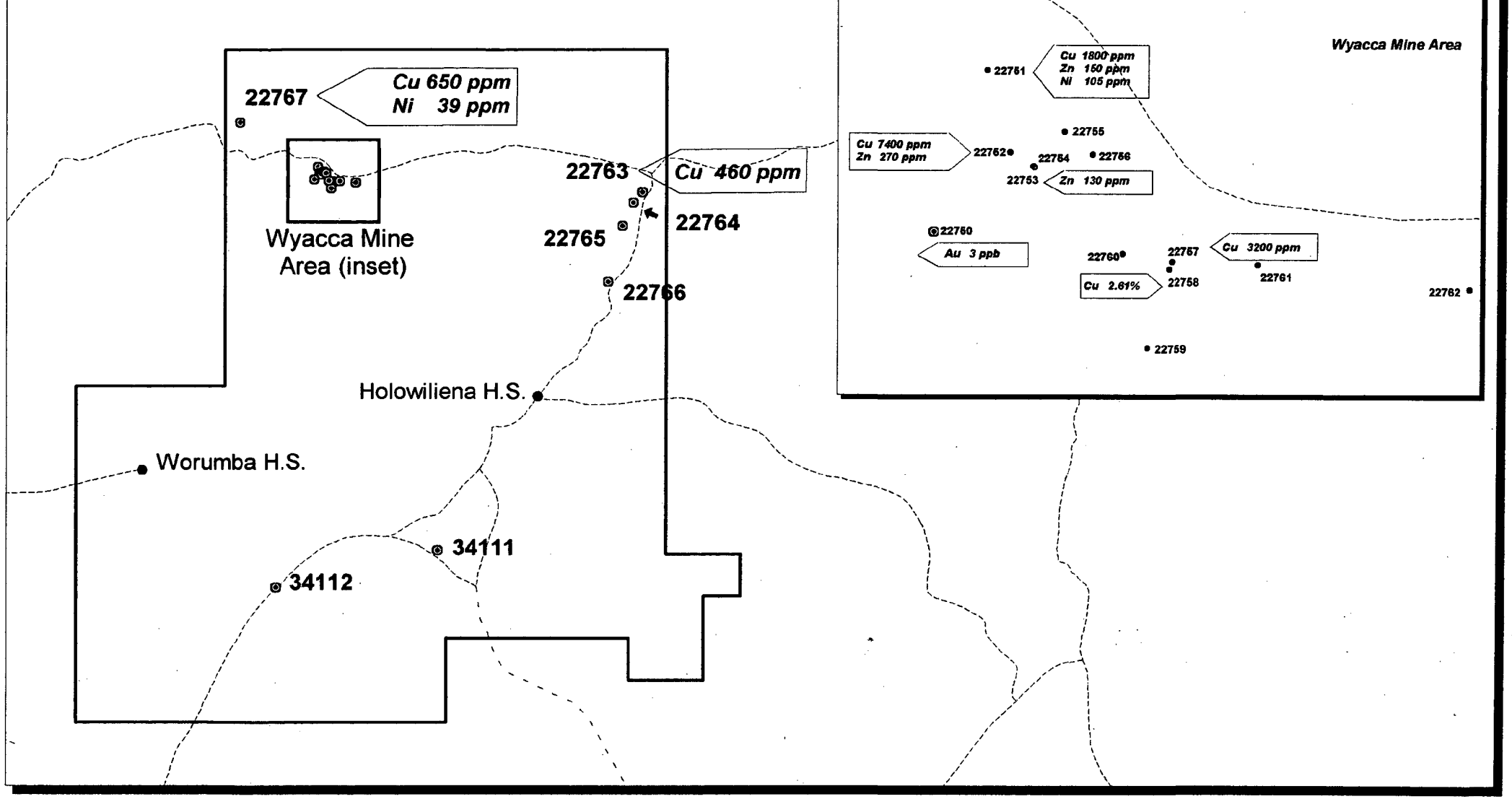


FIGURE 7

PIMA MINING N.L.

EL 2417 - HOLOWILENA
Location and anomalous values of geochemical sampling

EL 2417 Boundary

22766 Location and Sample Number

Cu 650 ppm Anomalous values (ppm) except Au (ppb)

NORTH

zinc and nickel anomalism was also identified within the Wyacca Mine Area. Samples ranged between 35ppm and 270ppm Zn, with nickel values as low as 8ppm and as high as 105ppm.

One anomalous gold value of 3ppb was identified from stream sediment sampling at –80 mesh size. Elevated As (20.5), Cu (42.5ppm), Ni (40ppm), Pb (28.5ppm) and Zn (63ppm) values were also associated with this sample.

No significant basemetal anomalism was detected from stream sediment sampling. Cu results were generally between 19 and 23ppm, Pb between 10 and 16ppm and Zn up to 84ppm.

No anomalous results were found within the Skillogalee dolomite.

8 CONCLUSIONS

Geochemical sampling completed within the Wyacca Mine Area identified anomalous copper and minor zinc/nickel targets that warrant further infill geochemical sampling. There remains a considerable possibility of a significant copper deposit surrounding the historical Wyacca Copper Mine. Modern mining and analytical techniques may provide the key in defining a cost-effective economic copper deposit.

The tenement also has considerable potential for the discovery of economic deposits of gold and uranium. An effective method of systematic exploration would involve regional geochemical sampling and drilling over the tenement.

While a number of targets were identified by Pima Mining NL from aeromagnetic data, Pima was not prepared to engage in drilling program, and has chosen to exit the Farm-in Agreement. Pima Mining NL has decide to refocus its exploration and developments on magnesium deposits within the Flinders Ranges, South Australia.

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Appendix

Rock Chip and Soil Sample locations and assay results

Sample No.	Easting	Northing	Au	Au Dup	Ca	Cr	Fe	K	Mg	Mn	Na	Ag	As
22751	287794	6481803	<1	<1	3.39%	15	42.80%	2650	5550	2.32%	320	0.2	59
22752	287884	6481530	<1		17.20%	47	10.70%	2750	4.42%	5550	550	0.3	220
22753	287967	6481485	<1		1.91%	190	4.09%	1.03%	5950	1300	4950	0.1	11.5
22757	288434	6481191	<1		4.20%	48	38.40%	1300	3250	9500	310	<0.1	220
22758	288427	6481165	2		2400	69	30.30%	175	1400	6050	120	0.7	77
22763	301755	6480980	<1		1150	500	2.44%	1550	650	300	2600	0.1	6
22767	284409	6483715	<1		9050	<2	50.70%	600	8200	1.84%	1800	0.1	19.5
Sample No.	**Easting**	**Northing**	**Bi**	**Cd**	**Ce**	**Co**	**Cs**	**Cu**	**Ga**	**In**	**La**	**Mo**	**Nb**
22751	287794	6481803	2.3	0.3	15.5	50	1.5	1800	2.9	2.2	19	6.5	1.5
22752	287884	6481530	0.5	<0.1	32.5	1.9	0.4	7400	1.4	0.7	19.5	1.4	0.5
22753	287967	6481485	0.5	0.3	48	9.5	1.5	56	9.5	0.1	28	10	4.5
22757	288434	6481191	0.3	0.8	6	2.1	0.3	3200	3.5	2	3.6	7.5	1
22758	288427	6481165	0.4	0.1	1.5	1.8	<0.1	2.61%	0.8	2.3	0.7	4.3	<0.5
22763	301755	6480980	<0.1	<0.1	10	2	0.6	460	2.1	0.05	5	6.5	<0.5
22767	284409	6483715	0.2	5	17.5	14	<0.1	650	0.7	3	17	4.9	1
Sample No.	**Easting**	**Northing**	**Ni**	**Pb**	**Rb**	**Sb**	**Se**	**Sr**	**Te**	**Th**	**P**	**Tl**	**V**
22751	287794	6481803	105	10.5	13	5	3	220	<0.2	3.1	490	280	29
22752	287884	6481530	12	8	9.5	0.5	<0.5	115	<0.2	1.35	60	210	10
22753	287967	6481485	20	9.5	52	1	<0.5	43.5	<0.2	10	240	1750	43
22757	288434	6481191	9	6.5	5.5	1	10	71	<0.2	1.5	125	160	26
22758	288427	6481165	8	9	0.4	2.5	1.5	24.5	<0.2	0.21	25	25	8
22763	301755	6480980	11	5.5	6	<0.5	<0.5	11.5	<0.2	1.05	40	250	6
22767	284409	6483715	39	3	1.5	<0.5	5	155	<0.2	0.71	350	55	15
Sample No.	**Easting**	**Northing**	**Tl**	**U**	**W**	**Y**	**Zn**						
22751	287794	6481803	0.9	4.7	0.4	41	150						
22752	287884	6481530	0.2	0.42	0.5	20	270						
22753	287967	6481485	0.4	1.7	1	19	130						
22757	288434	6481191	0.1	3.5	0.3	18.5	78						
22758	288427	6481165	<0.1	3	0.3	11	41.5						
22763	301755	6480980	<0.1	0.24	0.2	5.5	35.5						
22767	284409	6483715	0.2	7	0.1	58	35.5						

Sample No	Easting	Northing	mesh size	Au	Au Dup	Ag	As	Bi	Cd	Co	Cs	Cu	Ga
22750	287654	6481254	80	<1		<0.05	12.5	0.4	<0.1	11.5	2.6	30	3.1
22754	287963	6481488	80	<1		<0.05	3.5	0.3	<0.1	5.5	1	20.5	1.9
22755	288058	6481610	80	<1		<0.05	5	0.3	<0.1	5.5	1.6	19.5	1.9
22756	288154	6481538	80	<1		<0.05	3	0.3	<0.1	4.8	1.3	17	1.7
22759	288371	6480896	80	<1		<0.05	3.5	0.3	<0.1	5.5	1.4	18.5	1.7
22760	288272	6481209	80	<1		<0.05	3.5	0.3	<0.1	5	1.3	17.5	1.6
22761	288714	6481196	80	<1	<1	<0.05	3.5	0.4	<0.1	6.5	1.5	22.5	2.1
22762	289411	6481153	80	<1		<0.05	3	0.4	<0.1	6	1.2	21	1.9
22764	301373	6480506	80	<1		0.05	5.5	0.3	<0.1	7	1.5	18.5	1.8
22765	300923	6479477	80	2		<0.05	2.5	0.2	<0.1	7	1.4	12.5	2.3
22766	300371	647700	80	<1		<0.05	2	0.2	<0.1	3.6	1.2	11	1

Sample No	Easting	Northing	mesh size	In	Mo	Ni	Pb	Rb	Sb	Se	Te	Th	Tl
22750	287654	6481254	80	<0.05	1.3	32	16	13	1.9	<0.5	<0.2	9.5	0.2
22754	287963	6481488	80	<0.05	0.8	16	6.5	8.5	0.5	<0.5	<0.2	7	0.1
22755	288058	6481610	80	<0.05	0.8	16	10.5	10	0.5	<0.5	<0.2	8.5	0.1
22756	288154	6481538	80	<0.05	0.4	12	6.5	10	0.5	<0.5	<0.2	7	0.1
22759	288371	6480896	80	<0.05	0.5	14	10.5	9	0.4	<0.5	<0.2	7.5	0.1
22760	288272	6481209	80	<0.05	0.5	13	13	8	0.4	<0.5	<0.2	7	0.1
22761	288714	6481196	80	<0.05	0.7	17	10.5	12	0.6	<0.5	<0.2	9	0.1
22762	289411	6481153	80	<0.05	0.9	16	8.5	11.5	0.5	<0.5	<0.2	8.5	0.1
22764	301373	6480506	80	<0.05	1.3	16	12.5	9.5	0.6	<0.5	<0.2	8.5	0.2
22765	300923	6479477	80	<0.05	0.3	11	9.5	8.5	0.4	<0.5	<0.2	5.5	<0.1
22766	300371	647700	80	<0.05	0.3	8	5	6.5	0.3	<0.5	<0.2	5	<0.1

Sample No	Easting	Northing	mesh size	U	Y	Zn	Cr	Fe	Mn
22750	287654	6481254	80	0.52	10	58	26	3.74%	450
22754	287963	6481488	80	0.4	6	22	16	2.82%	270
22755	288058	6481610	80	0.38	6	44	17	2.68%	190
22756	288154	6481538	80	0.31	4.8	27	15	2.24%	160
22759	288371	6480896	80	0.37	5.5	42	14	2.47%	200
22760	288272	6481209	80	0.33	5	40	13	2.19%	190
22761	288714	6481196	80	0.37	6.5	39	19	2.99%	230
22762	289411	6481153	80	0.34	5.5	34	17	2.67%	230
22764	301373	6480506	80	0.43	6.5	39	17	2.56%	260
22765	300923	6479477	80	0.3	7	29	13	1.72%	200
22766	300371	647700	80	0.29	3.8	19.5	7	1.28%	120

Sample No	Easting	Northing	mesh size	Au	Au Dup	Ag	As	Bi	Cd	Co	Cs	Cu	Ga
22750	287654	6481254	-80	3		0.1	20.5	0.4	0.1	18.5	2	42.5	3.2
22754	287963	6481488	-80	<1		0.05	6	0.3	<0.1	12.5	1.3	31.5	3
22755	288058	6481610	-80	<1		0.1	7	0.4	0.1	14	2.1	36	3.8
22756	288154	6481538	-80	<1		<0.05	3	0.3	<0.1	7	1	19	1.8
22759	288371	6480896	-80	<1		0.1	6.5	0.3	<0.1	8.5	1.3	23.5	2.2
22760	288272	6481209	-80	<1		<0.05	4.5	0.3	<0.1	7.5	1.2	21.5	2
22761	288714	6481196	-80	<1		0.05	3.5	0.3	<0.1	10.5	1.2	22.5	2.6
22762	289411	6481153	-80	<1		0.05	3	0.2	<0.1	7.5	0.9	19.5	2
22764	301373	6480506	-80	<1		<0.05	4	0.3	0.1	11	1.7	21.5	3.1
22765	300923	6479477	-80	<1		<0.05	3	0.2	<0.1	7.5	1.6	17	3
22766	300371	647700	-80	<1		<0.05	4	0.3	0.1	8	1.8	22.5	2.8

Sample No	Easting	Northing	mesh size	In	Mo	Ni	Pb	Rb	Sb	Se	Te	Th	Tl
22750	287654	6481254	-80	<0.05	2.3	40	28.5	11	2.5	<0.5	<0.2	7.5	0.2
22754	287963	6481488	-80	<0.05	1.7	23	12	9.5	0.8	<0.5	<0.2	6	0.2
22755	288058	6481610	-80	<0.05	1.4	28	21	13.5	1	<0.5	<0.2	7.5	0.3
22756	288154	6481538	-80	<0.05	0.6	14	7.5	8	0.6	<0.5	<0.2	6	0.1
22759	288371	6480896	-80	<0.05	1.6	18	16	8.5	0.7	<0.5	<0.2	7.5	0.2
22760	288272	6481209	-80	<0.05	1.1	17	14.5	7.5	0.6	<0.5	<0.2	6.5	0.2
22761	288714	6481196	-80	<0.05	1.1	16	13	9.5	0.5	<0.5	<0.2	7	0.2
22762	289411	6481153	-80	<0.05	0.9	14	9.5	8	0.4	<0.5	<0.2	6	0.1
22764	301373	6480506	-80	<0.05	0.9	19	13	11	0.4	<0.5	<0.2	7	0.2
22765	300923	6479477	-80	<0.05	0.8	16	10.5	10.5	0.4	<0.5	<0.2	6	0.2
22766	300371	647700	-80	<0.05	0.9	18	12	11	0.5	<0.5	<0.2	6.5	0.2

Sample No	Easting	Northing	mesh size	U	Y	Zn	Cr	Fe	Mn
22750	287654	6481254	-80	0.68	11.5	63	26	4.70%	500
22754	287963	6481488	-80	0.49	8.5	39	18	2.93%	450
22755	288058	6481610	-80	0.54	11.5	84	19	3.10%	440
22756	288154	6481538	-80	0.35	5.5	26	13	2.12%	185
22759	288371	6480896	-80	0.51	7.5	55	15	2.47%	330
22760	288272	6481209	-80	0.4	6.5	45.5	14	2.43%	310
22761	288714	6481196	-80	0.43	8.5	41.5	18	2.62%	430
22762	289411	6481153	-80	0.35	6.5	35	15	2.18%	280
22764	301373	6480506	-80	0.37	9.5	51	21	2.81%	370
22765	300923	6479477	-80	0.32	8	44.5	20	2.55%	280
22766	300371	647700	-80	0.37	8.5	50	19	2.69%	300

Sample No.	Easting	Northing	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LoI
34111	293254	6465050	0.67	50.4	0.37	0.21	0.45	0.07	0.16	0.03	6.88	0.04	40.4
34112	286377	6463287	0.57	51.3	0.32	0.13	0.4	0.04	0.05	0.02	4.81	0.045	41.4

RASP RESOURCES NL
ACN 076 819 602

2nd Floor, 12 Pirie Street,
ADELAIDE SA 5000
Tel: (08) 8212-2688

30th August 2000

Attention: Mr George Kwitko

Mineral Assessment Branch
Mineral Resources
Primary Industries and Resources SA
GPO Box 1671
ADELAIDE SA 5001

Dear Sir,

Technical Report to 29th April 2000, EL 2417

This is to advise that during the period 30th November 1999, being the date of withdrawal of PIMA Mining NL from its Joint Venture with Rasp, and the date of this Technical Report, being 20th February 2000, no field work was carried out by Rasp Resources NL on the above tenement. Any field work carried out by PIMA Mining NL, as our previous Joint Venture partners, would have been fully reported by Pima in Final Reports submitted by that company on its withdrawal from the Joint Venture.

The intervening period following Pima's withdrawal was fully consumed by:

1. negotiations with Pima Mining NL of a corporate nature, related to the terms of that company's withdrawal from the JV,
2. assessment of the limited data gathered by PIMA during the term of that company's JV with Rasp,
3. review of all available data to identify a range of targets for further investigation, and
4. presentation of the above targets to a range of potential new Joint Venture partners.

This company is presently in the stages of finalising a merger with a mining and exploration company that possesses the necessary experience and financial resources to properly investigate the targets identified by Rasp Resources.

A comprehensive program of exploration is currently being formulated for submission to PIRSA in the very near future.

We therefore anticipate that future technical reports submitted by this company will add considerably to the valuable PIRSA exploration database.

Yours sincerely,

John L. Newman
Director.

RASP RESOURCES NL
ACN 076 819 602

2nd Floor, 12 Pirie Street,
ADELAIDE SA 5000
Tel: (08) 8212-2688

1st September 2000

Attention: Mr George Kwitko

Mineral Assessment Branch
Mineral Resources
Primary Industries and Resources SA
GPO Box 1671
ADELAIDE SA 5001

Dear Sir,

Final Technical Report, 1st September 2000, EL 2417

Rasp is presently in the stages of finalising a merger with a company that is well established in the fields of mining and mineral exploration. The parties to the merger have assessed the tenements available and a decision has been made to concentrate efforts on other properties.

Rasp Resources NL therefore wishes to relinquish Exploration Licence 2417 as at 1st September 2000.

We must advise that during the period 20th February 2000 to 1st September 2000, no field work was carried out by Rasp Resources on the above tenement. Any field work carried out by PIMA Mining NL, as our previous Joint Venture partners, would have been fully reported by Pima in Final Reports submitted by that company on its withdrawal from the Joint Venture.

The above period was fully consumed by:

1. assessment of the limited data gathered by PIMA during the term of that company's JV with Rasp,
2. review of all available data to identify a range of targets for further investigation,
3. presentation of the above targets to a range of potential new Joint Venture partners, and
4. project review with the new merger partner.

A final Summary Report to 1st September 2000 is attached.

Yours sincerely,

John L. Newman
Director.