317001 95-3780

1ST FLOOR
44 ORD STREET
WEST PERTH
W.A. 6005
TELEPHONE:
(09) 322 5811
FACSIMILE:
(09) 322 5301

ANGLO AUSTRALIAN RESOURCES N L
ACN 009 159 077

NABOWLA 38/94

ANNUAL REPORT ON EXPLORATION ACTIVITY

November 1994 - November 1995

95-3780

ANNUAL REPORT EL 38/94
NABOWLA - ANGLO
AUSTRALIAN RESOURCES

September 1995

AMG REFERENCE POINTS ADDED

ANGLO
AUSTRALIAN
RESOURCES N.L.
A.C.N. 009 159 077
INCORPORATED IN

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1.0 SUMMARY

Initial reconnaissance field work and appraisal of previous mining and exploration together with an initial evaluation of the Netgold data base has highlighted the following:

- The area is prospective for structurally controlled high grade gold quartz vein mineralisation (eg. New Golden Gate Mine at Mathinna 250,000 oz @ 28 g/t Au) and mineralisation associated with Devonian granodiorites i.e. epithermal veins, stockworks and disseminations (eg. Lisle alluvial derived from this source 250,000 oz).

- The area has not seen significant modern exploration data.

- Newly acquired to high quality aeromagnetic and radiometric data is available. This data has not been interpreted in the area of E 38/94.

- Reconnaissance field work in the area has revealed that sediments are hornfelsed and thus have considerable potential for the styles of mineralisation responsible for the 250,000 ounce Lisle alluvials to the south. Also, the same rocks underlie MacMin N.L.'s coherent anomalous soil geochemistry at Golconda, also immediately to the south.

- The area is easily accessed and will be relatively cheap to explore. Image enhancement / interpretation of aeromagnetics, radiometrics, gravity data and Landsat imagery, stream geochemistry, soil geochemistry and geological mapping should result in the definition of high priority targets that could be drilled before the end of the licences' second year.

317005

AMG REFERENCE POINTS ADDED

AMG 583090E 5466090N

ANGLO AUSTRALIAN RESOURCES N.L.

NABOWLA E 38/94

PROJECT LOCATION
NORTH EAST TASMANIA

AUTHOR:	SCALE: 1:250000	PLAN NO:
DRAWN: CO-ORDINATED DRAFTING	DATE:	

5 cm

2.0 INTRODUCTION

E.L. 38/94 'Nabowla' was designated as Netgold Exempt Area 4 and was granted to Silverthorn Resources N.L. a private unlisted exploration company. The licence was until recently, unavailable for mineral exploration and mining due to forestry activities and environmental restrictions.

Netgold Exempt Area 4 covers approximately 249 square kilometres.

Silverthorn targeted stratabound epigenetic gold mineralisation as a style of mineralisation compatible with the company's corporate goal to develop a small to medium scale but high grade gold mining operation.

Within the area bounded by Netgold Exempt Area 4, gold mineralisation is localised in quartz veins within the Silurian-Devonian Mathinna Beds which consist fo a sequence of psammitic/pelitic sediments of turbidite origin. The sediments have undergone three phases of deformation which appears to have been widespread throughout NE Tasmania associated with the Tabberabberan Orogeny and subsequent granodiorite emplacement in the Lower-Middle Devonian.

Mining operations have been small scale, principally working high grade (25 g/t Au average) auriferous quartz veins within narrow shears along axial planes of folds with most mines being reasonably shallow less than 30m deep.

An evaluation by Silverthorn of the Netgold Data Base comprised reports on the geology, structure, geochemistry and geophysics of the Mathinna Beds in NE Tasmania which clearly identified the essential elements required in the understanding of gold mineralisation within the Mathinna Beds. The most important aspects relate to the relationship of structure, geology and geochemistry in localising gold mineralisation into commercially exploitable deposits. Structural control appears to be overriding factor in gold deposits within the Mathinna Beds.

3.0 TENURE

E.L. 38/94 Lebrina was granted to Silverthorn Resources N.L. as a result of a successful tender on the Netgold Exempt Area 4.

A Joint Venture agreement has been entered into with Silverthorn Resources N.L. and Anglo Australian Resources N.L. whereby Silverthorn agreed to assign to Anglo a 90% interest in the licence.

The Commencement Date of the Joint Venture was to be the date on which Ministerial Approval was given.

The application for a dealing in Exploration Licence 38/94 between Silverthorn Resources N.L. and Anglo Australian Resources N.L. was approved by the Minister and noted in the Register on 10th August 1995.

4.0 LOCATION AND ACCESS

E.L. 38/94 forms a contiguous block with E.L. 37/94 covering the Lebrina and Denison Goldfields in N.E. Tasmania.

The area extends from the north coast to the lower foothills of the mountains to the south. Much of the area is farmland with beef cattle the major commodity. The rest of the area, predominantly in the south and more hillier pats, is State Forest and is subject to forestry activities.

Access from Launceston is by sealed highway B81 to the small township of Lebrina. Within the area secondary roads and forestry tracks provide reasonable access.

5.0 REGIONAL GEOLOGY

The prospective rocks in north eastern Tasmania are the (?)Ordovician - Devonian quartzwacke to aplitic turbidites, correlated with rocks of the Melbourne Trough in the Lachlan Fold Belt. These rocks were deformed and intruded by granitoids in the mid-Devonian Tabberabberan Orogeny at which time gold mineralisation took place. In the Lyndhurst - Alberton - Mathinna - Mangana trend this mineralisation is considered to have been related to deformation as there is no spatial relationship to granitoids. At Lisle - Golconda - Panama and Golden Ridge there is a strong relationship between gold mineralisation and granodiorites.

Younger cover rocks in the north east consist of Permo - Triassic sediments, Jurassic dolerite, Tertiary basalts and alluvium and Quaternary sands and alluvium.

6.0 GEOLOGY

Approximately 75% of the area is underlain by the Mathinna Beds with 5% (in the south-eastern corner) underlain by Devonian granodiorite.

Apart from 5% cover by Tertiary basalts and gravels the rest of the area, predominantly the northern coastal region, is covered by Quaternary sands and alluvium.

The Mathinna Beds in the area are mapped as being predominantly siltstones and sandstones (Marshall et al, 1965) however, a significant unit of pelitic rocks is mapped in the south-western corner near Lebrina. In addition, other smaller units of pelitic rocks are known to occur and would be located in smaller scale mapping.

Structurally the Mathinna Beds are broadly folded on sub-horizontal north-north-west striking fold axes. Elsewhere in the north east, ie the Alberton - Mathinna - Mangana trends, gold mineralisation appears to be structurally controlled with no apparent genetic relationship to granites.

The Lisle - Golconda - Panama goldfields lies within the largely eroded contact metamorphic aureole of a Devonian granodiorite with Reid (1926) stating that "the gold deposits in veins, either in the granite or in the intensely metamorphosed contact rocks, had (their) source in the granite magma".

Sediments in this 800 m to 5 kilometre wide aureole are spotty and / or hornfelsed and may contain biotite, andalusite or cordierite (Bottrill, 1994(?)).

the granitoids underlying the Lisle - Golconda - Panama field are considered to be discrete from the Scottsdale Batholithy., They are variably magnetic and have been interpreted to possibly represent a number of intrusive phases (Roach 1992, Leaman 1991).

Structurally these granitoids appears as cupolas.

Roach (1992) recognised a gravity low in the area of the Denison goldfield and states that " the most likely explanation for this anomaly is the presence of a sub-surface granitic intrusion." This would agree with the hornfelsed nature of sediments found on the dump of the Sir William Denison mine.

Gold occurs in quartz veins with pyrite and / or arsenopyrite and lesser galena, sphalerite, chalcopyrite. Bottrill (1994) also notes the present of tetrahedrite, bournonite, stibnite and orpiment.

7.0 PREVIOUS MINING AND EXPLORATION

Records of previous production from old mines in Tasmania north-east are often unreliable. Bottrill (1994) reports the following production from the Denison and Lebrina areas.

Table 2
PREVIOUS PRODUCTION DENISON AND LEBRINA AREA

MINE	PRODUCTION OF GOLD KG	AVERAGE GRADE g/t Au
Sir William Denison	0.3	10
Alacrity	10.3	48
Lebrina	1.2	6

The Sir William Denison mine worked on two veins, one 12" to 18" with the other 6" to 12", to 94' depth with levels of 50' and 94'. Several crushings reported by Reid (1936) averaged 45.5 and 243.0 g/t Au. Reid (1926) also notes that a considerable proportion of the gold is contained in pyrite (with values of 93.3 g/t and 622 g/t Au reported by Reid from pyrite concentrates) with a lesser amount in galena.

The Alacrity mine worked a 12" to 18" vein to a depth of over 200' with levels at the 100', 150' and 200'. The vein is reported as averaging 31 g/t Au (Reid, 1926) with pyrite and arsenopyrite common.

The Lebrina mine worked a 12" to 18" vein in an adit and shaft. Pyrite and arsenopyrite being abundant.

The Wiangata worked a vein to a depth of 260' with several lots averaging 68.4 g/t Au.

Previous exploration in the area has been minimal with no drilling or soil sampling surveys undertaken. Argyle Minerals (Cromer, 1987) sampled mullock from old workings and reported low values. Both Billiton (Randall, 1992) and CRA (Broadbent, 1982) carried out regional stream geochemistry over parts of the Denison area with Billiton also carrying out

some more detailed sampling in the southern part of the Denison area. A number of -80# As and BLEG Au anomalies were reported however no follow-up was undertaken.

The southern most part of the Denison area was covered by a BP Minerals aeromagnetics Survey in 1983 and that data together with the regional gravity data forms the basis of Leaman's (1992) and Roach's (1992) interpretative reports. Recently the area previously not covered by aeromagnetics was flown as part of the Tasmanian Governments NETGOLD project. That data is now available for interpretation.

8.0 WORK CONDUCTED IN 1994/95

8.1 Netgold Data Base Evaluation

Silverthorn Resources obtained and evaluated the Netgold Data Base which comprises reports on geology, structure, geochemistry and geophysics of the Mathinna Beds in NE Tasmania and conducted an interpretation of the geophysical data base. Exploration targets were also identified.

8.1 Interpretation of the Netgold Geophysical Data Base

The integration of magnetics, gravity and radiometrics over Netgold Exempt Areas 3 and 4 incorporating interpretation by Richardson and Roach (1994) and Roach (1992) has defined the following anomalies and structural elements.

(i) A 1.8 km wide residual gravity gradient linear striking 52° extending for at least 40 km from NE sector of Netgold Exempt Area 4 through the southern boundary of Netgold Exempt Area 3 and beyond. This linear zone contains a residual gravity low indicating granitoid bodies in elevated terrain, 1 km north of the Denison Goldfield. Interpretation of this gravity linear implies a contact zone between two granitoids - one the Lisle granodiorite and the other the Denison granitoid (of unknown composition). A similar residual gravity low zone occurs 200m north of the Lebrina Mine.

(ii) A 6 km wide incipient residual gravity gradient striking 312° extending for at least 20 km through the Lisle - Golconda Goldfields and extending into Netgold Exempt Areas 3 and 4.

(iii) A 2km wide incipient residual gravity gradient linear striking 314° extending for at least 28 km through the northern section of Netgold Exempt areas 3 and 4.

(iv) A 1.8 km wide linear zone has been interpreted to coincide with the 52° striking residual gravity linear based on imaging of magnetic data. This linear is marked by a distinctive break or change in character in the magnetic patterns of the imaged data.

(v) A 2.5km wide linear residual magnetic gradient zone striking 321° and containing the Denison Goldfield based on imaging and inflections in the magnetic contours. The sharpest inflection in the magnetic contours corresponds to a 7° plunging F_1 fold axis which is extrapolated to divide the Alacrity Mine to the west limb and the Star Mine to the east limb. The zone contains a series of F_1 anticlines and synclines.

(vi) A 1.9km wide linear residual magnetic gradient zone striking 321° containing the Lisle, Lone Star, Panama Goldfields as well as the Lebrina Mine. The zone delineation is based on imaging and inflections in magnetic contours. The zone contains a series of F_1 anticlines and synclines.

(vii) The intervening zone between the two residual magnetic gradient zones contains the Golconda and Cradle Creek Goldfields. No imaged lineation had been interpreted in this area by Richardson and Roach (1994). The zone contains an F_1 anticline fold at the headwater of the Panama Creek; NW of the Golconda Goldfield and an F_1 syncline in the Lisle Creek area 2 km SE of the Cradle Creek Goldfield.

(viii) NW processed lineaments have been interpreted by Richardson and Roach (1994) within magnetic linear zones interpreted by Silverthorn Resources NL. IN addition, several NW trending and NE trending processed lineaments dissect

Netgold Exempt Areas 3 and 4. In particular, in the northern sector of both areas where the Mathinna Beds are covered by Quaternary surficial deposits.

(ix) A 1.3 km wide, 55° striking zone of ":tight" total radiometric count gradients containing the Denison Goldfield and Lebrina Mine extend for at least 8.75 km between the two gold mining centres.

(x) Two NW trending zones between 1.25-1.9km wide of elevated total radiometric counts appearing to be disrupted by the NE trending zones. The NW trending radiometric zones extend for a least 15 km in the central to southern sections of Netgold Exempt Area 3 and the SW section of Netgold Exempt Area 4.

(xi) Three distinctive E-W trending total radiometric count zones occur across Netgold Exempt Areas 3 and 4. The E-W zone is north of 5,460,000N reflecting surficial Quaternary deposits. The second E-W zone is 2 km wide extending through the central portion of both areas - reflecting geomorphology., The third E-W zone is 1.8 km wide in the southern sector of both areas appearing to reflect geomorphology.

8.3 Exploration Targets

A synthesis of all the Netgold Database covering Netgold Exempt Areas 3 and 4 has identified the Denison Goldfield and Lebrina Mine Area highly prospective for gold mineralisation. 10g Au/t in quartz reef settings striking E-ENE, NE and N-S within a folded sequence of pelitic-psammitic metasediments which plunge 7-20° towards the SE.

The auriferous quartz reefs are confined to intersecting NW and NE trending zones defined from geophysics, radiometrics and gravity. It would appear that the mineralisation may originate from the emplacement of a different granitoid than the Lisle granodiorite which is believed to be the source for the auriferous fluids in the Lisle-Golconda Area. Keele (1994) evaluating the Mathinna - Alberton Gold lineament some 50 km to the SE of Netgold Exempt areas 3 and 4 concluded that three phases of movement occurred, these being:-

(a) Low angle east directed thrusting in the Mathinna Beds during D_1;
(b) Wrench faulting on NW-NNW trending faults (D_2);
(c) Reactivation of the wrench faults a dip slip high angle reverse faults(D_3).

Keele (1994) states the veining in the lodes is associated with the D_2 dextral wrench faulting with 3 generations of quartz veins (2 extensional fibre veins which is overprinted by late ENE trending sulphidic quartz veins relating to late granite emplacement. It is concluded that similar relationships hold over Netgold Exempt Areas 3 and 4.

Keele (1994) also highlighted the importance of a NE trending transfer fault zone to tap deeper parts of the crust thereby acting as a short circuit mechanism for any gold bearing solutions. In the Denison Goldfield-Lebrina area the NE trending gravity and coincident radiometric gradient linears are essential in outlining a prospective target zone.

A distinctive gravity gradient trending NE contains the Denison Goldfields and Lebrina Mine. This gradient zone marks the contact point between the two granodiorites. A similar trend in the total count in radioactivity for U, Th and K indicate some contact metasomatism in the overlying Mathinna Beds along the contact zone of the two granodiorites. The linear magnetic zones trending NW reflect axial folding regimes and where intersecting NE trending gravity structures reflect potential structural traps to localise auriferous fluids enter in saddle reef or fault structures.

A typical Epithermal Model of mineralisation based on the Boyle (1979) metamorphic facies / auriferous shear zone model is envisaged to encapsulate the essential elements of the proposed exploration targets on Netgold Exempt Areas 3 and 4.

8.4 Fieldwork

Reconnaissance fieldwork was conducted on the area of 38/94 Nabowla. In addition a brief appraisal was made of the geology, previous mining and relatively limited previous exploration activity.

An attempt was made to locate and sample the more significant mines in the Lebrina & Denison Goldfields. Due to the relatively thick bush over much of the area and only old generalised location maps this was only partially successful.

Table 2
MULLOCK SAMPLE - LOCATION / DESCRIPTION / RESULTS DENISON AREA

SAMPLE	MINE	DESCRIPTION	RESULT g/t Au
SWD 1	near Alacrity	limonitic bucky quartz, float	0.02
SWD 2	near Alacrity	vuggy limonitic bucky quartz, float	<0.008
A 1	Sir William Denison	blue / grey (arsenopyrite) quartz	2.60
A 2	Sir William Denison	fibrous limonitic stockwork quartz in siltstone	0.02
COW 1	near Wiangata	vuggy limonitic bucky quartz	0.01
S 1	Star	limonitic quartz with central crack / seal	<0.008
S 2	Star	limonitic bucky quartz	<0.008

Alacrity Mine

Two shafts were found in the area shown on the map to be the location of this mine. One shaft had no mullock with the other small heap of slates with no quartz. Both shafts were water filled so depth could not be ascertained. It is possible that the Alacrity mine was neither of these. Two samples of limonitic bucky quartz were assayed with very low results (Note: These samples were misnamed SWD1 and SWD2) being 0.02g/t and <0.008 g/t.

Sir William Denison Mine

This mine was definitely located. The shaft appears to be both caved in and water filled. Quartz on the mullock heap does not appear very interesting. The only sulphidic quartz (arsenopyrite) found (A1) returned 2.6 g/t with a sample of fibrous limonitic quartz stockwork in siltstone (A2) returning 0.02 g/t.

The most interesting find on the mullock heap was abundant blue - grey hornfels. This rock is identical in hand specimen to rocks seen at Panama in EL 2/92 (MacMin NL) to the south which host quartz veins reported on returning up to 49.5 and 71.1 g/t Au. It also indicates that the granodiorite responsible for mineralisation in the Lisle - Golconda - Panama goldfields may extend under the Denison goldfield.

Star Mine

The Star Mine was located with both samples of bucky limonitic quartz (S1 and S2) returning <0.008 g/t. The Star Mine worked an 18" vein to 70' with average grade of 7.5 g/t Au.

Wiangata Mine

This mine was not found where shown on the map, however, considerable amounts of limonitic bucky quartz is seen as float. A single sample (E.O.W.1) returned 0.01 g/t Au.

8.5 Landsat Imagery

A remote sensing program has been contracted to cover the licence area.

This will be used in conjunction with enhanced imagery of the airborne surveys from the Netgold data to assist in identifying regional exploration guides.

The work on the Lebrina and Denison areas will use a 7 band TM "map sheet" (50 x 100km) data set, corrected to UTM projection. As work proceeds on the area it may become obvious that another data type (SPOT, JERS, or radar) may be more suitable. A decision will be made before ordering the TM data.

A variety of maps will be generated each useful in a specific way (Table 2). The maps will be at a scale of 1:100,000, be printed on 22 x 28 cm or 22 x 43 cm paper, and bound in a 3 ring binder. A final report will summarise the work, conclusions and recommendations

9.0 CONCLUSIONS AND RECOMMENDATIONS

The discovery of hornfels on the Sir William Denison dump means that it is probable that the granodiorite responsible for the gold mineralisation at Lisle - Golconda - Panama (in EL 2/92 MacMin NL) immediately to the south continues under the Denison goldfield. The Lisle goldfield produced 250,000 ounces of alluvial gold eroded from this granodiorite and / or its contact metamorphic aureole. In the Denison goldfield this granodiorite is apparently not exposed with the aureole perhaps only partially exposed hence the target is a 250,000 ounce deposit with a number of possible models including stockworks, epithermal veins or breccias, sheeted quartz veins or reef.s

A number of recommendations can be made:

1. Image enhanced aeromagnetic and gravity data and Landsat imagery should be interpreted.

   Three features should be looked for:

- shallow granodiorites and particularly
- ring structures indicative of cupolas
- roughly north (north-north-east to north-north-west) striking and east-north-east striking structures representing the major vein orientations in Tasmania's north east.

2. The available stream sediment data (Billiton, CRA) should be compiled with check sampling carried out to ascertain the quality of the data. Following the geophysical interpretation prospective areas should be stream sampled at high densities with Au, Ag, Cu, Pb, Zn, As and Sb assayed. Both -80# and BLEGs should be taken.

3. Reconnaissance soils or gridded soils in anomalous areas with the above elements assayed for.

Table 1

Map-making work for the Denison - Gladstone Project, Tasmania

Order data and outside processing

- order data from EOSAT

Background work

- Review literature in library and provided by client
- Create basic maps (topography, existing information, if needed)
- First - pass processing (123, 147, etc images)

Ground truth

- by client

Make maps

- Additional image processing (rations, principal components)
- Interpretation (if desired)
- Computer drafting

Report and final copies of maps

Table 2

Products from the program

Topographic base -	for basic orientation and land status
True colour map -	locate discrepancies with existing maps
False colour map -	for geologic interpretation
Ratio (or special processing) map -	for geologic interpretation
Geologic map -	interpretation based on the above and existing geologic maps
Favourablility map -	for exploration decisions
Final report	