HARMONY GOLD OPERATIONS LIMITED

ANNUAL EXPLORATION REPORT

MCN3839-3844 INCLUSIVE
EVA VALLEY (YEURALBA) GROUP

YEAR ENDING 31ST DECEMBER 2002

KATHERINE 1:250,000 SD53-9
EVA VALLEY 1:100,000 5469

Distribution:

DBIRD Darwin NT
Harmony Brocks Creek Office NT
Harmony Perth Office WA

Compiled:

John Shaw
January 2003
SUMMARY

The Eva Valley tenement group comprises six MCNs centred some 68km north east of Katherine NT and 3km north of the old Eva Valley homestead.

The tenements cover a prospective sector of Tollis Formation volcanics, greywackes, Maud Dolerite and banded ironstones striking NNW. The prospect has been explored for base metals and gold mineralisation since the mid 1960s. Copper and gold occurrences are known at several locations including the Copperflower prospect that was trenched and RC drilled by Denehurst Limited in 1989.

Their work located significant grades of gold mineralisation associated with copper oxides and sulphides in mafic to intermediate volcanics. A resource of 116,000t @ 1.98g Au/t and 1.0% copper was outlined to 50m.

Title to the project is in the process of being transferred to Harmony Gold Australia that acquired the assets of Hill 50 Gold NL in mid 2002.

Harmony has focused its efforts this year on RC and diamond drilling at the Maud Creek Main Zone deposit. Work on the Eva Valley tenement this year has been confined to literature reviews and reporting.
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1.0 INTRODUCTION

The Eva Valley tenements were acquired as part of the purchase of the Maud Creek project from Dolomatrix International by Hill 50 Gold NL in mid 2001. A year later ownership passed to Harmony Gold Operations Limited (Harmony) when it took over Hill 50 in mid 2002.

Harmony has initially focused its exploration effort on the Maud Creek gold resource and little has so far been done at Eva Valley due to its more remote location and apparent lower gold grades.

Previous exploration at the Eva Valley prospect has shown it to contain stratabound copper occurrences associated with gold values. A small gold-copper resource had been outlined by RC drilling.

2.0 TENEMENT DETAILS

The Eva Valley tenement group comprises MCN 3839-3844 inclusive totalling 240 ha. They were originally pegged by Denehurst Limited to protect the Copperflower prospect prior to surrender of EL4457.

Denehurst later joint ventured the property to Acacia Resources Limited with Acacia earning 34%. Denehurst and Acacia sold the tenements to Kilkenny Gold NL (Dolomatrix International) in 1998. The tenements are in the process of being transferred to Harmony.

The following table lists the tenements and their details.

<table>
<thead>
<tr>
<th>Tenement No.</th>
<th>Grant Date</th>
<th>Expiry Date</th>
<th>Area ha</th>
</tr>
</thead>
<tbody>
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<td>24 Aug 1990</td>
<td>31 Dec 2003</td>
<td>40</td>
</tr>
<tr>
<td>MCN3840</td>
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<td>40</td>
</tr>
<tr>
<td>MCN3841</td>
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<td>31 Dec 2003</td>
<td>40</td>
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<tr>
<td>MCN3842</td>
<td>24 Aug 1990</td>
<td>31 Dec 2003</td>
<td>40</td>
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<td>MCN3843</td>
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</tr>
<tr>
<td>MCN3844</td>
<td>24 Aug 1990</td>
<td>31 Dec 2003</td>
<td>40</td>
</tr>
</tbody>
</table>

The mineral claims are surrounded by ELA9541 of 16 blocks. The ELA is beneficially owned by Harmony. See Fig 1

The land covered by the claims is situated on Eva Valley Station (Manyallaluk) held under pastoral lease 705 that is operated by the Barunga-Wugularr Aboriginal Community. Prior discussions with the Northern Land Council would be required prior to conducting exploration programs.
3.0 LOCATION AND ACCESS

The tenements are located 3km NNW of Manyallaluk (previously old Eva Valley Homestead) approximately 68km north east of Katherine.

Access via Katherine is SE along the Stuart Highway for 65km to the turn off northwards onto the Central Arnhem Highway for 20km to the Manyallaluk turnoff. A graded road continues northwards for 35km to the homestead and a further 3km by bush track to the tenements. See Fig. 1.

4.0 GEOLOGICAL SETTING

4.1 Regional Geology

The Eva Valley area is situated in the extreme south eastern part of the Pine Creek Geosyncline that comprises Lower Proterozoic metasedimentary and volcaniclastic sequences up to 14km thick. The geosynclinal package was strongly folded and intruded by batholithic granitoids in the period 1870My to 1780My.

The folding has induced greenschist facies metamorphism, locally upgraded to amphibolite in the thermal aureoles of the granitoids. A suite of base and precious metal deposits accompanied or just post-dated the granitoid intrusive phase. These deposits including gold, occupy favourable structurally prepared sites such as shears and antclinal hinge zones. See Fig. 2.

4.2 Local Geology

Within the Eva Valley tenements the rock sequence comprises Tollis Formation greywackes, siltstones and mafic volcanics that strikes generally NNW. Maud Dolerite has intruded Tollis Fm. as a pre orogenic, semi concordant package of mafic to microdioritic sills.

The sequence is truncated to the north by faulting and by outcrops of Eva Valley Granite, a fine grained biotite leucogranite. To the west, Tollis Formation is intruded by Yeuralba Granite that has greisenised parts of the contact zone and induced tin-tungsten occurrences. An airborne magnetic overview shows that a strong crustal lineament strikes NW close to the Eva Valley prospect and passes beneath Cretaceous basinal cover to the south.

At the prospect the sequence strikes north westerly parallel to the lineament and is bounded to the west by a strong sinuous shear zone within Tollis Fm. To the east of the shear, and sub parallel to it, copper showings associated with banded ironstone units occur over a strike length of 3km. A major dolerite unit of the Maud Dolerite suite occurs just east of the prospective sequence. See Fig 3.
4.3 Mineralisation

The Eva Valley area has been explored since the 1960s for banded ironstone hosted base metal and gold mineralisation.

A banded ironstone horizon that hosts copper and gold mineralisation has been traced within Tollis Formation discontinuously for 8km. It has been displaced by NW and NE trending faults. The unit at surface comprises magnetite, haematite, tourmaline and chert, with secondary copper minerals and limonite. Increased gold values are associated with higher copper concentrations. Drilling has shown that the primary sulphide suite comprises finely disseminated chalcopyrite, sphalerite, and galena with some pyrrhotite and arsenopyrite.

In 1990 Denehurst recognised three types of mineralisation. One comprised stratiform occurrences with secondary copper minerals, gold in the range 0.1g/t to 2.0g/t and increased tin values in banded ironstones and related tourmaline rich 'exhalites' such as at the Ludan Prospect (outside the tenement group to the SE).

The second type was stratabound mineralisation in Tollis Fm sheared mafic volcanics (Dorothy Volcanic Member). The type examples of this form is the Copperflower Prospect and Ghost Gum Prospect where dolerite, andesitic volcanics, tuffaceous siltstone and tuff contain shears with siliceous pods with copper minerals. The shears also host disseminated pyrite and gold values ranging up to 16.0g Au/t.

The third type of deposit is represented by minor shear related copper mineralisation within quartz veined Tollis Fm. Lead and gold values are often present within the veins.

To the west of the tenements, greisenisation of the Tollis Fm occurs near the western contact of the Yeuralba Granite over some 3.5km and is the focus of tin and tungsten mineralisation. Copper minerals and gold have been reported in association with this occurrence.

5.0 PREVIOUS EXPLORATION

Exploration for base metals and gold has been intermittent since the early 1960s. Copper minerals associated with banded ironstone were initially the target while later, gold values associated with the unit caused renewed interest from the 1980s.

Early work was conducted by Geopeko (1966-1970) Nord Resources P/L on EL1594 (1977-1982) and Newmont Pty Ltd, on EL 1574, (1979) Billiton Australia explored the area between 1984-1987 with Denehurst Limited taking over in 1988.
In the late 1980s Denehurst Ltd conducted work on EL4903 and EL4457 in the Eva Valley area. In 1989 this work culminated in costeaming and the drilling of 25 reverse circulation drill holes at the Copperflower prospect.

The drilling met with significant gold and copper values with a best intercept at 13m @ 3.38g Au/t and 0.93% copper from 30m in CFRC1. Primary sulphides were generally encountered from about 28m down hole.

The following table lists the intercepts of Denehurst:1989

<table>
<thead>
<tr>
<th>Hole ID</th>
<th>Ox/fresh</th>
<th>From (m)</th>
<th>To (m)</th>
<th>Intercept</th>
<th>Au g/t</th>
<th>Copper %</th>
</tr>
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<tbody>
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<td>CFRC-1</td>
<td>Ox</td>
<td>13</td>
<td>17</td>
<td>4</td>
<td>1.31</td>
<td>0.53</td>
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<tr>
<td></td>
<td>Fresh</td>
<td>30</td>
<td>43</td>
<td>13</td>
<td>3.38</td>
<td>0.93</td>
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<tr>
<td>CFRC-2</td>
<td>Ox/fresh</td>
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<td>32</td>
<td>7</td>
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<tr>
<td>CFRC-3</td>
<td>Ox</td>
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<td>16</td>
<td>12</td>
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<td>18</td>
<td>18</td>
<td>1.59</td>
<td>1.35</td>
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<td>Ox</td>
<td>5</td>
<td>9</td>
<td>4</td>
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<td>Fresh</td>
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<td></td>
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<td>16</td>
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<td>1.10</td>
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</tbody>
</table>

Averages using a cut off of 0.5g Au/t or 1% copper.

Using a density of 2.3 for oxide and 2.7 for fresh a cross sectional resource using halfway extrapolation (12.5m) identified 116,000t @ 1.98g Au/t and 1% copper to a depth of 50m.

The mineralisation was described as sub vertical narrow higher grade zones up to 4m wide that exceed 5.0g Au/t within a much wider zone of lower grade (>0.5g Au/t material.)
The mineralised envelope dips steeply to the west and is about 30m wide at surface, narrowing to 10m wide at 50m depth. The host rock is described as a propylitically altered fine grained andesitic volcanic. The main mineralised zone at Copperflower extends for about 80m and appears to be cut off by a fault at the northern end where a second zone is offset about 25m to the west.

The relative small dimensions of the shoots and strike length, low average gold grade and the presence of metallurgically problematic copper oxides led to the project being downgraded. As the prospect is on Aboriginal land prior discussions with the Northern Land Council would be required.

There has been no further field work reported to date. Though it is possible Acacia Resources NL carried out some exploration activity to earn its equity. This data if it exists, was not available at the time of writing. Kilkenny Gold NL conducted database reviews, acquired aerial photography and geological and topographic maps.

6.0 EXPLORATION DURING 2002

No field work has been carried out on the Eva Valley tenements since they were acquired by Hill 50, then Harmony Gold Limited in 2001-2002.

Work has been confined to data reviews and ranking of the project with the Maud Creek and other projects in which Harmony has an interest.

During the year Harmony conducted further RC and diamond drilling at the Maud Creek Project with the objective of defining mineable gold resources.

The expenditure on data reviews at Eva Valley for 2002 was $800.

7.0 PROPOSED EXPLORATION 2003

Further data reviews and a field visit to the project are planned for 2003. This will allow a relative ranking of the tenements with developments at the Maud Creek project. An expenditure of $1,200 is planned.
8.0 REFERENCES

