

Exploration review





Hidden Valley, Papua New Guinea



Watut River Valley, Papua New Guinea



Nambonga North Prospect, Wafi-Golpu Project, Papua New Guinea

Harmony's exploration strategy is to focus on key prospective geological terrains to create shareholder value through the discovery of large long-life gold orebodies.

After prospectivity, investment decisions on new exploration opportunities are also shaped by:

- Project- and country-related risks.
- The ability to meet minimum filter criteria (potential size/production profile).

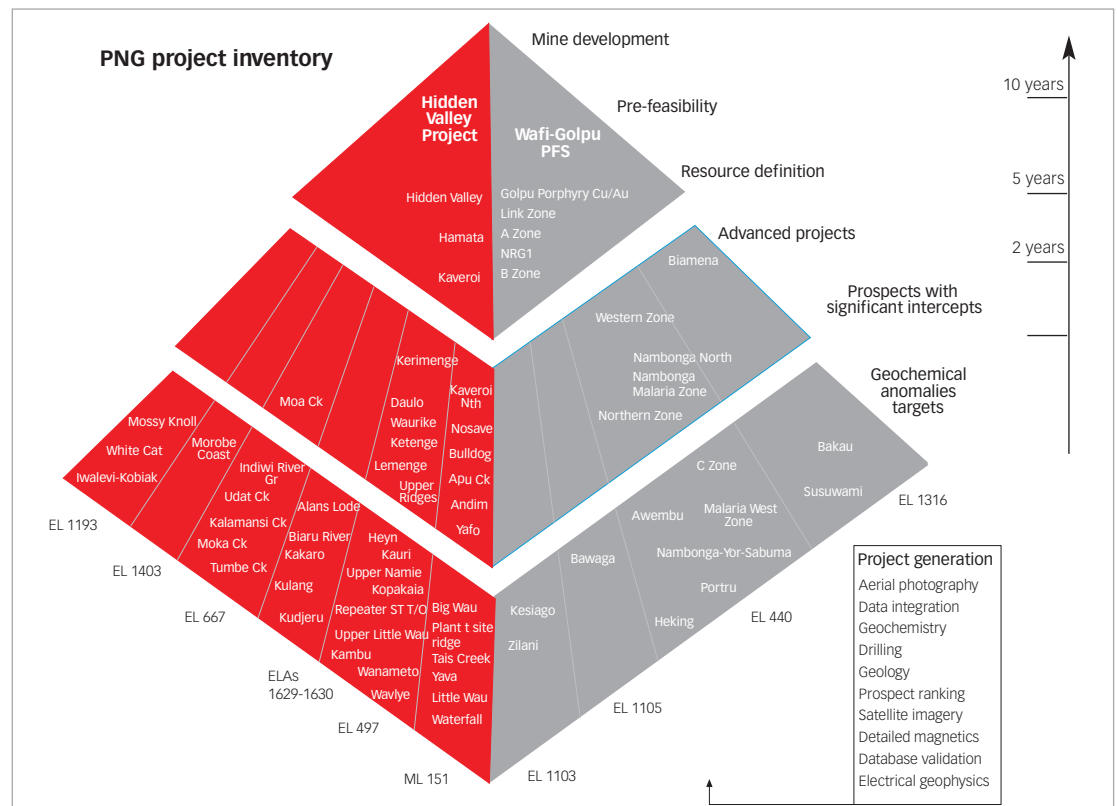
Harmony has adopted a flexible approach in that exploration can be undertaken in-house or as joint venture partnerships, and can involve both greenfields (no infrastructure) and brownfields (existing mine infrastructure) work.

In FY08, Harmony's greenfields exploration effort focussed almost entirely on Papua New Guinea (PNG). Its approach has been to develop and maintain a balanced project pipeline across all levels of the exploration process, ranging

from grassroots geochemical and geophysical anomalies through to advanced prospects, resource definition, and projects moving into feasibility. A total of A\$19.2 million (\$17 million or R125 million) was spent on PNG exploration during FY08. The group's exploration budget is set for FY09 at R351 million (60% in PNG).

Although this is a long-term process, Harmony has had a successful year of exploration in PNG with two prospects worthy of particular note:

- Nambonga North Prospect. This prospect was generated from base datasets and progressed to advanced prospect stage in less than 12 months. Results have been highly encouraging. It represents a new zone of porphyry style copper-gold mineralisation, which was previously unknown at Wafi-Golpu, and has the potential to have a major positive



PNG project inventory, showing the pipeline of prospects which range from grassroots geochemical and magnetic targets through to deposits undergoing resource definition, prefeasibility studies and the Hidden Valley Project currently in construction. The axis on the right provides a guide to lead times from discovery to development.



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impact on the prefeasibility study. Drilling to define the limits of mineralisation and scope out the size of the deposit continues with three drill rigs on site.

- Biamana Prospect was advanced from a grassroots geochemical target with initial drilling returning ore grade intercepts. This project has the potential to deliver a multi-million ounce deposit similar to that of the Wafi-Golpu project.

The group's exploration programme in South Africa was curtailed in August 2007, although work in the Evander area (discussed below) has recommenced.

Papua New Guinea

The majority of exploration expenditure during FY08 was in PNG on our land holding around the Wafi-Golpu and Hidden Valley projects. This tenement package comprises some 3 276km² of tenure located entirely within the Morobe Province.

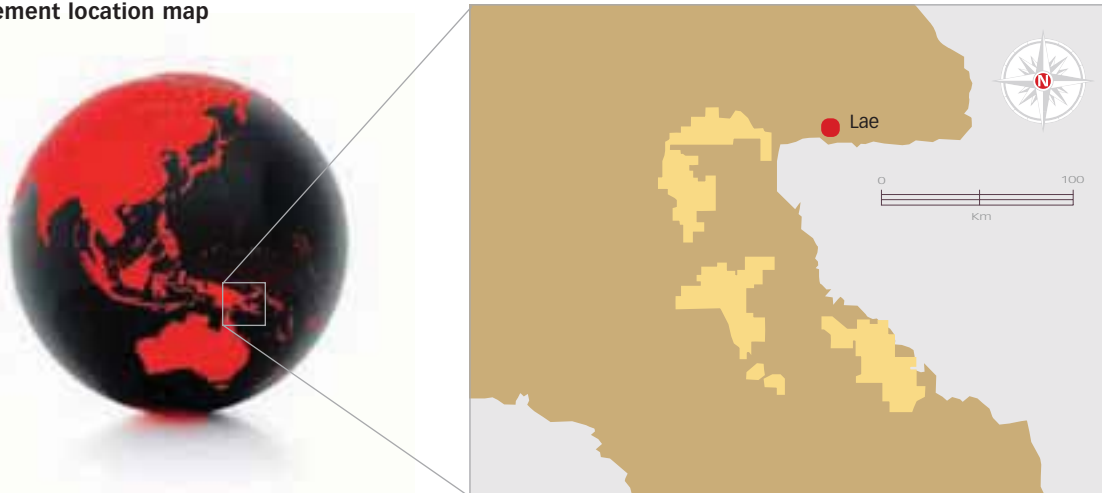
On a regional scale the Morobe district forms part of the New Guinea Mobile belt. This metallogenic belt hosts a number of world-class deposits including the Grasberg-Ertzberg and OK Tedi porphyry copper-gold deposits, and the Porgera gold deposit. In line with the exploration strategy, opportunities to expand further in this highly prospective geological terrain will be monitored closely.

Locally, the Morobe district has a known mineral endowment of over 18 million ounces of gold, 89 million ounces of silver, 3.9 billion pounds of copper and 47 million pounds of molybdenum. The region is underexplored and has demonstrable potential for the discovery of major multi-million ounce gold deposits and copper-gold porphyry deposits. The project pipeline has numerous quality prospects which have had little more than surface sampling or magnetics completed by way of first pass exploration. The group's strategy here is to capitalise on this exploration opportunity and realise value by developing the district into a major mineral province with multiple mines.

During FY08, initiatives to accelerate prospect turnover and development of the pipeline has included building the exploration team numbers to a staff of 16 national geologists, increasing drilling capacity through new drilling contractors, and increasing sample volumes and decreasing turnaround times for assay samples through the laboratory.

This momentum is set to increase in the forthcoming year, as the new joint venture with Newcrest Mining Limited will continue building a strong base for its exploration activities. A budget of \$A19.6 million (\$18 million) for exploration in Morobe Province (45% for greenfields, 55% for brownfields activities) has been approved for FY09.

Tenement location map



Exploration review (continued)



The New Guinea Mobile Belt spans the core of the Irian Jaya – PNG mainland and represents one of the world's most prospective geological terranes for porphyry copper-gold and epithermal gold mineralisation. This belt of remote and rugged mountainous country contains major gold and copper-gold deposits including OK Tedi (copper-gold), Grasberg-Ertzberg (copper-gold), Porgera (gold), Misima (gold), Frieda River (copper-gold), Bulolo (gold) and Harmony's deposits at Hidden Valley (gold-silver) and Wafi-Golpu (gold and copper-gold). The belt is underexplored and remains a major focus for additional opportunities.

Wafi-Golpu

Wafi brownfields exploration

Exploration in the immediate area surrounding the existing deposits at Wafi and Golpu was the cause of much excitement during the year, particularly with the discovery of porphyry-style copper-gold mineralisation at the Nambonga North Prospect.

Nambonga North

The Nambonga North prospect lies approximately 2km north-west of Golpu. The prospect was prioritised for follow-up work based on a magnetic target coincident with an electromagnetic conductor and anomalous copper-molybdenum geochemistry at surface.

Drilling at the prospect during FY08 comprised 13 holes for 5 827 metres. Porphyry gold-copper intercepts obtained from the programme to date include:

WR262: 178m @ 1.2g/t gold, 0.3% copper from 232m
 WR264: 213m @ 1.1g/t gold, 0.3% copper from 300m
 WR272: 199m @ 1.1g/t gold, 0.28% copper from 292m
 WR268: 30m @ 1.42g/t gold, 0.37% copper from 276m
 WR270: 150m @ 0.8g/t gold, 0.23% copper from 320m
 WR275: 180m @ 1.0g/t gold, 0.25% copper from 383m

Mineralisation generally occurs as banded quartz, magnetite, chalcopyrite, (\pm pyrite, \pm hematite) vein stockwork developed in both diorite porphyry, and the

surrounding metasediments of the Owen Stanley Metamorphics. The host rocks are variably silicified and sericite altered. The association of hydrothermal magnetite with the mineralisation (also at Golpu in the potassic zone) has important implications for the regional prospectivity and exploration programme.

In addition to porphyry gold-copper mineralisation, the drilling at Nambonga North has outlined gold-base metal mineralisation in the form of a massive sulphide lens off the hanging wall contact of the intrusive.

Results include:

WR258: 74m @ 5.6g/t gold, 4.3% zinc, 1.2% lead and 54g/t silver from 125m
 WR264: 6m @ 3.6g/t gold, 5.3% zinc, 1.1% lead and 27g/t silver and from 286m
 WR269: 12m @ 2.87g/t gold, 4.9% zinc, 0.8% lead and 10.6g/t silver from 156m
 WR272: 10m @ 1.6g/t gold, 0.6% zinc, 0.3% lead and 26.7g/t silver from 282m
 WR273: 11m @ 5.0g/t gold, 3.8% zinc, 1.2% lead and 14g/t Ag from 201m

Nambonga North has the potential to develop into a major new resource, in excess of one million ounces (with additional copper and base metal credits) for the Wafi-Golpu project.

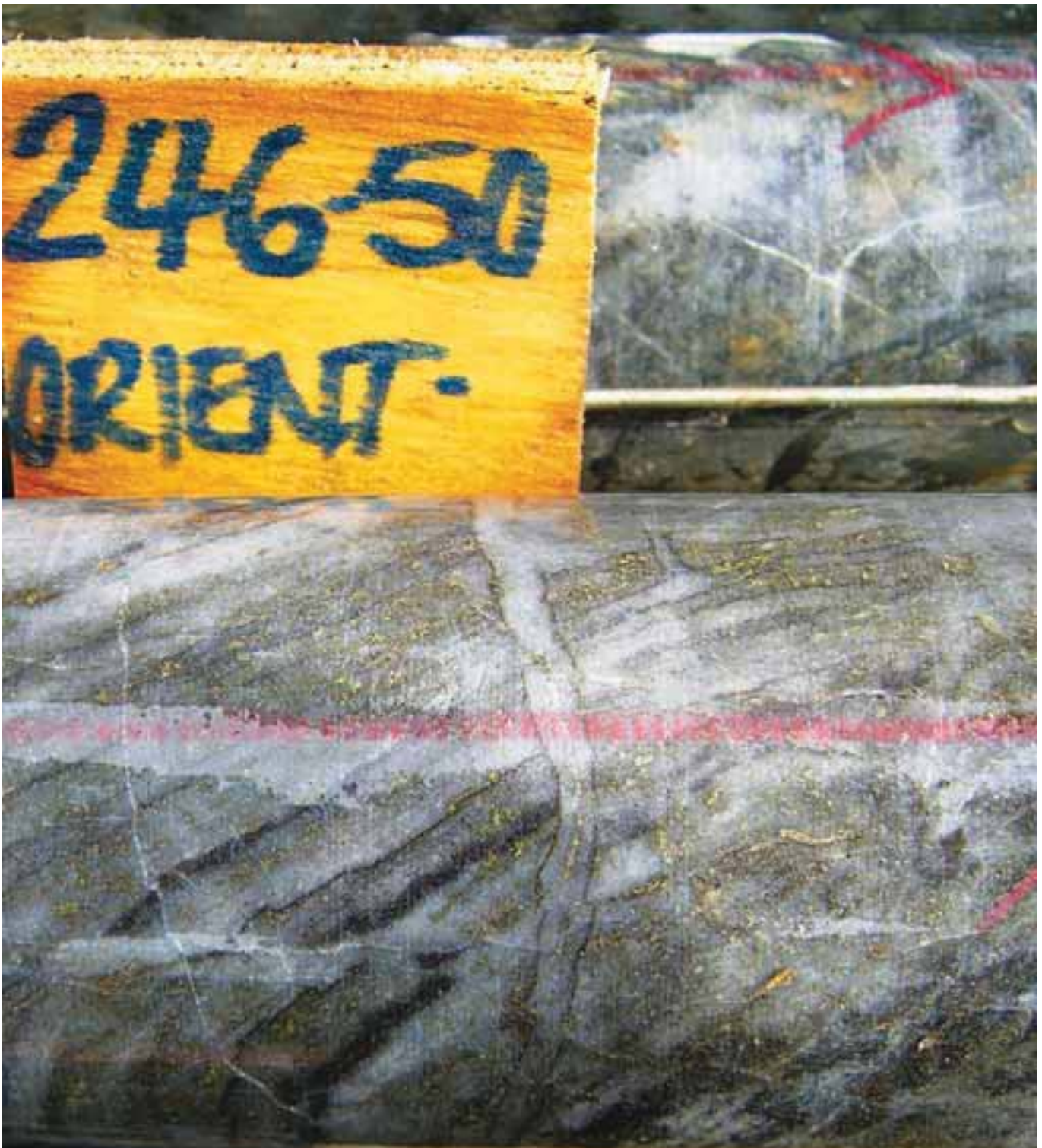
Drilling to scope out the deposit will remain a priority in the first half of FY09.



Hidden Valley, Papua New Guinea

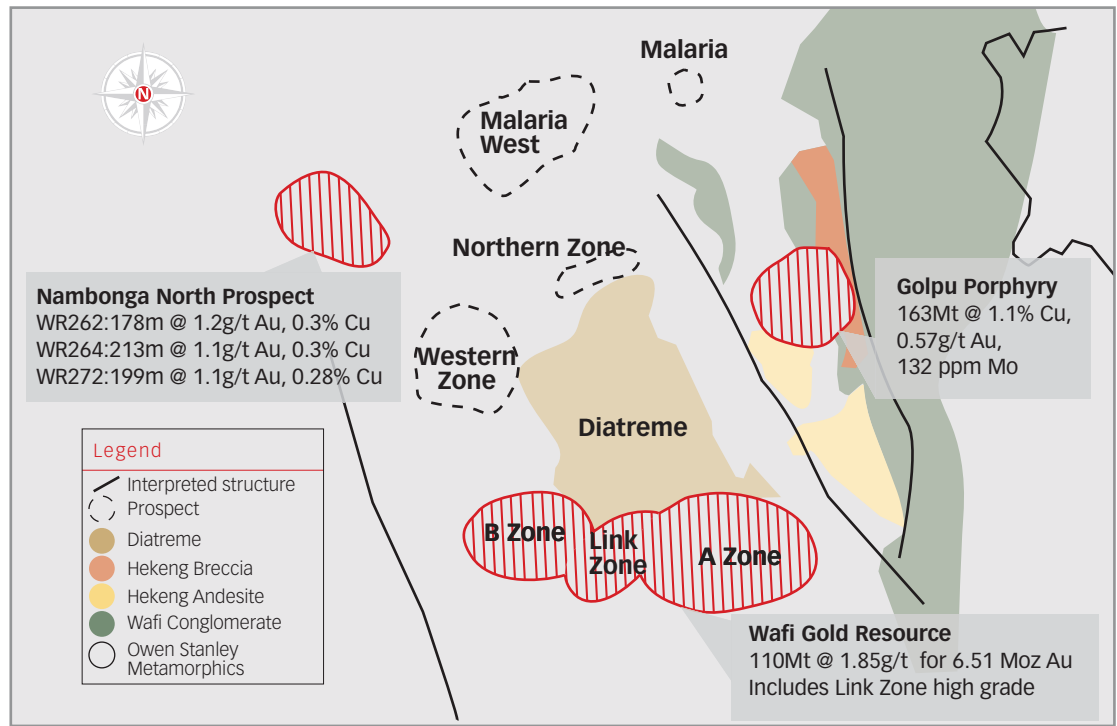


Wafi-Golpu, Papua New Guinea

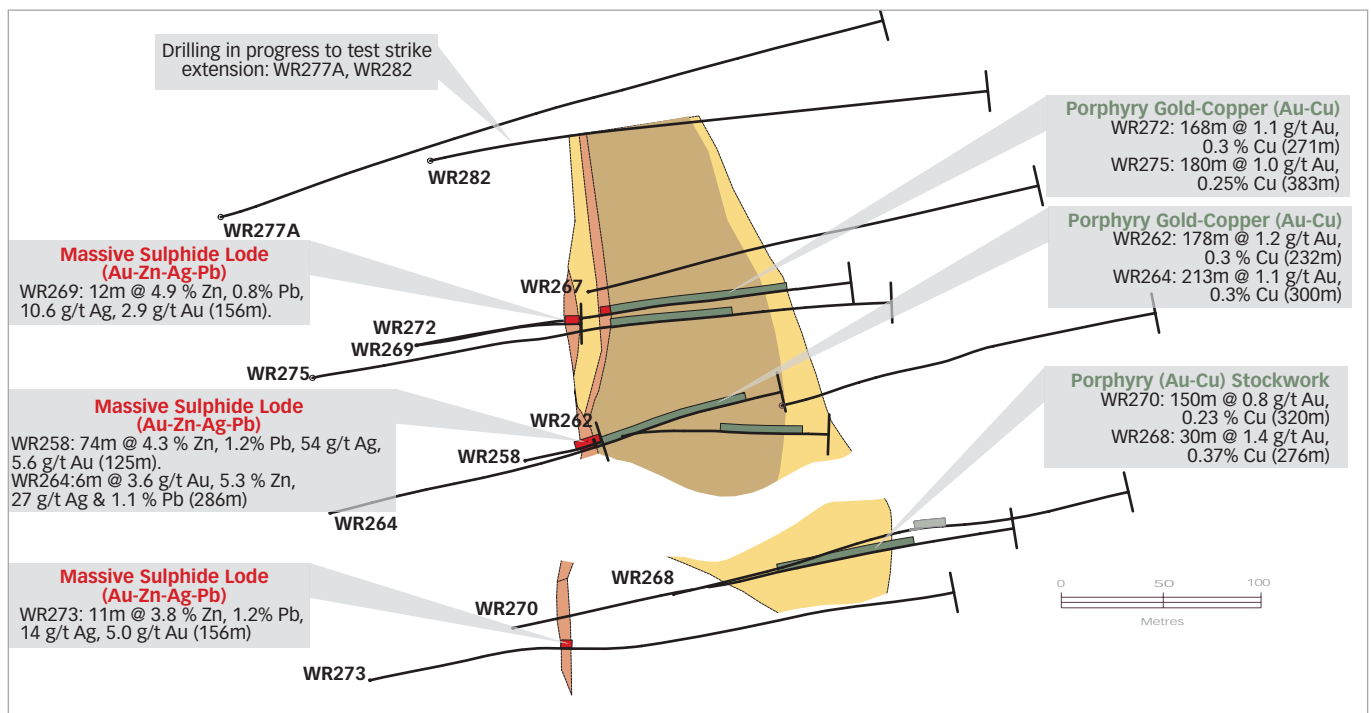


WR262; 246.5m. Banded quartz magnetite chalcopyrite vein stockwork developed in metasedimentary rocks of the Owen Stanley Metamorphics. Assays for this interval (246 – 247m) returned 2.9 g/t gold and 0.7 % copper.

Exploration review (continued)



Nambonga North location diagram (North arrow is grid north)



Nambonga North Assay results in context with drill hole geology (Plan view @ 300m below surface)



Nambonga North Prospect, Papua New Guinea

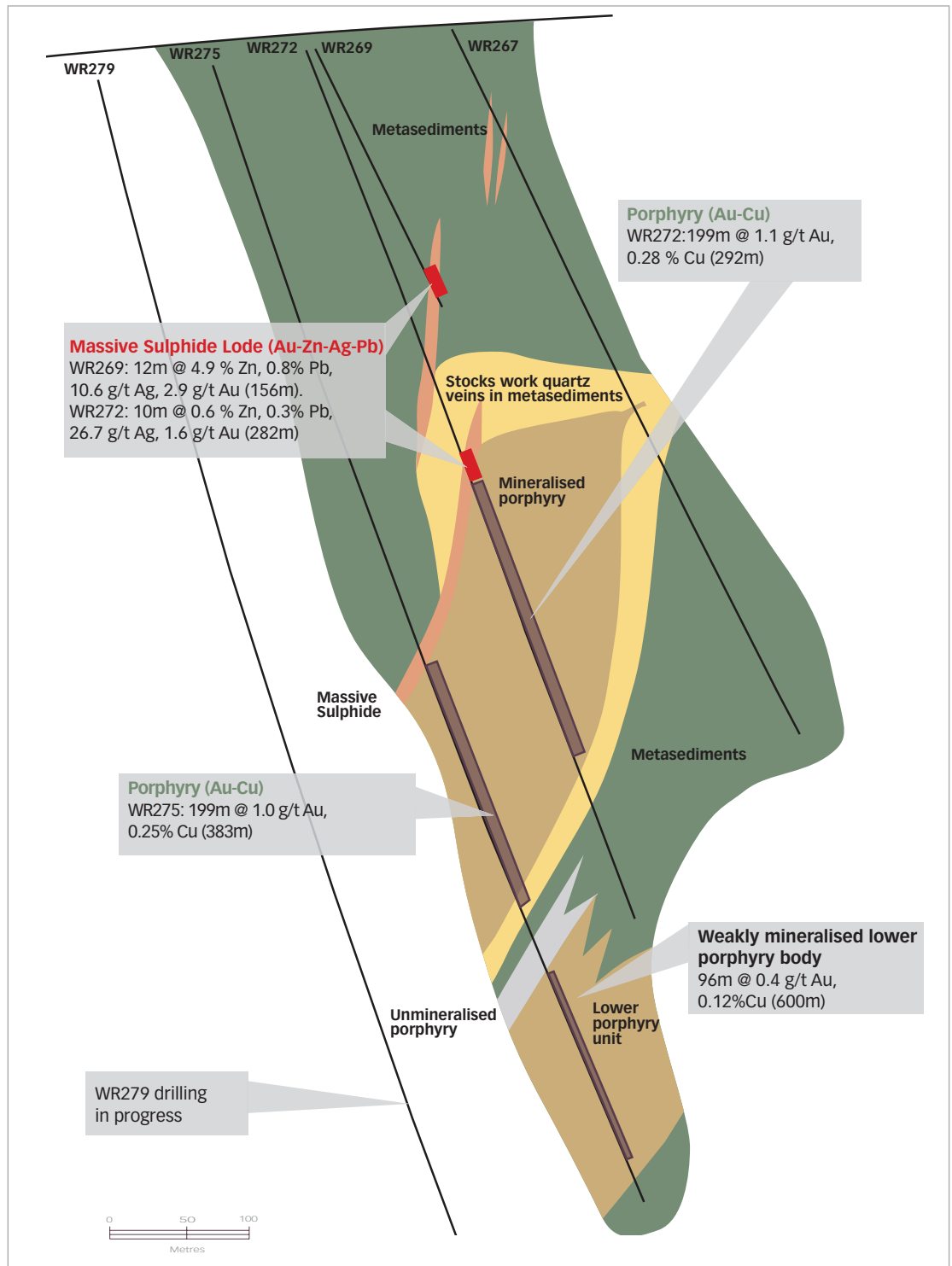


Wafi, Papua New Guinea



Nambonga North Prospect, Papua New Guinea

Exploration review (continued)



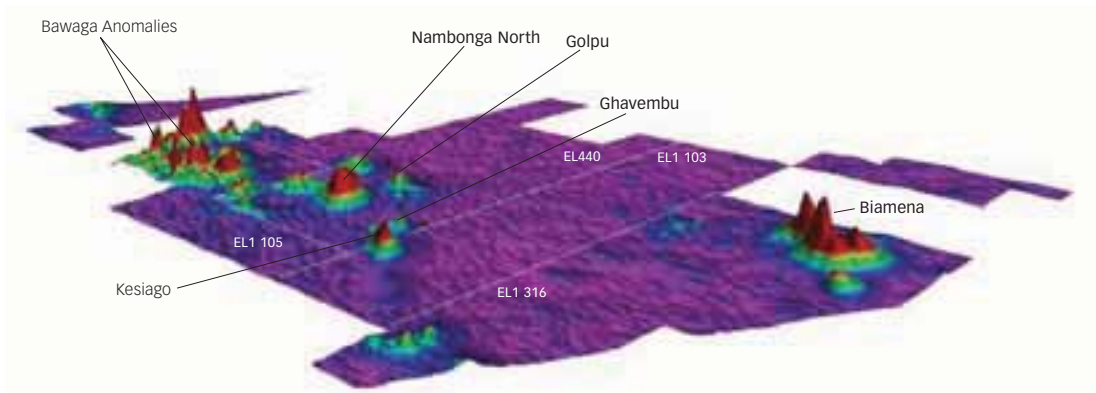
Oblique drill section showing recent intercepts and geology at Nambonga North. Mineralised porphyry remains open to the north and south, off the grid.

Wafi greenfields exploration

Porphyry copper-gold and stand-alone gold targets represent the best potential to crystallise value from the Wafi mining tenement group. Reprocessing of regional magnetics has outlined a number of discrete magnetic targets within a 14km radius of the Wafi-Golpu project. These anomalies all have the potential to deliver major

gold or copper-gold systems in areas where there has been little or no previous exploration.

FY08 exploration has focused on the Biamera Prospect. Negotiations to access Ghavembu (on EL440) and Kesiago (EL1103) Prospects were also successful during the year and work programmes including surface trenching, mapping and initial drilling are now underway.



This diagram is an image of the analytic signal of aeromagnetic data with a linear colour stretch. The analytic signal is a filter which tries to force the magnetic peaks to lie directly over the top of the bodies that cause them. The image shows where highly magnetic porphyry and granodiorite bodies have intruded the non-magnetic host rocks of the Owen Stanley Metamorphics. These magnetic targets have had little previous exploration and highlight the prospectivity of the region. Initial exploration comprising mapping, surface sampling and predominantly reconnaissance drilling is planned to test these magnetic targets.

Biamena Prospect

The Biamena prospect is located approximately 12km south-south-east of Wafi and is prospective for epithermal gold and porphyry copper-gold mineralisation.

Work completed during FY07 obtained a number of promising mineralised gold zones from channel sampling of surface trenches. Ridge and spur soil sampling was also completed and outlined a major coincident copper-gold anomaly (open to the south).

Work by Harmony during FY08 included:

- Drilling (2 holes / 749m)
- Surface geophysical surveys including
 - Induced polarisation (IP) survey
 - Electromagnetic (EM) survey
- Reconnaissance geological mapping and rock chip sampling

The work programme has advanced the Biamena prospect from a grassroots magnetic target with anomalous coincident surface geochemistry to a prospect with promising intercepts of ore-grade mineralisation in drill core.

Initial drilling produced a number of significant intercepts including:

BMA002: 24m @ 3.41g/t gold from 177m
Includes: 11m @ 5.38g/t gold from 181m.

This intercept is particularly significant as no previous drilling exists in the area and mineralisation encountered is completely open.

The IP and EM geophysical surveys were designed to outline:

- blind porphyry copper gold-targets at depth (similar to that of Golpu), and
- areas of disseminated sulphide mineralisation and silicification which may be associated with gold mineralisation.

Preliminary results from the 3D inversion of the IP data show a chargeable annulus around a magnetic core. This is consistent with the response expected from a porphyry system. A similar response was recorded at Wafi-Golpu. Data processing and imagery is underway and the geophysical datasets will be integrated with surface geology and geochemistry to highlight targets and guide initial follow-up drilling.

Reconnaissance geological mapping on the lines cut for the geophysical surveys have already outlined several new zones of mineralisation south of the main prospect area. Rock chip sampling obtained high-grade gold, silver and base metal assays up to 88g/t gold, 400g/t silver, 5.8% copper and 2.3% lead. The results more than double the footprint of the anomalous area at Biamena, and highlight the prospectivity of the area for porphyry copper-gold and related epithermal gold mineralisation.

Ghavembu Prospect

The Ghavembu prospect is located 1.5km south of the Wafi-Golpu prospect and is associated with the north-east trending Wafi Transfer. The prospect was initially defined in the 1980s by CRA Exploration (Pty) Ltd with reconnaissance stream sampling. Subsequent

Exploration review (continued)

grid-based soil sampling delineated a porphyry related, multi-element gold-copper-molybdenum anomaly, which is similar in size and tenor to the surface anomaly located over the Golpu deposit. The anomaly is also flanked by several discrete magnetic targets suggesting intrusives at depth.

The footprint of the anomaly, potential size, and proximity to the Wafi-Golpu project combine to rank this prospect as a priority target for follow-up in the first quarter of FY09.

Kesiago

The Kesiago anomaly covers an area of approximately 3km² and is located 2.5km south-west of the Golpu porphyry copper-gold deposit. It is associated with the north-east/south-west trending Wafi transfer structure.

The prospect comprises a magnetic anomaly supported by elevated levels of gold and copper in stream-sediment geochemical results.

Although reconnaissance work including trenching and drilling was planned for the second quarter of 2008, protracted access negotiations delayed the start of the programme. Negotiations to access the ground have now concluded and drill site preparation is currently in progress. Drilling is planned to begin in the first quarter of FY09.

Bawaga

The Bawaga magnetic anomalies lie approximately 5km north of the Wafi-Golpu project and is also highly prospective for epithermal gold and porphyry copper-gold mineralisation. Reprocessed magnetics outline a number of anomalies associated with north-east trending transfer structures in a similar structural setting to that of the Wafi-Golpu system.

Data compilation has highlighted the fact that most of the Bawaga magnetic targets held within EL1105 have had no previous exploration. This represents a major opportunity given the relationships established with the landowner groups during the Wafi prefeasibility studies. Negotiations to access this area are currently under way.

Hidden Valley brownfields exploration

Project generation work was the main focus of the Hidden Valley mining lease exploration programme during FY08. Some 2 824 ridge and spur soil samples, 25 line kilometres of geological mapping and 7 675 rock chip and continuous channel samples were collected from new trenches and exposures associated with new mine infrastructure. Work integrating the geological and

geochemical datasets together with detailed helimagnetics is currently being completed to provide a new solid geological interpretation to identify additional targets on the Hidden Valley mining lease.

Results have prioritised Upper Bulolo, Yafo and Big Wau for follow-up work. Both Upper Bulolo and Yafo prospects have good potential for high-grade gold mineralisation to supplement the ore feed from Hidden Valley, and surface trenching and mapping activities at these prospects are under way to outline the full extent of the anomalies to optimise first pass drilling.

Drilling at Salemba was also completed during the year but results have downgraded the prospect.

Hidden Valley greenfields exploration

Exploration in the region around Hidden Valley aims to add value through the discovery of major satellite resources, or to provide a high-grade sweetener to supplement the ore feed for Hidden Valley processing plant. Although the area is highly prospective for bulk-tonnage low-grade deposits similar to Hidden Valley, examples of high-grade deposits in the district include Edie Creek, mined in the 1920s with a historical production of 2.7Mt @ 8.4g/t gold for 730Koz and Wau with a historical production of 2.6Mt @ 6.5g/t gold for 560Koz.

Harmony's exploration work during FY08 was focused on development of the prospect areas surrounding the historical deposit at Kerimenge and understanding mineralisation controls. This included work at the Daulo Prospect.

Kerimenge

The Kerimenge deposit is located approximately 7km east of the processing plant site currently under construction for the Hidden Valley Project. Historical work has focused on the main mineralised zone at Kerimenge but geometry and grade continuity of mineralisation are poorly understood.

Work during FY08 focused on understanding mineralisation controls by investigating the potential of prospect areas around the deposit. More than four line kilometres of hand dug trenches were completed and mapped, and some 2 036 samples were collected and assayed.

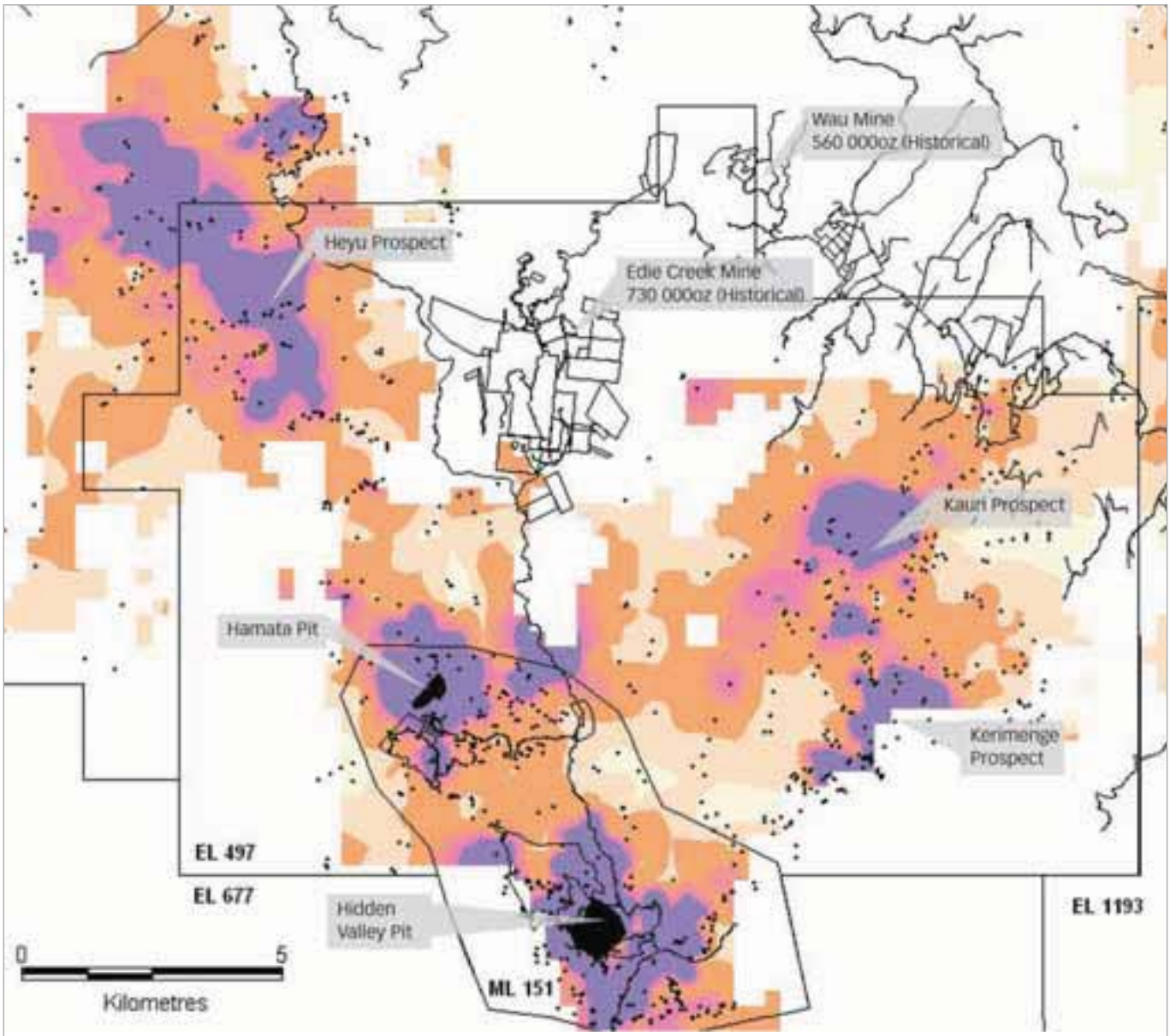
Trenching and mapping activities to the east of the deposit outlined a new zone surface gold mineralisation. The zone was defined over an area over 300m long and up to 30m wide but remains open ended. Results from continuous channel sampling include:



Wafi-Golpu, Papua New Guinea



Hidden Valley, Papua New Guinea



This diagram shows an image compiled from the gold stream sediment geochemistry over the area surrounding the Hidden Valley Project. Purple areas represent the highest order anomalies (98th percentile) and define +0.9 g/t gold anomalies. Clearly deposits at Hamata and Hidden Valley are located central to major anomalies. Importantly, there are a number of high-order anomalies which will be the subject of follow-up exploration work including Heyu, the broader area around Kerimenge, and Kauri. Black points reflect sample locations.

Exploration review (continued)

KTK02:	20m @ 3.4g/t gold; 24m @ 3.2g/t gold; 10m @ 7.07g/t gold
KTK03A:	16m @ 3.2g/t gold; 4m @ 22.5g/t gold; 4m @ 8.23g/t gold
KTK03B:	8m @ 5.7g/t gold; 12m @ 3.88g/t gold

These intercepts are associated with a north-west trending shear zone which has been intruded by porphyry. No previous work has been undertaken in the area and follow-up drill testing is proposed for FY09.

Daulo Prospect

The Daulo prospect is located approximately 1km south-west of the Kerimenge deposit

Historical trench results at the prospect include: 56.8m @ 3.83g/t gold; 27.8m @ 5.76g/t gold. Follow-up drilling was sporadic but included six drill holes (600m) with some significant intercepts including DP01: 12m @ 4.80g/t gold from surface and DP03; 5m @ 5.6g/t gold from 62m (BOH intercept). Mineralisation was associated with sheared and brecciated phyllites of the Owen Stanley Metamorphics.

Work completed by Harmony during FY08 included validation sampling and mapping and some trench work to understand the controls of mineralisation. Continuous channel sampling of trenches returned several significant intercepts including:

DLO1A:	10.8m @ 5.35g/t gold
DLO3A:	45m @ 4.6g/t gold
DLO4B:	23m @ 2.2g/t gold

Mineralisation at Daulo appears fault bounded. Mapping shows the majority of minor structures exposed in the trenches are oriented similar to Edie Creek, dipping 60 to 70 degrees to the south-east.

The work has highlighted good potential for shallow, high-grade, oxide gold mineralisation within a 6km radius of the Hidden Valley plant. A proposal for follow-up drilling to test the size potential of the prospect is under way. A programme of systematic soil sampling, mapping trenching and rock chip sampling, has been designed to tie down mineralised trends, with an allocation for follow-up diamond drill testing in FY09.

Morobe Coast greenfields exploration

The Morobe Coast exploration licence EL1403 encompasses some 1 041km² of tenure. The area lies to the south-east of the Morobe goldfield and Harmony believes it presents excellent grassroots exploration potential for high-grade low-sulphidation epithermal mineralisation. With the exception of anomalous gold assays from rock-chip and stream-sediment samples from the Lokaniu volcanics, there has been very little previous exploration on the tenements, and no drill testing has been undertaken on the tenement to date.

Giu Prospect

The Giu Prospect falls approximately 10km south-west of the Morobe township on the east coast of PNG and was the main focus of exploration activities on EL1403. The prospect represents a district-scale anomaly, 20km in diameter with elevated gold rock chip and stream sediment geochemistry. The aim of the work programmes is to identify and develop prospect areas with the potential for stand-alone gold (± related metal) orebodies.

Some 400 stream-sediment and rock chip samples were collected during FY08 and several highly anomalous drainage areas were identified where -80 mesh stream-sediment samples returned assays in excess of 0.4g/t gold. This stream-sediment anomaly encompasses an area of over 8km².

Mapping and rock chip sampling undertaken in conjunction with the stream-sediment sampling programme has obtained assays of up to 67g/t gold from mineralised coliform-banded infill breccias.

Field work in the form of ridge and spur soil sampling is scheduled for FY09 in order to trace the anomaly to its bedrock source. An airborne magnetic survey is also planned for FY09 to provide additional base data for integration with surface geochemical results and to assist with drill targeting.



Evander, South Africa



Phakisa, South Africa

South Africa

Evander South

In July 2007, a pre-feasibility study was completed on Evander South and a 2.2 million ounce reserve declared. The greater part of the Mineral Resource information was derived from exploration programmes that had been completed in the past by Union Corporation, Gencor and Anglo American. The study noted that considerable opportunity existed to increase the indicated mineral resource by carrying out further drilling.

A two-phase drilling programme has been devised that will see approximately 24 000m of drilling being

completed. The first phase will target the shallower section of the proposed mine and will take approximately a year to complete. Thereafter, and depending on results from the first phase, the second phase will target the deeper and the outlying areas of the orebody.

In all, 40 holes are planned to be drilled in the two-phase programme which is scheduled to start in FY09.

On completion of the drilling programme, the geological resource will be updated to reflect the results that have been obtained. Due to the expected increase in indicated resource, it is likely that the pre-feasibility will have to be re-visited prior to the project moving forward to feasibility.

Evander operations

Evander South Project

