

Exploration

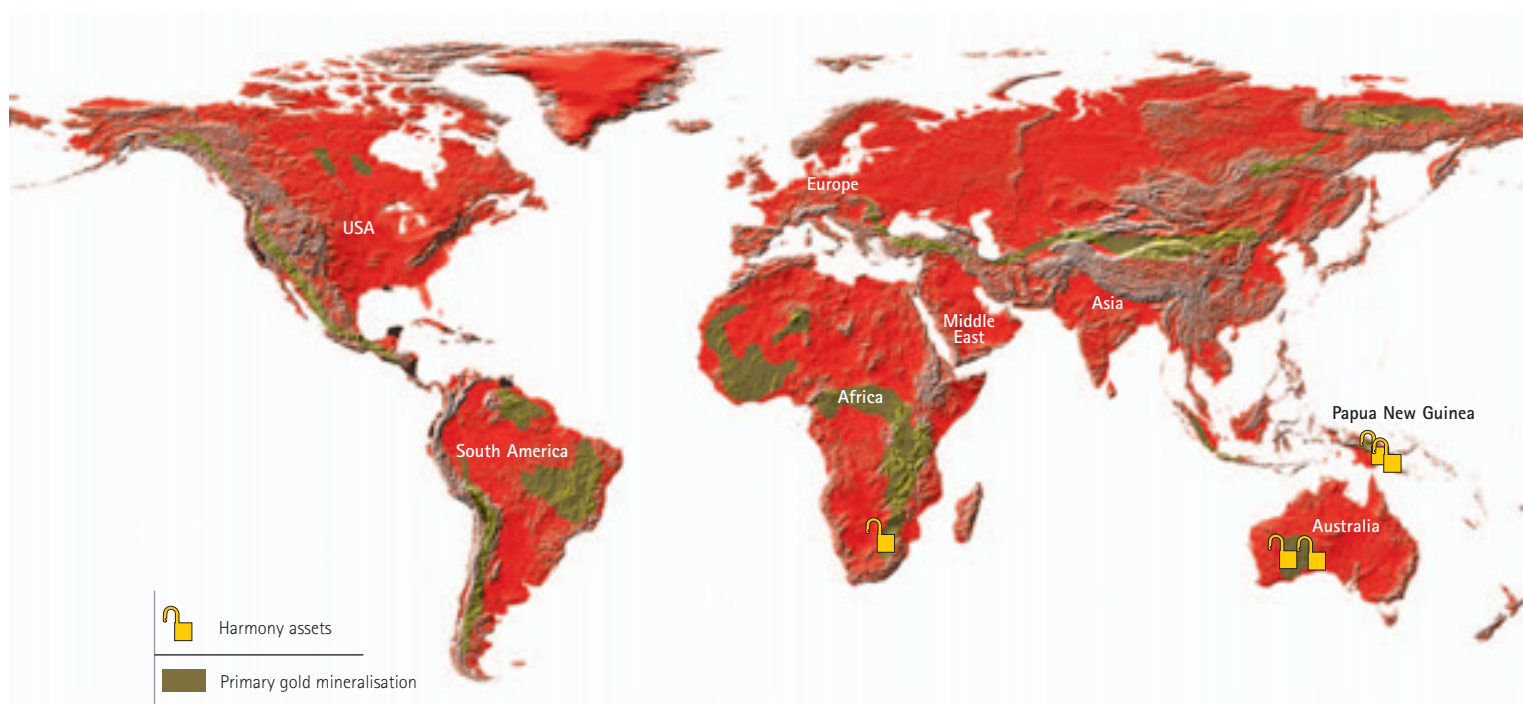
# DIGGING DEEPER FOR VALUE

Harmony's exploration expansion initiatives gained momentum during the past year, with investigative activities focused on Australia, Papua New Guinea, Africa and Europe. Success was achieved with the discovery of the 121 000oz Shirl deposit in Australia and the increase in the Wafi Golpu resource in Papua New Guinea (PNG).

The two components of exploration focus remain on-mine exploration, which seeks resources within the economic radius of existing mines, and new mine exploration, which is the global search for promising early to advanced stage projects in areas in which the company is not currently operating. On-mine exploration continued in South Africa, Australia and PNG.

Project strategies and filters (which specify the criteria that need to be met for each region and which take into account the orebody, the infrastructure and risks) are reviewed on an ongoing basis in alignment with the company's broader strategies. Long-term views of the global market for gold, project and country-related risks, and other factors form the cornerstones of the exploration growth strategy.





## Australia

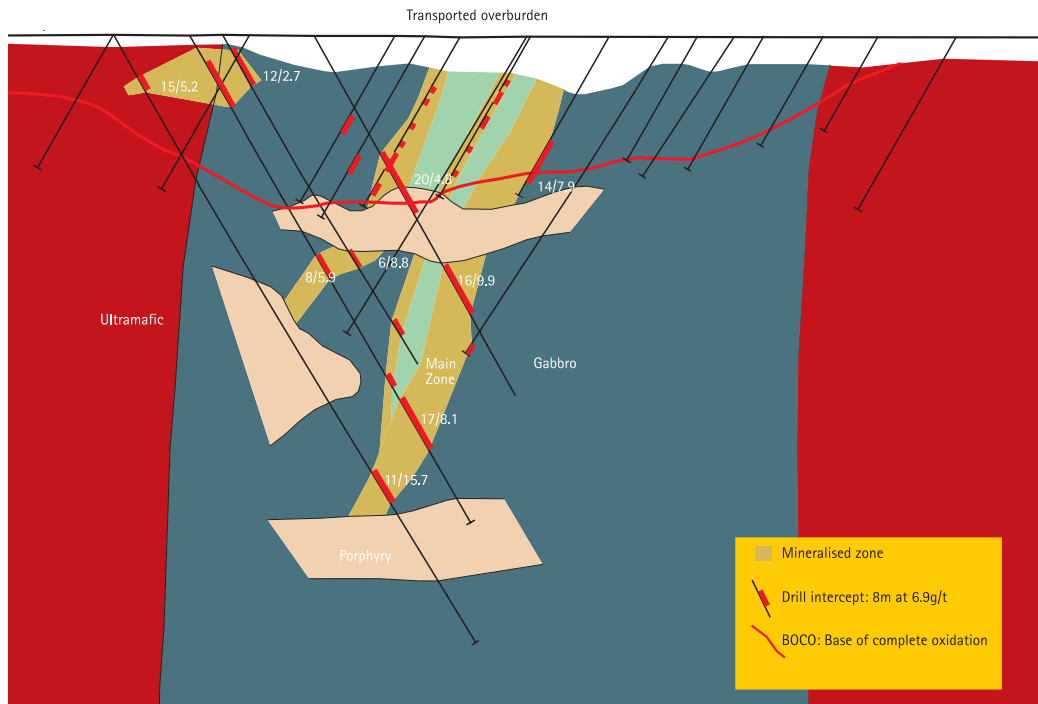
### South Kal

The South Kal tenements lie between Kalgoorlie and Kambalda in the West Australian Eastern Goldfields. On-mine exploration success was achieved at South Kal with the discovery and definition of the 121 000oz Shirl resource, a sub-vertical lode hosted within a gabbro unit bounded by ultramafics and intersected by late porphyry intrusions. Around 50 000oz of ore will be mined in FY07 and hauled 35km along existing haulroads to the Jubilee Plant. This find is significant, not only in terms of providing feed to the mill, but because it opens up exploration targets previously considered non-prospective. Shirl was found by drilling an aeromagnetic anomaly beneath barren surface geochemistry. Previous deposits had at least some surface signature to indicate an orebody underneath. Shirl has shown that orebodies exist in this area without a surface geochemical signature and exploration is targeting similar anomalies. Follow up work along strike and down dip is also under way. The few drill holes that have been drilled at depth have returned underground quality intersections including, 06BSDD005 16m @ 4.9g/t from 267m, 06BSDD006 21m @ 8.5g/t Au from 241m, and SHDD03 2m @ 16.8g/t Au from 334m. A drill programme is under way to follow up on these intersections.

Exploration activities will also focus on larger base load targets along the main Boulder Lefroy Fault. The Boulder Lefroy fault hosts the Hampton Boulder Jubilee pit as well as Kalgoorlie's Super Pit to the north and Gold Field's St Ives' orebodies to the south. These exploration targets have, in part, been generated by the CSIRO Stress Transfer Modelling project undertaken in FY06.

A budget of A\$3 million has been approved for exploration at South Kal mines.

## SHIRL PROSPECT CROSS-SECTION 11000MN

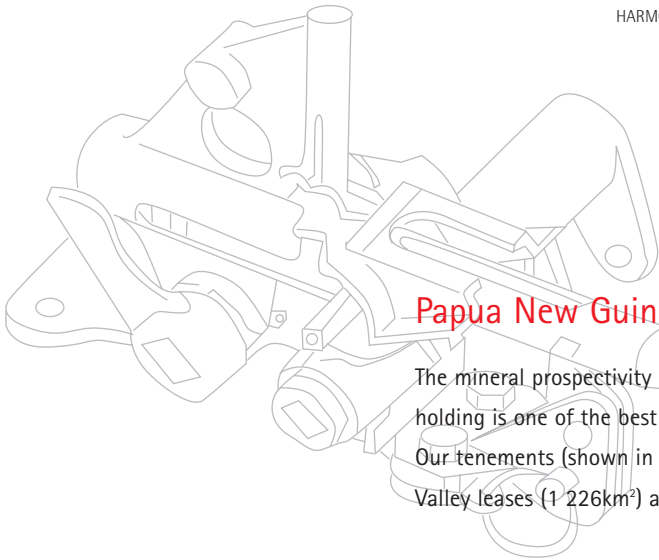


## Mt Magnet

Exploration activities at Mt Magnet, Western Australia, were hampered by ground access for much of the year owing to delays in the processing of clearing permits and unseasonably wet periods. Nonetheless, success has been achieved at Blackman's JV (75% Harmony, 25% Troy Resources). Drilling of a geochemical anomaly has produced significant results that may lead to a medium-grade oxide resource. The mineralisation is hosted in a mafic/ultramafic volcanic sequence. The best intersections to date include: 5m at 8.08g/t from 27m, 11m at 3.22g/t from 62m, 3m at 6.04g/t from 4m and 2m at 10.05g/t from 90m. Drilling is continuing.

Advanced geophysical techniques are being utilised at Mt Magnet with success. A trial of 3D induced polarisation has shown anomalism at depth underneath the Yellow Taxi pit. The survey is being increased to cover a broader area before drill targeting. The use of advance geophysics will be crucial to exploration in these mature belts and is being embraced by the exploration team at Mt Magnet.

A budget of A\$4 million has been approved for exploration at Mt Magnet.



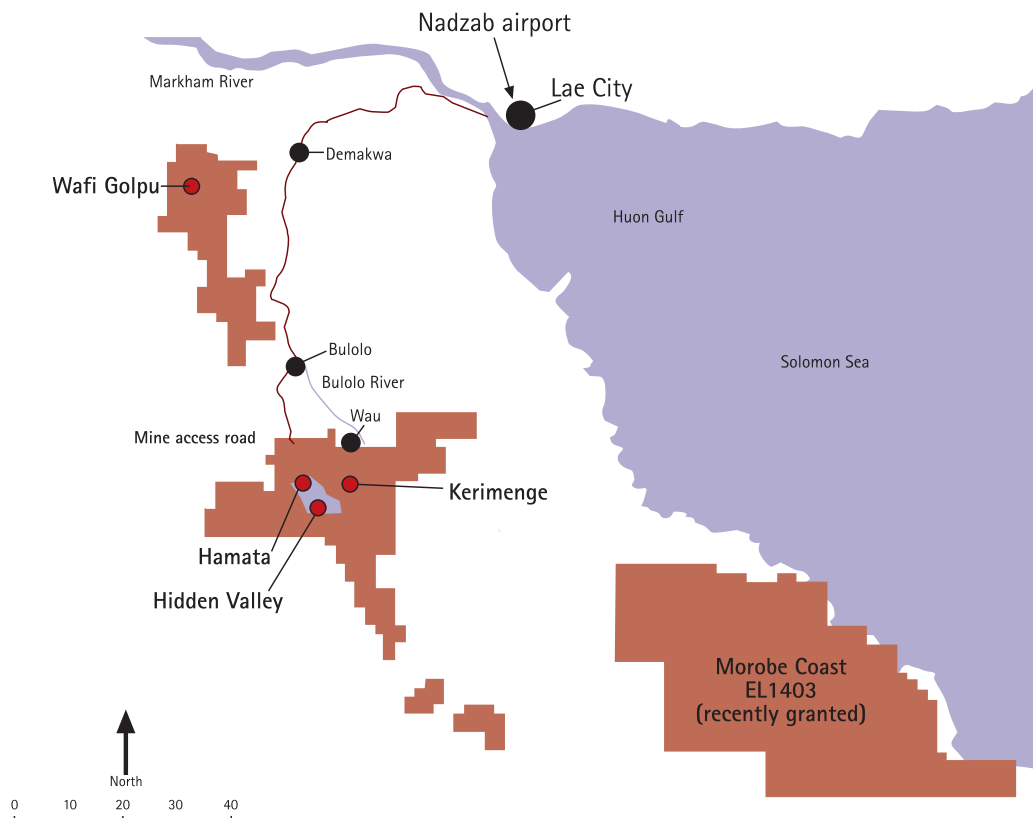
## Papua New Guinea (PNG)

The mineral prospectivity of PNG is considered among the highest in the world and Harmony's land holding is one of the best in PNG. A substantial portion of our exploration effort is focused here. Our tenements (shown in the map) include the Wafi Golpu leases (960km<sup>2</sup>), the Morobe–Hidden Valley leases (1 226km<sup>2</sup>) and the Morobe Coast EL (2 069km<sup>2</sup>), giving a total of 4 255km<sup>2</sup>.

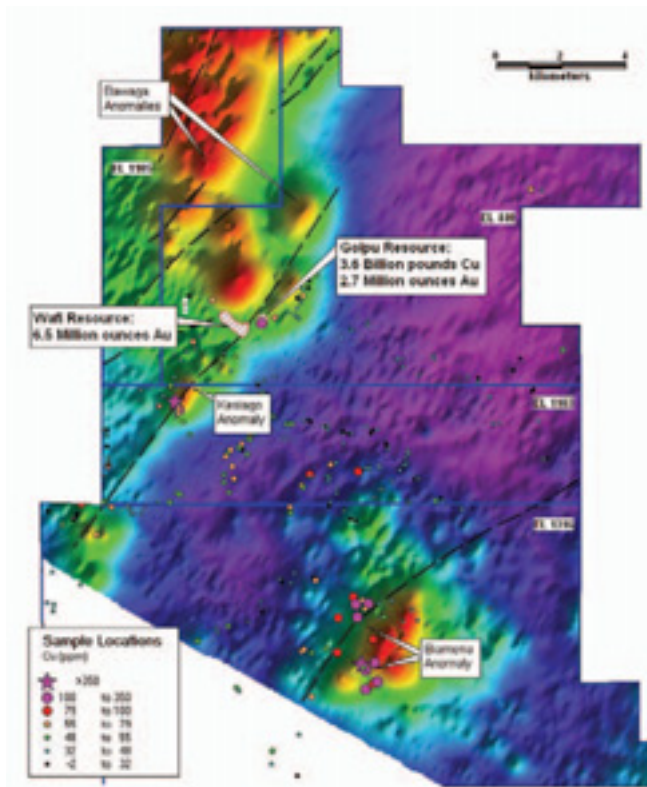
Exploration was intensified during the year and we now have a complement of 50 staff, including 14 geologists, dedicated to finding additional resources over and above those of Wafi Golpu and Hidden Valley. A budget of R47 million has been approved that includes an allowance for exploration in areas outside current leases.

Geologically, the project areas cover a tract of metamorphosed Lower Jurassic and Cretaceous sediments and obducted oceanic crust, which have been intruded by tertiary granodiorite, tonalite and porphyry units. Regionally, epithermal and porphyry related gold mineralisation is well known within the Morobe district, with historical high-grade gold mines including Wau (upper ridges) and Edie Creek. In addition, more than 2Moz of alluvial gold have been won from placer deposits in the Bulolo River valley, and small-scale alluvial prospecting in the tributaries of the Bulolo River continues today.

### LOCATION OF WAFI GOLPU AND HIDDEN VALLEY, PAPUA NEW GUINEA



## LOCATION OF WAFI GOLPU AND HIGH PRIORITY EXPLORATION TARGETS



### Wafi Golpu

The Wafi Golpu gold-copper system represents an area of enormous potential for increasing the resource and reserve base. Already there are 9.3Moz of gold and 3.6 billion pounds of copper in the small area around Wafi hill. Near-project activities at Wafi Golpu have focused on providing additional oxide gold resources. The drilling programme has begun and returned some spectacular intersections including WR209: 21m at 10.06g/t gold from 295m.

Similar geology, geophysical trends and geochemical responses are seen throughout the remainder of the lease area as shown in the figure and these are the targets of our regional work.

### Bawaga Prospect

This area is prospective for epithermal gold and porphyry copper-gold, similar to that of the Wafi Golpu system. The structural setting with north-northwest trending transfers, magnetic anomalies that suggest porphyry intrusives, and the lack of previous exploration in the area, combine to rank this target as a priority area for follow-up work. First-pass stream

sediment sampling is planned for the second quarter of FY07 once access negotiations have been completed.

### Kesiago and Biamena Prospects

Reprocessing of regional magnetics indicates Wafi has a clear association with a discrete magnetic high on a north-east trending transfer structure setting. The Kesiago prospect is located on the same transfer structure as that which lies 2km south-west of Wafi. Biamena lies on a similar structure 10km to the south. Both prospects show similarities in stream sediment and soil sampling as those of Wafi. These projects are at an early stage of exploration, with follow up stream and soil sampling and first phase drilling under way. They represent great potential to add Wafi-sized orebodies to the Harmony resource.

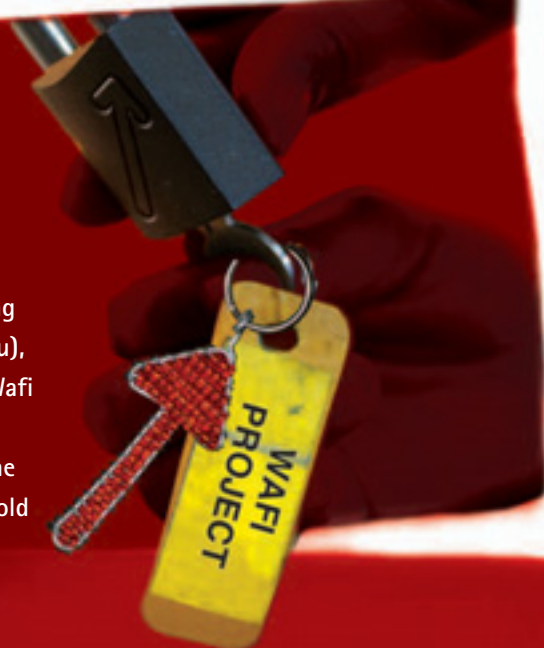
### Heking

Heking is a Golpu look-alike electromagnetic (EM), just 700m south-west of the Golpu porphyry. The EM response indicates argillic alteration and/or the disseminated chalcopyrite associated with mineralisation. Diamond drill testing, a priority of this target, began in July 2006.

PAPUA NEW GUINEA, 60KM SOUTH-WEST OF LAE IN MOROBE PROVINCE

## Wafi Golpu Project

The Wafi Golpu project is held under four contiguous exploration licences covering 996km<sup>2</sup>. It comprises two separate ore systems, gold and copper-gold (Wafi Golpu), located in close proximity to each other. Drill testing at the four main zones at Wafi Golpu has indicated the presence of substantial gold within a mostly high-sulphidation zone. A pre-feasibility study is currently underway at Wafi Golpu. The Copper-Gold, non-refractory gold (NRG1), and Link Zone high-grade refractory gold projects are currently under consideration.



All statutory requirements necessary for the completion of pre-feasibility studies have been satisfied.

### Geology, assay results and resource modelling

Assay results for the first four holes of the Wafi Golpu geotechnical drilling programme show wide, high-grade intercepts, confirming the consistency of the porphyry orebody. As part of the feasibility study process, the Wafi Golpu resource model was updated using additional information collected from the current drilling programme and reinterpretation of existing geological database information. It was previously assumed that mineralisation was cut off at the porphyry boundary; however, drilling in the current programme has confirmed that mineralisation extends into the metasediment host rock. Significantly, the resource model also includes molybdenum (Mo) and at the current price of US\$25/t, the value of the in-ground molybdenum is approximately US\$1 billion.

The inclusion of the mineralised meta-sediments adds some 259 000t of copper (+19%), and 650 000oz of gold (+32%) to the resource. The Wafi Golpu resource excludes the gold contained in the Wafi Golpu ore deposits, which contain a further 110Mtpa at 1.9g/t for 6.5Moz of gold. The exploration team is now investigating the work required to convert the meta-sediments resource to the indicated category.

The new Wafi Golpu model has been reviewed and endorsed by mining consultancies RSG Global and SRK. The increase in Wafi Golpu copper and gold resources was particularly encouraging given the current shortage in copper supply globally. Initial scoping studies utilising the existing indicated resource, conducted at \$0.90/lb - \$1.40/lb, recommended advancing the project to feasibility stage. Given current commodity price levels and the potentially larger resource, the Wafi Golpu copper-gold

### KEY DATES

Pre-feasibility studies – due dates	Mid-2007. Exact date depends on completion of drilling programmes.
Expected completion	September 2007

### PROJECT CAPITAL (CAPITAL AND PRE-PRODUCTION EXPENDITURE)

FY06	US\$9.6 million
FY07-FY08	Bankable feasibility studies to be defined by the pre-feasibility study. Expected to cost 3-5% of project capital – approximately US\$40 million. Costs will be higher if it is found that a feasibility exploration decline is required.
FY09-FY11	Detailed engineering and construction to be defined by bankable feasibility study
FY12 -FY13	Scheduled start of production

project appears to have significant value. The Wafi Golpu gold A, B and Link Zones were remodelled in a single block model to include the most recent drilling results. The model used a less selective approach than previous models, resulting in a larger but lower grade volume. Importantly, the re-modelling exercise included data from additional drilling which resulted in the Link Zone resource decreasing in size but increasing in grade. The overall ounce profile was only slightly lower than that of the previous model. The significantly increased grade increased the likelihood that the Link Zone resource, which currently stands at 4.8Mt @ 8.5g/t, will be found to be viable during the current pre-feasibility process.

The new Wafi Golpu gold zone model has been reviewed and endorsed by mining consultancies RSG Global and SRK.

#### Pre-feasibility study

A pre-feasibility study began at Wafi Golpu during July 2006. The study will test the viability of the Wafi Golpu copper-gold resource, and the high-grade refractory gold Link Zone resource. At the start of the study, it became clear that consideration of the NRG1 resource, which is the oxidised and transitional portion of the A Zone and to a lesser extent of the B Zone resource, was necessary, given the potential to realise synergies between the projects and the risk that some of the resource would be sterilised by the Link Zone and Wafi Golpu projects.

In order to complete pre-feasibility studies for the NRG1 and Link Zone resources, a scoping study was required since the viability of the projects had not been previously considered. The scoping studies are expected to be completed in the first quarter of the next financial year, and initial mining and processing estimates undertaken in

the scoping study indicate good returns under the conditions assumed.

As the NRG1 and Link Zone scoping studies were progressed, geotechnical drilling required for the completion of the Wafi Golpu pre-feasibility studies was undertaken in parallel. The core samples collected during the programme are primarily for geotechnical evaluation, but will also be used for metallurgical test work and resource estimation refinement. Engineering studies are due to start in the first quarter of next year.

#### Processing and infrastructure studies

A process establishment and engineering contract has been awarded, with work starting during the last quarter of the year. The scope of work includes assistance with metallurgical test work, programme formulation and execution, process design, and process and general infrastructural engineering and cost estimation, including both capital and operating cost.

At the end of the year, the consultants had completed a gap analysis on previous test work, and it is expected that the finalised test work programme for each of the projects will be under way early in the coming financial year. This programme will focus on comminution test work for all projects, flotation optimisation for Wafi Golpu ore, and pressure oxidation test work for the Link Zone. Test work for each of the projects is expected to be undertaken over a period of three to four months.

#### Mining studies

SRK Consultants undertook scoping level studies for the Link Zone and NRG 1 resources identified at Wafi Golpu. Should results be positive, both of these projects will be advanced to pre-feasibility, in

parallel with the Wafi Golpu copper-gold project, with a view to the development of an integrated site plan. The final Link Zone mining study was completed at the end of the year, with final mining quantities for NRG1 due in August 2007.

The NRG1 resource is that portion of the Wafi Golpu gold orebody which can be recovered using a conventional cyanide leach extraction method. If economically viable, this resource will be mined by way of open-pit methods.

The Link Zone resource is a high-grade portion of the Wafi Golpu gold ore body with an inventory of 4.79Mt at 8.5g/t. The Link Zone ore is refractory and requires oxidation methods such as pressure oxidation prior to extraction by conventional cyanide leach circuit. If economic, this resource will be mined by underground methods.

The results of the mining, processing and infrastructure studies will be combined into a single scoping study for the NRG1 and Link Zone projects, due at the end of August 2007. A plan to mine approximately 2Moz over six years is under consideration.

#### Delays in geotechnical drilling programme at Wafi Golpu

A new drill rig, which was originally expected on site in December 2005 was finally delivered in May 2006. Although the drill rig has been in production continuously since delivery, it is not yet operating at full capacity owing to a number of technical glitches. Delays in the completion of the drilling programme remain the biggest risk to the timing of completion of the Wafi Golpu pre-feasibility study, as most of the geotechnical and mining study work, along with metallurgical test work is



reliant on the drilling data. Every effort is being made to minimise the impact of these delays on the time line of the pre-feasibility study. A second large-capacity drill rig has been refurbished and mobilised to site by the drilling contractor in an effort to drill remaining holes simultaneously.

Additional geotechnical personnel are being recruited, and consulting personnel will have a stronger presence on site to ensure that the logging of remaining core data is completed as quickly as possible.

Additional core cutting equipment and personnel are being made available and the analysis of drill samples is being given priority at the assay laboratory, so as to minimise delays.

Consultants working on the project are in the process of reviewing work schedules and completion times.

### Environment and external relations

Key permitting, social mapping and community relations consultants have been appointed, all with extensive project experience in PNG. This is considered to be critical to the advancement of the Wafi Golpu project. The project has a history of difficulty with issues regarding traditional landowners, and minimising as many of these as early as possible will minimise their impact on the project.

Water monitoring and environmental drilling permits were issued for EL440 (all pre-feasibility drilling work is contained in this lease) and now all permits required for the completion of the study are held by the company.

Environmental baseline studies are being undertaken in line with the planned programme. Stream and sediment data collection, weather monitoring, and ore and waste rock characterisation for acid forming potential will assist in the completion of an Environmental Impact Assessment should the pre-feasibility study be found to be economic. Most rock types at Wafi Golpu have a high sulphur content and preliminary tests indicate that the potential for acid formation is high, while neutralising capacity is low. Mine and waste dump design will ensure that the potential for acid rock drainage can be managed at all times during the mine's operation.

### Outlook

To date, Kina 12.3 million (A\$5.6 million) has been spent on the pre-feasibility study against a total proposed budget of Kina 40.6 million (A\$18.5 million). Expenditure to date is lower than budget for the same period, primarily due to delays in drilling (the Wafi Golpu drilling programme was scheduled to be completed by June 2006).

The drilling programmes at the NRG1 and Link Zones are scheduled to continue, following the completion of the Wafi Golpu programme, and the geotechnical, mining, and metallurgical study work is to continue.

Engineering and mining consultants have now begun studies in line with the budget, and full expenditure of the project budget is expected during the coming year. Regarding expenditure to date, and budgeted spend in the coming year, approximately 52% of costs are for drilling and associated activities, with the remainder being allocated to studies including mining, processing, infrastructure, environment, community affairs and marketing.

## PNG

### Morobe – Hidden Valley

The Morobe area hosts the 5.5Moz Hidden Valley and Hamata resources and is highly prospective for similar deposits and higher grade skarn deposits.

### Moa Creek

During the year, drilling occurred at Moa Creek with good results. Four diamond drill holes were completed and the best intersections were 6m at 7.22g/t gold from 176m (MOD001), 4.2m at 6.64g/t gold from 38m (MOD002) and 3m at 19.45g/t gold from 47m (MOD004). Further trenching will be done to establish the full extent and orientation of the mineralisation before more drilling is undertaken.

### Kerimenge

The immediate focus this year will be on the Kerimenge deposit that lies 7km east of the Hamata processing plant site. This prospect displays a larger geochemical signature than Hidden Valley but has only a small amount of historical drilling. Previous work stored on paper has been compiled and captured digitally and has revealed a new target orientation that will be drill tested in the new financial year.

The Waurike prospect comprises part of the greater Kerimenge prospect. Here, high-grade trench results are broadly coincident with limestone contacts. There are only 10 drill holes in this area with mineralised limestone contacts mostly untested. Ore grade intercepts were obtained in the majority of holes and results include: 17m at 4.9g/t from 14m (QD44), 20m at 3.14g/t from surface (QD23), 34m at 2.5g/t from 2m (QD97), 50m at 2.0 g/t from 56m (QD50), 44m at 2.2g/t from 36m (QD102) and 14m at 5.8 g/t from 52m (QD22B). Diamond drilling is scheduled to start at these prospects in August 2006.

As at Wafi Golpu, a drill contract has been established for continual drilling throughout the year. The rig will move from prospect to prospect as our priorities dictate.

## Morobe Coast

The 2 068km<sup>2</sup> Morobe Coast exploration licence was granted in April 2006. The area lies to the south-east of the Morobe goldfield and presents exciting grassroots exploration potential. Previous work was limited but returned significant rock chip and stream sediment samples from the Lokaniu volcanics. A sample brought to the exploration department by a local villager had a grade of 175g/t. There are also copper, gold and lead mineral occurrences in gabbros towards the western side of the lease. A detailed aeromagnetic survey is proposed which will allow specific targeting for our first-pass site work.

The exploration team also has a watching brief over potential acquisitions or participation in other prospective regions throughout the country. This has been demonstrated most recently by the pegging of the Morobe Coast EL1403. Numerous confidentiality agreements have already been signed with neighbouring parties in anticipation of synergies that may develop further operations.

## Africa

The focus of exploration in Africa is to establish partnerships with existing project operators and governments in order to generate new gold exploration prospects that may be developed into operating mines in the future. During 2006 various projects were reviewed in East, West and Central Africa.

A joint venture agreement was signed with Axmin Inc in May 2006, whereby Harmony will fund US\$4 million over three years to explore Axmin's exploration licences in Senegal, known as the Sounkounko permits. This expenditure will secure 50% ownership of the Senegal projects. The first commitment period, ending April 2007, will require Harmony to spend US\$800 000 on exploration activities intended to target highly prospective gold mineralised zones on the permit areas. Harmony will have earned 10% ownership of the project after the first commitment period. Subsequent work is intended to drill test targets in order to define resources.

Elsewhere in Africa, a number of exploration opportunities are currently undergoing evaluation.

## South Africa

### Free State

#### Target North

The Target North resource is situated in the Central Rand Group of the Witwatersrand Sequence, with the bulk of the resource accommodated in the Turfontein Sub-group.

Broadly speaking, the structural regime is an asymmetrical syncline with a steep western limb (40° to 90°) and a shallower eastern limb (15° to 20°). The syncline plunges approximately 9° to 10° to the north. Three major sets of structures modify the overall synclinal nature of the deposit. These comprise northeast-southwest trending normal faults which generally have down throws to the south, north-south trending normal faults with down throws to the west and various sets of low angle fore and back thrusts evident on the west limb.

The major formations, which are of interest, are the Ventersdorp Contact Reef (VCR), the Uitkyk and Van den Heeverrust members, and the Kimberley Formation. The Welkom Formation may be of minor interest.

The VCR is recognised at the base of the Klipriviersberg Group. Recent work on the VCR has significantly improved the understanding of the setting and distribution of mineralisation. It is currently believed that the VCR is best developed where it directly overlies the Elsburg A (EA) reefs. Much work is still required to develop a robust geological model for this horizon. The EA and Dreyerskuil reefs of the Uitkyk and Van den Heeverrust members are believed to be conglomerates and arenites, which are hosted in a wedge-shaped sequence of clastic sediments, restricted to the western margin of the syncline which has a limited down dip extension. A reassessment of these

horizons has been completed during the period under review.

Significant mineralisation occurs in the Big Pebble Reefs (A Reefs), which straddle the base of the Earls Court Member and within the Aandenk Member. These reefs are thought to occur within a braided steam environment. In addition, the Maraisdal Reef (B Reef) is developed at the base of the Spes Bona Member overlying the Doornkop Quartzite. A reassessment of these horizons has been completed during the period under review.

The Basal Reef (previously referred to as the Sun Reef) occurs as a polymictic coarse pebble conglomerate with a kerogen facies developed in the extreme south of the Sun area. There are few intersections and this horizon is poorly understood. The bulk of this horizon occurs significantly deeper than the Kimberley Formation and is not considered to be of economic importance.

Prior to the period under review, the project team completed an extensive exercise to collate and validate data acquired over more than 20 years of surface drilling. During the period under review, a 3-D geological model was completed and the exploration model is being reinterpreted.

Since November 2004, major re-correlation and refinement of the Central Rand Group Stratigraphy (including Dreyerskuil, Eldorado and Kimberley successions) in over 90 surface boreholes and long deflections drilled within the project area have been completed. The entire borehole database has now been validated.

Seismic data, acquired during a 3-D seismic survey undertaken in 1997, has been reviewed and the interpretation completed. The original seismic interpretation only covered the southern third of the project area, and has now been interpreted to the northern limit of the project area. The seismic interpretation has been incorporated in the recently

completed 3-D geological model. A comprehensive re-evaluation of the mineral resource was completed in June 2006 in conjunction with independent party SRK acting as consultants to undertake a full technical audit on the resource and geological model. In the third quarter of FY06 under review, Harmony approved capital to drill two additional surface drillholes in the Target North area. The drillholes are intended to validate recently developed theories about the geological model. The two drillholes will be targeting VCR, EA and Dreyerskuilreefs, at depths ranging from 2 100m to 2 800m.

## Other geological projects

In order to extend the life of current operations and to take advantage of a resurgent gold price, a number of geological projects have been established on both the primary reef targets in the Free State, the Basal Reef and the Leader Reef, as well as the secondary targets, the Middle Reef, the B Reef and the A Reef. By evaluating these reefs on a regional basis, rather than within a specific lease area, and through understanding geological structures, new targets for exploration and future mining can be determined in previously untested areas. An initiative is ongoing to pool the vast amount of knowledge from the ore reserve managers and senior geologists, who have extensive experience of working in the Free State Goldfields.

### Basal Reef

A number of projects have been initiated to increase the reserves/resources of the Basal Reef in the Free State. The exploration and development of the Basal Reef to the west and east of Masimong is part of that shaft's expansion project. A project on Merriespruit 3 is aimed at locating isolated Basal Reef pockets beyond its subcrop on the Leader Reef while current drilling at Bambanani is intended to determine the feasibility of mining the Basal Reef below the lowest level (103L).

### Leader Reef

The Leader Reef occurs in narrow channels over much of the southern part of the Free State Goldfields. Projects are under way on Harmony 2 and West mines to re-evaluate old Leader Reef mining with a view to establishing new targets.



### Middle Reef

This is a highly erratic orebody located between the Basal and Leader horizons. Its complex structure makes it very difficult to mine but, where developed, can produce very high grades. Unisel continued to mine Middle Reef with considerable success, and a channel is known to extend into the neighbouring West and Bambanani mines. Management at these shafts is currently considering exploitation of the reef. An initiative is under way to look at synergies between the three mines in order to extract the orebody optimally. Taking into account lateral shifts on the De Bron fault, payable Middle Reef was discovered at Merriespruit 1 Mine. Exploration continues to find the extension of the high-grade channels that are currently being exploited.

### B Reef

Located 50 to 150m above the Basal Reef, the B Reef is a highly channelised orebody with grades confined to these narrow channels only. It is currently only mined at the Tshepong and Masimong mines, however, B Reef channels are known to occur elsewhere in selected areas across the Free State Goldfields.

A project was undertaken to determine the sedimentology of the B Reef at Loraine 2 (now part of Target Mine) where it has been mined since the 1960s. A high-grade B Reef channel runs through the shaft pillar, as well as to the north-west and south-east of the shaft. A business case is currently being completed to assess the viability and options of extracting the shaft pillar and surrounding areas. The same high-grade channel has been located some 2.5km further north to the west of Loraine 1. Underground drilling is under way to determine the extent of this channel.

A capital drilling programme for B Reef has been completed at Tshepong, and the project will now move into the next phase. The extension of the B Reef channels to the east and west at Masimong 5 forms part of the Masimong expansion project. In addition, B Reef channels are currently being explored at St Helena and Unisel, and at Merriespruit. A regional B Reef model is being put together to identify potential targets.

### A Reef

The A Reef is located approximately 40m above the B Reef and is also highly channelised. It is currently being mined at Harmony 2 and at Brand 1 and 3. Exploration is ongoing to determine the extent of these channels outside of current mining areas. Harmony 2 undertook a capital drilling programme in order to equip old Basal areas and drill 180m to the A Reef horizon. An investigation is under way to evaluate exploitation of the A Reef occurring between Harmony 2 and Virginia 1, where development took place on thick (3m+) A Reef channels in the 1990s.

A Reef has been mined previously in the Loraine 1C area of Target Mine, and a re-investigation of the sedimentology has been undertaken. The reopening and extraction of A Reef forms one option of the business case study currently being undertaken for Loraine.

Exploration continues for A Reef on Masimong 5 and Unisel; it may be possible to mine it at Tshepong and Phakisa.

## Evander

### The Evander 2 shaft-deepening project

The aim of the project is to explore the Kimberley Reef between 24 and 26 levels. Development of an incline shaft down to 26 level is planned in order to access the blocks of ground lying below current infrastructure. The crosstrend to the main payshoot has been projected into the target area.

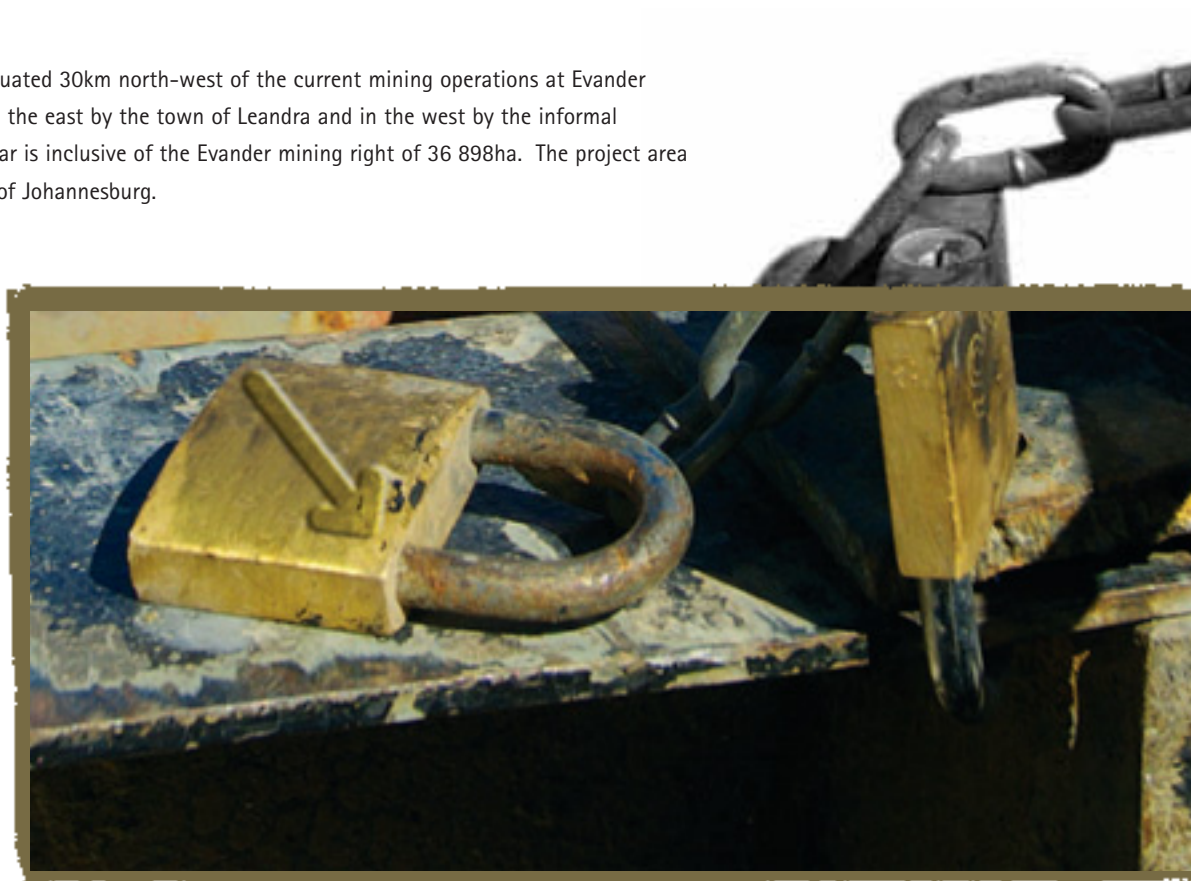
Exploration is ongoing. Two drill platforms were developed (461m in total) and drilling has been carried out from these development ends (slushers). As at May 2006, 925m of drilling had been completed (of 2 380m planned) and seven reef intersections had been obtained. Gold grades ranged as follows: 131cmg/t, 625cmg/t and 2 101cmg/t in the 24E43 slusher, and 575cmg/t, 180cmg/t, 120cmg/t and 1 863cmg/t in the 24E45A slusher. Drilling indicates that the edge of the payshoot has been intersected, which is believed to trend parallel to the main Kinross payshoot. Drilling will continue in order to establish the extent of this payshoot. The additional planned 1 455m of drilling will conclude the exploration programme.

### Evander 7 target

The aim of this project is to locate the down-dip extension of the Evander 5 payshoot, which merged with another payshoot from Evander 6 shaft. The Evander 5 payshoot is intersected by the 250m Kinross fault, creating three target areas. Drilling and development are under way and have partially confirmed the existence of the first target area, T1. The first raise in the T1 western flank is due to start during FY07. Currently, easterly drive development is taking place, which will allow drilling of the eastern flank of T1 within a few months. This development will also allow drilling of a portion of the second target area T2, once T1 drilling is complete.

### Poplar

The Poplar project area is situated 30km north-west of the current mining operations at Evander No 8 Shaft. It is bounded in the east by the town of Leandra and in the west by the informal settlement of Eendrag. Poplar is inclusive of the Evander mining right of 36 898ha. The project area lies 120km east-south-east of Johannesburg.



The economic placer of the Poplar lease area is the Kimberley Reef. It occurs at a depth below surface of between 500m in the east to 1 200m in the west. The reef strikes north-south and dips from 14° to 24° to the east. The Kimberley Reef comprises a sequence of fluvial, channel sediments that were deposited in a braided stream environment. Deposition of the reef was influenced by the footwall lithologies. The area of economic mineralisation is not continuous throughout the Poplar lease, but the most extensive zone of mineable reef is found in the southern part of the area. The high grade Kimberley Reef is associated with carbon and narrow, small-pebble, clast-supported and well-packed oligiomictic conglomerate.

The Poplar project will include greenfields development involving installation of a twin-shaft system to 1 200m below surface to exploit the above-mentioned Kimberley Reef payshoot. A definitive feasibility study was completed on this project in FY03. This study was updated recently at present day costs and a gold price of R105 000/kg. Capital expenditure for this project is estimated at R2.6 billion with a projected internal rate of return (IRR) of 14.0% pre-tax and 10.3% post-tax (at a discount rate of 7.5%). Total mineral resources are unchanged at 25.6Mt at 7.60g/t in situ for a total of 194 tonnes or 6.2Moz of gold. Ore reserves are estimated at 13.5Mt at 6.99g/t head grade for a total of 94.3 tonnes or 3.0Moz of gold.

The possibility that this orebody can be linked up to the south with the Evander South project is also being investigated. A linkage would result in an orebody stretching over 20km in strike length. This project still requires board approval.

### Rolspruit

The Rolspruit project aims to exploit the deeper extension (to 2 670m below surface) of the Kimberley Reef (Kinross payshoot), adjacent to Evander 8 shaft, through a

twin-shaft system from surface. A definitive feasibility study was completed in FY03 and has been reviewed in the past year. An improved engineering design incorporating a twin surface shaft system, followed some years later by a sub-vertical shaft system, replaces the abovementioned single lift twin shaft system. Capital expenditure is therefore delayed, production start up is accelerated and a conventional engineering design is incorporated. The project economics are now as follows (at a R105 000/kg gold price and 7.5% discount rate) – capital expenditure of 3.06 billion, a projected pre-tax IRR of 12% and a life of mine of 22 years. Further refinement to the improved design will be completed in the coming year.

The total mineral resources estimate for the project totals 81.90Mt at 5.87g/t in situ resulting in 480.30t – or 15.4Moz of gold. Estimated ore reserves total 24.4Mt at 7.78g/t, giving 212.8t of gold (8.70g/t) or 6.8Moz of gold.

### Other Evander projects

The Central Projects team is currently re-assessing three other Evander projects: Evander South, Twistdraai and Evander 6 shaft re-opening. For each of these projects, the original data has to be validated; seismic lines need to be re-interpreted where present; and a 3-D geological model developed (a similar process to that which was undertaken at Target North). The aim is to produce a detailed understanding of the Evander Basin, taking into account current mining activities. This study will also take into consideration the Poplar and Rolspruit project areas.

### Randfontein

At the Cooke section, exploration continues to focus on finding additional VCR targets at Cooke 3 shaft. Priority will be given to exploration for the extension of VCR payshoots eastward, up-dip of current mining activities. In addition, a portion of VCR

between Cooke 2 and 3 shafts will become a drilling target. A further drilling project is under way to determine the extent of the Elsburg payshoot towards the west of the shaft, below current mining levels. During 2006, 'down-the-hole' radar maybe used to provide further geological information. Development and drilling of the 128 South project is ongoing. Drilling to date has confirmed expected grades and channel widths on the UE1A reef. Where possible, Kimberley reefs (K4, K7 and K9) are also intersected and VCR intersections are planned in future. Further drilling will continue to add value to the construction of the structural and facies model for this area. The first stoping for this project is planned for early 2007.

## Elandsrand

In addition to the shaft-deepening project, an investigation is being conducted into establishing the economic viability of mining the Elsburg Reefs occurring in the footwall to the VCR. All historical drilling and sampling data has been collated and high-grade intersections identified. Initial investigations have shown that the uranium-bearing reef bands also contain the highest gold grades.

These reef bands also occur further west and are considered as potential targets in the Elandsrand deepening project area. New geological drillhole data obtained over the Elsburg Reef bands are being correlated with known mineralisation information for mined-out areas. This data will also be used to interpret expected sub-crop positions and trends, as early indication exists of localised enrichment of the sub-crop. If robust mineable reef bands can be identified deeper in the footwall, a detailed study will be undertaken to determine cut-off grades for the mining of these. Drilling continues.

## Latin America

A strategic shift in the early part of the financial year saw Harmony Peru's grassroots exploration activity in southern Peru phased out. During the programme, Harmony geologists visited 305 desktop-generated targets. Although three concessions were pegged and follow-up work completed, none offered the potential that Harmony was looking for. The strategic shift saw the Peru personnel turn their focus to the whole of Latin America, specifically to expose the company to advanced-stage gold projects. Projects were reviewed in Mexico, Argentina, Brazil, Venezuela, Guyana, Peru, Ecuador and Honduras.

A comprehensive database was constructed and populated with the details of close to 1 000 gold exploration projects in Latin America. Advanced projects were extracted and reviewed in detail, and various projects visited. Opportunities were identified and negotiations initiated but under current market conditions, the majority of opportunities were acquisitive in nature or offered as equity stakes in the holding companies, rather than being presented as joint venture opportunities.

As a result of a more focused approach to African exploration, high risks associated with Latin American investments at present and less positive cost/benefit ratios of growth opportunities on a continent where Harmony owns no operations, a corporate decision was taken to close the Lima office. Processes related to closure of the Harmony Peru regional office are under way.