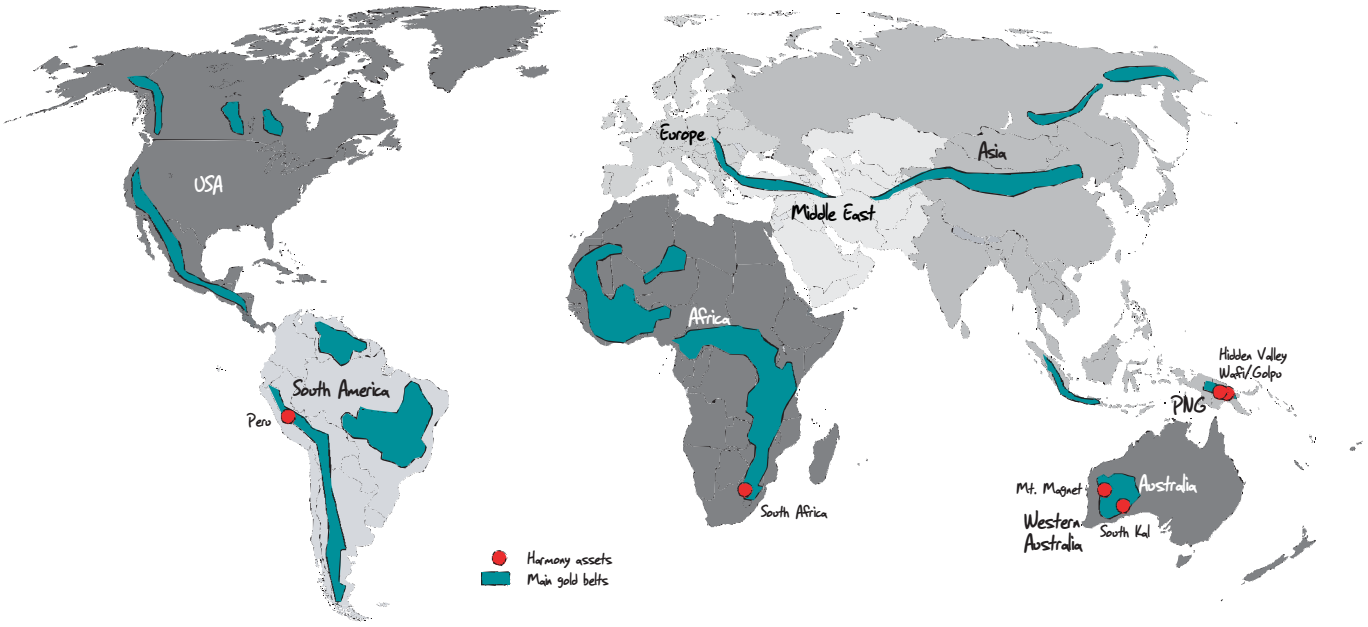
On the look-out

Exploration

For the first time, Harmony is reporting on its exploration projects around the world. The strategy is to grow the company's reserve and resource base, not only on and around existing operations, but also outside of traditional areas of operation.


THRIVE ON CHANGE



Harmony made a strategic decision last year to expand its exploration activities. As part of this, regional offices have been set up in Johannesburg, South Africa, Lima in Peru, Perth in Australia and Wau in PNG.

Harmony's exploration programme has two components: on-mine exploration which looks for resources within the economic radius of existing mines; and new mine exploration, which is the global search for promising early to advanced stage projects.

Potential projects are evaluated against Harmony's 'filters', which specify the criteria that need to be met. These 'filters' are set for each region and ensure that resources are applied optimally.

Australasia

Harmony's offshore exploration programme in Australasia continues to gain momentum with a number of projects in Australia and PNG.

Australia - Northern Territory

Harmony's 50% joint venture (JV) partnership in the Pine Creek Region of Australia's Northern Territory was consolidated during the period under review, with the acquisition from AngloGold Ashanti of the Union Reefs Gold Project for A$4 million, half of which was payable by Harmony. Located between the JV's current Brocks Creek and Pine Creek projects, the acquisition includes the 2.8 million tonnes per annum carbon-in-leach (CIL) gold plant and all site-related infrastructure, which are earmarked as the primary treatment facility for the JV.

First phase drilling at the Pine Creek mining leases, located 20 kilometres from the Union Reefs plant, has established a resource of 5.2 million tonnes at 2.1 g/t for 346 000 ounces of contained gold.

Pleasing results followed the second phase of drilling at the Burnside JV Cosmo Deeps Project, where the resource was upgraded from 0.7 to over 1.0 million ounces of gold. Metallurgical studies have indicated that excellent recoveries will be possible at the Union Reef treatment plant. Further drilling conducted during the year to identify the Cosmo Deeps resources indicated a potential increase in average grade at depth. A detailed mining plan is being compiled to include the underground and nearby open pit resources respectively.

Better than expected results were established at the Fountain Head open pit deposit. Resource estimates are placed at 604 000 tonnes while initial reserve estimates are 205 000 ounces. Harmony has been in discussion with its joint venture partners to determine the optimal shareholding structure to take this project forward.

The Maude Creek Tenements located in the Northern Territory were disposed of during the last quarter.

Australia - Mt Magnet

Murchison Province has a significant gold endowment with approximately 23 million ounces in past production and remaining resources documented. Gold prospectivity is highlighted by four +1 million ounce deposits within the MMG tenement holding, including Big Bell, Great Fingal, Hill 50 and Star.

Some of these areas have been subject to intensive exploration. However, the focus of the work has been such that the district still offers numerous virgin exploration targets within trucking distance of the Mt Magnet Mill. Six targets with the potential for major discoveries and a number of near-mine targets to replenish depleted reserves have been earmarked for drill testing. A budget of R25 million has been approved for this area.

Australia - South Kal

The South Kal operation lies in a mature district of the Eastern Goldfields. Intensive exploration over the last eight years has discovered additional reserves but has not replaced resources at the rate of depletion. The pedigree of the Kalgoorlie Kambalda Belt (with a gold endowment in excess of 100 million ounces in the upper 100 to 150 metres) highlights the prospectivity of the area. A shift in focus to detailed 3-D modelling and testing of deeper concealed targets is proposed.

Papua New Guinea

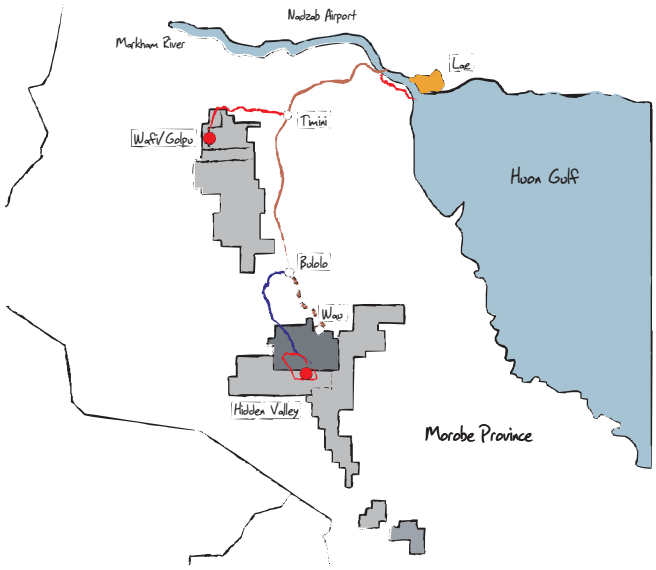
Harmony's PNG exploration holdings cover a tract of prospective stratigraphy located in the Morobe Province, south-west of Lae, the provincial capital. This rugged area hosts a complicated and very prospective geological suite consisting of uplifted Lower Jurassic and Cretaceous sediments, intruded by the Morobe Granodiorite. Harmony's ongoing exploration programme continues to identify new exploration targets which will continue to feed into phase 2 of the Hidden Valley project.

Wafi

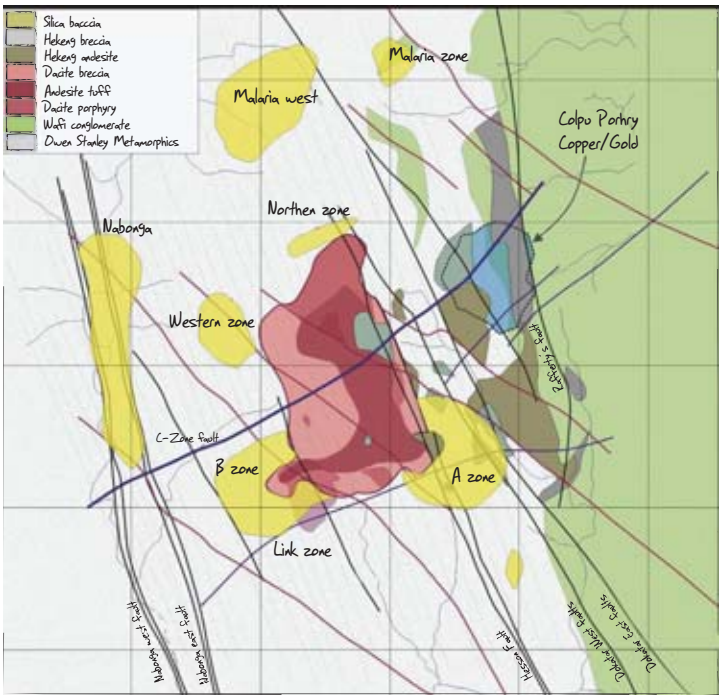
The Wafi prospect is located 60 kilometres south-west of Lae in the Morobe Province. The project is held under four contiguous exploration licences, totalling 996 square kilometres and comprising two separate ore systems, located within close proximity of each other, known as the Wafi Gold Project and the Golpu Copper-Gold Project.

Four main zones at Wafi (Zone A, Zone B, the Link Zone (between Zone A & B) and to a lesser extent, the Western Zone have been drill tested, revealing substantial gold mineralisation within a mostly high-sulphidation system.

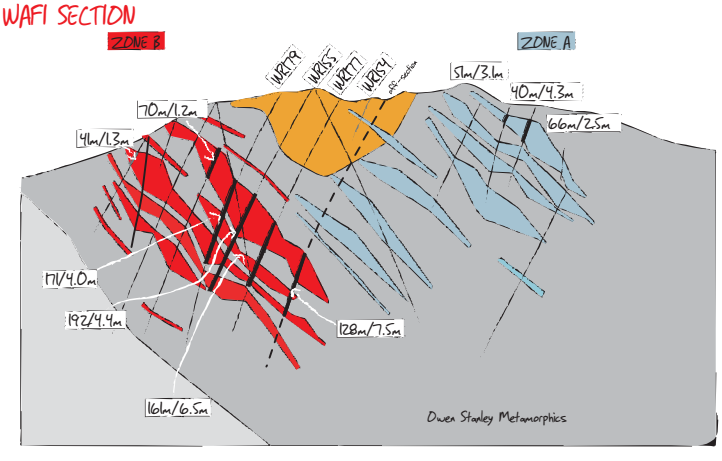
MAP OF PNG PROPERTIES



WAFI PLAN



WAFI SECTION



At Wafi, the bulk of gold mineralisation is located within moderate to steep east-dipping Owen Stanley conglomerates, sandstones and shales that surround a large diatreme core. Gold mineralisation appears to be controlled by mostly bedding-parallel faults and is associated with complex high-sulphidation, hydrothermal alteration assemblages. These assemblages form roughly concentric zones centered on the diatreme.

Prior to the acquisition of the project by Harmony, nearly 65 000 metres of drilling had been completed. Since acquisition, Harmony has completed a further 17 000 metres of both reverse circulation and diamond drilling to further define the shallower portions of the resource and to explore for additional oxide resources.

A programme of 6 800 metres of diamond drilling is planned for FY06 to explore for continuations of the high-grade component of the gold system.

Moa Creek prospect

The Moa Creek Prospect, located in rugged terrain 16 kilometres west of Harmony's Hidden Valley project, represents an exciting opportunity for the discovery of a new stand-alone gold mining operation in PNG. Initial exploration work has produced encouraging data, including the following bench sampling results: 16m @ 8.26 g/t Au, (including 1m @ 268.80 g/t Au); 19m @ 2.0 g/t Au (including 7m @ 3.78 g/t Au).

The current footprint of mineralisation covers an area of 600 metres by 500 metres within a north-easterly trending structural zone that extends for over 2 500 metres. Within the prospect area, the structural setting and style of mineralisation are similar to the Hidden Valley, Edie Creek and Kerimenge deposits.

Regional exploration work discovered a 36-metre wide, 300-metre long zone of epithermal-style in situ gold mineralisation hosted by a complex, structurally-controlled, hydrothermal breccia. Anomalous zones of in situ gold mineralisation have been exposed in the three benches completed to date.

Mineralisation is open to the south-west and to the north-east, with potential to increase the strike extension by up to two kilometres. A number of grab rock chip samples continue to return ore grade gold mineralisation away from the main area.

Further manual benching is continuing about 100 metres to the south-west to test south-west strike extension of the mineralised breccia. Detailed surface geological mapping and sampling is also continuing. Exploratory diamond drilling is expected to begin before December 2005.

Kerimenge

The Kerimenge deposit is located approximately 10 kilometres north-east of the Hidden Valley deposit on the western flank of Kwembu Creek. Kerimenge is a low-sulphidation, epithermal-mesothermal deposit located on the faulted contact between a porphyry-diatreme complex and Jurassic-Cretaceous Kaindi metamorphics.

A review of mineralisation was undertaken in January 2004 and a new model based on an elevated geo-assay boundary and the exclusion of some internal waste was determined. An in situ inferred resource of 17.0 million tonnes at 1.9 g/t gold, above a cut-off of 1 g/t gold, was estimated.

Kesiago

The Kesiago prospect is located about two kilometres south of the Wafi gold deposit in rugged terrain that rises to the south from the Wafi River. Previous exploration located anomalous gold mineralisation including 14.4 g/t gold in pan concentrates and up to 1.0 g/t in rock chip.

Work undertaken during the last year includes rock chip, soil sampling and mapping. Low level soil anomalies defined from this work will be supplemented by future 'ridge and spur' geochemical exploration.

Bawaga

The Bawaga area is located between four and nine kilometres north of Wafi. The area is bounded to the east by the north-north-west trending Wafi Transfer Structure and is notable for its interesting magnetic response, indicative of porphyry intrusives. Very little exploration has been carried out in this area. During the next year, a comprehensive high-resolution aero-magnetic survey and stream sediment sampling are planned.

Peru

The office in Peru was opened in 2003 and mainly concentrated on the evaluation of greenfield projects. Some 144 prospects were visited and sampled during the Peru generative grassroots programme. Harmony Gold Peru was awarded prospecting licences over two concessions in southern Peru, covering an area of 3 000 hectares. Encouraging sampling results were followed by detailed sampling programmes. Final sampling results obtained during June 2004 did not identify any project areas with significant gold mineralisation to warrant further exploration work. Eighty projects, as offered by juniors and project vendors in Peru, were reviewed for joint venture potential. Of these, 40 were sampled but none of these had mineralisation potential to warrant exploration work by Harmony. The decision was taken that the office would increase its focus to concentrate on opportunities in Latin America rather than just Peru. The office will be staffed accordingly.

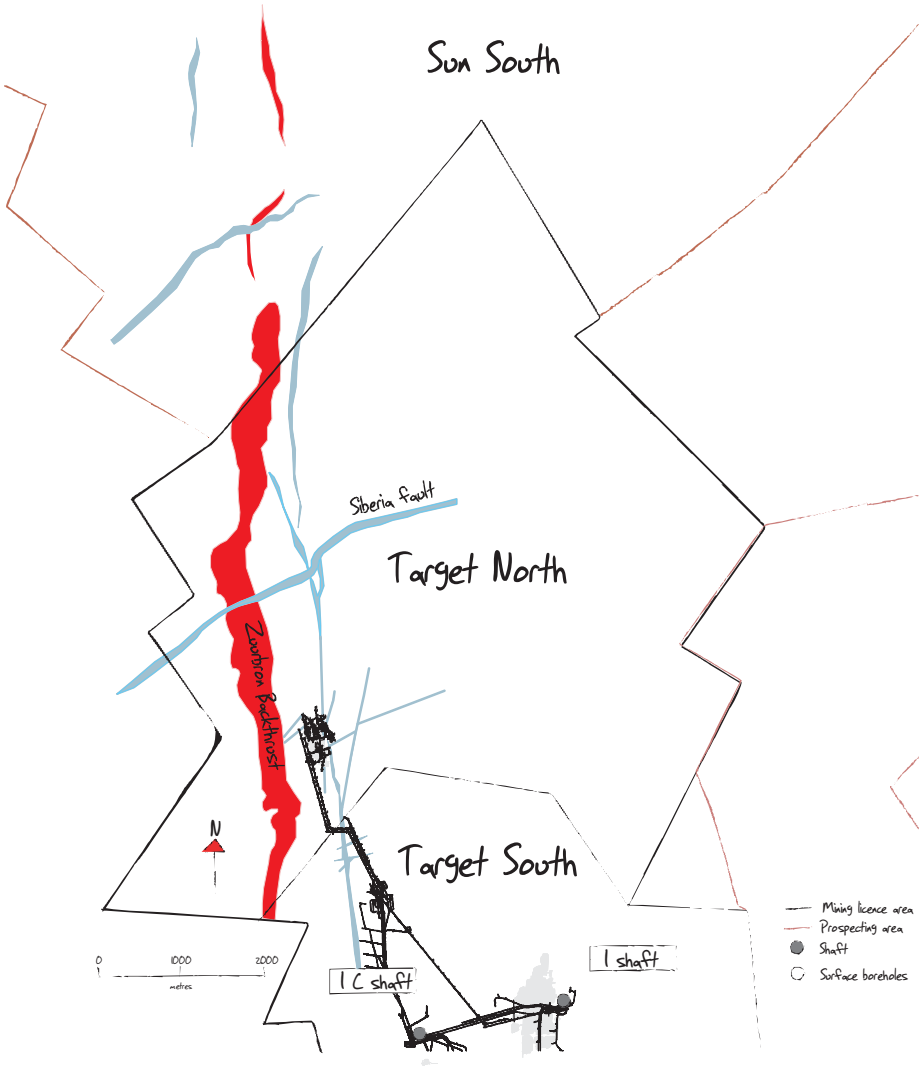
South Africa

One of the most exciting exploration ventures within South Africa at the moment relates to exploration being undertaken at our Target mine. This has already added significantly to our resource and reserve base, and work is being undertaken at our Target North and Sun properties.

Target North

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

Broadly speaking, the structural regime is an asymmetrical syncline with a steep western limb (40-90 degrees) and a shallower eastern limb (15-20 degrees). The syncline plunges at approximately 9 to 10 degrees to the north. Three major sets of structures modify the overall synclinal nature of the deposit. These comprise



north-east south-west trending normal faults which generally have downthrows to the south, north-south trending normal faults with downthrows to the west and various sets of low-angle fore- and back-thrusts evident on the west limb.

The major formations of interest are the Ventersdorp Contact Reef (VCR), Uitkyk and Van den Heeversrust members and 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 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 Heeversrust members are believed to be fanglomerates and arenites, which are hosted in a wedge-shaped sequence of clastic sediments, restricted to the western margin of the syncline which have a restricted development down dip. A re-assessment of these horizons is in progress.

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 braided river channel sediments. In addition, the Mariasdal Reef (B Reef) is developed at the base of the Spes Bona Member overlying the Doornkop Quartzite. A re-assessment of these horizons is in progress.

The Sun Reef (Basal Reef) occurs as a polymictic course 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 Kimberly Formation and is not considered to be of economic importance.

During the period under review, the project team undertook an extensive exercise to collate and validate data acquired over more than 20 years of surface drilling in order for a robust 3-D geological model to be constructed. In addition, the exploration model is also being reinterpreted.

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

Seismic data, acquired during a 3-D seismic survey undertaken in 1997, is currently being reviewed and the interpretation completed. The original seismic interpretation only covered the southern third of the project area and is now being interpreted to the northern limit of the project area. This will assist in validating the structure for the 3-D geological model.

By the third quarter of the 2006 financial year, it is envisaged that the 3-D geological model will have been completed and, by the end of June 2006, a comprehensive revaluation of the mineral resource/reserve. A full technical audit on the geological model and resource/reserve will also be completed in due course.

Other geological projects

In order to extend the life of current operations, a number of geological projects have been established on secondary reef targets. By looking at these reefs on a

regional basis, rather than within a specific lease area, new targets for exploration and future mining can be determined in previously unknown areas.

Free State

Middle Reef

This is a highly erratic orebody located between the Basal and Carbon Leader Reef horizons. Its complex structure makes it very difficult to mine, but where developed, can produce very high grades. Unisel has mined the Middle Reef with considerable success, and a channel has been seen to extend into neighbouring West Mine and Bambanani, which are currently not mining the reef. Taking into account lateral shifts on the De Bron fault, Middle Reef was discovered at Merriespruit 1 Mine. Exploration is continuing to find the extension of these channels.

A Reef

The A Reef is located about 40 metres above the B Reef and is also characterised by a highly channelised reef. It is currently being mined at Harmony 2 and Brand 3 and exploration is ongoing to determine the extent of these channels away from the mining areas. Harmony 2 will embark on a capital drilling programme in order to equip old Basal areas and drill 180 metres to the A Reef horizon. In addition, A Reef is also being explored for at Masimong 5, Unisel and in the Lorraine 2 area of Target.

B Reef

Located 50 to 150 metres above the Basal Reef, the B Reef is a highly channelised orebody with grades confined to these narrow channels only. It is currently mined at Tshepong and Masimong Mines, but much more extensive B Reef is known to occur. A project is underway to determine channels at Lorraine 2 Shaft (now part of Target Mine) where B Reef was mined in the 1960s. The first phase of a capital drilling programme for B Reef has been completed at Tshepong, and the project is now moving 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, Unisel, Merriespruit 3 and Harmony 2 mines.

Basal Reef

Several projects have been initiated to increase the reserves of the Free State goldfields' primary gold carrier, the Basal Reef. The exploration and development of the Basal Reef to the west and east of Masimong is part of that shaft's expansion project. Merriespruit 3 has a project to locate isolated Basal Reef pockets beyond its sub-crop on the Carbon Leader Reef, while Bambanani has a drilling project in place to determine the feasibility of mining the Basal Reef below the lowest level (103L)

Evander

Two exploration projects have been planned for FY06.

The Evander 2 shaft deepening project

The project aims to explore the Kimberley Reef between 24 and 26 levels. The development of the incline shaft, down to 26 level, is planned in order to access the blocks of ground lying below the current infrastructure. The cross-trend to the main payshoot has been projected into the target area. Two drilling platforms will be developed into this area and 18 prospect boreholes are planned. The drilling results would enable an upgrade of the resource categories and the confirmation of the grades.

Exploration of the Eastern Payshoot

The project objective is to complete the exploration drilling of the Eastern Payshoot, projected parallel to the Main Kinross Payshoot, on the north-eastern side of Evander 5 shaft's current mining area. It is expected that this payshoot extends down dip towards the Evander 7 and 8 shafts. The exploration platform has already been developed and initial drilling has been carried out. Four additional prospect boreholes are planned to test the Kimberley Reef within the projected payshoot. Further exploration could be undertaken should these boreholes indicate the presence of the payshoot.

Evander 5 target

This project aims to locate the down dip extension of the Evander 5 payshoot, which coalesces with another payshoot from Evander 6 Shaft. The Evander 5 payshoot is intersected by the 250-metre Kinross Fault, creating three target areas. Drilling and development are underway and have partially confirmed the existence of the first target area.

Poplar

The Poplar project area is situated 30 kilometres 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. The Poplar lease area covers approximately 1 500 hectares (9.0 kilometres x 1.5 kilometres). The project area lies 120 kilometres 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 500 metres in the east to 1 200 metres in the west. The reef strikes north-south and dips 14 to 24 degrees 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 1 200 metres below surface to exploit the above-mentioned Kimberley Reef payshoot. A definitive feasibility study was completed on this project in 2003. Capital expenditure for this project is estimated at R2 000 million with a projected internal rate of return (IRR) of 13.5% pre-tax and 10% post-tax. Total mineral resources are estimated to be 28.2 million tonnes at 6.89 g/t in situ

for a total of 194 tonnes or 6.2 million ounces of gold. Ore reserves are estimated at 13.5 million tonnes at 6.99 g/t head grade for a total of 94.3 tonnes or 3.0 million ounces of gold. This project still requires board approval and the ore reserves are classified as below infrastructure.

Rolspruit

The Rolspruit project aims to exploit the deeper extension (to 2 670 metres below surface) of the Kimberley Reef (Kinross payshoot) adjacent to Evander 8 shaft, either through a twin-shaft system from surface or a twin sub-vertical shaft system at Evander 8 shaft. A definitive feasibility study was completed in 2003. The project is considered to be marginal but of low technical risk. Capital expenditure for a greenfield twin-shaft project is estimated in the feasibility study at R5 200 million, with a projected IRR of 11.7% pre-tax and 8.8% post-tax over a 15-year life-of-mine.

The total mineral resources estimate for the project totals 81.90 million tonnes at 5.87 g/t in situ resulting in 480.30 tonnes- or 15.4 million ounces of gold. Estimated ore reserves total 27 million tonnes at 7.78 g/t, giving 209.8 tonnes or 6.7 million ounces of gold.

The project has not yet received board approval and the Harmony due diligence team is currently looking at cost-saving opportunities to enhance the net present value and IRR of this project.

Randfontein

At the Cooke section, exploration is ongoing to find additional Ventersdorp Contact Reef (VCR) targets at Cooke 3 shaft. There is also a drilling project underway to determine the extent of the Elsburg payshoot towards the east of the shaft, below current mining levels.

Elandsrand

In addition to the shaft deepening project, there is currently an investigation into the Elsburg footwall conglomerates to establish their stratigraphy and grade characteristics and in also their impact on VCR deposition and grade. The Elsburgs are found to subcrop against the VCR from the 31 line westwards, which means that most of the deepening project area has Elsburg situated below the VCR. Some exciting grades have been observed within the Elsburg conglomerates in this area. Once target areas have been identified, the geological confidence will be increased, with additional exploration drilling and on reef-development to convert these resources into reserves.

Going forward

An exploration budget of R165 million has been approved for the 2005/6 year. The budget excludes any capital expenditure.