

HARMONY GOLD MINING CO LTD  
Form 20-F  
October 29, 2012  
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As filed with the Securities and Exchange Commission on October 29, 2012

**UNITED STATES**  
**SECURITIES AND EXCHANGE COMMISSION**  
**WASHINGTON, D.C. 20549**  
**FORM 20-F**

(Mark One)

**REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934**

**OR**

**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**  
**For the fiscal year ended June 30, 2012**

**OR**

**TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**  
**OR**

**SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**  
**Date of event requiring this shell company report**

**For the transition period from**                      **to**

**Commission file number: 001 31545**

**HARMONY GOLD MINING COMPANY LIMITED**

**(Exact name of registrant as specified in its charter)**

**REPUBLIC OF SOUTH AFRICA**

(Jurisdiction of incorporation or organization)

**RANDFONTEIN OFFICE PARK, CNR WARD AVENUE AND MAIN REEF ROAD,**

**RANDFONTEIN, SOUTH AFRICA, 1760**

(Address of principal executive offices)

**Riana Bisschoff, Group Company Secretary**

**tel: +27 11 411 6020, [riana.bisschoff@harmony.co.za](mailto:riana.bisschoff@harmony.co.za), fax: +27 (0) 11 696 9734,**

**Randfontein Office Park, CNR Ward Avenue and Main Reef Road, Randfontein, South Africa, 1760**

(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

**Ordinary shares, with nominal value Rand 50 cents per share\***

(Title of Class)

**American Depositary Shares (as evidenced by American Depositary Receipts),**

**each representing one ordinary share**

(Title of Class)

Securities registered or to be registered pursuant to Section 12(g) of the Act:

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act: None

The number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the last full fiscal year covered by this Annual Report was:

431,564,236 ordinary shares, with nominal value of Rand 50 cents per share

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. YES x NO "

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. YES " NO x

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days: YES x NO "

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). YES " NO "

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of accelerated filer and large accelerated filer in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer x

Accelerated filer "

Non-accelerated filer "

Smaller reporting company "

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(Do not check if a smaller reporting company)

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

US GAAP

International Financial Reporting Standards as issued

Other

by the International Accounting Standards Board

If Other has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow: Item 17  Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). YES  NO

Indicate by check mark whether the registrant has filed all documents and reports required to be filed by Sections 12, 13 or 15(d) of the Securities Exchange Act of 1934 subsequent to the distribution of securities under a plan confirmed by a court. YES  NO

\* Not for trading, but only in connection with the registration of American Depositary Shares, pursuant to the requirements of the Securities and Exchange Commission.

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### **USE OF TERMS AND CONVENTIONS IN THIS ANNUAL REPORT**

Harmony Gold Mining Company Limited is a corporation organized under the laws of the Republic of South Africa. As used in this Annual Report on Form 20-F, or this annual report, unless the context otherwise requires, the terms **Harmony** and **Company** refer to Harmony Gold Mining Company Limited; the term **South Africa** refers to the Republic of South Africa; the terms **we** , **us** and **our** refer to Harmony and, as applicable, its direct and indirect subsidiaries as a **Group** .

In this annual report, references to **R** , **Rand** and **c** , **cents** are to the South African Rand, the lawful currency of South Africa, **A\$** refers to Australian dollars, **K** or **Kina** refers to Papua New Guinean Kina and references to **\$** , **US\$** and **US dollars** are to United States dollars.

This annual report contains information concerning our gold reserves. While this annual report has been prepared in accordance with the regulations contained in Securities and Exchange Commission Guide 7, it is based on assumptions which may prove to be incorrect. See *Item 3. Key Information Risk Factors Estimations of Harmony s gold reserve figures are based on a number of assumptions, including mining and recovery factors, future cash costs or production and the price of gold. As a result, quantities of gold produced may differ from current estimates.*

*Key Information Risk Factors Estimations of Harmony s gold reserve figures are based on a number of assumptions, including mining and recovery factors, future cash costs or production and the price of gold. As a result, quantities of gold produced may differ from current estimates.*

This annual report contains descriptions of gold mining and the gold mining industry, including descriptions of geological formations and mining processes. We have explained some of these terms in the Glossary of Mining Terms included at the end of this annual report. This glossary may assist you in understanding these terms.

### **PRESENTATION OF FINANCIAL INFORMATION**

We are a South African company and the majority of our operations are located in our home country. Accordingly, our books of account are maintained in South African Rand and our annual and interim financial statements are prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board ( **IFRS** ). Prior to fiscal year ended June 30, 2008, our annual financial statements (translated into US dollars) were prepared and filed with the US Securities and Exchange Commission ( **SEC** ) in accordance with generally accepted accounting principles in the United States ( **US GAAP** ). On December 21, 2007, the SEC adopted rules allowing foreign private issuers that file Annual Reports on Form 20-F to file financial statements with the SEC in accordance with IFRS without reconciliation to US GAAP. As per these rules, we include in this annual report our consolidated financial statements prepared in accordance with IFRS, translated into US dollars. All financial information, except as otherwise noted, is stated in accordance with IFRS.

In this annual report, we also present cash operating costs and cash operating costs per ounce , which are non-GAAP measures. An investor should not consider these items in isolation or as alternatives to production costs, cost of sales or any other measure of financial performance presented in accordance with IFRS. The calculation of cash operating costs, and cash operating costs per ounce may vary significantly among gold mining companies and, by themselves, do not necessarily provide a basis for comparison with other gold mining companies. For further information, see *Item 5. Operating and Financial Review and Prospects Costs Reconciliation of Non-GAAP Measures* .

We have included the US dollar equivalent amounts of certain information and transactions in Rand, Kina and A\$. Unless otherwise stated, we have translated: (i) balance sheet items at the closing rate as reported by Reuters on the last business day of the period (R8.21 per US\$1.00 as at June 30, 2012 and R6.78 per US\$1.00 as at June 30, 2011), (ii) acquisitions, disposals and specific items included within equity at the rate prevailing at the date the transaction was entered into and (iii) income statement items at the average rate for the year (R7.77 per US\$1.00 for fiscal 2012, R6.99 per US\$1.00 for fiscal 2011 and R7.58 per US\$1.00 for fiscal 2010). Capital expenditures for fiscal 2013 have been translated at the rates used for balance sheet items at June 30, 2012. By including these US dollar equivalents in this annual report, we are not representing that the Rand, Kina and A\$ amounts actually represent the US dollar amounts, as the case may be, or that these amounts could be converted at the rates indicated. For further information, see *Item 3. Key Information Exchange Rates* .

### **FORWARD-LOOKING STATEMENTS**

This annual report contains forward-looking statements within the meaning of the United States Private Securities Litigation Reform Act of 1995 with respect to our financial condition, results of operations, business strategies, operating efficiencies, competitive positions, growth opportunities for existing services, plans and objectives of management, markets for stock and other matters. These include all statements other than statements of historical fact, including, without limitation, any statements preceded by, followed by, or that include the words targets , believes , expects , aims intends will , may , anticipates , would , could or similar expressions or the negative thereof. In particular, statements, certain statements in *Item 4. Information on the Company*, *Item 5. Operating and Financial Review and Prospects* and *Item 11. Quantitative and Qualitative Disclosures About Market Risk* are forward-looking in nature. Statements in this annual report that



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are not historical facts are forward-looking statements for the purpose of the safe harbor provided by Section 21E of the Securities Exchange Act of 1934, as amended (the **Exchange Act** ), and Section 27A of the Securities Act of 1933, as amended.

These forward-looking statements, including, among others, those relating to our future business prospects, revenues and income, wherever they may occur in this annual report and the exhibits to this annual report, are necessarily estimates reflecting the best judgment of our senior management and involve a number of risks and uncertainties that could cause actual results to differ materially from those suggested by the forward-looking statements. As a consequence, these forward-looking statements should be considered in light of various important factors, including those set forth in this annual report. Important factors that could cause actual results to differ materially from estimates or projections contained in the forward-looking statements include, without limitation:

overall economic and business conditions in South Africa and elsewhere;

the ability to achieve anticipated efficiencies and other cost savings in connection with past and future acquisitions;

fluctuations in the market price of gold;

the occurrence of hazards associated with underground and surface gold mining;

the occurrence of labor disruptions;

availability, terms and deployment of capital;

changes in government regulation, particularly mining rights and environmental regulation;

fluctuations in exchange rates;

currency devaluations/appreciations and other macroeconomic monetary policies; and

socio-economic instability in South Africa and other countries in which we operate.

We undertake no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after the date of this annual report or to reflect the occurrence of unanticipated events.

**PART I**

**Item 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISORS**

Not applicable.

**Item 2. OFFER STATISTICS AND EXPECTED TIMETABLE**

Not applicable.

**Item 3. KEY INFORMATION  
SELECTED FINANCIAL DATA**

*The selected consolidated financial data below should be read in conjunction with, and are qualified in their entirety by reference to, our consolidated financial statements and the notes thereto and with Item 3. Key Information Risk Factors, Item 5. Operating and Financial Review and Prospects, all included elsewhere in this annual report. Historical results are not necessarily indicative of results to be expected for any future period.*

**SELECTED HISTORICAL CONSOLIDATED FINANCIAL DATA**

We are a South African company and the majority of our operations are located in our home country. Accordingly, our books of account are maintained in South African Rand and our annual and interim financial statements are prepared in accordance with IFRS. Prior to fiscal year ended June 30, 2008, our annual financial statements (translated into US dollars) were prepared and filed with the SEC in accordance with US GAAP. On December 21, 2007, the SEC adopted rules allowing foreign private issuers that file Annual Reports on Form 20-F to file financial statements with the SEC in accordance with IFRS without reconciliation to US GAAP. As per these rules, we have included in this annual report our consolidated financial statements prepared in accordance with IFRS, translated into US dollars.

The selected historical consolidated income statement and balance sheet data for the last five fiscal years are, unless otherwise noted, stated in accordance with IFRS, and has been extracted from the more detailed information and financial statements prepared in accordance with IFRS, including our audited consolidated financial statements as of June 30, 2012 and 2011 and for each of the years in the three years ended June 30, 2012 and the related notes, which appear elsewhere in this annual



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report. The historical consolidated financial data at June 30, 2010, 2009 and 2008, and for each of the years in the two years ended June 30, 2009, have been adjusted for discontinued operations (discussed below).

Discontinued operations for the periods below include the Evander operations in South Africa, as well as our Mount Magnet operations in Australia. The assets and liabilities of the Evander operation were classified as held for sale in January 2012 following the signing of a sale of shares and claims agreement. The results of this operation have been presented as a discontinued operation. In fiscal 2010, Australia's Mount Magnet operations were classified as held for sale and the results of the Mount Magnet operation presented as discontinued operations when an agreement for its disposal to Ramelius Resources Limited ( **Ramelius** ) was concluded. The reclassifications in respect of discontinued operations were done in terms of IFRS 5 Non-Current Assets Held for Sale and Discontinued Operations. See note 15 of the consolidated financial statements and *Item 4. Information on the Company's Business - Harmony's Mining Operations - Discontinued operations - Evander* .

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	Fiscal year ended June 30,				
	2012	2011	2010	2009	2008
	(\$ in millions, except per share amounts and cash operating costs per ounce)				
<b>Income Statement Data</b>					
Revenue	1,953	1,659	1,351	1,105	1,132
Operating profit	276	23	47	221	78
(Loss)/profit from associates		(7)	7	1	(11)
Profit from continuing operations before taxation	250	33	49	222	(34)
Taxation	16	55	(30)	(44)	(63)
Profit/(loss) from continuing operations	266	88	19	178	(97)
Profit/(loss) from discontinued operations	75	(2)	(43)	133	67
Net profit/(loss)	341	86	(24)	311	(30)
Basic earnings/(loss) per share from continuing operations (\$)	0.61	0.21	0.04	0.43	(0.25)
Diluted earnings/(loss) per share from continuing operations (\$)	0.61	0.21	0.04	0.42	(0.24)
Basic earnings/(loss) per share (\$)	0.79	0.20	(0.06)	0.75	(0.08)
Diluted earnings/(loss) per share (\$)	0.79	0.20	(0.06)	0.74	(0.08)
Weighted average number of shares used in the computation of basic earnings/(loss) per share	430,817,682	429,310,123	426,381,581	414,120,732	400,750,167
Weighted average number of shares used in the computation of diluted earnings/(loss) per share	432,022,229	430,420,068	427,846,547	415,962,899	402,894,248
Dividends per share (\$) <sup>(1)</sup>	0.14	0.07	0.06		
Dividends per share (R) <sup>(1)</sup>	1.00	0.50	0.50		
<b>Other Financial Data</b>					
Cash operating cost per ounce of gold from continuing operations (\$/oz) <sup>(2)</sup>	1,100	1,004	788	586	614
Total cash operating cost per ounce of gold (\$/oz) <sup>(2)</sup>	1,085	1,009	801	586	602
<b>Balance Sheet Data</b>					
<i>Assets</i>					
Property, plant and equipment	4,003	4,607	3,874	3,614	3,531
Assets of disposal groups classified as held for sale	174	40	32		197
Total assets	5,263	5,880	5,141	4,925	4,710
Net assets	4,152	4,450	3,828	3,824	3,172
<i>Equity and liabilities</i>					
Share capital	4,036	4,033	4,027	4,004	3,787
Total equity	4,152	4,450	3,828	3,824	3,172
Borrowings (current and non-current)	221	230	156	47	525
Liabilities of disposal groups held for sale	46	2	18		64
Other liabilities	844	1,198	1,139	1,054	949
Total equity and liabilities	5,263	5,880	5,141	4,925	4,710

<sup>(1)</sup> Dividends per share relates to the dividends recorded and paid during the fiscal year.

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- (2) Cash operating costs is a non-GAAP measure. We calculate cash operating costs per ounce by dividing total cash operating costs by gold produced which therefore excludes the effect of the movement in the gold inventory from the cash operating cost amount. Cash operating costs, include mine production costs, transport and refinery costs, applicable general and administrative costs, ongoing environmental rehabilitation costs as well as transfers to and from deferred stripping and costs associated with royalties. Employee termination costs are included; however, employee termination costs associated with major restructuring and shaft closures are excluded. Cash operating costs have been calculated on a consistent basis for all periods presented. Changes in cash operating costs per ounce are affected by operational performance, as well as changes in the currency exchange rate between the Rand and the US dollar. Because cash operating costs is a non-GAAP measure, it should therefore not be considered by investors in isolation or as an alternative to production costs, cost of sales, or any other measure of financial performance calculated in accordance with IFRS. The calculation of cash operating costs and cash operating cost per ounce may vary from company to company and may not be comparable to other similarly titled measures of other companies. However, we believe that cash operating costs per ounce is a useful indicator to investors and management of a mining company's performance as it provides (1) an indication of the cash generating capacities of the mining operations, (2) the trends in cash operating costs as the company's operations mature, (3) a measure of a company's performance, by comparison of cash operating costs per ounce to the spot price of gold and (4) an internal benchmark of performance to allow for comparison against other companies. For further information, see *Item 5. Operating and Financial Review and Prospects - Costs - Reconciliation of non-GAAP measures*.

**EXCHANGE RATES**

Unless otherwise stated, balance sheet item amounts are translated from Rand to US dollars at the exchange rate prevailing on the last business day of the period (R8.21 per US\$1.00 as at June 30, 2012), except for acquisitions, disposals and specific items included within equity that are converted at the exchange rate prevailing on the date the transaction was entered into, and income statement item amounts that are translated from Rand to US dollars at the average exchange rate for the period (R7.77 per US\$1.00 for fiscal 2012). During the year, the Rand/dollar closing exchange rate ranged between R6.63 and R8.57 per US\$1.00.

As of October 22, 2012, the exchange rate per US\$1.00 was R8.64.<sup>(1)</sup>

The following table sets forth, for the past five fiscal years, the average and period end rates for Rand expressed in Rand per US\$1.00. For periods prior to December 31, 2008, the following tables express the exchange rates in terms of the noon buying rate in New York City for cable transfers in Rand as certified for customs purposes by the Federal Reserve Bank of New York. As of December 31, 2008, the Federal Reserve Bank ceased publication of the noon buying rate and, as such, the exchange rates for fiscal 2009, 2010, 2011 and 2012 are sourced from Reuters, being the closing rate at period end.

<b>Fiscal Year Ended June 30,</b>	<b>Average<sup>(1)</sup></b>	<b>Period End<sup>(1)</sup></b>
2008	7.26 <sup>(2)</sup>	7.80
2009	9.00 <sup>(3)</sup>	7.72
2010	7.58 <sup>(3)</sup>	7.63
2011	6.99 <sup>(3)</sup>	6.78
2012	7.77 <sup>(3)</sup>	8.21

  

<b>Month of</b>	<b>High</b>	<b>Low</b>
May 2012	8.54	7.70
June 2012	8.58	8.19
July 2012	8.51	8.07
August 2012	8.48	8.06
September 2012	8.41	8.13
October 2012 (through October 22, 2012)	8.89	8.34

(1) Based on the interbank rate as reported by Reuters.

(2) The average of the noon buying rates on the last day of each full month during the relevant period as certified for customs purposes by the Federal Reserve Bank of New York.

(3) The daily average of the closing rate during the relevant period as reported by Reuters.

Fluctuations in the exchange rate between Rand and the US dollar will affect the dollar equivalent of the price of ordinary shares on the Johannesburg Stock Exchange, which may affect the market price of the American Depositary Shares ( ADSs ) on the New York Stock Exchange. These fluctuations will also affect the dollar amounts received by owners of ADSs on the conversion of any dividends on ordinary

shares paid in Rand.

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**CAPITALIZATION AND INDEBTEDNESS**

Not applicable.

**REASONS FOR THE OFFER AND USE OF PROCEEDS**

Not applicable.

**RISK FACTORS**

*In addition to the other information included in this annual report and the exhibits, you should also carefully consider the following factors related to our ordinary shares and ADSs. There may be additional risks that we do not currently know of or that we currently deem immaterial based on information currently available to us. Although Harmony has a formal risk policy framework in place, the maintenance and development of which is undertaken on an ongoing basis so as to help management address systematic categories of risk associated with its business operations, any of these risks could have a material adverse effect on our business, financial condition or results of operations, leading to a decline in the trading price of our ordinary shares or our ADSs. The risks described below may, in retrospect, turn out to be incomplete and therefore may not be the only risks to which we are exposed. Additional risks and uncertainties not presently known to us or that we now believe are immaterial (and have therefore not been included), could also adversely affect our businesses, results of operations or financial condition. The order of presentation of the risk factors below does not indicate the likelihood of their occurrence or the magnitude or the significance of the individual risks. The risks described below could occur individually or cumulatively and intensify in case of a cumulative occurrence.*

**Risks Relating to Our Business and the Gold Mining Industry**

*The profitability of our operations, and cash flows generated by those operations, are affected by changes in the price of gold. A fall in the gold price below our cash cost of production for any sustained period may lead to losses and require Harmony to curtail or suspend certain operations.*

Substantially all Harmony's revenues come from the sale of gold. Although the gold price has increased over the last decade, historically, the market price for gold has fluctuated widely and been affected by numerous factors over which Harmony has no control, including:

demand for gold for industrial uses, jewellery and investment;

international or regional political and economic trends;

strength or weakness of the US dollar (the currency in which gold prices generally are quoted) and of other currencies;

financial market expectations on the rate of inflation;

interest rates;

speculative activities;

forward sales by gold producers;

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actual or expected purchases and sales of gold bullion held by central banks or other large gold bullion holders or dealers; and

production and cost levels for gold in major gold-producing nations, such as South Africa, China, the United States and Australia. In addition, current demand and supply affects the price of gold, but not necessarily in the same manner as current demand and supply affect the prices of other commodities. Historically, gold has retained its value in relative terms against basic goods in times of inflation and monetary crisis. As a result, central banks, financial institutions and individuals hold large amounts of gold as a store of value and production in any given year constitutes a very small portion of the total potential supply of gold. Since the potential supply of gold is large relative to mine production in any given year, normal variations in current production will not necessarily have a significant effect on the supply of gold or its price.

The volatility of gold prices is illustrated in the table, which shows the annual high, low and average of the afternoon London bullion market fixing price of gold in US dollars for the past ten years:

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Calendar year	Price per ounce (US\$)		
	High	Low	Average
2002	332	278	309
2003	412	322	361
2004	427	343	389
2005	476	411	434
2006	725	525	604
2007	841	608	695
2008	1,011	713	872
2009	1,212	810	972
2010	1,421	1,058	1,225
2011	1,895	1,319	1,572
2012 (year to October 22, 2012)	1,792	1,540	1,660

On October 22, 2012, the afternoon fixing price of gold on the London bullion market was US\$1,727/oz.

While the aggregate effect of these factors is impossible to predict, if gold prices should fall below Harmony's cash cost of production and capital expenditure required to sustain production and remain at these levels for any sustained period, Harmony may record losses and be forced to curtail or suspend some or all of its operations. In addition, Harmony would also have to assess the economic impact of low gold prices on its ability to recover any losses that may be incurred during that period and on its ability to maintain adequate reserves.

Harmony's average cash cost per ounce of gold produced from continuing operations was US\$1,100 in fiscal 2012, US\$1,004 in fiscal 2011 and, US\$788 in fiscal 2010.

***Foreign exchange fluctuations could have a material adverse effect on Harmony's operational results and financial condition.***

Gold is priced throughout the world in US dollars and, as a result, Harmony's revenue is realized in US dollars, but most of our operating costs are incurred in Rand and other non-US currencies, including the Australian dollar and Kina. Any significant and sustained appreciation of the Rand and other non-US currencies against the dollar will materially reduce Harmony's Rand revenues and overall net income.

***As Harmony currently does not enter into forward sales, commodity derivatives or hedging arrangements on future gold production, it is exposed to the impact of any significant decreases in the gold price.***

As a rule, Harmony sells its gold at the prevailing market price. Currently, the company does not enter into forward sales, commodity derivative or hedging arrangements to establish a price in advance for the sale of future gold production, although Harmony may do so in future. As a result, Harmony may realize the benefit of any short-term increase in the gold price, but is not protected against decreases; if the gold price should decrease significantly, Harmony's revenues may be materially adversely affected.

***Global economic conditions could adversely affect the profitability of Harmony's operations.***

Harmony's operations and performance depend on global economic conditions. A global economic downturn may have follow-on effects on our business. These could include:

key suppliers could become insolvent, resulting in a break-down in the supply chain; or

the availability of credit may be reduced – this may make it more difficult for Harmony to obtain financing for its operations and capital expenditure or make financing more expensive.

In addition, uncertainty on global economic conditions may also increase volatility or negatively impact the market value of Harmony's securities.





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***Estimations of Harmony's gold reserves are based on a number of assumptions, including mining and recovery factors, future cash costs of production and the price of gold. As a result, quantities of gold produced may differ from current estimates.***

The mineral reserve estimates in this annual report are estimates of the mill-delivered quantity and grade of gold in Harmony's deposits and stockpiles. They represent the amount of gold that Harmony believes can be mined, processed and sold at prices sufficient to recover its estimated future cash costs of production, remaining investment and anticipated additional capital expenditures. Harmony's mineral reserves are estimated based on a number of factors, which have been stated in accordance with the SAMREC and JORC codes, SEC Industry Guide 7 and Sarbanes-Oxley. Calculations of Harmony's mineral reserves are based on estimates of:

future cash costs;

future gold prices; and

future currency exchange rates.

These factors, which significantly impact mineral reserve estimates, are beyond Harmony's control. As a result, reserve estimates in this annual report should not be interpreted as assurances of the economic life of Harmony's gold and other precious metal deposits or the future profitability of operations.

Since these mineral reserves are estimates based on assumptions related to factors detailed above, should there be changes to these, we may in future need to revise these estimates. In particular, if Harmony's cash operating and production costs increase or the gold price decreases, recovering a portion of Harmony's mineral reserves may become uneconomical. This will lead, in turn, to a reduction in estimated reserves.

***To maintain gold production beyond the expected lives of Harmony's existing mines or to increase production materially above projected levels, Harmony will need to access additional reserves through exploration or discovery.***

Harmony's operations have limited proved and probable reserves, and exploration and discovery are necessary to maintain current gold production levels at these operations. Exploration for gold and other precious metals is speculative in nature, may be unsuccessful and involves many risks, including those related to:

locating orebodies;

geological nature of the orebodies;

identifying the metallurgical properties of orebodies;

estimating the economic feasibility of mining orebodies;

developing appropriate metallurgical processes;

obtaining necessary governmental permits; and

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constructing mining and processing facilities at any site chosen for mining.

Harmony's exploration efforts might not result in the discovery of mineralization, and any mineralization discovered might not result in an increase in proved and probable reserves. To access additional reserves, Harmony will need to successfully complete development projects, including extensions to existing mines and, possibly, new mines. Development projects would also be required to access any new mineralization discovered by exploration activities around the world. Harmony typically uses feasibility studies to determine whether to undertake significant development projects. Feasibility studies include estimates of expected or anticipated economic returns, which are based on assumptions about:

future gold and other metal prices;

anticipated tonnage, grades and metallurgical characteristics of ore to be mined and processed;

anticipated recovery rates of gold and other metals from the ore; and

anticipated total costs of the project, including capital expenditure and cash costs.

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*Actual cash costs, capital expenditure, production and economic returns may differ significantly from those anticipated by feasibility studies for new development projects.*

It can take a number of years from the initial feasibility study until development is completed and, during that time, the economic feasibility of production may change. In addition, there are a number of inherent uncertainties in developing and constructing an extension to an existing mine or any new mine, including:

availability and timing of necessary environmental and governmental permits;

timing and cost of constructing mining and processing facilities, which can be considerable;

availability and cost of skilled labor, power, water and other materials;

accessibility of transportation and other infrastructure, particularly in remote locations;

availability and cost of smelting and refining arrangements;

availability of funds to finance construction and development activities; and

spot and expected future commodity prices of metals including gold, silver, copper, uranium and molybdenum.

Harmony currently maintains a range of focused exploration programs, concentrating on areas not too distant from its operational mines, as well as a number of prospective known gold mineralized regions around the world. During fiscal 2010 and fiscal 2012, the bulk of exploration expenditure was allocated to activities in Papua New Guinea ( PNG ) and South Africa. However, there is no assurance that any future development projects will extend the life of our existing mining operations or result in any new commercial mining operations.

*Costs associated with pumping water inflows from closed mines adjacent to our operations could adversely affect Harmony's operational results.*

Certain of our mining operations are adjacent to the mining operations of other companies. A mine closure can affect continued operations at an adjacent mine if appropriate preventative steps are not taken. In particular, this could include the ingress of underground water when pumping operations at the closed mine are suspended. This can result in damage to property, operational disruptions and additional pumping costs, which would adversely affect any one of our adjacent mining operations.

*Fluctuations in input production prices linked to commodities may adversely affect Harmony's operational results and financial condition.*

Fuel, energy and consumables, including diesel, heavy fuel oil, chemical reagent, explosives, tyres, steel and mining equipment consumed in mining operations form a relatively large part of the operating costs and capital expenditure of a mining company. Harmony has no control over the costs of these consumables, many of which are linked to some degree to the price of oil and steel.

Fluctuations in oil and steel prices have a significant impact on operating cost and capital expenditure estimates and, in the absence of other economic fluctuations, could result in significant changes in the total expenditure estimates for new mining projects or render certain projects non-viable.

*The supply of electricity and increases in the cost of power may adversely affect our results of operations and our financial condition.*

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In South Africa, each of our mining operations depends on electrical power generated by the state utility, Eskom, which holds a monopoly on the South African market. As a result of increased demand exceeding available generating capacity, South Africa has been subject to disruptions in electrical power supply. In fiscal 2008, electricity supply was interrupted by Eskom, halting production at certain of our mines. This led to management restructuring operating processes to control and reduce our consumption of electricity at all our operations. There have been no further disruptions and we have been able to continue production at a reduced electricity allocation as required by the energy conservation scheme ( **ECS** ) and interim rules imposed by Eskom. However, an insufficient supply of electricity may affect our operational results and financial condition.

As a result of Eskom's planned capital expansion program to deal with power constraints, an average annual tariff increase of 25% for the three-year multi-year price determination period has been approved by the National Energy Regulator South Africa ( **NERSA** ). The first increase was implemented on 1 April 2010. In April 2012, a slightly lower increase of 16% occurred. These increases will have a negative impact on our results of operations going forward.

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PNG has limited power generation and distribution capacity. This capacity is increasing but, currently, Harmony mines and projects still rely heavily on own power generation using diesel. The cost of this power will fluctuate with changes in the oil price.

Also, see *Item 5. Operating and Financial Review and Prospects – Electricity in South Africa.*

***We may experience problems in identifying, financing and managing new acquisitions and integrating them with our existing operations.***

Acquiring new gold mining operations involves a number of risks including:

our ability to identify appropriate assets for acquisition and/or to negotiate acquisitions on favorable terms;

obtaining the financing necessary to complete future acquisitions;

difficulties in assimilating the operations of the acquired business;

difficulties in maintaining our financial and strategic focus while integrating the acquired business;

problems in implementing uniform standards, controls, procedures and policies;

increasing pressures on existing management to oversee a rapidly expanding company; and

to the extent we acquire mining operations outside South Africa or Australasia, encountering difficulties relating to operating in countries in which we have not previously operated.

Our ability to make successful acquisitions and any difficulties or time delays in achieving successful integration of any of such acquisitions could have a material adverse effect on our business, operating results, financial condition and share price.

***Certain factors may affect our ability to support the carrying value of our property, plant and equipment, goodwill and other assets on our balance sheet.***

Harmony reviews and tests the carrying value of its assets when events or changes in circumstances suggest that this amount may not be recoverable.

At least on an annual basis for goodwill, and when there are indications that impairment of property, plant and equipment and other assets may have occurred, estimates of expected future cash flows for each group of assets are prepared. These estimates are prepared at the lowest level at which identifiable cash flows are considered as being independent of the cash flows of other mining assets and liabilities. Expected future cash flows are inherently uncertain, and could materially change over time. Such cash flows are significantly affected by reserve and production estimates, together with economic factors such as spot and forward gold prices, discount rates, currency exchange rates, estimates of costs to produce reserves and future capital expenditures.

As at 30 June 2012, Harmony had substantial amounts of property, plant and equipment, goodwill and other assets on its consolidated balance sheets. Impairment charges relating to these assets were recorded and if any one or a combination of these uncertainties should occur, management may be required to recognize further impairment charges, which could affect Harmony's financial results and condition.

***Given the nature of mining and the type of gold mines we operate, we face a material risk of liability, delays and increased cash costs of production from environmental and industrial accidents and pollution.***

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The business of gold mining involves significant risks and hazards, including environmental hazards and industrial accidents. In particular, hazards associated with underground mining include:

rock bursts;

seismic events;

underground fires;

cave-ins or fall-of-ground;

discharges of gases and toxic chemicals;

release of radioactive hazards;

flooding;

pillar mining;

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accidents; and

other conditions resulting from drilling, blasting and the removal and processing of material from a deep-level mine.  
Hazards associated with opencast mining (also known as open-pit mining) include:

flooding of the open-pit;

collapse of open-pit walls;

accidents associated with operating large open-pit and rock transportation equipment; and

accidents associated with preparing and igniting of large-scale open-pit blasting operations.  
Hazards associated with waste-rock mining include:

accidents associated with operating a waste dump and rock transportation; and

production disruptions caused by weather.

We are at risk from any or all of these environmental and industrial hazards. The occurrence of any of these hazards could delay production, increase cash costs and result in financial liability to Harmony.

### ***The nature of our mining operations presents safety risks.***

The environmental and industrial risks identified above also present safety risks for Harmony's operations and its employees and could lead to the suspension and potential closure of operations for indeterminate periods. Safety risks, even in situations where no injuries occur, can have a material adverse effect on Harmony's operations and production.

See *Item 4. Information on the Company - Regulation - Health and Safety Matters* .

### ***Illegal mining, or criminal mining, at our operations could pose a threat to the safety of employees and result in damage to property.***

Security issues related to criminal mining came to the fore in fiscal 2009, when criminal mining activities resulted in the deaths of criminal miners. The threat of fire caused by these activities poses a risk to the safety of our employees and could also result in property damage, which in turn could have an adverse impact on production.

See *Item 4. Information on the Company - Regulation - Health and Safety Matters* .

### ***Harmony's insurance coverage may prove inadequate to satisfy future claims against it.***

Harmony has third-party liability coverage for most potential liabilities, including environmental liabilities. While we believe that our current insurance coverage for the hazards described above is adequate and consistent with industry practice, we may be subject to liability for pollution (excluding sudden and accidental pollution) or other hazards against which we have not insured or cannot insure, including those for past mining activities. Harmony also maintains property and liability insurance consistent with industry practice, but this insurance contains exclusions and limitations on coverage. In addition, there can be no assurance that insurance will be available at economically acceptable premiums. As a result, in future, Harmony's insurance coverage may not cover the claims against it for environmental or industrial accidents or pollution.

*Harmony's operations may be negatively impacted by inflation.*

Harmony's operations have been materially affected by inflation. Inflation in South Africa has fluctuated widely in recent years, reaching 11.6% at the end of fiscal 2008 before decreasing within the inflation range of 3% - 6% set by the South African Reserve Bank. At the end of fiscal 2012, inflation was 5.5%, increasing from 4.6% in fiscal 2011. However, working costs, especially wages, have increased in recent years, resulting in significant cost pressures for the mining industry. In addition, electricity prices rose by 25% in fiscal 2010 and fiscal 2011 and 16% in fiscal 2012. A further increase of 16% is expected in fiscal 2013. This will have a negative effect on the profitability of our operations.

The inflation rate in PNG has remained relatively flat in recent years at around 7% but ended fiscal 2011 at 9.6%. The inflation rate declined during 2012 and the annualized inflation stood at 6.9% at the end of fiscal 2012.

Harmony's profits and financial condition could be adversely affected when cost inflation is not offset by devaluation in operating currencies or an increase in the price of gold.



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### ***The socio-economic framework in the regions in which Harmony operates may have an adverse effect on its operations and profits.***

Harmony has operations in South Africa and PNG. As a result, changes or instability to the economic or political environment in any of these countries or in neighboring countries could affect an investment in Harmony. It is difficult to predict the future political, social and economic direction in these countries, or any other country in which Harmony operates, and the impact government decisions may have on its business.

### ***Actual and potential shortages of production inputs may affect Harmony's operations and profits.***

Harmony's operational results may be affected by the availability and pricing of consumables such as fuel, chemical reagents, explosives, steel and other essential production inputs. Issues with regards to availability of consumables may result from shortages as well as long lead times to deliver, which could result in production delays and production shortfalls. These shortages and delayed deliveries may be experienced where industrial action affects Harmony's suppliers. These issues could also affect the pricing of the consumables, especially if shortages are experienced. The price of consumables may be substantially affected by changes in global supply and demand, along with weather conditions, governmental controls and other factors. A sustained interruption to the supply of any of these consumables would require Harmony to find acceptable substitute suppliers and could require it to pay higher prices for such materials. Any significant increase in the prices of these consumables would increase operating costs and affect production considerations.

### ***We compete with mining and other companies for key human resources.***

Harmony competes with mining and other companies globally to attract and retain key human resources at all levels with the appropriate technical skills and operating and managerial experience necessary to continue operating its business. The need to recruit, develop and retain skilled employees is particularly critical with historically disadvantaged South Africans ( **HDSAs** ), women in mining in South Africa, and recruiting and training local landowners in PNG. The global shortage of key mining skills, including geologists, mining engineers, metallurgists and skilled artisans has been exacerbated by increased mining activity across the globe. Despite various initiatives, there can be no assurance that we will attract and retain skilled and experienced employees. Should Harmony lose any of its key personnel, its business may be harmed and its operational results and financial condition could be affected. See *Item 6. Directors, Senior Management and Employees Employees* .

### ***Since our South African labor force has substantial trade union participation, we face the risk of disruption from labor disputes and non-procedural industrial action.***

Despite a history of constructive engagement with labor unions, there are periods when various stakeholders are unable to agree on dispute resolution processes. Disruptive activities on the part of labor, which normally differ in intensity, then become unavoidable. Due to the high level of union membership among our employees, we are at risk of production stoppages for indefinite periods due to strikes and other disputes, especially wildcat strikes. Significant labor disruptions have affected our operations and financial condition before and we are not able to predict whether we will experience significant labor disputes in future, or what the financial impact of any such disputes may be.

South African employment law sets out minimum terms and conditions of employment for employees. Although these may be improved by agreements between us and the trade unions, prescribed minimum terms and conditions form the benchmark for all employment contracts. See *Item 6. Directors, Senior Management and Employees Employees* .

We are required to submit a report under South African employment law detailing the progress made towards achieving employment equity in the workplace. If this report is not submitted, we could incur substantial penalties.

Developments in South African employment law may increase our cash costs of production or alter our relationship with our employees and trade unions, which may have an adverse effect on our business, operating results and financial condition.

### ***HIV/AIDS poses risks to us in terms of productivity and costs.***

The HIV/AIDS epidemic in South Africa and PNG poses risks to us in terms of potentially reduced productivity, and increased medical and other costs. If there is a significant increase in the incidence of HIV/AIDS infection and related diseases among the workforce over the next several years, this may have an adverse impact on our operations, projects and financial condition. See *Item 4. Information on the Company Regulation Health & Safety Matters* .

### ***The cost of occupational healthcare services and the potential liabilities related to occupational health diseases may increase in future.***

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Harmony's operations in South Africa are subject to health and safety regulations which could impose significant costs and burdens. The present Mine Health and Safety Act 29 of 1996 imposes various duties on mines and grants the authorities broad

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powers to, among others, close unsafe mines and order corrective action on health and safety matters. Operations in PNG are subject to the following laws and regulations: PNG Mining Act 1992, PNG Mining Safety Act 1997, PNG Mining Safety Regulation 1935 (updated 2006) and PNG Environment Act 2000.

There is a risk that the cost of providing health services and implementing various programs could increase in future, depending on changes to underlying legislation and the profile of its employees. This increased cost, should it transpire, is currently indeterminate.

The Occupational Diseases in Mines and Works Act 78 of 1973 ( **ODIMWA** ) governs the payment of compensation and medical costs for certain illnesses contracted by people employed in mines or at sites where activities ancillary to mining are conducted. The principles of compensation under ODIMWA are currently being tested in the Mr. Thembekekile Mankayi v AngloGold Ashanti court case as well as the recent class action filed against the biggest three gold mining companies in South Africa, including Harmony. Please see *Item 8. Financial Information Legal Proceedings* for further information. Should anyone bring similar claims against Harmony in future, those claimants would need to provide evidence proving that silicosis was contracted while in the employment of the Company and that it was contracted due to negligence on the Company's part. The link between the cause (negligence by the Company while in its employ) and the effect (the silicosis) will be an essential part of any case. It is therefore uncertain as to whether the Company will incur any costs related to silicosis claims in the future and due to the limited information available on any claims and potential claims and the uncertainty of the outcome of these claims, no estimation can be made for the possible obligation. Should Harmony be unsuccessful in defending any claims that may be lodged, it would have an adverse impact on the Company's financial condition.

### ***Laws governing mineral rights affect our business.***

Our operations in South Africa and PNG are subject to legislation regulating mineral rights and mining those rights. In South Africa, we are governed by the South African Mineral and Petroleum Resources Development Act 2002 ( **MPRDA** ) and in PNG by the Mining Act of 1992 (PNG). See *Item 4. Information on the Company Regulation South Africa* for a description of the principal objectives set out in the MPRDA.

Under the MPRDA, tenure over established mining operations is secured for up to 30 years (and then renewable for periods not exceeding 30 years each), provided that mining companies applied for new-order mining rights over existing operations within five years of May 1, 2004 or before the existing right expires, whichever was the earlier date and fulfil requirements specified in the MPRDA and the Broad-Based Socio-Economic Empowerment Charter for the South African mining industry ( **Mining Charter** ). The licenses for all of our South African operations have been granted. We will be eligible to apply for new licenses over existing operations, provided we comply with the MPRDA. Failure to comply with the conditions of the mining licenses could have a material adverse effect on our operations and financial condition.

The Mining Charter was signed by government and stakeholders in October 2002, and contains principles relating to the transfer, over a ten-year period, of 26% of South Africa's mining assets (as equity or attributable units of production) to HDSAs as defined in the Mining Charter. An interim target of 15% HDSA participation over five years was also set and the South African mining industry committed to securing financing to fund participation by HDSAs totaling R100 billion in the first five years of the Mining Charter's tenure. The Mining Charter provides for the review of the participation process after five years to determine what further steps, if any, are needed to achieve target participation of 26%. In order to measure progress in meeting the requirements of the Mining Charter, companies are required to complete a scorecard, in which the levels of compliance with the objectives of the Mining Charter can be ticked off after five and ten years, respectively. The Mining Charter and Scorecard require programs for black economic empowerment and the promotion of value-added production, such as jewelry-making and other gold fabrication, in South Africa. In particular, targets are set out for broad-based black economic empowerment in the areas of human resources and skills development; employment equity; procurement and beneficiation. In addition, the Mining Charter addresses socio-economic issues, such as migrant labor, mine community and rural development and housing and living conditions.

Following a review of progress made by the mining industry after five years of implementing the provisions of the Mining Charter, the Department of Mineral Resources ( **DMR** ) released the Revised Mining Charter on September 13, 2010. The requirement under the Mining Charter for mining entities to achieve a 26% HDSA ownership of mining assets by 2014 has been retained. Amendments in the Revised Mining Charter include, inter alia, the requirement by mining companies to:

- (i) facilitate local beneficiation of mineral commodities;
  
- (ii)

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procure a minimum of 40% of capital goods, 70% of services and 50% of consumer goods from HDSA suppliers (i.e. suppliers of which a minimum of 25% + 1 vote of their share capital must be owned by HDSAs) by 2014. These targets will exclude non-discretionary procurement expenditure;

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- (iii) achieve a minimum of 40% HDSA demographic representation by 2014 at executive management (board) level, senior management (executive committee) level, core and critical skills, middle management level and junior management level;
- (iv) invest up to 5% of annual payroll in essential skills development activities; and
- (v) implement measures to improve the standards of housing and living conditions for mineworkers by converting or upgrading mineworkers' hostels into family units, attaining an occupancy rate of one person per room and facilitating home ownership options for all mineworkers in consultation with organized labor.

All these targets must be achieved by 2014.

In addition, mining companies are required to monitor and evaluate their compliance to the Revised Mining Charter, and must submit annual compliance reports to the DMR. The revised scorecard makes provision for a phased-in approach for compliance with the above targets over the five year period ending in 2014. For measurement purposes, the Scorecard allocates various weightings to the different elements of the Revised Mining Charter. Failure to comply with the provisions of the Revised Mining Charter will amount to a breach of the MPRDA and may result in the cancellation or suspension of a mining company's existing mining rights. Harmony obtained all of its licenses four years ago and has no reason to believe that our mining licenses will be cancelled or suspended. Harmony will incur costs in meeting its obligations under the Revised Mining Charter and Scorecard.

The MPRDA also makes reference to royalties payable to the South African state in terms of the Mineral and Petroleum Resources Royalty Act (Act 28 of 2008) (the **MPRRA**). The MPRRA provides for the payment of a royalty according to a formula based on gross sales and EBIT, as defined under the MPRRA, after the deduction of capital expenditure. This rate is then applied to revenue to calculate the royalty amount due, with a minimum of 0.5% and a maximum of 5% for gold mining companies. For fiscal 2012, the average royalty rate for our South African operations was 0.92% of gross sales.

Mineral rights in PNG belong to the government of PNG which has a statutory right to obtain a participating interest of up to 30% in mining development projects. The government then issues and administers mining tenements under the relevant mining legislation, and mining companies must pay royalties to the government based on production. The types of tenements issued include: exploration license; mining lease; special mining lease; alluvial mining lease; lease for mining purpose; and mining easement.

Harmony's PNG mining operation is subject to a 2% royalty payment to the government of PNG. If we want to expand any of our initiatives in PNG into additional areas under exploration, these operations would need to convert the existing exploration licenses prior to the start of mining and that process could require landowner title approval. There can be no assurance that any approval would be received.

Please also see *Item 4. Information on the Company - Regulation* for further information.

***We are subject to extensive environmental regulations.***

As a gold mining company, Harmony is subject to extensive environmental regulation. We expect the trend of rising production costs due to compliance with South African and PNG environmental laws and regulations to continue.

The MPRDA, certain other environmental legislation and the administrative policies of the South African government regulate the impact of the Company's prospecting and mining operations on the environment. On the suspension, cancellation, termination or lapsing of a prospecting permit or mining authorization, Harmony will remain liable for compliance with the provisions of various relevant regulations, including any rehabilitation obligations. This liability will continue until the appropriate authorities have certified that the Company has complied with such provisions.

Estimates of ultimate closure and rehabilitation costs are significant and based principally on current legal and regulatory requirements that may change materially. Environmental provisions are accrued when they become known, probable and can be reasonably estimated. In future, Harmony may incur significant costs for compliance with increasingly stringent requirements being imposed under new legislation. This may include the need to increase and accelerate expenditure on environmental rehabilitation and to alter environmental provisions, which could have a material effect on its results and financial condition. Harmony may also face increased environmental costs should other mines in the vicinity fail to meet their obligations on pumping or treatment of water. Also impacting on the financial condition of the Company is the requirement by the DMR for cash collateral or guarantees for Harmony's environmental obligations.

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The South African government has reviewed requirements imposed on mining companies to ensure environmental restitution. For example, following the introduction of an environmental rights clause in South Africa's constitution, a number of environmental legislative reform processes have been initiated. Legislation passed as a result of these initiatives has tended to be

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materially more onerous than previous laws in South Africa. Examples of such legislation include the MPRDA, the National Nuclear Regulator Act 1999, the National Water Act of 1998 and the National Environmental Management Act 1998, which include stringent polluter pays provisions. The adoption of these or additional or more comprehensive and stringent requirements, particularly for the management of hazardous waste, pollution of ground and groundwater systems and duty to rehabilitate closed mines, may result in additional costs and liabilities.

Harmony's PNG operations are also subject to various laws and regulations relating to protection of the environment, which are similar in scope to those of South Africa. The Environment Act 2000 governs the environmental permitting and regulatory aspects of mining projects. An environmental impact statement is required when projects are likely to have an adverse impact on the environment. This statement must be lodged with the Department of Environmental Conservation where, for large projects, it may be forwarded to Environment Council for review. Public consultation is an integral part of this review.

See *Item 4. Information on the Company Regulation Environmental Matters* for further discussion on the applicable legislation and our policies on environmental matters.

***Mining companies are increasingly required to consider and ensure the sustainable development of, and provide benefits to, the communities and countries in which they operate.***

As a result of public concern about the perceived ill effects of economic globalization, businesses in general and large international companies such as Harmony, in particular, face increasing public scrutiny of their activities.

These businesses are under pressure to demonstrate that while they seek a satisfactory return on investment for shareholders, other stakeholders including employees, communities surrounding operations and the countries in which they operate, also benefit from their commercial activities. Such pressures tend to be particularly focused on companies whose activities are perceived to have a high impact on their social and physical environment. The potential consequences of these pressures include reputational damage, legal suits and social spending obligations.

Existing and proposed mining operations are often located at or near existing towns and villages, natural water courses and other infrastructure. Mining operations must therefore be designed to mitigate and/or manage their impact on such communities and the environment. Specifically at our PNG operations, cognizance of landowner rights may require measures that could include agreed levels of compensation for any adverse impact the mining operation may continue to have on the community. The cost of these measures could increase capital expenditure and operating costs and therefore impact Harmony's operational results and financial condition.

***Compliance with emerging climate change regulations could result in significant costs for Harmony, and climate change may present physical risks to our operations.***

Greenhouse gases ( **GHGs** ) are emitted directly by Harmony's operations and indirectly as a result of consuming electricity generated by external utilities. Emissions from electricity consumption are indirectly attributable to Harmony's operations. There are currently a number of international and national measures to address or limit GHG emissions, including the Kyoto Protocol and the Copenhagen Accord, in various phases of discussion or implementation.

The countries in which Harmony operates South Africa and PNG are non-Annex I countries and do not have mission reduction targets under the Kyoto Protocol in the first commitment period, ending 2012. Following recent environmental summits, including the one hosted in South Africa in 2011, South Africa has committed voluntarily to 30% clean energy by 2025, aiming for the country's GHG emissions to peak by 2020-2025, plateau for a decade and then decline by 40% by 2050. These targets were set out in the National Climate Change Response Policy, endorsed by the South African cabinet in October 2011.

In line with this aim, the country's key carbon-emitting sectors, including energy and transport, have until October 2013 to finalize carbon budgets and appropriate strategies to support these targets. Adopting a carbon budget model reflects government's acceptance of the relative energy and carbon intensity of the economy and the need to create the setting required for industries to make the transition to a more carbon-constrained environment.

The Minister of Water and Environmental Affairs noted that government would actively consult with industry on developing carbon budgets to identify an optimal combination of mitigation actions to strike a balance between South Africa's socio-economic imperatives, especially creating and preserving jobs, as well as the need to manage climate change impacts and contribute to global efforts to stabilize GHG concentrations.

In February 2012, the South African finance minister announced that a carbon tax would be implemented in the financial year spanning 2013-2014. The proposal is to implement the tax at a fairly low level, and define a rising price path over time at this stage, a carbon tax of

US\$16/t (South African R120/t of CO<sub>2</sub>e) is expected in 2013, increasing annually to 10% by 2019.



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The South African National Treasury has established a working group comprising a number of different industries to evaluate the impact of this proposed tax on the different sectors of industry. Harmony is participating in this initiative, as is the Chamber of Mines.

As our current mines have a life expectancy of up to 25 years, we are undertaking capital projects to sustain and increase production at Phakisa, Doornkop, Kusasaletu, Tshepong and Hidden Valley operations. These expansions will extend our mining operations by ten years or more, by which time GHG regulations are expected to be a permanent feature of the global economy. Future climate change regulation will therefore need to be considered for all Harmony's extensions and acquisitions. All new greenfields and brownfields projects are required by company policy to consider the impact of climate change in their design and planning.

While Harmony is not conceptually opposed to using financial instruments as incentives in reducing emissions, we are concerned about the potential impact on the industry's competitiveness. We are working with both the industry task team on climate change and the Chamber of Mines to understand the implications for our business and optimal mechanisms to further promote emission reduction.

Harmony's exposure to Australian legislation is limited as the operations we owned there have been sold or are under care and maintenance. PNG's national office of climate change and environmental sustainability is studying the potential for future economic growth to be driven by renewable energy. Along with other Pacific Island countries, PNG has adopted a framework for action on climate change 2006 to 2015 and a disaster risk reduction and disaster management framework for action. The implications of these structures on Harmony's operations in PNG have not yet been established and studies are on-going.

The largest portion of GHG emissions is predominantly electricity-related, with electricity expenditure amounting to 15% of Harmony's operational costs in South Africa. While cost management is clearly a strategic issue for Harmony, of even greater importance is that energy supply be constant and reliable, given the implications of loss of energy on both production and health and safety. GHG emissions regulations, which would increase the price of energy, will affect Harmony significantly, as will regulation that stipulates emission thresholds, or sets technology standards that may result in insecure energy supply. Already certain compliance costs from power suppliers are being passed on to the Group in the form of price increases. For instance, in South Africa since 2009, Harmony has paid a levy of R0.02 per kilowatt hour for electricity generated by fossil fuels. These levies may increase over time and additional levies may be introduced in future in South Africa or PNG, which could result in a significant increase in our costs.

See *Item 4. Information on the Company – Environmental Matters* for disclosure regarding our GHG emissions.

### ***Our operations in South Africa are subject to water use licenses, which could impose significant costs.***

Under South African law, Harmony's local operations are subject to water use licenses that govern each operation's water use. These licenses require, among other issues, that mining operations achieve and maintain certain water quality limits for all water discharges, where these apply. The majority of our South African operations are lawful users with existing water permits in terms of the Water Act of 1954. Nevertheless, the South African operations have applied to the relevant regional directors for water use licenses in terms of the National Water Act, 1998. Submissions were made as early as 2003 and Harmony has been working closely with the regional directors in the review process; a number of our operations have been issued with licenses or draft licenses.

We anticipate that the conditions of the licenses may require Harmony to consider and implement alternate water management measures that may have a significant cost implication for our business. Any failure on Harmony's part to achieve or maintain compliance with the requirements of these licenses for any of its operations may result in Harmony being subject to penalties, fees and expenses or business interruption due to revoked water licenses. Any of these could have a material effect on our business, operating results and financial condition.

See *Item 4. Information on the Company – Regulation – Environmental Matters* for disclosure regarding our water usage and management.

### ***We may have exposure to rehabilitate potential groundwater pollution, which may include salination, and radiation contamination that may exist where we have operated or continue to operate.***

Due to the interconnected nature of mining operations, any proposed solution for potential flooding and decant risk posed by deep groundwater needs to be a combined one supported by all mines located in the goldfields and government in the event of legacy issues. As a result, the DMR and affected mining companies are involved in developing a regional mine closure strategy. In view of limited current information, no reliable estimate can be made for this possible obligation, which could be material and have an adverse impact on Harmony's financial condition.



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Harmony has initiated analytical assessments to identify, quantify and mitigate impacts, should they arise. Numerous scientific, technical and legal studies are under way to assist in determining the magnitude of possible contamination of groundwater and to find sustainable remediation solutions. Geohydrological studies were undertaken in the Free State, Evander, Kalgold operations and the modelling confirms that there is no risk of acid mine drainage ( AMD ) decant from any of these sites. Harmony has instituted processes to reduce possible future potential seepage and it has been demonstrated that monitored natural attenuation by the existing environment will contribute to improvement in some instance. The ultimate outcome of the matter cannot presently be determined and no provision for any potential liability has been made in the financial statements. Should these costs be significant, this could have a material impact on Harmony s operational results and financial condition.

*Investors in the United States may have difficulty bringing actions, and enforcing judgments, against us, our directors and our executive officers based on the civil liabilities provisions of the federal securities laws or other laws of the United States or any state thereof.*

We are incorporated in South Africa. Each of our directors and executive officers (and our independent registered public accounting firm) resides outside the United States. Substantially all of the assets of these persons and substantially all our assets are located outside the United States. As a result, it may not be possible for investors to enforce a judgment against these persons or ourselves obtained in a court of the United States predicated upon the civil liability provisions of the federal securities or other laws of the United States or any state thereof. A foreign judgment is not directly enforceable in South Africa, but constitutes a cause of action which will be enforced by South African courts provided that:

the court that pronounced the judgment had jurisdiction to entertain the case according to the principles recognized by South African law with reference to the jurisdiction of foreign courts;

the judgment is final and conclusive;

the judgment has not lapsed;

the recognition and enforcement of the judgment by South African courts would not be contrary to public policy, including observance of the rules of natural justice which require that the documents initiating the United States proceeding were properly served on the defendant and that the defendant was given the right to be heard and represented by counsel in a free and fair trial before an impartial tribunal;

the judgment does not involve the enforcement of a penal or revenue law; and

the enforcement of the judgment is not otherwise precluded by the provisions of the Protection of Business Act 99 of 1978, as amended, of the Republic of South Africa.

***Compliance with new and changing corporate governance and public disclosure requirements adds uncertainty to our compliance policies and increases our costs of compliance.***

Laws, regulations and standards relating to accounting, corporate governance and public disclosure, new SEC regulations and other listing regulations applicable to us are subject to change and can create uncertainty for companies like us. New or changed laws, regulations and standards could lack specificity or be subject to varying interpretations. Their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty on compliance matters and higher costs of compliance as a result of ongoing revisions to such governance standards.

In terms of Section 404 of the Sarbanes-Oxley Act of 2002, we are required to furnish a report by our management on our internal control over financial reporting. The report in this annual report contains, among other matters, an assessment of the effectiveness of our internal control over financial reporting as of the end of the fiscal year, including a statement as to whether or not our internal controls over financial reporting are effective. If we fail to maintain the adequacy of our internal controls, we may not be able to ensure that we can conclude on an ongoing basis that we have effective internal control over financial reporting in accordance with the Sarbanes-Oxley Act. The requirement to evaluate and

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report on our internal controls also applies to companies that we may acquire and therefore, this assessment may be complicated by any future acquisitions. While we continue to dedicate resources and management time to ensuring that we have effective controls over financial reporting, failure to achieve and maintain an effective internal control environment could have a material adverse effect on the market's perception of our business and our stock price. See *Item 15. Disclosure Controls and Procedures* for management assessment as of June 30, 2012. In addition to management's assessment of internal controls over financial reporting, we are required to have our independent registered public accounting firm publicly disclose their conclusions regarding the effectiveness of Harmony's internal controls over financial reporting.

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We are committed to maintaining high standards of corporate governance and public disclosure, and our efforts to comply with evolving laws, regulations and standards in this regard have resulted in, and are likely to continue to result in, increased general and administrative expenses.

*Sales of large quantities of our ordinary shares and ADSs, or the perception that these sales may occur, could adversely affect the prevailing market price of such securities.*

The market price of our ordinary shares or ADSs could fall if large quantities of ordinary shares or ADSs are sold in the public market, or there is a perception in the marketplace that such sales could occur. Subject to applicable securities laws, holders of our ordinary shares or ADSs may decide to sell them at any time. The market price of our ordinary shares or ADSs could also fall as a result of any future offerings it makes of ordinary shares, ADSs or securities exchangeable or exercisable for its ordinary shares or ADSs, or the perception in the marketplace that these sales might occur. We may make such offerings of additional ADS rights, letters of allocation or similar securities at any time or from time to time in the future.

*Because we have a significant number of outstanding share options, our ordinary shares are subject to dilution.*

We have several employee share option schemes in operation. The employee share option schemes came into effect in 2001, 2003 and 2006, while awards under an employee share ownership plan ( **ESOP** ) governed by a trust called the Tlhakanelo Employee Share Trust ( **Tlhakanelo** ) for employees other than management were made in August 2012. Shares were issued to the trust on August 31, 2012. Our shareholders have authorized up to 10% of the issued share capital as at June 30, 2011 to be used for these plans. As a result, shareholders' equity interests in us are subject to dilution to the extent of the potential future exercises of the options through share schemes.

*We may not pay dividends or make similar payments to our shareholders in the future.*

Harmony's dividend policy is to pay cash dividends only if funds are available for that purpose. Whether funds are available depends on a variety of factors, including the amount of cash available, our capital expenditures and other cash requirements existing at the time. Under South African law, we are only entitled to pay a dividend or similar payment to shareholders if we meet the solvency and liquidity tests set out in the Companies Act 71 of 2008 (as amended) including its Regulations (the **Companies Act** ) and our current Memorandum of Incorporation. Cash dividends or other similar payments may not be paid in the future.

In February 2007, the South African Government announced a proposal to replace Secondary Tax on Companies with a 10% withholding tax on dividends and other distributions payable to shareholders. On April 1, 2012, a dividends tax ( **Dividends Tax** ) was introduced at a rate of 15% on dividends declared to beneficial shareholders borne by the shareholder receiving the dividend. Although the substitution of secondary tax on companies with Dividends Tax may reduce the tax payable on our South African operations, thereby increasing distributable earnings, the withholding tax will generally reduce the amount of dividends or other distributions received by shareholders.

## **Item 4. INFORMATION ON THE COMPANY BUSINESS**

### **History and Development of the Company**

We conduct underground and surface gold mining and related activities, including exploration, processing and smelting. We are currently the third largest producer of gold in South Africa, producing approximately one-fifth of the country's annual gold output, and we ranked among the largest gold producers in the world, with operations and projects in South Africa and PNG. Our gold sales were 1.275 million ounces of gold in fiscal 2012. As at June 30, 2012, our mining operations reported total proven and probable reserves of 52.9 million ounces (including gold equivalent ounces), primarily from South African sources. In fiscal 2012, we processed 20.7 million tons of ore.

In fiscal 2012, 93% of our total gold production took place in South Africa. In fiscal 2012, approximately 84% of our gold came from our South African underground mines, and approximately 9% came from our South African surface operations (which include the Kalgold opencast operation and the Phoenix operation). For more detailed information about our activities, see *Item 4. Information on the Company Business Harmony's Mining Operations Overview* and the notes to the consolidated financial statements included in this annual report. Mining is a highly regulated industry, and we operate under a variety of statutes and regulations. For more detailed information about these statutes and regulations, see *Item 4. Information on the Company Regulation* and *Item 10. Additional Information Memorandum of Incorporation* .

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The majority of our exploration and evaluation done during fiscal 2012 has been focused on PNG. Our PNG exploration and evaluation opportunities are handled through the international office in Brisbane, Australia. Exploration in South Africa focused on Joel North, Freddie's 9 and Masimong.

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Harmony Gold Mining Company Limited was incorporated and registered as a public company in South Africa on August 25, 1950 (under registration number 1950/038232/06). We have expanded from a single lease-bound mining operation into an independent, world-class gold producer. From 1997 to 2004, we acquired additional mineral rights in the Free State, Mpumalanga, Gauteng and North West provinces in South Africa through various mergers and acquisitions. In our most recent transaction in fiscal 2010, we acquired the President Steyn 1 and 2 shafts, Loraine 3 shaft, Freddie's 7 and 9 shafts as well as the President Steyn gold plant, collectively known as the Pamodzi Free State assets, from Pamodzi Gold Free State (Proprietary) Limited (In Liquidation) ( **Pamodzi FS** ). See *Item 4. Principal Investments* . These shafts have been included in the Bambanani and Target operations. In building our international portfolio, we acquired Hill 50 and New Hampton in Western Australia in 2001 and 2002, respectively, and started our exploration portfolio in PNG with projects in the Morobe province originally through our acquisition of Abelle in 2003. In the past three years, we disposed of several operations in South Africa and Australia. See *Item 4. Disposals* .

Our principal executive offices are located at Randfontein Office Park, Corner of Main Reef Road and Ward Avenue, Randfontein, 1760, South Africa and the telephone number at this location is +27-11-411-2000.

### **Business overview**

#### ***South African Operations***

In South Africa, we operate a total of ten underground operations, several surface operations including an opencast mine, and nine processing plants which are located in all of the currently known goldfields in the Witwatersrand basin of South Africa as well as the Kraaipan Greenstone Belt. These operations produced approximately 1,186 million ounces in fiscal 2012, and South Africa represented approximately 58% (or 30.9 million ounces) of our total proven and probable reserves. The deep level gold mines are located in four provinces in this basin, being the Free State province, Mpumalanga, the West Rand Goldfields in Gauteng province and the North West province. Surface operations are located in all these provinces.

Ore from the shafts and surface material are treated at nine metallurgical plants in South Africa, located near the operations (five in the Free State province, two in the North West province, one in Mpumalanga and one in Gauteng). We are currently demolishing three plants in the Free State – the Virginia plant's demolition is almost completed, while the process for Steyn plant will continue until fiscal 2013; the demolition of St Helena Plant has started and will continue until the beginning of fiscal 2014. In addition, Winkelhaak plant at the Evander operations was placed on care and maintenance during fiscal 2010, and the demolition of the plant is in progress and will be completed in the first half of 2013.

Each operation, consisting anywhere from a single shaft to a group of shafts, is managed by a team headed up by a general manager. See *Harmony's Management Structure* below.

Operations are classified as Underground or Surface with the reportable segments in South Africa being as follows:

Bambanani (includes Steyn 1 and 2 shafts), Doornkop, Joel, Kusasaletu, Masimong, Phakisa, Target (includes Target 3), Tshepong and the Virginia operations (the Evander operations have been disclosed under discontinued operations); and

all other shafts and surface operations, including those that treat historic sand dumps, rock dumps and tailings dams, are grouped together under and Other Surface .

#### ***International Operations***

Our interests internationally are currently located in PNG and represent 42% (or 22.0 million gold equivalent ounces) of our total proven and probable reserves.

#### ***PNG operations***

In PNG, through our wholly-owned PNG-based subsidiaries, we own various development and exploration prospects, and one operating mine. This includes a 50% interest in what is collectively known as the Morobe Mining Joint Venture ( **MMJV** ), held through Morobe Consolidated Goldfields Limited ( **Morobe Consolidated Goldfields** ), Wafi Mining Limited ( **Wafi** ) and Morobe Exploration Limited ( **MEL** ).

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In August 2008, Newcrest Mining Limited ( **Newcrest** ) acquired a 30.01% interest in our assets and tenements in the Morobe Province through the MMJV. By the end of fiscal 2009, Newcrest had earned an additional 19.99% in terms of the farm-in agreement, resulting in Newcrest and us each owning a 50% interest in the MMJV. Through the MMJV, we operate the Hidden Valley mine. The pre-feasibility study at Wafi-Golpu which commenced during fiscal 2011 has been completed and the results released in August 2012. The feasibility study will commence following stakeholder (PNG Government and communities)

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engagement. We also have exploration projects that are wholly-owned, held through Harmony Gold (PNG) Exploration Limited ( **HGEL** ). We are continuing with exploration at three key project sites, being Mount Hagen, Amanab and Tari.

### **Strategy**

Our strategy is to deliver long-term value by creating a global mining and exploration company - growing gold production, reserves and profits. This strategy has as its overall goal the production of 1.7 million safe and profitable ounces of gold by 2016 (excluding any future acquisitions or disposals).

We have invested significant capital in developing and commissioning gold mining assets in South Africa. Harmony has undertaken a number of strategic initiatives in recent years with the aim of achieving robust and sustainable financial results, with better controlled cash costs and improved grade.

Three key objectives underpin our strategy, namely:

growth by delivering on projects and exploiting global opportunities;

exploration that results in growth in reserves; and

optimizing operational delivery by improving cash costs and quality of ounces.

Our emphasis is on safe, profitable ounces and important steps have been taken to ensure that these goals are and will be met. To ensure this we have:

closed high-cost mines to give us a better mix of assets;

commissioned gold mines in South Africa and in PNG;

tailored each mine's business plan to its individual requirements;

aimed to address ongoing industry challenges. Please see *Item 3. Key Information Risk Factors* for further information;

aimed to improve production and productivity; and

increased our exploration exposure.

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### **Principal Investments**

We have concluded several strategic transactions within and outside South Africa in the last three fiscal years, which are summarized below.

During fiscal 2012, we acquired a Tari tenement in PNG. This project comprises 31% of the tenement area that Harmony currently holds on its own in PNG, outside of the MMJV.

During fiscal 2010, we acquired the President Steyn 1 and 2 shafts, Loraine 3 and the Freddies 7 and 9 shafts, along with the President Steyn gold plant, collectively known as the Pamodzi Free State assets, for R405 million (US\$53 million). The assets were acquired from Pamodzi FS, a subsidiary of Pamodzi Gold Limited ( **Pamodzi** ), which is an associate of Harmony and has been placed in liquidation.

During fiscal 2009, we reached an agreement with Africa Vanguard Resources (Doornkop) (Proprietary) Limited ( **AVRD** ) to re-acquire AVRD's 26% interest in the Doornkop mining right. In March 2010, the condition precedent to the agreement became effective. As a result the 26% interest in the Doornkop mining right was transferred from AVRD to Harmony in exchange for our repayment of the Nedbank loan of R244 million (US\$33.4 million) and the issue of 2,162,359 Harmony ordinary shares.

In August 2009, we acquired 100% interest in two new exploration tenements, the Mount Hagen and Amanab Projects, in PNG.

### **Disposals**

On May 30, 2012, Harmony entered into an agreement with Pan African Resources plc ( **Pan African Resources** ) to dispose of its 100% interest in Evander Gold Mines Limited for a total consideration of R1.5 billion (US\$182.7 million). The conditions precedent are expected to be fulfilled before December 31, 2012.

During September 2010, Harmony concluded an agreement with Witwatersrand Consolidated Gold Resources Limited ( **Wits Gold** ) for the cancellation of the Freegold farm-in option in exchange for Wits Gold shares. The conditions precedent were fulfilled on November 5, 2010 and Harmony received 4,376,194 shares in Wits Gold valued at R275 million (US\$41 million).

On July 20, 2010, the conditions precedent for the sale of the Mount Magnet operation were fulfilled. A total consideration of A\$35.3 million (US\$31.6 million) was received from Ramelius in exchange for 100% of the issued share capital in Mount Magnet.

In June 2010, the group sold the Jeanette prospecting rights to Taung Gold Limited ( **Taung** ) for a total consideration and profit of R75 million (US\$10 million).

On January 18, 2010, we disposed of our investment in our Australian subsidiary, Big Bell Operations (Proprietary) Limited to Fulcrum Resources (Proprietary) Limited ( **Fulcrum** ) for A\$3.5 million (US\$3.2 million) in cash and replacement environmental bonds of A\$3.2 million (US\$3.0 million), resulting in total consideration of A\$6.7 million (US\$6.2 million).

During September and October 2009, we sold our interest in Avoca into the market for a total consideration of R42 million (US\$5.8 million).

### **Description of Mining Business**

#### ***Exploration***

Exploration activities are focused on the extension of existing orebodies and identification of new orebodies, both at existing sites and at undeveloped sites.

Our gold-focused exploration program has two components:

on-mine exploration, which looks for resources within the economic radius of existing mines; and

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new mine exploration, which is the global search for early to advanced stage projects.

Once a potential orebody has been discovered, exploration is extended and intensified in order to enable clearer definition of the orebody and the potential portions to be mined. Geological techniques are constantly refined to improve the economic viability of prospecting and mining activities.

We conduct exploration activities on our own or with joint venture partners. As at June 30, 2012, our prospecting interest measured 75,249 hectares (185,938 acres) in South Africa and 898,400 hectares (2,219,546 acres) in PNG. We spent US\$64

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million on exploration in PNG and South Africa in fiscal 2012. In fiscal 2013, we intend to continue with exploration in PNG and South Africa.

### ***Mining***

The mining process can be divided into two main phases: (i) accessing the orebody; and (ii) mining the orebody. This basic process applies to both underground and surface operations.

#### *Accessing the orebody.*

In our South African underground mines, access to the orebody is by means of shafts sunk from the surface to the lowest economically and practically mineable level. Horizontal development at various intervals of a shaft (known as levels) extends access to the horizon of the reef to be mined. On-reef development then provides specific mining access. Horizontal development at various intervals of the decline extends access to the horizon of the mineral to be mined. The declines are advanced on a continuous basis to keep ahead of the mining taking place on the levels above. In our open-pit mines, access to the orebody is provided by overburden stripping, which removes the covering layers of topsoil or rock, through a combination of drilling, blasting, loading and hauling, as required.

#### *Mining the orebody.*

The process of ore removal starts with drilling and blasting the accessible ore. The blasted faces are then cleaned, and the ore is transferred to the transport system. In open-pit mines, gold-bearing material may require drilling and blasting, and is usually collected by bulldozers or shovels to transfer it onto trucks, which transport it to the mill.

In our South African underground mines, once ore has been broken, train systems collect ore from the faces and transfer it to a series of ore passes that gravity feed the ore to hoisting levels at the bottom of the shaft. The ore is then hoisted to the surface in dedicated conveyances and transported either by conveyor belts directly or via surface railway systems or roads to the treatment plants. In addition to ore, waste rock broken to access reef horizons must similarly be hoisted and then placed on waste rock dumps.

### ***Processing***

We currently have nine operational metallurgical plants in South Africa. We also have a metallurgical plant at the Hidden Valley project in PNG. The principal gold extraction processes we use are carbon in leach, or CIL, and carbon in pulp, or CIP.

The gold plant circuit consists of the following:

#### *Comminution*

Comminution is the process of breaking up the ore to expose and liberate the gold and make it available for treatment. Conventionally, this process occurs in multi-stage crushing and milling circuits, which include the use of jaw and gyratory crushers and rod and tube and ball mills. Our more modern milling circuits include semi- or fully-autogenous milling where the ore itself is used as the grinding medium. Typically, ore must be ground to a minimum size before proceeding to the next stage of treatment.

#### *Treatment*

In most of our metallurgical plants, gold is extracted into a leach solution from the host ore by leaching in agitated tanks. Gold is then extracted onto activated carbon from the solution using the CIL or CIP processes. Gold in solution at one of our plants is recovered using zinc precipitation. Recovery of the gold from the loaded carbon takes place by elution and electro-winning. Cathode sludge or dore bars produced from electro-winning are currently sent directly to the Rand Refinery. Most of the South African plants no longer use smelting to produce rough gold bars (dore). Our South African zinc precipitation plants continue to smelt precipitate to produce rough gold bars. These bars are then transported to the Rand Refinery, which is responsible for refining the bars to a minimum of good delivery status.

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All the production from our South African operations is sent to the Rand Refinery, which is owned by a consortium of the major gold producers in South Africa. The PNG gold production was refined in Australia at an independent refiner, The Perth Mint Australia.

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### Harmony's Management Structure

We have a de-centralized management structure that is based on small, empowered management teams led by General Managers at each of our operations. In South Africa, the General Managers report to the Operating Officers, and are responsible for business optimization, mineral reserve optimization, and for developing a business culture at the operations. They also focus on long-term viability and growth of the operations. The General Managers are supported by a Mineral Reserve Manager, a Financial Manager, a Human Resources Manager and an Engineer Manager in ensuring the growth and long-term sustainability of the operations.

What is known as the Morobe Mining Joint Venture consists of three unincorporated joint ventures (Hidden Valley Mine Joint Venture ( **HVMJV** ), Wafi-Golpu Mine Joint Venture ( **WGMJV** ) and Morobe Exploration Joint Venture ( **MEJV** ) which are owned 50/50 by respective Harmony and Newcrest 100% owned subsidiaries ( **owners** )).

The Joint Ventures are managed by a Joint Venture Committee ( **JVC** ) appointed by the respective owners. The JVC is responsible for the supervision of each of the three Joint Ventures, and implementation of the owners' policy and strategy. The members act as owner representatives within the unincorporated joint ventures.

Three legal operator entities ( **operator co.** ), Hidden Valley Services Limited, Wafi-Golpu Services Limited and Morobe Exploration Services Limited have been established and appointed as operator of / agent for the respective unincorporated joint ventures (HVMJV, WGMJV and MEJV). Shareholding is held equally by the owners who appoint a board of directors ( **board** ) for each operator co.

The respective operator co. boards appoint Operational Steering Committees and General Managers who are responsible for implementation of the operating plan as approved by the JVC as well as making recommendation to the JVC for growth and sustainability. The General Managers report to the Operational Steering Committees. The General Managers are supported by functional managers.

### Capital Expenditures

Capital expenditures for all operations incurred for fiscal 2012 amounted to US\$414 million compared with US\$444 million in fiscal 2011 and US\$442 million in fiscal 2010. During fiscal 2012, capital expenditure in PNG accounted for 19% of the total, with Kusasaletu, Target and Phakisa accounting for 13%, 11% and 9% respectively. For fiscal 2011, capital expenditure at Kusasaletu and Phakisa each accounted for 12% of the total, with expenditure at PNG and Target accounting for 11% and 14% respectively. For fiscal 2010, the capital development at PNG accounted for 16% of the total, with development at Phakisa and Kusasaletu accounting for 14% and 13%, respectively. Capital development also took place at the Doornkop South Reef Project and Tshepong Sub 71 Declines, as well as at the newly acquired President Steyn and Loraine shafts.

The focus of our capital expenditures in recent years has been underground development and plant improvement and upgrades. Construction at these projects has been completed in certain areas, and production, if not yet at full capacity, has started from these areas at all our current growth projects. Capital will still be expended at these projects in the next two to three years to complete construction. During fiscal 2012, the capital expenditure was funded from the Company's cash reserves, as well as by the loan facilities (see *Item 5. Operating and financial review and prospects - Liquidity and capital resources* ).

We have budgeted approximately US\$545 million for capital expenditures in fiscal 2013. Details regarding the capital expenditures for each operation are found in the individual mine sections under *Item 4. Information on the Company - Business - Harmony's Mining Operations* . We currently expect that our planned operating capital expenditures will be financed from operations and new borrowings as needed.

### Reserves

As at June 30, 2012, we have declared attributable gold equivalent proven and probable reserves of 52.9 million ounces, broken down as follows: 30.9 million ounces gold in South Africa and 22.0 million gold equivalent ounces in PNG. In instances where individual deposits may contain multiple valuable commodities with a reasonable expectation of being recovered (for example gold and copper in a single deposit) Harmony computes a gold equivalent to more easily assess the value of the deposit against gold-only mines. Harmony does this by calculating the value of each of the deposits commodities then divides the product by the price of gold. For example, the gold equivalent of a gold and copper deposit would be calculated as follows: ((gold ounces x gold price per ounce) + (Copper pounds x copper price per pound)) / gold price per ounce. All calculations are done using metal prices as stipulated in the discussion below. Harmony assumes a 100% metallurgical recovery in its calculations unless otherwise stated. The year-on-year positive variance in mineral reserves is due to the following reasons:

normal depletion of 1.5 million ounces;

Evander assets classified held for sale resulted in a decrease of 8.0 million ounces;

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geology and scope changes in South Africa resulted in an increase of 1.3 million ounces; and

an increase of gold and gold equivalent reserves in PNG of 19.5 million ounces following the completion of an updated pre-feasibility study at Golpu.

We use the South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves ( **SAMREC Code** ), which sets out the internationally recognized procedures and standards for reporting of mineral resources and mineral reserves. We use the term mineral reserves herein, which has the same meaning as ore reserves, as defined in the SAMREC code. Our reporting of the PNG Mineral Reserves complies with the Australian Code for the Reporting of Mineral Resources and Mineral Reserves ( **JORC** ) of the Australian Institute of Mining and Metallurgy. This code is materially the same as the SAMREC Code. In reporting of reserves, we have complied with Industry Guide 7 of the US Securities and Exchange Commission.

For the reporting of Mineral Reserves at our South African and PNG operations, the following parameters were applied:

a gold price of US\$1,400 per ounce;

an exchange rate of R7.55 per US dollar,  
the above parameters resulting in a gold price of R340,000/kg;

an uranium price of US\$50.00/lb for South Africa;

prices of US\$1,250/oz Au, US\$21/oz Ag, US\$15/lb Mo and A\$3.10/lb Cu at an exchange rate of A\$0.90 per US dollar were used for the Hidden Valley mine and Wafi-Golpu project in the Morobe Mining Joint Venture;

gold and gold equivalent ounces are calculated assuming a US\$1,400/oz for gold, US\$3.50/lb for copper and US\$25.00/oz for silver with 100% recovery for all metals; and

gold equivalent is computed as the value of the company's gold, silver and copper from all mineral resources/reserves classifications divided by the price of gold. All calculations are done using metal prices as stipulated.

In order to define that portion of a measured and indicated mineral resource that can be converted to a proven and probable mineral reserve at our underground operations, we apply the concept of a cut-off grade. At our underground operations in South Africa, this is done by defining the optimal cut-off grade as the lowest grade at which an orebody can be mined such that the total profits, under a specified set of mining parameters, are maximized. The cut-off grade is determined using our Optimizer computer program which requires the following as input:

the database of measured and indicated resource blocks (per operation);

an assumed gold price which, for this mineral reserve statement, was taken as R340,000 per kilogram;

planned production rates;



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the mine recovery factor which is equivalent to the mine call factor ( **MCF** ) multiplied by the plant recovery factor; and

planned cash costs (cost per tonne).

Rand per tonne cash costs of the mines are historically based, but take into account distinct changes in the cost environment, such as the future production profile, restructuring, right-sizing, and cost reduction initiatives.

The block cave reserve at Golpu (PNG) used the computer program to define the optimal mine plan and sequencing.

The open pit reserve at Hidden Valley (PNG) is defined by a pit design based on the Whittle open pit optimization program guiding the most efficient mine design given this constraint.

See the table below in this section for the cut-off grades and cost per tonne for each operation.

The mineral reserves represent that portion of the measured and indicated resources above cut-off in the life-of-mine plan and have been estimated after consideration of the factors affecting extraction, including mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. A range of disciplines which includes geology, survey, planning, mining engineering, rock engineering, metallurgy, financial management, human resources management and environmental management have been involved at each mine in the life-of-mine planning process and the conversion of resources into reserves. The overflow-related modifying factors used to convert the mineral resources to mineral reserves through the life-of-mine planning process are stated for each individual operation. For these factors, historical information is used, except if there is a

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valid reason to do otherwise. Because of depth and rock engineering requirements at our underground mines, some mines design stope support pillars into their mining layouts which accounts for approximately 7% to 10% discounting. Further discounting relates to the life-of-mine extraction to provide for geological losses.

Our standard for narrow reef sampling with respect to both proven and probable reserve calculations for underground mining operations in South Africa is generally applied on a 6 meter by 6 meter grid. Average sample spacing on development ends is at 2 meter intervals in development areas. For the massive mining at the Target operations, our standard for sampling with respect to both proven and probable reserves are fan drilling with B sized diamond drill holes (43mm core) sited at 50 meter spaced sections along twin access drives. The Kalgold opencast operations are sampled on diamond drill and reverse circulation drill spacing of no more than 25 meters on average. Surface mining at South African operations other than Kalgold involves recovering gold from areas previously involved in mining and processing, such as metallurgical plants, waste rock dumps and tailing dams (slimes and sand) for which random sampling is used.

The PNG resources are hosted in large porphyry or related mesothermal geological systems. Data is gained through diamond drilling using PQ down to NQ sized core. The core is cut in half, one half sampled at a maximum of 2 meter intervals and the other half stored in designated core storage facilities. Drill spacing at our Hidden Valley operations is typically on less than 20 meter centers for Measured category, 20 to 40 meter centers for the Indicated category and greater than 40 meters for Inferred category material. Due to the nature of the Golpu porphyry mineralization, drill spacing is increased to 100 to 200 meters for indicated and greater for inferred. Assaying for gold is by fire assay and various methods are used for copper and other elements. All assays informing the resource calculation are analyzed at a National Association of Testing Authorities accredited commercial laboratory. Some sample preparation is done at the mine site laboratory. Extensive Quality Assurance/Quality Control work is undertaken and data is stored in an electronic database.

Our mining operations reported total proven and probable reserves as of June 30, 2012 are set out below:

OPERATIONS GOLD	Mineral Reserves statement (Imperial) as at June 30, 2012								
	PROVEN RESERVES			PROBABLE RESERVES			TOTAL RESERVES		
	Tons (millions)	Grade (oz/ton)	Gold oz <sup>(1)</sup> (000)	Tons (millions)	Grade (oz/ton)	Gold oz <sup>(1)</sup> (000)	Tons (millions)	Grade (oz/ton)	Gold oz <sup>(1)</sup> (000)
<b>South Africa Underground</b>									
Bambanani	2.6	0.372	952				2.6	0.372	952
Joel	1.7	0.154	258	4.7	0.151	715	6.4	0.151	973
Masimong	6.2	0.147	911	1.4	0.149	205	7.6	0.148	1,116
Phakisa	4.1	0.182	739	17.4	0.238	4,149	21.5	0.228	4,888
Target	8.3	0.134	1,113	9.3	0.182	1,692	17.6	0.160	2,805
Tshepong	19.9	0.162	3,229	4.4	0.144	633	24.3	0.159	3,862
Unisel	1.9	0.140	267	1.2	0.127	150	3.1	0.135	417
Doornkop	4.6	0.098	454	5.7	0.120	683	10.3	0.110	1,137
Kusasalethu	13.0	0.208	2,704	25.7	0.172	4,408	38.7	0.184	7,112
<b>Total South Africa Underground</b>	<b>62.3</b>	<b>0.171</b>	<b>10,627</b>	<b>69.8</b>	<b>0.181</b>	<b>12,635</b>	<b>132.1</b>	<b>0.176</b>	<b>23,262</b>
<b>South Africa Surface</b>									
Kalgold	3.3	0.018	61	17.3	0.030	510	20.6	0.028	571
Free State Surface	400.8	0.008	3,212	560.1	0.007	3,879	960.9	0.007	7,091
<b>Total South Africa Surface</b>	<b>404.1</b>	<b>0.008</b>	<b>3,273</b>	<b>577.4</b>	<b>0.008</b>	<b>4,389</b>	<b>981.5</b>	<b>0.008</b>	<b>7,662</b>
<b>Total South Africa</b>	<b>466.4</b>		<b>13,900</b>	<b>647.2</b>		<b>17,024</b>	<b>1,113.6</b>		<b>30,924</b>
<b>Papua New Guinea<sup>(2)</sup></b>									
Hidden Valley	0.8	0.035	28	40.1	0.043	1,736	40.9	0.043	1,764
Hamata	0.0	0.086	2	2.5	0.063	161	2.5	0.065	163
Golpu				248.0	0.025	6,221	248.0	0.025	6,221
<b>Total Papua New Guinea</b>	<b>0.8</b>	<b>0.036</b>	<b>30</b>	<b>290.6</b>	<b>0.028</b>	<b>8,118</b>	<b>291.4</b>	<b>0.028</b>	<b>8,148</b>
<b>GRAND TOTAL</b>	<b>467.2</b>		<b>13,930</b>	<b>937.8</b>		<b>25,142</b>	<b>1,405.0</b>		<b>39,072</b>

In addition to the gold reserves, we also report our gold equivalents for reserves for silver and copper from our PNG operations. Gold equivalent ounces are calculated assuming a US\$1,400/oz for gold, US\$3.50/lb copper and US\$25.00/oz for silver with 100% recovery for all metals.



**Table of Contents****Gold Equivalents**

SILVER	PROVEN RESERVES		PROBABLE RESERVES		TOTAL RESERVES	
	Tons (millions)	Gold Equivalents (oz) <sup>(1)</sup> (000)	Tons (millions)	Equivalents (oz) <sup>(1)</sup> (000)	Tons (millions)	Equivalents (oz) <sup>(1)</sup> (000)
Hidden Valley	0.8	7	40.1	584	40.9	591
<b>COPPER</b>	<b>PROVEN RESERVES</b>		<b>PROBABLE RESERVES</b>		<b>TOTAL RESERVES</b>	
	Tons (millions)	Gold Equivalents (oz) <sup>(1)</sup> (000)	Tons (millions)	Equivalents (oz) <sup>(1)</sup> (000)	Tons (millions)	Equivalents (oz) <sup>(1)</sup> (000)
Golpu			248.0	13,274	248.0	13,274
<b>Total Gold Equivalents</b>	<b>0.8</b>	<b>7</b>	<b>288.1</b>	<b>13,858</b>	<b>288.9</b>	<b>13,865</b>
<b>Total Harmony including gold equivalents</b>	<b>467.2</b>	<b>13,937</b>	<b>937.8</b>	<b>39,000</b>	<b>1,405.0</b>	<b>52,937</b>

In addition to the gold reserves, we also report our attributable reserves for silver and copper from our PNG operations. Metal prices are assumed at US\$21.00/oz for silver, US\$3.10/lb for copper and US\$50.00/lb for uranium.

**Papua New Guinea: Other<sup>(2)</sup>**

SILVER	PROVEN RESERVES			PROBABLE RESERVES			TOTAL RESERVES		
	Tons (millions)	Grade (oz/ton)	Silver oz ( <sup>(1)</sup> ) (000)	Tons (millions)	Grade (oz/ton)	Silver oz ( <sup>(1)</sup> ) (000)	Tons (millions)	Grade (oz/ton)	Silver oz ( <sup>(1)</sup> ) (000)
Hidden Valley	0.8	0.569	458	40.1	0.814	32,654	40.9	0.809	33,112

COPPER	Tons (millions)	Grade (%)	Cu lb <sup>(1)</sup> (millions)	Tons (millions)	Grade (%)	Cu lb <sup>(1)</sup> (millions)	Tons (millions)	Grade (%)	Cu lb <sup>(1)</sup> (millions)
	Golpu				248.0	1.098	6,003	248.0	1.098
<b>South Africa:</b>									

URANIUM	PROVEN RESERVES			PROBABLE RESERVES			TOTAL RESERVES		
	Tons (millions)	Grade (lb/ton)	U <sub>3</sub> O <sub>8</sub> lb ( <sup>(1)</sup> ) (millions)	Tons (millions)	Grade (lb/ton)	U <sub>3</sub> O <sub>8</sub> lb ( <sup>(1)</sup> ) (millions)	Tons (millions)	Grade (lb/ton)	U <sub>3</sub> O <sub>8</sub> lb ( <sup>(1)</sup> ) (millions)
Masimong	5.7	0.351	2	2.6	0.288	1	8.3	0.331	3
Phakisa	4.1	0.273	1	17.5	0.253	4	21.6	0.256	5

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Tshepong	9.0	0.206	2	15.1	0.217	3	24.1	0.213	5
<b>Grand Total</b>	<b>18.8</b>	<b>0.265</b>	<b>5</b>	<b>35.2</b>	<b>0.240</b>	<b>8</b>	<b>54.0</b>	<b>0.249</b>	<b>13</b>

(1) Metal figures are fully inclusive of all mining dilutions and gold losses, and are reported as mill delivered tons and head grades. Metallurgical recovery factors have not been applied to the reserve figures.

(2) Represents Harmony's attributable interest of 50%

Note: 1 ton = 907 kg = 2,000 lbs

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Our methodology for determining our reserves is subject to change and is based upon estimates and assumptions made by management regarding a number of factors as noted above in this section. Cost per tonne and cut-off grade per operation is as follows.

OPERATIONS GOLD	UNDERGROUND OPERATIONS		SURFACE AND MASSIVE MINING	
	Cut-off grade (cmg/t)	Cut-off cost (R/Tonne)	Cut-off grade (g/t)	Cut-off cost (R/Tonne)
<b>South Africa Underground</b>				
Bambanani	1,687	1,925		
Joel	806	1,140		
Masimong	890	1,087		
Phakisa	640	1,367		
Target	621	1,209	4.25	1,178
Tshepong	650	1,138		
Unisel	723	1,258		
Doornkop	716	850		
Kusasaletu	771	1,229		
<b>South Africa Surface</b>				
Kalgold			0.48	190
Free State Surface			0.136	34
	Cut-off % Cu	Cut-off cost (A\$/Tonne)	Cut-off grade (g/t)	Cut-off cost (A\$/Tonne)
<b>Papua New Guinea</b>				
Hidden Valley			0.600	20.4
Hamata			0.600	20.4
Golpu	0.2	22.0		
	Cut-off % Cu	Cut-off cost (A\$/Tonne)	Cut-off grade (g/t)	Cut-off cost (A\$/Tonne)
<b>SILVER</b>				
<b>Papua New Guinea</b>				
Hidden Valley			0.600	20.4
<b>COPPER</b>				
<b>Papua New Guinea</b>				
Golpu	0.2	22.0		

**Notes on Cut-off:**

(1) Surface and massive mining are stated in g/t (g/t is grams of metal per tonne of ore).

(2) All SA underground operations are stated in cmg/t (cmg/t is the Reef Channel width multiplied by the g/t which indicates the gold content within the Reef Channel).

**Notes on Cut-off cost:**

Cut-off cost refers to the cost in R/Tonne or A\$/Tonne to mine and process a tonne of ore.

**Notes on Copper:**

Cut-off is stated in % Cu

**Notes on Golpu:**

Cut-off is based on 0.2% copper : molybdenum and gold mined as by-product.

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**Worldwide Operations**

*Description of Property*

The following is a map of our worldwide operations:

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Our operational mining areas in South Africa are set forth below:

	Hectares	Acres
Doornkop (includes Doornkop extension)	4,352	10,754
Kusasaletu	5,113	12,634
Free State (includes Masimong and Virginia operations)	22,583	55,802
Tshepong and Phakisa	10,799	26,684
Bambanani	2,356	5,822
Joel	2,356	5,822
St Helena	5,856	14,470
Kalgold	615	1,520
Evander	36,898	91,174
Target (includes Loraine)	7,952	19,649
Loraine 3, 7 & 9	3,085	7,623
Steyn 1 & 2	1,888	4,665
<b>Total</b>	<b>103,853</b>	<b>256,619</b>

In PNG, we hold tenements as set forth below:

	Hectares	Acres
PNG (50% - JV Interest)	472,600	1,167,820
PNG 100%	425,800	1,051,726
<b>Total International Operations</b>	<b>898,400</b>	<b>2,219,546</b>
<b>TOTAL</b>	<b>1,002,253</b>	<b>2,476,165</b>

In line with the rest of the South African mining industry, and in an effort to reduce costs, we have been rationalizing our mineral rights holdings in recent years. Accordingly, over the past three years, we have disposed of our shares and participation rights in areas within and outside of South Africa in which we have not actively pursued mining. However, in some cases we have retained certain participation rights and option clauses in properties and mining rights we have disposed of. We may continue to investigate further disposals.

**Geology**

The major portion of our South African gold production is derived from mines located in the Witwatersrand Basin in South Africa. The Witwatersrand Basin is an elongated structure that extends approximately 300 kilometers in a northeast-southwest direction and approximately 100 kilometers in a northwest-southeast direction. It is an Archean sedimentary basin containing a six kilometer thick stratigraphic sequence consisting mainly of quartzites and shales with minor volcanic units. The majority of production is derived from auriferous placer reefs situated at different stratigraphic positions and at varying depths below the surface in three of the seven defined goldfields of the Witwatersrand Basin.

Our Hidden Valley project comprises low sulphidation carbonate-base metal-gold epithermal deposits within the Morobe Goldfield, in the Morobe Province of PNG. In the Hidden Valley project area, a batholith of Morobe Granodiorite (locally a coarse grained monzogranite) is flanked by fine metasediments of the Owen Stanley Metamorphics. Both are cut by dykes of Pliocene porphyry ranging from hornblende-biotite to feldspar-quartz porphyries. A number of commonly argillic altered and gold anomalous breccias are known, including both hydrothermal and overprinting structural breccias. The Hidden Valley deposit is hosted in the Moribe Granodiorite, dominated by a series of post-Miocene faults, both north and north-west trending, control the gold mineralization.

Our Wafi project comprises the sedimentary/volcaniclastic rocks of the Owen Stanley Formation that surround the Wafi Diatreme and host the gold mineralization. Gold mineralization occurs associated with an extensive zone of high-sulphidation epithermal alteration overprinting porphyry mineralization and epithermal style vein-hosted and replacement gold mineralization with associated wall-rock alteration. The Golpu Copper-Gold project is located about one kilometer northeast of the Wafi gold orebody. It is a porphyry (diorite) copper-gold deposit. The host lithology is a diorite that exhibits a typical zoned porphyry copper alteration halo together with mineralization in the surrounding metasediment. The mineralized body can be described as a porphyry copper-gold pipe. The Wafi gold mineralization and alteration partially overprints the upper levels of the Golpu porphyry copper-gold mineralization.



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**Harmony's Mining Operations**

**Overview**

In South Africa, we conduct underground mining at ten operations:

Bambanani (includes Steyn 2 Shaft from February 2010);

Doornkop;

Joel;

Kusasaletu;

Masimong;

Phakisa;

Target (consists of Target 1, and as of February 2010 Loraine 3 (now Target 3) and Freddie's 7 (rehabilitated) and 9 shafts);

Tshepong;

Virginia (at June 30, 2012, Unisel was the only operating shaft. Previously also included Harmony 2, Merriespruit 1 & 3 and Brand 3 & 5); and

Evander (Evander 8 is in operation, with Evander 2 & 5 and 7 having been closed during fiscal 2010) has been presented as discontinued operations.

We conduct surface mining at four sites (all included in *Other Surface*):

Free State (also known as Phoenix);

Freegold;

Kalgold; and

Target.

Surface mining conducted at the South African operations other than Kalgold involves recovering gold from areas previously involved in mining and processing, such as metallurgical plants, waste rock dumps and tailings dams (slimes and sand). We are conducting studies to determine the feasibility of further retreatment projects in the Free State, including uranium extraction from material.

Internationally, we conduct mining activities in PNG at the Hidden Valley mine, which is a joint venture, known as the Morobe Mining Joint Venture, between Harmony and Newcrest in which we each have a 50% interest.

Underground and surface mining was conducted at the operation, with underground access through two declines and surface access principally through open-pits.

The following discussion is a two-part presentation of our operations:

an overview of our South African mining operations with a discussion and production analysis of each of our operating segments;  
and

an overview of our international (PNG) operations with a discussion and production analysis for Hidden Valley. We have also included a discussion on the exploration projects in the MMJV as well as for the wholly-owned projects.

Where we have translated the Rand amount budgeted for capital expenditures in fiscal 2013 into US dollars using the closing rate at the balance sheet date.

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**South African Mining Operations**

Unless indicated otherwise, the discussions below are for continuing operations.

*Underground*

*Bambanani*

**Introduction:** We acquired Bambanani in January 2002 when we acquired the Freegold operations from AngloGold Ashanti Limited ( **Anglogold** ) through a 50% joint venture with African Rainbow Minerals Gold Limited ( **ARMGold** ). In September 2003, we acquired 100% of these operations when ARMGold became a wholly-owned subsidiary. During February 2010, we acquired President Steyn 1 & 2 Shafts in the transaction with Pamodzi FS. These shafts have been incorporated into Bambanani. These operations are located in the Free State province. Production from the operations is processed through Harmony 1 Plant.

**History:** Exploration, development and production history in the area of the Freegold assets dates from the early 1900 s, leading to commercial production by 1932. Subsequent consolidation and restructuring led to the formation of Free State Consolidated Gold Mine (Operations) Limited, which became a wholly-owned subsidiary of Anglogold in June 1998.

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In 1998, President Steyn Gold Mine (Free State) (Proprietary) Limited ( **PSGM** ) was formed after purchasing shafts from various individuals. During 2002, the mine was sold to Thistle Mining Inc, an international company with interests in the Philippines and South Africa. The mine struggled to make operational profits, and Thistle undertook a restructuring program in 2006, which together with an increase in the Rand gold price resulted in positive operational cash flows. In February 2008, PSGM was purchased by Pamodzi FS. The mine was operated from that time until March 2009, when Pamodzi FS was placed into liquidation.

**Geology:** The operations are located in the Free State Goldfield, which is on the south-western edge of the Witwatersrand basin. The Free State Goldfield is divided into two sections, cut by the north-south striking De Bron Fault. This major structure has a vertical displacement of about 1,500 meters in the region of Bambanani, as well as a lateral shift of 4 kilometers. Bambanani is to the west of the De Bron Fault. The reefs generally dip towards the east. Mining is conducted in the Basal Reef.

**Mining Operations:** These operations are subject to the underground mining risks detailed in the Risk Factors section. The management teams regularly revisit their mining strategy and management procedures in order to minimize risks.

Bambanani, near Welkom, has three surface shafts (Bambanani, Steyn 2 and West). Mining is conducted at depths ranging from 1,911 and 3,680 meters. Activities at the mine include mining the Basal Reef and remnant pillar extraction. The primary mining challenges at these operations are seismic risks, ventilation and fire avoidance. Bambanani is classified as a seismically active operation with seismic activity monitoring systems installed to do active seismic risk evaluation.

In the first quarter of fiscal 2012, and in line with Harmony's stated strategy to restructure for safe, profitable and quality ounces, we decided to halt mining in the sub-shaft after Bambanani had struggled to meet production targets and curb costs for a number of quarters. As such, mining activities moved from deeper operating areas to accelerated development of the shaft pillar. The restructuring process at Bambanani was well managed, with only 284 employees retrenched (118 of those elected voluntary retrenchment) out of a possible 2,268). This process was concluded by year-end. Almost 2,000 employees were redeployed or retrained and transferred to other Harmony operations, mainly Doornkop and Phakisa, in line with production build-up at those operations. The decision to halt mining in the sub-shaft was vindicated by a 70% improvement in recovered grade in the second quarter of fiscal 2012. Production was severely curtailed in the third quarter, after the DMR imposed a section 54 stoppage (following a fatality) that covered West shaft, Bambanani, Steyn 2 and Unisel as one general manager is responsible for all these operations. The stoppage equated to 45 lost shaft days.

Bambanani is on track to mine the shaft pillar for around eight years from 2013, improving both the productivity and profitability of this mine. Steyn 2 shaft has commenced with the removal of its shaft pillar and is planning to complete this within the next 18 months. The ore from both of these shaft pillar extractions is going to be hoisted at West shaft, which is being re-commissioned for this purpose. The focus on standards and procedures is ongoing as preparations to mine the shaft pillar near completion. The shaft pillar is being established through up-dips to start breast-panel mining in the new financial year. Backfill will be in place in the pillar to mitigate seismic events, with support in the face area enhanced by in-stope steel netting. A detailed seismic risk assessment was completed for the shaft pillar by the Institute of Mine Seismology of Stellenbosch, and some re-design work is under way to further mitigate identified risks. Bambanani and Steyn 2 will become a single operation shortly, when the barrel of Steyn 2 is closed and all services routed through Bambanani/West shaft. Reef development has been halted, in line with the mine plan, and capital metres are slowing with completion scheduled for October 2012 (Bambanani only).

During fiscal 2012, Bambanani accounted for 3% (7% in 2011 and 9% in 2010) of our total gold production.

**Safety:** Regrettably one fatality occurred at Bambanani during fiscal 2012 (2011: three) and the lost time injury frequency rate ( **LTIFR** ) was reported as 8.51 per million hours worked (2011: 10.74). This is an unsatisfactory performance and more work is being done to improve safety behavior. Bambanani recorded 1.5 million fall-of-ground fatality-free shifts towards the end of the year, and received seventh place for year-on-year improvement in LTIFR in the MineSafe competition.

**Plants:** The ore from Bambanani, along with ore from Tshepong, Masimong and Phakisa, is sent to Harmony 1 Plant for processing. This plant, which processes underground ore, waste rock and various surface accumulations, was commissioned in 1986 and is a conventional CIP plant processing ore that has been milled by fully-autogenous grinding. Gold is recovered from the eluate solution using zinc precipitation and a precoat vacuum filter. The precipitate recovered from the filter is calcined and smelted to bullion.

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The following table sets forth processing capacity and average tons milled during the fiscal 2012 for the Harmony 1 Plant:

Plant	Processing Capacity (tons/month)	Average Milled for the Fiscal Year Ended June 30, 2012 (tons/month)
Harmony 1	390,000	371,953

In fiscal 2012, Harmony 1 Plant recovered approximately 95.62% of the gold contained in the ore delivered for processing.

**Production analysis:**

Bambanani Production	Fiscal Year Ended June 30,		
	2012	2011	2010
Tons ( 000)	217	470	582
Recovered grade (ounces/ton) <sup>(1)</sup>	0.198	0.203	0.227
Gold produced (ounces) <sup>(1)</sup>	44,174	98,092	133,007
Gold sold (ounces) <sup>(1)</sup>	43,982	99,443	134,165
<b>Results of operations (\$)</b>			
Product sales ( 000)	70,748	131,753	146,971
Cash cost ( 000)	76,911	118,442	98,289
Cash profit ( 000)	(6,163)	13,311	48,682
<b>Cash costs</b>			
Per ounce of gold (\$)	1,787	1,247	723
<b>Capex ( 000) (\$)</b>	34,255	45,884	27,300

<sup>(1)</sup> During fiscal 2012, 1,157 (2011: 2,894, 2010: 1,061) ounces were produced by Steyn 2 prior to it being considered to be in production. The revenue has been credited against capital expenditure as the shaft was not in production yet. The cost of these ounces has not been included in the cash cost per ounce amount. The calculation of grade also excludes these ounces.

Tons milled from Bambanani decreased from 582,000 in fiscal 2010 to 470,000 in fiscal 2011. Ounces produced were 98,092 in fiscal 2011 compared with 133,007 in fiscal 2010. Grade decreased by 11% to 0.203 ounces per ton in fiscal 2011, which together with the production constraints during the first half of the year and the cessation of mining on the remnant pillars contributed to the lower production.

Cash costs per ounce for Bambanani were US\$1,247 in fiscal 2011, compared with US\$723 in fiscal 2010. The costs per ounce increased by 72% in fiscal 2011 compared with fiscal 2010. This was mainly due to a 26% increase in the cost of electricity, which now constitutes 28% of the total operational cost. Also contributing was an increase in labor cost, which reflects the annual salary increases of 7.5% as well as an increase in the average staff complement of 278.

Tons milled from Bambanani decreased to 217,000 in fiscal 2012 compared with 470,000 in fiscal 2011. Ounces produced were 44,174 in fiscal 2012 compared with 98,092 in fiscal 2011. Production was affected by major restructuring at Bambanani as the lower section of the mine was closed; mining will be focused on the upper pillar.

Cash costs per ounce for Bambanani were US\$1,787 in fiscal 2012, compared with US\$1,247 in fiscal 2011. The costs per ounce increased by 43% in fiscal 2012 compared with fiscal 2011. This was due to an increase in labor cost, which reflects the annual salary increases of 7.5%, electrical increases and the drop in production.

The rock hoisting capacity at Bambanani is 120,000 tons per month. The average tons milled in fiscal 2012 were 18,083 tons per month, compared with 39,200 tons per month for fiscal 2011.

Assuming no additional reserves are identified, at expected production levels, it is foreseen that the reported proven and probable mineral reserves of 2.6 million tons (1.0 million ounces) will be sufficient for Bambanani to maintain underground production until approximately 2020.

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Any future changes to the assumptions upon which the mineral reserves are based, as well as any unforeseen events affecting production levels, could have a material effect on the expected period of future operations.

**Capital Expenditure:** Bambanani incurred approximately R266 million (US\$34.2 million) in capital expenditure in fiscal 2012, primarily to extract the shaft pillar and to equip the Steyn operations (R32.9 million (US\$4.2 million)). We budgeted R149 million (US\$18.1 million) for capital expenditure in fiscal 2013, primarily for the access development for the shaft pillar extraction and the Steyn operations (R128 million (US\$15.6 million)).

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### *Doornkop*

**Introduction:** Doornkop is located in the Gauteng Province of South Africa, approximately thirty kilometers west of Johannesburg. The operation is owned by Randfontein Estates Limited ( **REL** ). Doornkop currently operates under its own mining authorization of 2,941 hectares. Production is treated at the Doornkop plant.

**History:** Harmony acquired this operation when it took over Randfontein in 2000.

**Geology:** These operations are situated in the West Rand Goldfield of the Witwatersrand Basin, the structure of which is dominated by the Witpoortjie and Panvlakte Horst blocks, which are superimposed over broad folding associated with the southeast plunging West Rand Syncline.

The Doornkop operation lease area is bounded by and lies to the south-east of the major north-easterly striking Roodepoort Fault, which dips to the south and constitutes the southern edge of the Witpoortjie Horst Block or Gap. This Horst Block is comprised of the stratigraphically older sediments of the West Rand Group, the overlying Central Rand Group sediments having been removed by erosion. A number of other faults, forming part of and lying southeast of the Roodepoort Fault, including the Saxon Fault, also constitute conspicuous structural breaks. A second major fault, the Doornkop Fault, which trends in an east west direction, occurs towards the southern portion of the lease area. This fault dips to the south and has an up-throw to the north. Nearly the entire upper Witwatersrand section is present in the lease area and therefore all the major zones are present, though due to the distance of the area from the fan head, the number of economic bands and their payability is limited. Eight of the well-known reefs are present in the area, but only the Kimberley Reef and South Reef are considered viable at this stage. The resource is concentrated in the Kimberley and South Reefs. The Kimberley Reef is contained in the Vlakfontein Member of the Westonia Formation. This reef, also known as the K9 Reef horizon, rests on an unconformity and is a complex multi-pulse conglomerate, which can be separated into four facies or cycles. All four cycles consist on average of an upper conglomerate and a lower quartzite. The characteristics of every cycle are area-dependent and the grades are variable within each cycle. The South Reef is approximately 900 meters below the current Kimberley Reef mining, and between 7.5 and 60 meters above the Main Reef horizon. The hanging wall to the South Reef consists of siliceous quartzites with non-persistent bands of blue-shot grit and thin argillite partings. The footwall to the South Reef is a light colored and fairly siliceous quartzite. Secondary conglomerate bands and stringers in the hanging wall and footwall of the South Reef may contain sporadic gold values. The general strike of the reef is east-west, with a dip from 10 to 20 degrees. The orebody at Doornkop has a strike length of 4km and a width of 4km from west to east.

During fiscal 2011, the gathering of additional geological information from on-reef development and exploration drilling on the South Reef resulted in an increase in confidence to successfully build up maximum production. The geological, depositional, facies & evaluation models receive regular attention and are being expanded as the new data becomes available. A 3-D geological model was developed for the mine. This model incorporates the Kimberley, South & Main Reefs.

**Mining Operations:** These operations are subject to the underground mining risks detailed in the Risk Factors section.

Doornkop uses both mechanized bord-and-pillar and narrow-reef conventional mining. Due to the shallow to moderate depths of the operations, seismicity and high rock stress related problems are infrequent. There is a risk of subterranean water and/or gas intersections in some areas of the mines. However, this risk is mitigated by active and continuous management and monitoring, which includes the drilling of boreholes in advance of faces. Where water and/or gas are indicated in the drilling, appropriate preventative action is taken.

The Doornkop South Reef Project was announced on January 22, 2003. The project involved the deepening of the Doornkop main shaft to 1,973 meters to access the South Reef between 1,650 and 2,000 meters below surface, and includes development towards these mining areas. The estimated final capital cost is R1,811 million (US\$239.9 million) with R1,701 million (US\$225.3 million) spent as at June 30, 2012.

The improvement in year-on-year production at Doornkop reflects mainly the production build-up on the South Reef. The transfer of an additional six production crews from the Bambanani closed shaft during the first quarter of fiscal 2012 supported build-up on the South Reef and preserved the jobs of employees affected by restructuring.

Tons mined from the South Reef areas accounted for 62% of total tons mined in fiscal 2012 up from 58% the year before while the contribution from the Kimberley Reef declined from 42% to 38%. Overall results were affected by shaft stoppages related to two fatalities and a planned infrastructure stoppage in the third quarter. The planned stoppage related to commissioning challenges faced by newly-built operations. A project to optimize equipment availability and beneficiation processes in the plant was launched in mid-2011. The project is focused on installing or replacing equipment to minimize downtime in the plant and optimize gold recovery. A second phase of plant upgrading to further enhance plant efficiencies will follow completion of phase one.



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In addition, testing and commissioning of the shaft headgear change-over were successfully completed during fiscal 2012. The raise-bore drilling for the 6.1m diameter hole between 106 level and 192 level started during fiscal 2012, with 633m drilled by June 2012. Pilot drilling is planned to be completed during the first quarter of fiscal 2013, and reaming started in September 2012. A drive to further develop safety on railbound equipment continued during fiscal 2012. Going forward focus will be on the installation of the skip arrestors on the rock winder as well as work on the spillage arrangement on 212 level. As part of this project a 340m decline was developed during the third quarter of 2012.

Development meters decreased by 13% or 1,622 meters from the previous year, primarily due to the three months affected by the safety stoppages and the planned stoppage to complete the shaft bottom spillage arrangement. As more mining takes place on the South Reef, the level of confidence on the geology of this reef improves. Few surprises were encountered during the year in terms of geology. The exploration program to further improve confidence will continue. The conversion of the South Reef resource to reserves continued, with an increase of 227,400 ounces of gold (42%) and 962,612 tons (27%).

During fiscal 2012, Doornkop accounted for 8% (6% in 2011 and 5% in 2010) of our total gold production.

**Safety:** The safety record at Doornkop during fiscal 2012 was as follows: LTIFR improved to 6.38 (2011: 8.04) per million hours worked. There were two fatalities at Doornkop during fiscal 2012 (2011: none). Prior to the fatal accidents, the mine achieved 1.7 million fatality-free shifts and 5 million fall-of-ground/fatality-free shifts during the year. The mine achieved five million fall-of-ground fatality-free shifts during the year. The increased focus on safety has streamlined procedures and improved training, maintenance and behaviour. Doornkop was awarded fourth place in the MineSafe competition for its year-on-year improvement in LTIFR.

**Plants:** The processing facilities presently comprise one operating plant, the Doornkop metallurgical plant. The Doornkop metallurgical plant, commissioned in 1985, is a conventional CIP plant, which was used to treat waste rock and other surface accumulations. It is now treating all ore from underground mining at the Doornkop and some of the ore from Gold One's Cooke operations. The plant is serviced by a surface rail network from the Cooke shafts and by a conveyor belt configuration system from Doornkop shaft.

The following table sets forth processing capacity and average tons milled during fiscal 2012 for the Doornkop plant:

Plant	Processing Capacity (tons/month)	Average Milled for the Fiscal Year Ended
		June 30, 2012 (tons/month)
Doornkop	242,500	155,135

In fiscal 2012, the Doornkop plant recovered approximately 94.38% of the gold contained in the ore delivered for processing. During fiscal 2010 a split-stream configuration that isolates the Doornkop ore from the ore from Rand Uranium (Proprietary) Limited ( **Rand Uranium** ) which is treated in terms of a toll agreement, was adopted to improve the accuracy of gold accounting to the respective companies.

**Production analysis:**

Doornkop	Fiscal Year Ended June 30,		
	2012	2011	2010
<b>Production</b>			
Tons ( 000)	1,023	792	595
Recovered grade (ounces/ton)	0.097	0.102	0.105
Gold produced (ounces)	98,863	80,763	62,694
Gold Sold (ounces)	98,027	81,149	62,275
<b>Results of operations (\$)</b>			
Product sales ( 000)	165,271	111,759	68,169
Cash cost ( 000)	111,016	85,999	54,042
Cash profit ( 000)	54,255	25,760	14,127
<b>Cash costs</b>			
Per ounce of gold (\$)	1,142	1,054	822
Capex ( 000) (\$)	37,813	41,782	45,097

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Tons milled from Doornkop were 792,000 in fiscal 2011, compared with 595,000 in fiscal 2010. This was due to the production build-up in the South Reef and the introduction of new trackless machinery on the Kimberley Reef during the year and the introduction of new trackless machinery on the Kimberley Reef during the year. Recovered grade deteriorated slightly from 0.105 ounces per ton in fiscal 2010 to 0.102 in fiscal 2011. This was due to the decrease of the grade in the South Reef, which was

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offset by the increase in grade recovered from the Kimberley Reef. Ounces produced increased from 62,694 in fiscal 2010 to 80,763 in fiscal 2011, reflecting the production build-up of the South Reef.

Production from trackless areas in the Kimberley Reef section will continue through the build-up phase of mining from the South Reef project areas.

Revenue received increased from US\$68.2 million in fiscal 2010 to US\$111.8 million in fiscal 2011 as a result of the increase in ounces produced and the higher gold price received. Cash costs per ounce were 28% higher at US\$1,054/oz, mainly due to the increase in production. Also contributing was the annual increase in labor rates of 7.5% and the 25% increase in electricity costs.

Tons milled from Doornkop were 1,023,000 in fiscal 2012, compared with 792,000 in fiscal 2011. This was mainly due to production build-up in the South Reef. South Reef areas accounted for 62% of total tons mined in fiscal 2012; up from 58% in fiscal 2011. The results were affected by safety-related stoppages after two fatalities in January 2012 and a management decision to upgrade infrastructure on the higher-grade South Reef. Recovered grade deteriorated slightly from 0.102 ounces per ton in fiscal 2011 to 0.097 in fiscal 2012. This was due to the decrease of the grade in the South Reef areas and the Kimberley reef areas. Management remains confident of the geology and grade available in the South Reef. Ounces produced increased from 80,763 in fiscal 2011 to 98,863 in fiscal 2012, reflecting the production build-up of the South Reef.

Revenue received increased from US\$111.8 million in fiscal 2011 to US\$165.2 million in fiscal 2012 as a result of the increase in ounces produced and the higher gold price received. Cash costs per ounce were 8% higher at US\$1,142/oz, mainly due to the increase in production. Contributing factors were the annual increase in labor rates of 9.2% and the 16% increase in electricity costs.

The hoisting capacity of the Doornkop shaft is 185,000 tons per month. The average tons milled in fiscal 2012 were 85,000 tons per month.

On a simplistic basis, assuming no additional resources are identified, at expected production levels, it is foreseen that: the reported proven and probable mineral reserve of 10.3 million tons (1.1 million ounces) will be sufficient for the Doornkop shaft to maintain production until approximately fiscal 2027.

**Capital Expenditure:** Harmony incurred R294 million (US\$37.8 million) in capital expenditure in fiscal 2012 at Doornkop, primarily for the South Reef project (32%) and ongoing capital development (46%). The planned capital expenditure for fiscal 2013 is R279 million (US\$34.0 million) for the Doornkop South Reef project and ongoing capital development.

### ***Joel***

**Introduction:** Joel is located in the Free State province, on the south-western edge of the Witwatersrand basin. The mine comprises of two shafts, North and South shafts. Previously ore mined at Joel was transported to Central Plant, 38 kilometers away, for processing, but since the re-commissioning of the Joel plant in November 2009, the ore is now processed on site.

**History:** Joel was purchased from a subsidiary of AngloGold at the same time as the rest of the Freegold assets in January 2002.

**Geology:** The main structures on Joel Mine are associated with the Platberg Extensional event, which formed the De Bron and associated faults. These faults are north South striking, steeply dipping and typically have downthrows to the east in the order of 10 to 100m. These form a graben against the De Bron Fault, which has a 450m up throw to the east. East of the De Bron Fault the reef has been truncated/eroded against the Karoo.

The complex nature of the reef, with multiple pulses of detrital influx and scouring non-deposition on paleotopographic highs and the mixing between the Beatrix, Beatrix-VS5 Composite Reef and Beatrix-VS5-Aandenk, has resulted in a highly irregular distribution of gold throughout the mining area. There are broad low and high-grade zones on the scale of hundreds of metres, which are considered likely to be repeated within the reef environment beyond the limits of the current development, however, the detailed grade distribution within these zones remains very unpredictable.

For the purposes of resource estimation, a detailed facies model is used and is based on detailed sedimentological observations and absence of well-mineralized reef at paleo-topographic highs.

**Mining operations:** These operations are subject to the underground mining risks detailed in the Risk Factors section. The management teams regularly revisit their mining strategy and management procedures in order to minimize risks.

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Scattered mining takes place on the Beatrix Reef, down to a depth of some 1,400 meters. Upgrading of the infrastructure at North Shaft is currently in progress.

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While production at Joel has progressively moved to the deeper portions of the mine, some 1,400 meters below surface, the North Shaft, which accesses these areas, was never fully equipped for this and adjustments to the shaft spillage arrangements are now being made retrospectively. The modifications being made include:

changing the winder from sinking to production mode;

installing larger skips;

ensuring that emergency egress is available;

raise boring the lift shaft from 121 to 129 level; and

improving cleaning arrangements at the shaft bottom.

After excessive spillage at the bottom of North shaft at the end of fiscal 2010, which cost Joel 43 production days in the first quarter of fiscal 2011, the shaft bottom rehabilitation process was completed in 50 days (rather than the planned 59 days) with production resuming in September 2010. A permanent spillage arrangement (spillage skip) was installed by December 2010.

Performance was hampered mid-year as the higher grades on 129 level could not be accessed until the lift shaft was commissioned. The lift shaft is an integral part of the logistics of mining at Joel, and was only equipped to 121 level. To facilitate future production for mining below 121 level, we decided to ream and equip the lift shaft to 129 level. A sub-level was developed on 121 level for access to the conveyance only, giving us time to equip the raise bore shaft to 129 level. Equipping of the lift shaft was completed at the end of June 2011.

The mining support design has changed with the shaft changing from shallow to intermediate depth. This will impact on the face advance as well as the costs per square meter. The face time and tramming time decreased in fiscal 2012 with the completion of the lift shaft and mining raises being concentrated closer to the lift shaft. The effect of the changes can be seen in the increase in production results year on year. The advantages have been seen following the completion of the lift shaft. Due to the mine now being classified as an intermediate depth mine, the support type and pattern has changed to pack support and we also have to carry sidings on all panels on and below 129 level.

To ensure production targets are met, plans are in place to ensure the operability of North shaft through a planned maintenance program to minimize breakdowns, maintain blast advances and assess the feasibility of mining below 129 level. Supported by a successful drilling program in 2009 and pre-feasibility study in 2010, a feasibility study on possible mining of 137 level and testing the upside potential of 145 level was completed by the end of the fiscal 2011.

Exceptional production in the first half of fiscal 2012 and sharply higher recovered grades were offset by challenges in the third quarter, including a mud rush in January 2012 which halted production in the development section for five days, a 14-day stoppage in February for unplanned rope guide repairs which locked up ore tonnage underground, and a one-day industry (Cosatu) strike in March 2012.

Grade improved by 34%, with a 37% increase in volumes milled to 557,000 tonnes in fiscal 2012. This resulted in an overall increase of 84% in gold produced to 2,663kg (85,618oz), despite the stoppages noted earlier.

Production at Joel is progressively moving to deeper portions of the mine, some 1,400 metres below surface. Access to these areas is via North shaft, which was never fully equipped for this purpose and required retrospective adjustments to shaft spillage arrangements. In fiscal 2011, these included changing the winder from sinking to production mode, installing larger skips, ensuring emergency egress was available, raise boring the lift shaft from 121 to 129 level, and improving cleaning arrangements at the shaft bottom.

During fiscal 2012, the decline project (to 137 level) started well, reflecting good progress with development metres. Managing the shaft and project schedules is critical for Joel, given its limited shaft flexibility.

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By the end of fiscal 2011, Joel's lift shaft – an integral part of the logistics of mining at this deep mine – was equipped down to 129 level from 121 level. This has provided access to the higher grades at deeper levels. In addition, mining support design was altered with the shaft changing from shallow to intermediate depth. This will impact on the face advance as well as costs per square metre. The benefits of these changes were evident in the first half when Joel recorded the lowest cash operating costs in the Company.

To ensure production targets are met, plans are in place to ensure the operability of North shaft through a planned maintenance program to minimize breakdowns, maintain blast advances and assess the feasibility of mining below 129 level. Supported by a successful drilling program in 2009 and pre-feasibility study in 2010, a feasibility study on mining 137 level and testing the upside potential of 145 level was completed by the end of the review period. The project was approved and began in the last quarter of fiscal 2012.

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During fiscal 2012, Joel accounted for 7% of our total gold production (4% in fiscal 2011 and 5% in fiscal 2010).

**Safety:** Safety at Joel improved during fiscal 2012 with no fatalities (2011: one) and the LTIFR at Joel improved from 2.05 in fiscal 2011 to 1.77 per million hours worked in fiscal 2012. Joel plant achieved one full year without any lost time or reportable injuries.

**Plants:** The Joel plant is a hybrid CIP/CIL plant and was commissioned in 1987. During fiscal 2005, it was decided to close the Joel Plant and place the plant under care and maintenance. Joel Plant was re-commissioned in November 2009 and during fiscal 2012 the plant processed an average of 46,837 tons per month with two mills. This comprised 100% reef. The current monthly capacity is 80,000 tons of rock.

The following table sets forth processing capacity and average tons milled during fiscal 2012 for the operating plant:

Plant	Processing Capacity (tons/month)	Average Milled for the Fiscal Year Ended June 30, 2012 (tons/month)
Joel	80,000	46,837

In fiscal 2012, the Joel Plant operations recovered approximately 94.67% of the gold ore delivered for processing.

**Production analysis:**

Joel	Fiscal Year Ended June 30,		
	2012	2011	2010
<b>Production</b>			
Tons ( 000)	614	448	484
Recovered grade (ounces/ton)	0.139	0.104	0.133
Gold produced (ounces)	85,618	46,586	64,495
Gold Sold (ounces)	86,132	46,618	63,788
<b>Results of operations (\$)</b>			
Product sales ( 000)	144,750	64,928	69,150
Cash cost ( 000)	72,798	59,690	50,017
Cash profit ( 000)	71,952	5,238	19,133
<b>Cash costs</b>			
Per ounce of gold (\$)	836	1,297	792
<b>Capex ( 000) (\$)</b>	10,822	10,461	11,587

Tons decreased from 484,000 in fiscal 2010 to 448,000 in fiscal 2011. Grade decreased by 22% to 0.104 ounces per ton and ounces produced decreased from 64,495 to 46,586 in fiscal 2011. The decreases in production were as a result of the shaft stoppage in July and August 2010 and the process of equipping the lift shaft, which was completed by the end of fiscal 2011.

Revenue decreased by 6% to US\$64.9 million in fiscal 2011, despite the increase in the gold price year on year. Cash costs per ounce increased by 64% in fiscal 2011, primarily as a result of the decrease in ounce produced. Also contributing was the increase in electricity tariffs of 25%.

Tons increased from 448,000 in fiscal 2011 to 614,000 in fiscal 2012. Grade increased by 34% to 0.139 ounces per ton and ounces produced increased from 46,586 in fiscal 2011 to 85,618 in fiscal 2012.

Revenue increased by 123% to US\$144.8 million in fiscal 2012, due to an increase in production performance and gold price year on year. Cash costs per ounce decreased by 36% in fiscal 2012, primarily as a result of the increase in ounce produced.

The rock hoisting capacity at Joel is 50,000 tons per month. The average tons milled in fiscal 2012 was 46,837 tons per month.

Assuming no additional reserves are identified, at expected production levels, it is foreseen that the reported proven and probable mineral reserves of 6.4 million tons (1.0 million ounces) will be sufficient for Joel to maintain underground production until approximately 2023/24. Any future changes to the assumptions upon which the mineral reserves are based, as well as any unforeseen events affecting production levels,

could have a material effect on the expected period of future operations.

**Capital Expenditure:** We incurred R84 million (US\$10.8 million) in capital expenditures at Joel in fiscal 2012. This was mainly on ongoing capital requirements (R38.6 million (US\$4.9 million)), the start-up of the 137 Decline Project (R21.6 million (US\$2.78 million)) and shaft capital (R6.6 million (US\$0.8 million)). Capital budgeted for fiscal 2013 is R135.8 million (US\$16.5

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million), primarily for ongoing capital development and Project Capital, which comprises the deepening from 129 level to 137 level.

### ***Kusasaletu***

**Introduction:** Kusasaletu is located near Carletonville on the Gauteng/North West border in South Africa. The assets and associated liabilities were purchased during fiscal 2001 for approximately R1 billion (US\$128.4 million) from AngloGold. Ore from the operation is treated at the Kusasaletu plant.

**History:** Gold mining began at Kusasaletu in 1978 following approval of the project in 1974 by Elandsrand Gold Mining Company. Two surface shafts and two adjoining sub-vertical shafts were sunk at Elandsrand. The sub-vertical shafts at Elandsrand, which accessed the deeper part of the VCR reef in the lease area, were completed in 1984. The deepening of the sub-vertical shafts to approximately 3,600 meters below surface has been completed after the deepening project was commissioned in 1991. Activities are currently focused on accessing and opening up areas of the new mine and on the development and construction of support infrastructure.

**Geology:** At Kusasaletu we primarily exploit the Ventersdorp Contact Reef, or VCR and the Elsburg Reef. Only the VCR is economic to mine and has been mined at depths below surface between 1,600 and 3,300 meters at the Kusasaletu operations. The VCR consists of a narrow (20 centimeters to 2 meters) tabular orebody of quartz pebble conglomerates hosting gold, with extreme lateral continuity. The VCR strikes east-northeast and has a regional dip of 21 degrees to the south-southeast. Local variations in dip are largely due to the terrace-and-slope palaeotopography surface developed during VCR deposition.

**Mining Operations:** The Kusasaletu mine is subject to the underground mining risks detailed in the Risk Factors section.

The Kusasaletu mine has the challenge of developing a new mine underneath the original mine after the shaft was deepened to access the deeper part of the VCR orebody. The operation is still hampered by the lack of flexibility, an issue that will be addressed by the full commissioning of the new mine. Due to the operating depths of the Kusasaletu underground operations, seismicity and high rock stress are significant risks at the mine. Steps were taken during fiscal 2012 to improve the quality of the pre-conditioning at the stope face and seismic management systems so as to reduce the possibility of face ejection during small, volatile seismic events.

The largely completed deepening project has extended the sub-vertical shafts, accessing the Ventersdorp Contact Reef up to 3,276 meters below collar. Remaining project work is focused on extending the service shaft to 113 level. Completion of the refrigeration complex at 100 level occurred in October 2011, 109 and 113 Mini Fridge Plants are currently operational, and commissioning the 92 level turbine complex has been started during the September 2012 quarter.

Dewatering from Deelkraal on 98 level is currently in progress and dewatering on 102 level will commence during April 2013. Commissioning of 109 and 113 levels BACs will be complete by November 2012. The second escape from 115 to 75 level is in progress, with completion scheduled for March 2013. Sinking was completed to 113 level from 109 level during the year.

In terms of grades, Kusasaletu has now reached an area of localized enrichment although the higher grade was diluted by waste being hoisted with reef and delivered to the plant. A decision to rehabilitate the shaft orepass system after major scaling took place inside these excavations resulted in only one orepass system being available for production. Estimates are that the rehabilitation work will take around four years to complete.

The sub-station for the 100-level refrigeration complex and 98-level complex was commissioned early in the year, and mechanical construction work on the refrigeration plants was completed by year end. Sinking was completed to 113 level from 109 level during the year. The mechanical installation of the turbine on 92 level was completed in March 2011.

Other engineering initiatives include greater use of thermal scanning to detect potential hot connections on electrical panels, protection relays to prevent power outages and a central monitoring system for all pumps. Rotational dam cleaning has eliminated the risk of silting, which has compromised dam capacity in the past and constrained pumping. Additional instrumentation has been installed on all large dams to monitor their levels and prevent mud from being drawn into the valves, causing production delays.

These and other initiatives are expected to improve productivity. Currently, 71% of production at Kusasaletu is from production areas below 100 level (the new mine expansion project) and 29% from production areas in the old mine, above 100 level.

In fiscal 2012, our Kusasaletu operations accounted for approximately 14% (14% in 2011 and 12% in 2010) of our total gold production.



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**Safety:** The focus on safety at Kusasaletu continued through the Qhapelangozi campaign. The LTIFR improved from 7.74 per million hours worked in fiscal 2011 to 5.57 per million hours worked in fiscal 2012. Regrettably there were four fatalities in fiscal 2012 (2011: two). Kusasaletu achieved over 2.5 million fall-of-ground fatality-free shifts and third place in the MineSafe competition for improved LTIFR. A continuous drive to entrench the mine's value system and non-negotiable standards in different disciplines is evident in improved physical conditions.

A new auditing system was successfully introduced, encompassing joint visits to worksites by all service departments, with feedback to relevant supervisory personnel. Pre-planning sessions, including both stoping and development, have been escalated to senior level, with all department heads attending.

Seismicity remains a risk on Kusasaletu and the mine introduced in-stope netting through the Chamber of Mines MOSH initiative to reduce fall of ground injuries. All stope panels on Kusasaletu are equipped with in-stope netting and bolting. The focus on proper pre-conditioning of all stope panels will remain.

**Plants:** Commissioned in 1978, the Kusasaletu Plant consist of milling in closed circuit with primary and secondary hydrocyclones, thickening and cyanide leaching in a CIP pump cell carousel circuit. The CIP was commissioned after an upgrade of the facility in 1999. Ore from Kusasaletu underground operations is delivered to the plant for treatment via conveyor belt after being hoisted from underground. Loaded carbon from the Kusasaletu Plant is transported by road to the Kinross Plant for elution, electro-winning and smelting to produce gold. Residues from the CIP are pumped either to a backfill plant or directly to the tailings facility.

The following table sets forth processing capacity and average tons milled during fiscal 2012 for the plant:

Plant	Processing Capacity (tons/month)	Average Milled for the Fiscal Year Ended June 30, 2012 (tons/month)
Kusasaletu Plant	203,925 <sup>(1)</sup>	100,323

<sup>(1)</sup> Processing capacity will reach its optimal capacity upon completion of the Kusasaletu New Mine Project. In fiscal 2012, the Kusasaletu Plant recovered approximately 96.0% of the gold contained in the ore delivered for processing.

**Production analysis:**

Kusasaletu	Fiscal Year Ended June 30,		
	2012	2011	2010
<b>Production</b>			
Tons ( '000)	1,320	1,212	1,141
Recovered grade (ounces/ton)	0.137	0.149	0.153
Gold produced (ounces)	181,105	180,334	175,029
Gold Sold (ounces)	178,726	185,510	168,244
<b>Results of operations (\$)</b>			
Product sales ( '000)	298,671	253,812	183,603
Cash cost ( '000)	185,254	189,090	143,985
Cash profit ( '000)	113,417	64,722	39,618
<b>Cash costs</b>			
Per ounce of gold (\$)	1,046	1,008	857
<b>Capex ( '000) (\$)</b>	53,486	54,335	56,687

Tons milled from Kusasaletu increased from 1,141,000 in fiscal 2010 to 1,212,000 in fiscal 2011. Ounces produced increased by 3% in fiscal 2011 to 180,344, despite a 3% decline in recovered grade. The increases in production reflects the build-up of the new mine, although the planned build-up was hampered by the accident which damaged the hoisting shaft.

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Revenue was 38% higher at US\$253.8 million in fiscal 2011, mainly due to the higher average gold price and the increase in ounces sold. Cash costs per ounce increased by 18% to US\$1,008/oz as a result of the annual labor increases of 7.5% and the 25% increase in the electricity tariffs.

Tons milled from Kusasalethu were 1,320,000 in fiscal 2012, compared with 1,212,000 in fiscal 2011. Ounces produced increased to 181,105 in fiscal 2012, compared with 180,344 in fiscal 2011 as a result of increased volumes in production. Mining continues in the old, upper areas of the mine, while the new mine project is completed. Recovered grades decreased during fiscal

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2012, resulting in an average of 0.137 ounces per ton in fiscal 2012, compared to the average of 0.149 ounces per ton in fiscal 2011.

Revenue was 18% higher at US\$298.7 million in fiscal 2012, mainly due to the higher average gold price.

The increase in labor rates of 6.5% and the higher than normal electricity increases of 25% approved by NERSA were the main contributors to the increased cash cost. Electricity rates are expected to continue rising by an estimated 25% annually for the next two years. The increase in electricity costs, labor rates and inflation were the main contributors to the increase in cash cost from US\$1,008 per ounce in fiscal 2011 to US\$1,046 per ounce in fiscal 2012.

Kusasaletu has a hoisting capacity of 209,440 tons per month. The average tons milled in fiscal 2012 was 100,323 tons per month.

Assuming no additional reserves are identified, at expected production levels, it is foreseen that the reported proven and probable mineral reserves of 38.7 million tons, or 7.1 million ounces, will be sufficient for the Kusasaletu shaft to maintain underground production until approximately calendar year 2037. Any future changes to the assumptions upon which the mineral reserves are based, as well as any unforeseen events affecting production levels, could have a material effect on the expected period of future operations.

**Capital Expenditure:** Harmony incurred R415 million (US\$53.4 million) in capital expenditure at the Kusasaletu operations in fiscal 2012, mainly for ongoing development (72%), equipment maintenance (16%) and development of the new mine (12%). Harmony budgeted R577.7 million (US\$70.4 million), for capital expenditure at the Kusasaletu operations in fiscal 2013, primarily for ongoing development expenditure.

### ***Masimong***

**Introduction:** Masimong is located in the Free State province, near Riebeeckstad. The Masimong complex comprises an operating shaft - 5 shaft and 4 shaft which, although closed, is used for ventilation, pumping and as a second outlet. Mining is conducted at depths ranging from 1,518 meters to 2,142 meters. Ore is treated at the Harmony 1 Plant, approximately 23 kilometers away.

**History:** Masimong is located in the Free State Goldfield on the south-western edge of the Witwatersrand Basin. The Company purchased the Masimong complex (formerly known as Saaiplaas Shafts 4 and 5) during September 1998.

**Geology:** The operation exploits the Basal Reef, which varies from a single pebble lag to channels on more than 2m thick (although the thicker channels greater than 1m were only seen on Masimong 4 in the Steyn facies). It is commonly overlain by shale, which thickens northwards and completely disappears again north of the North dyke. Masimong is also mining secondary reefs, most notably the B Reef (140m above Basal). The B Reef is a highly channelized orebody. Within the channels, grades are excellent, but this falls away to nothing outside of the channels. Consequently, the operation has undertaken extensive exploration to locate these pay channels.

**Mining Operations:** The operations are subject to the underground mining risks detailed in the Risk Factors section. Due to the shallow to moderate depths of the underground operations, seismicity related problems are relatively infrequent. We regularly revisit our mining strategy and management procedures in connection with our efforts to mitigate risks of these problems. There is a risk of subterranean water and/or gas intersections in some areas of the mine. However, this risk is mitigated by active and continuous management and monitoring, which includes the drilling of boreholes in advance of faces. Where water and/or gas are indicated in the drilling, appropriate preventative action is taken.

Grade remains challenging on Masimong, due to the variability of the B Reef. Further difficulty was experienced with respect to grade in 2012, due to dilution of value due to waste development tons that needed to be hoisted with the reef as a result of problems with shaft infrastructure.

The infrastructural upgrade completed two years ago continues to support improved productivity, efficiencies and output, particularly in the call plant factor. Masimong's historical ventilation issues have been addressed by changing the entire ventilation circuit from a booster to a conventional bottom level return airways system. A new refrigeration plant was installed by in December 2011.

Following the upgrade program, production face advances are planned to increase and every effort made to ensure that panels are well equipped and crews motivated. In addition, steps have been taken to overcome the erratic grade of the B Reef.

The mine received integrated ISO 14001, OHSAS 18 000 and ISO 9000 certification during the year.





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The project to convert Company hostels into quality family rental units was showcased during the year when the Masimong conversion was officially opened. This formed part of the municipal spatial development framework focused on urban renewal.

In fiscal 2012, Masimong accounted for approximately 8% (11% in fiscal 2011 and fiscal 2010) of our total gold production.

**Safety:** Masimong recorded a fatality-free year in fiscal 2012 (2011: one), reaching over one million fatality-free shifts by the end of fiscal 2012. The LTIFR declined slightly to 13.52 per million hours worked (2011: 13.13). Masimong also recorded more than 2 million fall-of-ground fatality-free shifts during the year.

**Plants:** The ore from the operation is sent to Harmony 1 Plant for processing. See *Item 4. Information of the Company Business Bambanani* for a discussion on the plant.

**Production analysis:**

Masimong Shaft Complex	Fiscal Year Ended June 30,		
	2012	2011	2010
<b>Production</b>			
Tons ( 000)	1,029	957	991
Recovered grade (ounces/ton)	0.101	0.144	0.157
Gold produced (ounces)	103,526	137,605	155,609
Gold sold (ounces)	102,978	139,437	153,937
<b>Results of operations (\$)</b>			
Product sales ( 000)	173,652	189,716	168,439
Cash cost ( 000)	108,583	108,172	92,571
Cash profit ( 000)	65,069	81,544	75,868
<b>Cash costs</b>			
Per ounce of gold (\$)	1,057	788	602
<b>Capex ( 000) (\$)</b>	26,771	25,446	23,407

Tons milled decreased by 3% in fiscal 2011 to 957,000 tons. Recovered grade decreased in line with the mine plan to 0.144 ounces per ton. Ounces produced decreased by 12% to 137,605 in fiscal 2011.

Revenue increased from US\$168.4 million in fiscal 2010 to US\$189.7 million in fiscal 2011. This was due to the higher average gold price received. Cash costs per ounce increased by 31%, due to increases in labor costs (the annual labor rate increases of 7.5%) and the 25% increase in electricity tariffs.

Tons milled from Masimong increased by 8% to 1,029,000 in fiscal 2012, compared with 957,000 in fiscal 2011, and ounces produced were 103,526 in fiscal 2012, compared with 137,605 in fiscal 2011. Year-on-year gold production decreased due to a decrease in grade. The reduction in grade was due to damage to the reef pass system that resulted from wear and tear. Subsequently the reef and waste were transported through the existing waste pass system while re development of the reef system was done. This resulted in dilution of grade from underground.

Revenue decreased from US\$189.7 million in fiscal 2011 to US\$173.6 million in fiscal 2012. The decrease in recovered grade was the main contributor to the decrease in revenue; however, this was partially negated by an increase in the average gold price received. Cash costs per ounce increased by 34%. The increases in labor costs (the annual labor rate increases between 7.5% and 10%) and the 25% increase in electricity tariffs were negated by the 11% higher R/US\$ exchange rate. Cash costs were US\$108.5 million in fiscal 2012 compared with US\$108.1 million in fiscal 2011 with cash costs per ounce at US\$1,057 in fiscal 2012 compared with US\$788 in fiscal 2011. This increase in cash cost is mainly attributable to an 11% higher R/US\$ exchange rate and annual cost increases. The biggest cost increase contributors were annual labor cost and electricity cost increases.

Recovered grade declined from 0.144 ounces per ton in fiscal 2011 to 0.101 ounces per ton in fiscal 2012.

Assuming no additional reserves are identified, at expected production levels, it is foreseen that the reported proven and probable mineral reserves of 7.6 million tons (1.1 million ounces) will be sufficient for the Masimong shaft complex to maintain underground production until approximately fiscal 2025. Any future changes to the assumptions upon which the reserves are based, as well as any unforeseen events affecting production levels, could have a material effect on the expected period of future operations.

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**Capital Expenditure:** Masimong incurred approximately R208 million (US\$26.8 million) in capital expenditures in fiscal 2012, largely spent on the refrigerator plant, Masimong 4 plug, OAN energy saving project, new inter-level ore pass system and the infrastructure upgrade. We have budgeted a total of R172 million (US\$21.0 million) for capital expenditures at Masimong

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in fiscal 2013, primarily for ongoing capital development, a medical hub, overhead line between mm4# and mm5# and compressor move to mm.

**Phakisa**

**Introduction:** We acquired Phakisa when we, in January 2002, acquired the Freegold operations from AngloGold through a 50% joint venture with ARMGold. In September 2003, we acquired 100% of these operations when ARMGold became a wholly-owned subsidiary. The operation is located in the Free State province. Production from the operations is processed through Harmony 1 Plant.

**History:** Exploration, development and production history in the area of the Freegold assets dates from the early 1900 s, leading to commercial production by 1932. Subsequent consolidation and restructuring led to the formation of Free State Consolidated Gold Mine (Operations) Limited, which became a wholly-owned subsidiary of AngloGold in June 1998.

**Geology:** The operation is located in the Free State Goldfield, which is on the south-western edge of the Witwatersrand basin. The Goldfield is divided into two sections, cut by the north-south striking De Bron Fault. The Phakisa mine is located to the west of the De Bron Fault. Mining is conducted in the Basal Reef. The reefs generally dip towards the east.

**Mining Operations:** These operations are subject to the underground mining risks detailed in the Risk Factors section. The management teams regularly revisit their mining strategy and management procedures in order to minimize risks.

The mine received integrated ISO 14001, OHSAS 18000 and ISO 9000 certification during the year. Once the expansion project is complete, this mine will operate to a depth of some 2,400 metres with monthly capacity of 72,000 tonnes. Phakisa includes the Nyala shaft, five kilometres away, which is used to hoist rock and as a second escape route. The production build-up was affected by geological issues, illegal mining activities and down-time on the new infrastructure. Phakisa produces 1,700 tons of ice per day, resulting in water temperatures of <15°C which in turn improved both ventilation and productivity. This will drastically reduce the temperature as soon as the fridge plants are commissioned on 55 level at mid of October 2012. Decline sinking will commence in February 2013.

Since it is still a new mine, development at Phakisa is currently centered close to the shaft in the lower-grade areas. The major drive is on developing the area to the north to access higher-grade zones and move closer to the average reserve grade. Grades will improve further as development progresses towards the north and more reef is exposed in the major north-west to south-east trending Basal Reef payshoot.

During fiscal 2012, Phakisa accounted for 6% (4% in 2011 and 3% in 2010) of our total gold production.

**Safety:** The LTIFR for 2012 was 8.87 per million hours worked (2011: 10.27). There were no fatalities in fiscal 2012 (five in fiscal 2011). Phakisa also recorded 1.5 million fatality-free shifts in June 2012 and 1.5 million fall-of-ground fatality-free shifts towards the end of the year, as well as 2 million tramming fatality-free shifts in fiscal 2012. Notably, the strong improvement in safe use of rail-bound equipment reflects both internal initiatives and the mine s success as an implementation site for the related MOSH initiative. Management is also concentrating on reducing fall-of-ground incidents by implementing best-practice standards.

**Plants:** The ore from the operation is sent to Harmony 1 Plant for processing. See *Item 4. Information of the Company Business Bambanani* for a discussion on the plant.

Phakisa	Fiscal Year Ended June 30,		
	2012	2011	2010
<b>Production</b>			
Tons ( 000)	575	427	374
Recovered grade (ounces/ton)	0.142	0.133	0.118
Gold produced (ounces)	81,695	56,649	44,079
Gold sold (ounces)	81,276	57,227	44,496
<b>Results of operations (\$)</b>			
Product sales ( 000)	136,953	78,831	49,458
Cash cost ( 000)	103,338	67,658	43,040
Cash profit ( 000)	33,615	11,173	6,418
<b>Cash costs</b>			
Per ounce of gold (\$)	1,279	1,200	953

Capex ( 000)

38,925

52,866

64,106

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Tons milled in fiscal 2011 were 427,000, compared with 374,000 tons in fiscal 2010. Gold produced increased by 29% to 56,649 ounces in fiscal 2011. These increases reflect the production build-up at Phakisa. Recovered grade was 0.133 ounces per ton in fiscal 2011, compared with 0.118 in fiscal 2010.

Revenue was 59% higher at US\$78.8 million in fiscal 2011 as a result of the higher average gold price received and the increase in production. Cash costs per ounce for Phakisa was US\$1,200/oz in fiscal 2011, compared with US\$953/oz in fiscal 2010. Costs increased as a result of the production build-up and the cost of employees transferred from closed shafts to Phakisa.

Tons milled increased from 427,000 tons in fiscal 2011 to 575,000 tons in fiscal 2012, with gold production increasing from 56,649 ounces to 81,695 ounces. This was as a result of the planned ramp up in production during the year. Grade was higher in fiscal 2012 at 0.142 ounces per ton, compared to 0.133 in fiscal 2011.

Cash costs per ounce for Phakisa were US\$1,279 per ounce in fiscal 2012, compared with \$1,200 per ounce in fiscal 2011. This increase is primarily attributable to the increase in tons mined, as well as the cost of employees transferred to Phakisa from shafts that were closed during fiscal 2011. Revenue was 74% higher at US\$136.9 million in fiscal 2012 as a result of the higher average gold price received and the increase in production.

The expected capacity of Phakisa will be 72,000 reef tons per month. Phakisa has no rock hoisting facilities and all rock will be transported via a rail system on 55 level to the Nyala shaft for hoisting to surface. First production took place during September 2007, with a build up to full production expected by fiscal 2013.

On a simplistic basis reported proven and probable underground mineral reserves of 21.5 million tons (4.9 million ounces) will be sufficient for the Phakisa shaft to, once production commences, maintain production until approximately fiscal 2033. Any future changes to the assumptions upon which the reserves are based, as well as any unforeseen events affecting production levels, could have a material effect on the expected period of future operations.

**Capital Expenditure:** We incurred approximately R302 million (US\$38.9 million) in capital expenditures at the Phakisa operations in the fiscal year ended June 30, 2012, mainly for the expansion project and ongoing development. We have budgeted R404 million (US\$49.2 million) for capital expenditures in fiscal 2013, primarily for ongoing capital development and twin decline.

## **Target operation**

**Introduction:** The Target operation consists of Target 1, Target 3 and Freddie's 7 & 9 shafts. We acquired Target 1 when Avgold became a wholly-owned subsidiary in fiscal 2004. Target 3, previously Loraine 3, and Freddie's 7 & 9 shafts were acquired from Pamodzi FS in February 2010. They have been incorporated into our Target operation. Target is situated near the town of Allanridge in the Free State Province, some 270 kilometers southwest of Johannesburg. Located on the northern limit of the Welkom Goldfields, the site is accessed via the R30 motorway situated between the towns of Bothaville and Welkom.

**History:** Target 1 was initially explored through surface drilling in the late 1980s with further exploration being undertaken from a 5.6 kilometers long decline, commenced in 1995, driven from 203L at Loraine No. 1 Shaft. A positive feasibility study into the development of a 105 ktpm operation was produced in May 1998 resulting in the decision to develop Target 1. A detailed mine design was produced in 2000 and the mine officially opened in May 2002. Upon closure of the Loraine mine in August 1998, the Loraine No. 1 and No. 2 Shafts were transferred to the Target mine, becoming Target No. 1 and No. 2 Shafts, respectively. No 5 Shaft being the up-cast Ventilation Shaft.

Numerous corporate actions since the 1940s until the 1990s saw the Loraine 3 and Freddie's 7 & 9 shafts change ownership a number of times. Previous owners include the Free State Development and Investment Corporation, Johannesburg Consolidated Investment, Avgold and AngloGold. In 1998, PSGM was formed after purchasing Loraine 3 and Freddie's 7 & 9 shafts from various individuals. During 2002, the mine was sold to Thistle Mining Inc, an international company with interests in the Philippines and South Africa. The mine struggled to make operational profits, and Thistle undertook a restructuring program in 2006, which together with an increase in the Rand gold price resulted in positive operational cash flows. In February 2008, PSGM was purchased by Pamodzi FS. The mine was operated from that time until March 2009, when Pamodzi FS was placed into liquidation.

**Geology:** The gold mineralization currently exploited by Target 1 is contained within a succession of Elsburg and Dreyerskuil quartz pebble conglomerate reefs hosted by the Van Heeverrust and Dreyerskuil Members of the Eldorado Formation, respectively. Additional mineral resources have been delineated in the Big Pebble Reefs of the Kimberley Formation but these are not planned to be exploited in the current life-of-mine plan.

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The majority of the mineral reserves at Target 1 are contained within the Eldorado Fan, a structure with dimensions of some 135 meters vertically, 450 meters down-dip and 500 meters along strike. The Eldorado Fan is connected to the subsidiary

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Zuurbron Fan by a thinner and lower grade sequence of Elsburg Reefs termed the Interfan area. To the north of the Eldorado Fan, a number of fans have been intersected by surface drilling of which the Siberia and Mariasdal Fans are the most significant. These fans are subject to ongoing technical studies and do not form part of the current Target 1 life-of-mine mineral reserve.

A number of faults that displace the reefs of Target 1 have been identified, of which the most prominent are the north-south trending Eldorado Fault and the east-west trending Dam and Blast Faults. The Eldorado uplifts the more distal portions of the Elsburg and Dreyerskuil Reefs while the Blast Fault forms the northern border of Target 1.

Target North is sub-divided into the Paradise, Siberia and Mariasdal areas by the east-west trending Siberia and Mariasdal Faults. To the north of the Siberia Fault, the Eldorado Fault continues trending more to the northwest and an additional north-south trending fault, the Twin Fault has uplifted the distal portions of the reefs. North of the Mariasdal Fault, the reef horizons are at a depth greater than 2,500 meters below surface. Resources have been delineated on strike up to 15 kilometers north of Target 1 mine.

Approximately 40 kilometers north of Target 1, surface boreholes have intersected gold bearing reefs in the Oribi area close to the town of Bothaville. Resources have been delineated at Oribi on the VCR and Elsburg at depths of approximately 2,750 meters below surface.

At Target 3 Shaft there remains a mix of remnant ore blocks including shaft pillar blocks where scattered mining can be exploited, and a number of areas of virgin ground where conventional mining can take place, with the potential to exploit zone 3 in the Freddie's 9 Shaft area.

The Target 3 Shaft ore body has characteristics that suit massive mining techniques in the Eldorados which enable design to be centered on a mechanized operation, utilizing employees from Target 1 skilled in this type of mining, to produce gold at low cash costs.

**Mining operations:** Target is subject to the risks associated with underground mining detailed in the Risk Factors section. The management teams regularly revisit their mining strategy and management procedures in order to minimize risks.

Mining operations at Target 1 comprise one primary underground mine commissioned in May 2002, making use of information systems and mechanization, combined with process-driven organizational design that relies on a multi-skilled workforce. The majority of the production is derived from mechanized mining; however, conventional stoping is still employed primarily to de-stress areas ahead of the mechanized mining.

*Target 1* - After solid results in the first half, unscheduled maintenance on load-haul dumpers ( **LHDs** ) and dump trucks in the third quarter affected loading from the massive stopes. With ventilation and cooling issues resolved, all ten narrow-reef, conventional mining panels were in production during the review period, supported by a clean-mining initiative. Collectively, this has enabled Target 1 to perform consistently and manage its ore reserves better, which is crucial to the mine's success.

*Target 3* - Infrastructure improvements and shaft build-up continued during fiscal 2012. This included a new belt on 71 level to facilitate build-up of the sub-shaft on the higher grade Basal Reef. On the B-Reef, pre-development reef slushers are being used to identify high grade zones, similar to the approach employed by Masimong.

Although challenges remain in improving sub-shaft conditions, the new fridge plant has supported access to more panels in the sub-shaft, contributing in turn to higher grades. Mining on non-critical development ends was halted at the interim stage, improving the recovery grade. Higher grades are expected when volumes mined from the sub-shaft increase.

In fiscal 2012, Target's operations accounted for 12% of our total gold production, compared to 10% in fiscal 2011 and 8% in fiscal 2010.

**Safety:** Reflecting the concerted effort in recent years to improve safety, Target recorded a second consecutive fatality-free year. In the final quarter of fiscal 2012, Target 1 achieved two consecutive accident-free months. The LTIFR improved 38% to 4.78 per million hours worked (2011: 7.71). In the final quarter of fiscal 2012, the Target plant reached 1,000 reportable injury-free days, while Target 1 achieved one million fatality-free shifts in February 2012. Target 1 and 3 combined both achieved one million fall-of-ground fatality-free shifts in fiscal 2012. The combined operation was awarded first place in the MineSafe competition for its year-on-year improvement in LTIFR.

**Plants:** Target Plant was commissioned in November 2001 and currently treats both underground ore and surface sources, which include both waste rock dump and plant clean up material. The process route comprise of a closed circuit SAG mill as well as a closed circuit ROM mill. Both these mills are in closed circuit with hydro-cyclones. The milling circuit is followed by thickening, cyanide leaching, CIP adsorption, elution, electro-winning, smelting and tailings disposal. Both the milling circuits are incorporated in the gravity concentration circuit and the concentrates from this circuit are processed via intensive cyanidation and electro-winning.





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The following table sets forth processing capacity and average tons milled during fiscal 2012:

Plant	Processing Capacity (tons/month)	Average Milled for the Fiscal Year Ended June 30, 2012 (tons/month)
Target Plant	105,000	101,148

In fiscal 2012, the Target Plant recovered approximately 95.33% of the gold contained in the ore delivered for processing.

**Production analysis:**

Target (includes Target 1 and 3)	Fiscal Year Ended June 30,		
	2012	2011	2010
<b>Production</b>			
Tons ( 000)	1,217	888	857
Recovered grade (ounces/ton) <sup>(1)</sup>	0.126	0.125	0.128
Gold produced (ounces) <sup>(1)</sup>	152,814	127,992	113,782
Gold sold (ounces) <sup>(1)</sup>	153,488	129,312	110,598
<b>Results of operations (\$)</b>			
Product sales ( 000)	257,197	154,483	115,772
Cash cost ( 000)	165,153	116,679	87,563
Cash profit ( 000)	92,044	37,804	28,209
<b>Cash costs</b>			
Per ounce of gold (\$) <sup>(1)</sup>	1,077	1,011	783
<b>Capex ( 000) (\$)</b>	44,818	62,792	50,446

<sup>(1)</sup> During 2011, 17073 (2010: 3762) ounces were produced by Target 3 prior to it being considered to be in production. The revenue has been credited against capital expenditure for the period that the shaft was not in production. The costs and ounces were not used in the cash cost per ounce calculation. The ounces were also excluded from the grade calculation.

Ounces produced increased by 12% to 127,992 in fiscal 2011, primarily as a result of Target 3 increased production.

Revenue increased to US\$154.5 million in fiscal 2011 as a result of the higher average gold price and the increase in ounces produced. Cash costs per ounce increased from US\$783/oz in fiscal 2010 to US\$1,011/oz in fiscal 2011. This was mainly due to the delayed start-up of the sub shaft at Target 3 and labor transfers earlier than planned from other Harmony operations to avoid retrenchments.

Tonnages milled from the Target 1 operations increased significantly from 888 in fiscal 2011 to 1,217 in fiscal 2012. Ounces produced increased by 19% to 152,814 in fiscal 2012, primarily as a result of Target 3 increased production.

Maintenance of the average mining grades, and continuing focus on clean-up and clean mining resulted in an improved recovery grade which increased marginally from 0.125 ounces per ton in fiscal 2011 to 0.126 ounces per ton in fiscal 2012.

Cash costs for Target were US\$165.1 million in fiscal 2012, compared with US\$116.6 million in fiscal 2011. This increase was primarily attributed to an increase in electricity costs, earlier than planned labour transfers to Target 3 from other Harmony operations to avoid retrenchments and increased maintenance costs on Target 1 due to unscheduled maintenance on LHDs and dump trucks. Cash costs per ounce were US\$1,077 in fiscal 2012, compared with US\$1,011 in fiscal 2011. This increase was due to higher labor, electricity and maintenance costs.

Assuming no additional reserves are identified, at expected production levels and, at the current planned gold price, it is foreseen that the reported proven and probable mineral reserves of 17.6 million tons (2.8 million ounces) will be sufficient for Target to maintain underground production until approximately 2024. Any future changes to the assumptions upon which the mineral reserves are based, as well as any unforeseen events affecting production levels, could have an effect on the expected period of future operations.

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**Capital Expenditure:** Target incurred approximately R349 million (US\$44.8 million) in capital expenditures in fiscal 2012, principally for ongoing capital development (R202 million (US\$25 million)), development of Block 3 at Target 1 (R50.1 million (US\$6.1 million) and development at Target 3 (R51 million (US\$6 million)). We have budgeted R488.6 million (US\$59.5 million) in fiscal 2013, principally for ongoing capital development, replacement of production vehicles and the continuation of Block 3 development at Target 1 and upgrading of infrastructure at Target 3.

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**Table of Contents****Tshepong**

**Introduction:** We acquired Tshepong when we, in January 2002, acquired the Freegold operations from AngloGold through a 50% joint venture with ARMGold. In September 2003, we acquired 100% of these operations when ARMGold became a wholly-owned subsidiary. These operations are located in the Free State province. Production from the operations is processed through Harmony 1 Plant.

**History:** Exploration, development and production history in the area of the Freegold assets dates from the early 1900 s, leading to commercial production by 1932. Subsequent consolidation and restructuring led to the formation of Free State Consolidated Gold Mine (Operations) Limited, which became a wholly-owned subsidiary of AngloGold in June 1998.

**Geology:** The operation is located in the Free State Goldfield, which is on the southwestern edge of the Witwatersrand basin. The Tshepong mine is located to the north and west of Welkom. Mining is primarily conducted in the Basal Reef, with limited exploitation of the B Reef. The reefs generally dip towards the east or northeast while most of the major faults strike north-south.

**Mining Operations:** The operation is subject to the underground mining risks detailed in the Risk Factors section. The management teams regularly revisit their mining strategy and management procedures in order to minimize risks.

Mining is conducted at depths ranging from 1,671 and 2,245 meters at Tshepong. Tshepong is one of Harmony s lowest-cost producers, although its grade remains sensitive to stopping width. This is rigorously controlled by the under-cut mining method used at this mine.

The sub-71 project, which will connect Tshepong with Phakisa, remains on track for completion in March 2013. This project extends the existing double decline from 71 to 76 level to enable mining on both 73 and 75 levels. The project s goal is to sink the decline to 76 level by March 2013. Management is investigating ways to implement a waste/reef split from the sub-71 decline, which currently affects recovered grade. The mine received integrated ISO 14001, OHSAS 18000 and ISO 9000 certification during the year.

During fiscal 2012, Tshepong accounted for 13% (16% in 2011 and 15% in 2010) of our total gold production.

**Safety:** The overall safety performance improved slightly, with LTIFR at 12.54 (2011: 12.60) per million hours worked. There were regrettably two fatalities during the year (2011: two). Tshepong also recorded 600,000 fatality-free shifts and over 600,000 shifts without a fall-of-ground fatality during fiscal 2012.

**Plants:** The ore from this operation is sent to Harmony 1 Plant for processing. See *Item 4. Information of the Company Business Bambanani* for a discussion on the plant.

**Production analysis:**

Tshepong	Fiscal Year Ended June 30,		
	2012	2011	2010
<b>Production</b>			
Tons ( 000)	1,359	1,481	1,674
Recovered grade (ounces/ton)	0.125	0.140	0.130
Gold produced (ounces)	169,980	207,950	216,986
Gold Sold (ounces)	169,177	209,976	219,332
<b>Results of operations (\$)</b>			
Product sales ( 000)	285,644	287,257	240,473
Cash cost ( 000)	164,197	167,742	151,382
Cash profit ( 000)	121,447	119,515	89,091
<b>Cash costs</b>			
Per ounce of gold (\$)	973	810	677
<b>Capex ( 000) (\$)</b>	37,068	39,030	34,402

Tons milled decreased from 1,674,000 to 1,481,000 in fiscal 2011. Production output was disrupted by two fatal accidents during the year, as well as production stoppages imposed by the DMR. Gold produced was 4% lower in fiscal 2011 at 207,950 ounces. This decrease was due to the lower tons mined, but was offset by the 8% increase in recovered grade, from 0.130 ounces per ton in fiscal 2010 to 0.140 in fiscal 2011.

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Despite the decrease in ounces produced, revenue increased by 19% to US\$287.3 million in fiscal 2011 as a result of the higher gold price received. Cash costs increased by 11% from US\$151.4 million to US\$167.7 million, while cash costs per ounce

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increased by 20% to US\$810/oz in fiscal 2011. This was due to annual labor rates increases of 7.5% and the 25% increase in electricity tariffs. Cash costs per ounce were also negatively affected by the decrease in ounces produced.

Tons milled during fiscal 2012 decreased year on year by 8% (1,359 tons in fiscal 2012 compared with 1,481 tons in fiscal 2011), with gold production decreasing by 18% from 207,950 ounces in fiscal 2011 to 169,980 ounces in fiscal 2012. Production output was disrupted by two fatal accidents during the year and safety related stoppages imposed by the DMR, as well as a wage strike during the first quarter of the year. The decrease was attributable to the decreased volume as well as the decrease in the recovery grade. The recovery grade decreased to 0.125 in fiscal 2012 compared with 0.140 in fiscal 2011. The decrease in recovery grade was primarily due to a decrease in the average mining grade, which was 955 cmg/t in fiscal 2012 compared with 1079 cmg/t in fiscal 2011. The decrease in the average mining grade is in line with the life-of-mine profile. During fiscal 2012, most of the mining (approximately 80%) in Tshepong was on the edges of the main high grade pay shoot and as mining continue south and north the values will continue to be erratic and marginal. The continuation of the main higher grade pay shoot will be mined in the decline area once Sub 71 decline reaches full production and will have a positive effect on the average mining grade going forward.

Revenue reduced by 0.5% to US\$285.6 million in fiscal 2012. Cash costs for Tshepong were US\$164.2 million in fiscal 2012, compared with US\$167.7 million in fiscal 2011. Cash costs per ounce were US\$973 in fiscal 2012, compared with US\$810 in fiscal 2011. The increase in unit cost is attributable primarily to the decrease in the number of ounces of gold produced. The increase in cash costs were primarily due to increases in the costs of labor and high increases in electrical power rates as well as the effect of inflation on costs of materials and supply contracts.

Assuming no additional reserves are identified, at expected production levels and, at the current planned gold price, it is foreseen that the reported proven and probable mineral reserves of 24.3 million tons (3.9 million ounces) will be sufficient for Tshepong to maintain underground production until approximately 2029. Any future changes to the assumptions upon which the mineral reserves are based, as well as any unforeseen events affecting production levels, could have an effect on the expected period of future operations.

**Capital Expenditure:** Tshepong incurred approximately R288 million (US\$37.1million) in capital expenditure during fiscal 2012. The expenditure was primarily for the decline project, ongoing development and the fridge plant conversion project. For fiscal 2013 capital expenditure of R308.6 million (US\$37.5 million) is planned, primarily for ongoing capital development, decline project, as well as a surface refrigeration project.

### ***Virginia Operations***

**Introduction:** The Virginia Operations are located in the Free State province, near Virginia and Welkom. The Virginia operations consist of the original Harmony mines, the Unisel mine and Brand shafts 1 and 3. By the end of fiscal 2011, only Unisel was still in operation, following the closure of Merriespruit 1 during December 2010. Fiscal 2012 results covers Unisel mine only, due to the closure of the remaining Virginia shafts during fiscal 2010 and 2011. Mining is conducted at Unisel at depths ranging from 1,000 meters to 2,000 meters. Ore is treated at the Harmony 1 Plant.

**History:** Our operations in the Free State began with the Harmony mine, which is an amalgamation of the Harmony, Virginia and Merriespruit mines. Beginning in 1996, we began purchasing neighboring mine shafts. The Unisel mine was purchased in September 1996, the Saaiplaas mine Shafts 2 and 3 were purchased in April 1997, the Brand mine Shafts 1, 2, 3 and 5 were purchased in May 1998. Of these operations, Unisel is the sole remaining producer.

**Geology:** The Unisel operation is located in the Free State Goldfield on the south-western edge of the Witwatersrand Basin. The basin, situated on the Kaapvaal Craton, has been filled by a 6 kilometer thick succession of sedimentary rocks, which extends laterally for hundreds of kilometers. The Free State goldfield is divided into two sections, cut by the north-south striking De Bron Fault.

Unisel is situated to the west of the De Bron Fault. Dips are mostly towards the east, averaging 30 degrees but become steeper approaching the De Bron Fault. The western margin area is bound by synclines and reverse thrusts faults and is structurally complex. Towards the south and east, reefs sub-crop against overlying strata, eventually cutting out against the Karoo to the east of the lease area.

Most of the mineral resource tends to be concentrated in reef bands located on one or two distinct unconformities. A minority of the mineral resource is located on other unconformities. Mining that has taken place is mostly deep-level underground mining, exploiting the narrow, generally shallow dipping tabular reefs.

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The Basal Reef is the most common reef horizon. It varies from a single pebble lag to channels of more than 2m thick. It is commonly overlain by shale, which thickens northwards.

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The second major reef is the Leader Reef, located 15-20m above the Basal Reef. Further north, it becomes poorly developed with erratic grades. The reef consists of multiple conglomerate units, separated by thin quartzitic zones, often totaling up to 4 meters thick. A selected mining cut on the most economic horizon is often undertaken.

The Middle Reef, a secondary reef, is mined at Unisel where it comprises approximately 5% of the shaft production. The Middle Reef is a localized channel deposit and lies at irregular elevations between the Basal and the Leader reef.

**Mining Operations:** The operations are subject to the underground mining risks detailed in the Risk Factors section. Due to the shallow to moderate depths of the underground operations, seismicity related problems are relatively infrequent with the exception of the deeper areas on the eastern margin of the operations where the problem receives constant attention. We regularly revisit our mining strategy and management procedures in connection with our efforts to mitigate risks of these problems. There is a risk of subterranean water locally and/or gas intersections in some areas of the mine. However, this risk is mitigated by active and continuous management and monitoring, which includes the drilling of boreholes in advance of faces. Where water and/or gas are indicated in the drilling, appropriate preventative action is taken. The principal challenges at the operations of achieving optimal volumes and grades of ore production are addressed by stringent mineral reserve management.

At Unisel, both Basal and Leader Reef development produced good results after environmental constraints in the E block were removed by the completion of the cooling project. Middle Reef development focused on the decline area pillars and was affected by seismicity and poor ground conditions. No development was undertaken on the A or B Reefs. Overall, the shaft produced reserves on the Basal and Leader Reefs. Future development will continue to focus more on the better-grade E block and portions of the Brand 5 shaft pillar.

In fiscal 2012, the Unisel operation accounted for approximately 4% (5% in fiscal 2011 and 12% in fiscal 2010) of Harmony's total gold production. This reduction is attributable to the closures of Brand 1, Harmony 2 and Merriespruit 3 during fiscal 2010 and Merriespruit 1 during fiscal 2011.

**Safety:** Unisel recorded improved performance across several safety indicators during the year, reflecting the benefits of an improved relationship with organised labour. The safety record during fiscal 2012 deteriorated to an LTIFR of 15.83 (2011: 11.57) per million hours worked. Regrettably there was one fatality during fiscal 2012 (2011: one). Unisel recorded over one million fall-of-ground fatality-free shifts during the review period.

**Plants:** The ore from the operation is sent to Harmony 1 Plant for processing. See *Item 4. Information of the Company - Business Bambanani* for further information on the plant. Central plant is no longer used for the processing of ore from Unisel, the last remaining producing shaft in the Virginia operations.

**Production analysis:**

Virginia Operations	Fiscal Year Ended June 30,		
	2012	2011	2010
<b>Production</b>			
Tons ( '000)	434	636	1,826
Recovered grade (ounces/ton)	0.118	0.112	0.093
Gold produced (ounces)	51,216	71,149	170,013
Gold Sold (ounces)	51,056	72,017	173,035
<b>Results of operations (\$)</b>			
Product sales ( '000)	86,454	97,542	186,649
Cash cost ( '000)	63,609	80,371	176,774
Cash profit ( '000)	22,845	17,171	9,875
<b>Cash costs</b>			
Per ounce of gold (\$)	1,253	1,114	1,036
<b>Capex ( '000) (\$)</b>	9,150	11,373	23,744

Tons milled and ounces produced decreased to 636,000 tons and 71,149 ounces, respectively, in fiscal 2011. This was due to the shaft closures during fiscal 2010 and 2011. Grade increased from 0.093 ounces per ton in fiscal 2010 to 0.112 in fiscal 2011. Cash costs decreased by 55% as a result of shaft closures. This increased the operation's profitability by 74%. Cash costs per ounce increased by 8% to US\$1,114/oz in fiscal 2011.

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Tons milled from the Virginia operations decreased to 434,000 in fiscal 2012, compared with 636,000 in fiscal 2011, and ounces produced were 51,216 in fiscal 2012, compared with 71,149 in fiscal 2011. This is mainly attributable to the closure of Merriespruit 1, safety stoppages by the South African Department of Mineral Resources and a slow start up after the Christmas break. The slightly higher recovered grade year on year did not contribute significantly to the lower ounces produced.

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Cash costs decreased by 21% in fiscal 2012 to US\$63.6 million in fiscal 2012, compared with US\$80.4 million in fiscal 2011. The decrease was mainly due to the closure of Merriespruit 1 during the first six months of fiscal 2012. Cash costs per ounce were US\$1,253 in fiscal 2012, compared with US\$1,114 in fiscal 2011. This increase was attributable primarily to a 28% drop in ounces produced for fiscal 2012. This was partially negated by a drop in the cash costs as well as weakening of the Rand.

Assuming no additional reserves are identified, at expected production levels, it is foreseen that the reported proven and probable mineral reserves of 3.1 million tons (0.4 million ounces) will be sufficient for the Virginia operations to maintain production until approximately 2017. However, any future changes to the assumptions upon which the reserves are based, as well as any unforeseen events affecting production levels, could have a material effect on the expected period of the future operations.

**Capital Expenditure:** Virginia incurred approximately R71 million (US\$9.1 million) in capital expenditures at the Unisel operation in fiscal 2012, principally for ongoing capital development. We have budgeted R80 million (US\$9.7 million) in fiscal 2013. The majority of this capital (68%) will be spent on the ongoing development capital, 16% on major equipment repairs/replacements and 10% for the hostel privatization project.

### **Other Surface**

**Introduction:** Other Surface consists of Kalgold, Phoenix and the surface operations owned by the Freegold and Avgold companies. As the results of operations for Other Surface consist primarily of the results from Kalgold and Phoenix, these two operations are discussed separately.

### ***Kalgold***

**Introduction:** Harmony's only opencast mining operation in South Africa is the Kalgold gold mine that is situated 60 kilometers south of Mahikeng in the North West Province of South Africa.

**History:** Harmony acquired Kalgold on July 1, 1999 and fully incorporated Kalgold into its existing operations in October 1999. Prior to Harmony's acquisition of the Kalgold mine, the mine had already been in operation for three years.

**Geology:** The Kalgold operation is located within the Kraaipan Greenstone Belt. This is part of the larger Amalia-Kraaipan Greenstone terrain, consisting of north trending linear belts of Archaean meta-volcanic and metasedimentary rocks, separated by granitoid units. Mineralization occurs in shallow dipping quartz veins, which occur in clusters or swarms, within the steeply dipping magnetite-chert banded iron formation. Disseminated sulphide mineralization, dominated mostly by pyrite, occurs around and between the shallow dipping quartz vein swarms. The D Zone is the largest orebody encountered and has been extensively mined within a single open-pit operation, along a strike length of 1,300m. Mineralization has also been found in the Mielie Field Zone (adjacent to the D Zone), the A Zone and A Zone West (along strike to the north of the D Zone), and the Watertank and Windmill areas to the north of the A Zone.

**Mining Operations:** The Kalgold operation is engaged in open-pit mining. This operation is subject to the opencast mining risks detailed in the Risk Factors section. Small subterranean water intersections in the pit are common and are actively managed and appropriate action is taken when necessary. The primary mining challenges at the Kalgold operations of achieving optimal volumes and grades of ore production are addressed by stringent mineral reserve management. The processing design capacity of the Kalgold operation is 165,345 tons per month. The average tons in fiscal 2012 were 123,333 tons per month.

Volumes at Kalgold declined 17% over the year, largely due to pre-primary crusher breakdown (swing stock and main frame) in first quarter of fiscal 2012. While these were being repaired, ore was crushed by two mobile plants and lower throughput countered by feeding higher-grade material from the stockpile. Gold produced declined by 17% to 33,469 ounces. The Kalgold plant was evaluated by a team of internal and external experts, which then prepared an action plan to address outstanding maintenance and implement improvements. This included replacing and repairing the carbon-in-leach tanks, carbon regeneration circuit and elution circuit in the third quarter. The project to replace the carbon in-leach tanks in the plant will be completed in first quarter of fiscal 2013.

The Watertank pit will be mined out within seven months in fiscal 2013 and mining in the A zone pit will be at full production in fiscal 2013.

During fiscal 2012, Kalgold stopped operations for three weeks due to a lack of water supply. Harmony has since adjusted its strategy to reduce its dependency on existing groundwater infrastructure.

Harmony continued with brownfields exploration in areas surrounding the Kalgold operation.

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In fiscal 2012, the Kalgold operations accounted for approximately 3% (3% in fiscal 2011 and fiscal 2010) of our total gold production.

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**Safety:** The Kalgold operations had a LTIFR of 1.27 (2011: 5.43) per million hours worked in fiscal 2012, and recorded no fatal accidents in fiscal 2012. During fiscal 2012, Kalgold achieved 2.5 million fatality free shifts over a 16-year period. It was also awarded second place in the MineSafe competition for year-on-year improvement in LTIFR. Kalgold recorded 51 white flag days and reached one million fatality-free shifts during the year.

**Plants:** Ore is trucked from the pit and is directly tipped into the feed bin of the pre-primary crusher or stockpiled. The ore then undergoes a four phase crushing process before it reaches the Dome stockpile. Three ball mills are used to grind the ore down to between 70-80% less than 75 micron for the leaching process.

The following table sets forth processing capacity and average tons milled during fiscal 2012 for the plant:

Plant	Processing Capacity (tons/month)	Average Milled for the Fiscal Year Ended June 30, 2012
		(tons/month)
CIL Heap Leach <sup>(1)</sup>	165,345	111,865

<sup>(1)</sup> Active use of heap leaching was discontinued in July 2001.

In fiscal 2012, the plant at our Kalgold operations recovered approximately 79.5% of the gold contained in the ore delivered for processing.

**Production analysis:**

Kalgold	Fiscal Year Ended June 30,		
	2012	2011	2010
<b>Production</b>			
Tons ( 000)	1,480	1,775	1,873
Recovered grade (ounces/ton)	0.023	0.023	0.026
Gold produced (ounces)	33,469	40,285	49,063
Gold Sold (ounces)	33,630	41,828	48,097
<b>Results of operations (\$)</b>			
Product sales ( 000)	56,931	57,064	51,437
Cash cost ( 000)	40,003	45,473	36,162
Cash profit ( 000)	16,928	11,591	15,275
<b>Cash costs</b>			
Per ounce of gold (\$)	1,176	1,135	748
<b>Capex ( 000) (\$)</b>	9,836	2,631	1,389

Volumes mined decreased from 1,873,000 tons in fiscal 2010 to 1,775,000 in fiscal 2011. Gold produced decreased by 18% in fiscal 2011 to 40,285 ounces. This decrease was due to mechanical breakdowns in the mill section of the plant

Revenue increased by 11% to US\$57.1 million in fiscal 2011, due to the higher average gold price received. Cash costs per ounce increased by 52% to US\$1,135/oz, mainly due to the lower ounces produced.

Tons milled decreased from 1,775,000 in fiscal 2011 to 1,480,000 in fiscal 2012. Ounces produced decreased to 33,469 in fiscal 2012, compared with 40,285 in fiscal 2011, due to the lower volumes.

Cash costs decreased from US\$45.4 million in fiscal 2011 to US\$40.0 million in 2012.

Gold produced decreased by 17% in fiscal 2012 to 33,469 ounces. This decrease was due to breakdown in pre-primary crusher in the first quarter of 2012.

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Cash costs per ounce increased by 4% to US\$1,176/oz, mainly due to the lower ounces produced.

The processing design capacity of the Kalgold operation is 165,345 tons per month. The average tons milled in fiscal 2012 were 111,865 tons per month.

Assuming no additional reserves are identified and at expected production levels, it is foreseen that the reported proven and probable mineral reserves of 20.6 million tons (0.6 million ounces) will be sufficient for the Kalgold operations to maintain production until approximately fiscal 2024. However, any future changes to the assumptions upon which the reserves are based, as well as any unforeseen events affecting production levels, could have a material effect on the expected period of future operations.

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**Capital Expenditure:** Harmony incurred approximately R76 million (US\$9.8 million) in capital expenditures at the Kalgold operations in fiscal 2012. Harmony budgeted R86.4 million (US\$10.5 million) for capital expenditures in fiscal 2013, primarily for plant structure upgrade and completion of CIL tank farm project.

**Phoenix**

**Introduction:** Phoenix is a tailings retreatment operation, located at Virginia and adjacent to our current and historical mining operations in the Free State province. The Saaiplaas plant is used for the treatment of the material from this project.

**History:** The project commenced during fiscal 2007 and is aimed at treating the surface sources from our operations in the Free State province.

**Safety:** Safety at the Phoenix operations improved slightly year-on-year in fiscal 2012 with LTIFR improving to 2.54 per million hours worked from 2.89 per million hours worked in fiscal 2011. There were no fatalities during fiscal 2012 (2011: none). The plant recorded 2,000 reportable injury-free days in fiscal 2012.

**Plant:** The Saaiplaas plant, commissioned in the late 1950 s, has been converted from the zinc precipitation filter process to the CIL. During 2007, the ROM mills were de-commissioned and the plant started treating slime from Dam 22 and Brand A tailings storage facilities. The plant currently processes reclaimed slime at 6 million tons per annum.

The following table sets forth processing capacity and average tons milled during fiscal 2012 for the Saaiplaas plant:

Plant	Processing Capacity (tons/month)	Average Milled for the Fiscal Year Ended June 30, 2012
		(tons/month)
Saaiplaas	500,000	416,333

In fiscal 2012, Saaiplaas plant recovered approximately 46.3% of the gold contained in the ore delivered for processing.

**Mining operations:** Phoenix, which began five years ago, involves retreating around 6 million tons annually at plant capacity. Phoenix operations were severely hampered by residue deposition dam stability concerns resulting in tonnage reduction upon recommendation from the consultants Jones and Wagner to 423,000tpm. A major capital project is underway to construct a new cyclone dam on the St Helena 1, 2, 3 dam footprint for depositing the full plant residue tonnage at 500 000tpm completion scheduled for April 2013. The Dam 21 source proved problematic with plant recovery requiring process modifications the introduction of pre-oxidation by air injection in the delivery pipeline from the source to the plant to neutralize cyanide consumers and preg robbers yielded a step change in gold dissolution and overall gold recovery improving from 35.1% to 46.3% year-on-year. Plans to increase processed volumes up to 992,000 tons per month, at which rate the life of the project is around 12 years, remain on hold pending further investigation and consideration of options involving potentially converting Central plant to slime treatment when the surface sources are depleted.

During fiscal 2012, Phoenix accounted for 2% of our total gold production (1.5% in fiscal 2010 and fiscal 2011).

**Production analysis:**

Free State (Phoenix)	Fiscal Year Ended June 30,		
	2012	2011	2010
<b>Production</b>			
Tons ( 000)	5,509	5,846	6,083
Recovered grade (ounces/ton)	0.005	0.003	0.003
Gold produced (ounces)	26,427	18,937	20,801
Gold Sold (ounces)	26,749	18,873	20,801
<b>Results of operations (\$)</b>			
Product sales ( 000)	44,939	25,847	22,723
Cash cost ( 000)	25,981	20,761	15,856

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Cash profit ( 000)	18,958	5,086	6,867
<b>Cash costs</b>			
Per ounce of gold (\$)	966	1,141	762
<b>Capex ( 000) (\$)</b>	3,800	3,108	0.660

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Volumes decreased by 4% year on year to 5,846,000 tons, due to the issues experienced (as discussed above in *Mining Operations* ) during fiscal 2011. This affected the ounces produced, which decreased from 20,801 ounces in fiscal 2010 to 18,937 in fiscal 2011.

Despite the lower ounces produced, revenue increased by 14% to US\$25.8 million in fiscal 2011 as a result of the higher average gold price received. Cash costs per ounce in fiscal 2011 were US\$1,141/oz, compared with US\$762/oz in fiscal 2010 due to the lower production as well as the 25% increase in electricity and the increase in the cost of consumables.

Tons treated from Phoenix decreased to 5,509,000 fiscal 2012, compared with 5,846,000 in fiscal 2011. Ounces produced increased to 26,427 in fiscal 2012, compared with 18,937 in fiscal 2011, primarily due to the improved gold dissolution and recovery. The recovered grade improved to 0.005 ounces per ton in fiscal 2012. The grade of the tons treated is dependent on the waste grade at the time at which the original deposition was done.

Cash costs were US\$25.9 million in fiscal 2012, compared with US\$20.8 million in fiscal 2011, primarily due to the higher costs of reagents, power unit cost increases, increased water pumping costs, increased mining contractor costs and reduced volumes impact. Cash costs per ounce reduced during fiscal 2012 to US\$966/oz, compared with US\$1,141 in fiscal 2011 due to the improved recovery more than offsetting the decrease in volume and increase in cost of consumables, water pumping, remaining contractors and 25% increase in electricity. Though this affected the ounces produced, the improved recovery pushed gold production up which increased from 18,937 ounces in fiscal 2011 to 26,427 in fiscal 2012.

Revenue increased by 74% to US\$44.9 million in fiscal 2012 as a result of the higher average gold price received, and the increased gold production.

**Capital Expenditure:** We incurred approximately R30 million (US\$3.8 million) in capital expenditures at the Phoenix operation in fiscal 2012. For 2013, R177 million (US\$21.7 million) is planned, mainly for the major Phoenix 500 upgrade project to improve efficiencies (two additional CIL stages) and build a cyclone dam to return to 500,000 per month for minimum 17 year life.

## **Discontinued operations**

### *Evander*

**Introduction:** The Evander operations are located in the province of Mpumalanga in South Africa and comprise an amalgamation of the former Kinross, Bracken, Leslie and Winkelhaak mines into a mining right of 36,898 hectares, and additional adjacent prospecting rights comprising 19,933 hectares. Ore is treated at the Kinross plant, after the closure of the Winkelhaak plant. An agreement in principle to sell the Evander operations was signed on May 30, 2012.

**History:** Gold mining in the Evander Basin began in 1955. Eventually, four mining operations were established at Evander. In 1996, as a result of the depletion of mineral reserves, all four mining areas were merged to form Evander Gold Mines Limited. In August 1998, Harmony acquired Evander as a wholly-owned subsidiary.

**Geology:** The area covered by Evander's mining authorization and mineral rights is situated within the Evander basin, a geologically discrete easterly extension of the main Witwatersrand Basin. Only one economic reef type, the Kimberley Reef, is mined at Evander. In addition to the faulting of the reef horizon, there are numerous dykes and sills that complicate the mining layouts, the most significant of which is an extensively developed dolerite footwall sill that occasionally intersects the Kimberley Reef, causing displacements within it.

**Mining Operations:** The Evander operations are primarily engaged in underground mining but a limited amount of surface material, containing gold, from the surface clean-up operations are also processed. These operations are subject to the underground mining risks detailed in the Risk Factors section. Due to the shallow to moderate depths of the Evander underground operations, seismicity and high rock stress related problems are relatively infrequent. There is a risk of subterranean water and/or gas intersections in some areas of the mine. However, this risk is mitigated by active and continuous management and monitoring, which includes the drilling of boreholes in advance of faces. Where water and/or gas are indicated in the drilling, appropriate preventative action is taken.

A due diligence of the operations during fiscal 2010 led to the conclusion that the only economically viable shaft was Evander 8. Mining operations at Evander 2 and 5 and 7 shafts ceased during the year and Evander 8 was restructured. The shaft infrastructure at Evander 7 is being utilized by Evander 8 for the pumping of water and the hoisting of rock as well as being available for use as a second escape.

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Following the feasibility study that proved the viability of Evander 8, greater attention was given to re-engineering this shaft which involves not just deepening the decline but repositioning within the payshoot for immediate access to the high-grade areas between 24 and 25 levels. The project's parameters include the optimizing of logistics, cooling and ventilation as well as an

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upgrade of the refrigeration plants and the installation of a 5000 mW BAC (Bulk Air Cooler). The results of these initiatives started to materialize in the last quarter of fiscal 2011. During the June 2011 quarter, more mining crews were moved into the main payshoot of the decline section, where the grade is higher. The mining in the main payshoot has continued in 2012.

During fiscal 2011, the chilled water project was completed. This now pumps cold water from the 7 shaft refrigeration plant to 8 shaft, significantly reducing the heat load in the decline section and improving underground environmental conditions. In addition, much work went into electricity savings through load control on the compressors, and controlling the Winkelhaak water via 8 shaft.

Ongoing improvements to ventilation at Evander included a new raise borehole between 17 and 21 levels, new return airways and the installation of a second refrigeration plant on 18 level. This will improve both temperature and air quality, and enable Evander to operate to 25 level using the same ventilation infrastructure. This infrastructure was completed during this fiscal 2012 year.

Following the closure of the Evander 2 and 5 shafts as well as the Winkelhaak plant, a short-term clean-up program commenced during fiscal 2010 at and in the vicinity of the plant. The aim of this program is to clean up any metal contained in the plant footprints, to process rock from the rock dumps in the vicinity, to rehabilitate the Winkelhaak plant, and to clean the surface rail network. In fiscal 2012, approximately 196,000 tons were treated via this program, yielding 6,238 ounces of gold. Benefits from this program are expected to contribute to Evander's results for another year.

In fiscal 2012, the Evander operations accounted for approximately 8% (6% in fiscal 2011 and 8% in fiscal 2010) of Harmony's total gold production.

**Safety:** The behavior-based safety initiatives at the Evander operations produced significant results in fiscal 2012, with an improvement in terms of LTIFR from 4.0 per million hours worked in fiscal 2012 to 3.72 during fiscal 2011. There were five fatalities at Evander during fiscal 2012 (2011: no fatalities). Evander recorded over one million fall-of-ground fatality-free shifts and one million fatality-free shifts during the review period. It was awarded sixth place in the MineSafe competition for year-on-year LTIFR improvement.

**Plants:** Evander has one active processing plant, the Kinross plant. Ore from Evander 8 is hoisted directly to and treated at the Kinross plant, which is a hybrid CIP/CIL plant.

The following table sets forth processing capacity and average tons milled during fiscal 2012 for the operating plant:

Plant	Processing Capacity (tons/month)	Average Milled for the Fiscal Year Ended June 30, 2012 (tons/month)
Kinross	160,000	53,038

In fiscal 2012, the Kinross plant recovered approximately 96% of the gold contained in the ore delivered for processing.

**Table of Contents****Production analysis:**

Evander	Fiscal Year Ended June 30,		
	2012	2011	2010
<b>Production</b>			
Tons ( 000)	704	916	1,192
Recovered grade (ounces/ton) <sup>(1)</sup>	0.154	0.096	0.108
Gold produced (ounces) <sup>(1)</sup>	108,317	87,900	128,700
Gold Sold (ounces) <sup>(1)</sup>	108,123	88,544	128,507
<b>Results of operations (\$)</b>			
Product sales ( 000) <sup>3)</sup>	180,809	121,452	138,483
Cash cost ( 000) <sup>3)</sup>	98,684	95,285	118,203
Cash profit ( 000) <sup>3)</sup>	82,125	26,167	20,280
<b>Cash costs</b>			
Per ounce of gold (\$) <sup>(1)</sup>	919	1,070	922
<b>Capex ( 000) (\$<sup>3)</sup></b>	<b>22,817</b>	<b>28,102</b>	<b>23,352</b>

<sup>(1)</sup> Amounts include production from surface sources.

Tons milled at Evander during fiscal 2011 were 916,000, compared with 1,192,000 in fiscal 2010. Ounces produced amounted to 87,900 in fiscal 2011, a decrease of 32% from fiscal 2010. These decreases are primarily as a result of the closure of Evander 2 & 5 and 7 shafts during fiscal 2010 and the lower production from Evander 8 due to the ventilation constraints in the decline shaft. A decrease in the grade year on year also contributed to the decrease in ounces produced.

Revenue decreased from US\$138.5 million in fiscal 2010 to US\$121.5 million in fiscal 2011 as a result of the decrease in ounces produced. This was offset by the higher average gold price received. The increase in cash costs per ounce of 16% is due to the lower production of 32%, annual labor rate increases of 7.5% and the 25% increase in electricity tariffs.

Tons milled at the Evander operations were 704,000 in fiscal 2012, compared with 916,000 in fiscal 2011, and ounces produced 108,317 in fiscal 2012 compared with 87,900 in fiscal 2011. Recovered grade was 0.154 ounces per ton in fiscal 2012, compared with 0.096 in fiscal 2011. The increase in the recovered grade was a direct result of having more mining crews in the higher grade decline section, as the ventilation constraints were relieved.

The decrease in cash costs from US\$1,070 per ounce in fiscal 2011 to US\$919 per ounce in fiscal 2012 was attributable primarily to the increase in gold ounces produced in fiscal 2012 compared to fiscal 2011 due to the improvement in recovered grade.

Assuming no additional reserves are identified, at expected production levels, it is foreseen that the reported proven and probable mineral reserves of 5.3 million tons (1.2 million ounces) (excluding the below infrastructure reserves) will be sufficient for the Evander operations to maintain production until approximately fiscal 2022 at Evander 8. Any future changes to the assumptions upon which the reserves are based, as well as any unforeseen events affecting production levels, could have a material effect on the expected period of future operations.

**Capital Expenditure:** Harmony incurred approximately R177 million (US\$22.8 million) in capital expenditures at the Evander operations in fiscal 2012. The expenditure was primarily for the re-engineering project at Evander 8 as well as ongoing development. The operation has budgeted R95 million (US\$11.6 million) for capital expenditures in fiscal 2013 primarily for the upgrading of major equipment, ongoing development and the 8 shaft deepening project. The funding for capital expenditure is expected to come from the operation in anticipation of the conclusion of the disposal.

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### *International Mining Operations*

#### **Papua New Guinean Operations and Exploration**

##### *Overview*

**Introduction:** Fiscal 2012 was the fourth year of the Morobe Mining Joint Venture between Harmony and Newcrest. The Morobe Mining Joint Venture comprises the following three 50:50 joint ventures:

1. the Hidden Valley Joint Venture;
2. the Wafi-Golpu Joint Venture; and
3. the Morobe Exploration Joint Venture on the surrounding tenement package.

Outside of the Morobe province Harmony has expanded the PNG exploration portfolio with three key projects that are 100% owned:

1. Mount Hagen in the Western Highlands;
2. Amanab in the Sandaun Province; and
3. Tari in the Southern Highlands Province.

In terms of regional geological setting, Harmony's tenement interests are all located within the New Guinea mobile belt. The mobile belt comprises tracts of metamorphosed Lower Jurassic and Cretaceous sediments and oceanic crust. These rocks have undergone deformation in the collision zone between the Australian and Pacific Plates and multiple intrusive events including Tertiary granodiorite and younger mineralized porphyries.

Exploration expenditure in PNG for fiscal 2012 was US\$42.6 million. This breaks down into US\$31.8 million as Harmony's 50% contribution to the Morobe Mining Joint Venture exploration program and US\$10.8 million for Harmony 100% projects. Results from exploration work have been highly encouraging, with a major Resource expansion achieved at the

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Wafi-Golpu Project, and a number of targets with the potential for major stand-alone gold and copper/gold deposits identified and advanced to the drill testing phase.

### ***Hidden Valley Operation***

**Introduction:** The Hidden Valley Mine is an open pit gold-silver mine and processing plant, managed by the Hidden Valley Joint Venture. Two separate open pits are in operation, being Hidden Valley-Kaveroi ( **HVK** ) pit, and Hamata pit. The mill has been constructed to process a nominal 4.2 million tonnes (dry metric) of ore per year from the two pits, with de-bottlenecking of the plant planned up to 4.7 million tonnes per year. The mine was officially opened on September 30, 2010.

Newcrest purchased an initial 30.01% interest in the project on June 30, 2008, and provided sole funding of the project to June 30, 2009 to earn a further 19.99%. On June 30, 2009 Newcrest formally achieved 50% ownership in the project, such that the project is now a 50:50 joint venture between Newcrest and Harmony.

The mine is located in a highly prospective exploration lease area and it is envisaged that, as active exploration continues, the life of the process facility may be extended as it is fed from a number of sources.

The project comprises a number of mining and exploration licenses in the Wau District of Morobe Province, PNG and is located 210 kilometers north-northwest of Port Moresby and 90 kilometers south-southwest of Lae, the two largest cities in PNG. Access to the project is presently by sealed road from the deepwater port of Lae to Bulolo. Harmony constructed an all-weather gravel road from Bulolo to the Hidden Valley mine site to access the site.

**History:** Alluvial gold was first discovered at Hidden Valley in 1928 but it was not until the early 1980 s that the area was investigated by CRA Exploration using modern exploration techniques that resulted in the discovery of the Hidden Valley and Kaveroi gold deposits on EL 677. The Hamata deposit was discovered and first drilled by RGC Ltd in 1987 on EL497. The two tenements were subsequently acquired and combined into the one project by Australian Goldfields Ltd (AGF) in 1997. A number of feasibility studies have been prepared for the Hidden Valley Project by the various owners, including one by Abelle in 2003. Harmony extensively reviewed and updated the Abelle feasibility study during fiscal 2006 in order to: (a) reflect changes in the project s ore body interpretation; (b) incorporate increases in capital and operating costs as a result of energy prices and scarce resources in the mining industry as well; and (c) resolve technical aspects that were outstanding from the previous study. The updated feasibility study was presented to the board during June 2006 with subsequent approval given for construction of the project. In late 2007, Harmony began a search for a partner to partake in all of our PNG mining and exploration activities, culminating in the selection of Newcrest in 2008.

**Mining operations:** Currently ramping up to full production, the Hidden Valley Mine is expected to initially process 4.6 million tons (short) of ore per annum from ore mined at two open-pits, the HVK pit and the Hamata pit. Currently planned de-bottlenecking is expected to increase the processing rate to 5.2 million tons (short) of ore per annum by the end of fiscal 2013.

The HVK pit, at an elevation of between 2,500 meters and 2,700 meters above sea level, is the larger pit supplying the majority of the ore. The HVK pit is located some 5 to 6 kilometers from the processing plant. The smaller Hamata pit is directly adjacent to the processing plant on the northern side of the processing plant and is at an elevation of between 1,850 meters and 2,040 meters above sea level. The resources are mined in a sequence that sees the low silver, high gold Hamata ore mined in conjunction with the Hidden Valley/Kaveroi oxide/transition ores (high silver), to be followed by the Hidden Valley/Kaveroi primary ores. The plant and infrastructure for the project has been developed in close proximity to the Hamata deposit.

The planned ramp-up throughput rates were interrupted in the third quarter of fiscal 2011, when a conveyor belt splice failed on the Hidden Valley conveying circuit. The work required to reinstate and re-commission the conveyor has been completed with ramp-up to full capacity in progress. Much of the production impact of this event was mitigated via rapid mobilization of additional contractor haulage trucks, which were used to haul ore from the Hidden Valley stockpile to the process plant. As a result of this unexpected situation annual production came in at the lower end of management guidance, with gold recoveries reaching target levels and a significant increase in silver recoveries compared to 2010 levels.

A program to systematically identify constraints in the process plant and to optimize plant capacity and performance is under way. This will facilitate plant throughput rates achieving the target after reinstatement of the Hidden Valley overland conveyor.

After the overland conveyor was re-commissioned in September 2011, increasing capacity of the materials handling system, Hidden Valley was able to raise milled tonnes by 14% in the second quarter. However, production in ensuing months was severely curtailed by natural factors (an

earthquake in December and exceptionally high rainfall in January and February 2012), impeding access to high-grade ore. This was exacerbated by infrastructural constraints which included a six-day shutdown mainly due to lack of grid power, the decision to reduce throughput to remediate large quantities of water on the tailings storage facility,

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fuel shortages caused by flooding, and a 24-hour shutdown to check for damage after the earthquake. By the end of fiscal 2012, monthly annualized throughput had improved to record levels.

Hidden Valley mine was connected to the national electricity grid in fiscal 2011, and is receiving up to 10MW of grid power at night (100% of total requirements) and 5MW during the day. This has already reduced operational costs in terms of trucking diesel to site, with concomitant environmental benefits, and lessened demand on the site's diesel-fired power station. In terms of the offtake agreement in place, the national utility benefits from securing a large customer which, in turn, will support its infrastructural development and rural electrification program.

In fiscal 2011, additional waste dump capacity was created as part of a long-term strategy to match waste dump capacity to the target mining rate. This ensures that all waste rock mined at Hidden Valley is retained on site and that the potential for impacts on the Watut River is minimized and managed effectively. Innovative waste dump designs that require less rock are addressing this requirement and have allowed a ramp-up in the open-pit mining rate.

Implementation of Hidden Valley's policy of community engagement and local employment, as well as training local employees, continued throughout the year.

**Geology:** The major gold-silver deposits of the Morobe Goldfield, and the Hidden Valley project are hosted in the Wau Graben. The Wau Graben developed as a back-arc rift basin in the southern extension of the New Guinea Mobile Belt (Owen Stanley Foreland Thrust Belt) covering an area of approximately 850 square kilometers in which the Morobe Goldfield, including the Hidden Valley and Hamata deposits are developed.

The Hidden Valley and Hamata Deposits are interpreted as a low-sulphidation or adularia-sericite-type epithermal gold-silver system. The Hidden Valley deposit further forms part of the carbonate-base-metal-gold subgroup, with abundant carbonate vein-gangue. Other gold-silver deposits around the Pacific Rim in this sub-group are Kelian (Indonesia), Woodlark (PNG) and Gold Ridge (Solomon Islands).

Discrete zones of intense stockwork fracture and mineralized veining comprise individual lodes. At the Hidden Valley deposit, gold and silver are related to the flat-lying (Hidden Valley Zone, **HVZ**) and steeply-dipping (Kaveroi Creek Zone, **KCZ**) sheeted vein swarms associated with an underlying shallow thrust. The Hamata deposit gold is contained with structurally controlled shallow dipping veins associated with sericite-pyrite alteration.

**Safety:** As production ramps up at Hidden Valley, the implementation of a comprehensive risk management strategy is evident in the good safety performance for the year, with no fatalities (2011: none) and only four lost-time injuries, resulting in an LTIFR of 0.75 (2011: 0.2). A key aspect of the risk management strategy is ensuring that each work function is undertaken within a risk management framework, and that hazards are identified and managed to maintain this safety performance.

**Plant:** The processing plant production rate is 4.6 million tons of ore per annum and operates using process routes that complement the metallurgical characteristics of the ore types mined. The processing plant operates as:

- (a) a primary crushing plant for the low silver Hamata ores;
- (b) a primary and secondary crushing plant for Hidden Valley / Kaveroi ore; and
- (c) a combined treatment of all ore through grinding, gravity gold recovery, flotation, concentrate regrind, flotation concentrate leaching and counter-current decantation circuit ( **CCD** ) with Merrill-Crowe zinc precipitation, CIL of flotation and CCD tailings, goldroom and tailings detoxification via the INCO process.

The circuit is designed to enable discard of flotation tailings when treating primary ore only from Hidden Valley / Kaveroi orebodies. Tailings from the CCD circuit would still be subject to final treatment through the CIL circuit.

The gravity gold recovered is processed through an intensive cyanide leach followed by electro-winning circuit to produce a high quality dore product.

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Gold and silver rich carbon is processed in an elution plant and precious metals are recovered in the gold room via Merrill-Crowe zinc precipitation stream independent of the CCD circuit.

All tailings are stored in a tailings storage facility, and all water recovered is subjected to detoxification prior to being recycled or released to the environment.

The processing plant and tailings storage facility was built to meet the requirements of the International Cyanide Management Code. Gold production commenced in August 2009 and the plant is currently ramping up to targeted production.

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<b>Hidden Valley</b>	<b>Fiscal Year Ended June 30,</b>		
	<b>2012</b>	<b>2011</b>	<b>2010<sup>(1)</sup></b>
<b>Production</b>			
Tons ( 000)	1,948	1,852	335
<b>Recovered grade (ounces/ton)</b>			
- Gold	0.046	0.054	0.045
- Silver	0.440	0.401	0.233
Gold produced (ounces)	88,800	100,246	61,173
Silver product (ounces)	857,540	673,032	222,717
Gold Sold (ounces) <sup>(1)</sup>	89,315	101,017	53,274
<b>Results of operations (\$)</b>			
Product sales ( 000)	149,787	139,688	10,422
Cash cost ( 000)	109,595	102,294	8,357
Cash profit ( 000)	40,192	37,394	2,065
<b>Cash costs</b>			
Per ounce of gold (\$) <sup>(1)</sup>	1,238	993	1,003
<b>Capex ( 000) (\$)</b>	<b>38,168</b>	<b>41,376</b>	<b>71,420</b>

<sup>(1)</sup> Production for fiscal 2010 was only for three months and is therefore not comparable to fiscal 2011. Ore tonnes mined increased 5% to 1,948,000 tons in fiscal 2012.

Tons milled by the plant increased from 1,678,000 in fiscal 2011 to 1,766,000 in fiscal 2012. This was despite downtime to the overland conveyor for belt repairs and extreme wet weather events during the summer adversely affecting the haulage of ore to the mill and from mining operations.

Ounces produced decreased to 88,800 in fiscal 2012 compared with 100,246 in fiscal 2011 due to lower gold grade and lower recoveries.

Revenue increased by 7% to US\$149.8 million in fiscal 2012 due to the higher average gold price received.

Cash costs increased from US\$102.3 million in fiscal 2011 to US\$109.6 million in 2012 primarily due to increased truck haulage and significant strengthening in the Kina against the US dollar.

Cash costs per ounce increased by 25% to US\$1,238/oz, due to the lower produced ounces, as well as the other factors mentioned above.

Assuming no additional reserves are identified, and at expected production levels, it is foreseen that the reported proven and probable mineral reserves of 40.9 million tons gold and gold equivalents (1.9 million ounces at 1.5g/t) will be sufficient for the operation to maintain production until approximately fiscal 2025. However, any future changes to the assumptions upon which the reserves are based, as well as any unforeseen events affecting production levels, could have a material effect on the expected period of future operations.

**Capital Expenditure:** Attributable capital expenditure by Harmony during the year was US\$38.1 million, which included work on approved mine development (sustaining capital) projects, process plant debottlenecking, new mobile equipment and mine expansion feasibility studies. Harmony's portion of the capital budgeted for fiscal 2013 is US\$50.0 million.

**Exploration in PNG**

The Morobe JV land holding comprises some 4,726 km<sup>2</sup> of tenure. The tenements sit in a broader strategic alliance area where both Harmony and Newcrest operate as JV partners. The tenement package encompasses the Wafi-Golpu and Hidden Valley projects and is a key strategic holding in the Morobe goldfields district. Although prospecting and mining activities date back to the early 1900s, the true potential of the district is only now beginning to crystallise. Fiscal 2012 exploration expenditure for the Morobe JV totaled A\$31.8 million and has been very successful.



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By far the highlight of the 2012 work program was the expansion of the Golpu copper-gold deposit. However, greenfields exploration continued with work programs undertaken on 24 separate prospects in the Morobe JV area. Exploration statistics for fiscal 2012 include:

48,940m diamond drilling; and

2,956 surface samples (soils, rock chips, trenches).

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The underlying strategy of the MMJV exploration program is threefold:

Wafi-Golpu:

resource definition and brownfields exploration to develop Wafi-Golpu into a second mining operation for the MMJV; and

Wafi transfer greenfields exploration targeting discovery of additional resources to expand Wafi-Golpu into a mineral district;

Hidden Valley district brownfields exploration in a 10km radius of the Hidden Valley plant to develop resources to replace mining depletion and supplement millfeed with high grade ore, and support expansion; and

regional greenfields exploration develop a project pipeline capable of delivering additional quality resources and sustaining future growth and operations in the province.

Work programs and results for these activities are detailed below.

The drilling success highlights the fact that the region is under-explored and still has significant potential for the discovery of additional multimillion-ounce gold deposits. Accordingly, the Morobe Exploration JV proposes to spend A\$74 million on exploration in fiscal 2013, of which A\$37 million will be Harmony's share. This includes drilling costs incurred on the Golpu project resource definition program.

### ***Wafi-Golpu Project***

**Introduction:** The Wafi-Golpu JV prospect is a 50:50 joint venture with Newcrest of Australia. Harmony's ownership is through its wholly-owned subsidiary, Wafi Mining Limited. The first exploration at Wafi dates back to the nationwide porphyry copper search by CRA Exploration Ltd in the late 1960's. Elders Resources farmed-in to the project from 1989-1991, and AGF subsequently farmed-in to the project for a short period in 1997 prior to going into administration in 1998. Aurora subsequently acquired the project from Rio Tinto (CRA) in 1999, with ownership passing to Abelle when it merged with Aurora in 2002. We assumed control of the Wafi Project by way of the acquisition of Abelle in 2003. The project is held under 2 contiguous exploration licenses (EL 440, and EL 1105), totaling 130.5 square kilometers. The Wafi-Golpu Project comprises a porphyry and epithermal copper and gold systems within a 2.5km x 2.5km area and contains numerous lodes including the Golpu copper gold porphyry, the Nambonga gold copper porphyry and the Wafi epithermal gold lodes. The Wafi gold mineralization is hosted by sedimentary/volcanoclastic rocks of the Owen Stanley Formation which surrounds the intrusive Wafi Diatreme. Gold mineralization occurs in the form of extensive high-sulphidation epithermal alteration overprinting porphyry mineralization and epithermal style vein-hosted and replacement gold mineralization with associated wall-rock alteration.

**Geography:** The Wafi prospect is located near Mount Watut in the Morobe Province of PNG, approximately 60 kilometers southwest of Lae and about 60 kilometers northwest of Wau. The Wafi camp is located at an elevation of approximately 400 meters above sea level in terrain that is mountainous and forested in most areas. The site is accessed by sealed road (Lae to Bulolo) which comes within 5 kilometers of the eastern edge of the tenements and 15 kilometers from the Wafi camp. From the sealed road, a 38 kilometer dirt-base access track to the prospect is accessible during most weather conditions. The site is serviced by helicopter when the road access is cut due to extreme wet weather. Watut Valley is located immediately west of the project, and the foothills of Watut Valley provide an option for placement of ore processing and mine infrastructure.

**Project Status:** The discovery of extensive zones of additional high-grade mineralization at Wafi-Golpu has been one of the most significant in the world this year. The Wafi-Golpu resource has world-class credentials compared with other similar projects: in size, it is substantial, and it has the highest copper and gold grade among its peers in South East Asia. Drilling at Wafi-Golpu during fiscal 2012 focused on delineation of the existing resource to bring the deposit into reserve and feasibility study. The drilling confirmed the high grade nature of the deposit and added further knowledge in the internal geological structure of the deposit.

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The Golpu copper-gold deposit is a nested porphyry system that comprises at least four separate mineralized intrusions. There is strong potential for additional mineralized intrusives along strike from Golpu, at Nambonga, and for additional feeder zones around the margins and at depth below the diatreme. Recent drilling has shown that the upper area of Golpu (Lift1 in the pre-feasibility study) is open to the north and extending closer to surface in this area. The lower portions of the ore body are open at depth and to the east. In overall assessment, the deposit remains hugely prospective and under-explored.

The Wafi epithermal gold system is also expanding, with new zones of gold mineralization discovered off the northern and eastern margins of the diatreme. We have identified additional Wafi-style gold mineralization adjacent to the Golpu porphyry in drill holes designed to target the latter deposit.

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The drilling exploration strategy for fiscal 2013 for the Wafi-Golpu project will find a balance between further resource growth, further resource definition and engineering focused drilling for infrastructure and geotechnical system and to expand the known resource through step-out drilling while exploring for more Wafi- and Golpu-style mineralization via brownfields exploration strategies inside the 2.5km<sup>2</sup> project zone and greenfield exploration programs along the Wafi transfer structure outside the project zone.

Some of this drilling will specifically target areas of the existing resources requiring additional geotechnical, hydrological and metallurgical information. The majority will focus on resource extension and discovery.

**Pre-feasibility study:** A pre-feasibility study on Golpu was completed and the results released in August 2012. The study allows the Wafi-Golpu Joint Venture participants to report a substantially increased mineral reserve estimate for Golpu. Block caving is the mining method proposed for Golpu, with two lifts to an aggregate depth of 1.45km. Drilling beneath Lift 2 has returned significant high grade intersections and mineralization remains open at depth. The development capital costs and resulting preliminary valuations demonstrate a sound business case that supports the updated Mineral Reserve estimate associated with developing Lifts 1 and 2 at Golpu.

The Wafi-Golpu Joint Venture partners are engaging with key stakeholders (including the PNG and provincial governments, landholders and community representatives) to ensure clear alignment on the objectives and requirements for the project development, key elements of the next phase of work and how the project would proceed in the medium term. In addition, capital costs which have been estimated to PFS level are now being closely evaluated to assess what opportunities exist to further refine them given the continuing weaker global economic conditions. It is anticipated that, subject to satisfactory resolution on these outstanding matters, Harmony and Newcrest will progress the Golpu project into the feasibility study phase during the first half of 2013.

Highlights of the Golpu pre-feasibility study:

Excellent potential for further mineral discoveries in the region.

Golpu deposit a large, low cost, long life, block cave mining operation:

Updated Golpu probable mineral reserve estimate containing 12.4 million ounces of gold and 5.4 million tonnes of copper for 38.9 million gold equivalent ounces. <sup>(1)</sup>

Drilling within the Lift 1 post completion of the study have returned higher grades than modelled in the Mineral Reserve, thus there is grade upside potential to the Mineral Reserve estimate.

First production by 2019, subject to approvals and feasibility study.

Mine life of 26 years and annual production reaches 490 thousand ounces of gold and 290 thousand tonnes of copper during the period 2026 to 2035 under the PFS base case scenario.

First quartile cash costs (whether measured by gold or copper unit cost).

Estimated capital cost to first production of US\$4.85 billion. This estimate is at PFS level and capital costs are undergoing further evaluation with the objective of optimizing these.

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Harmony has budgeted US\$114 million for study and drilling program costs for fiscal 2013 and the Company's share of expenditure for the feasibility study is estimated to be in the order of US\$400 million, over half of which would comprise expenditure on additional resource definition drilling and early stage access decline development.

Total capital expenditure to first production occurs over a 6 year period. Harmony expects to be able to fund its share of the capital expenditure largely from operating cashflow (see Investor Day presentation).

High grade drill intercepts occur at depth indicating good potential for a third mining lift.

Further metallurgical test work is expected to optimize the metal recoveries assumed in the PFS.

The Wafi deposit is in concept study, with completion expected later this calendar year.

<sup>(1)</sup> Gold equivalent based on US\$1400/oz Au and US\$3.50/lb Cu with 100% recovery (figures above quoted on a 100% basis with 50% attributable to Harmony).

The PNG Government can exercise an option to take up to a 30% interest in the project as an equity participant in the expenditure up to the grant of the mining lease.

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Additional elements of the projects include social and environmental programs, statutory permitting and licensing, and community agreements; all necessary to advance the project to development. These aspects are being progressed within the scope of the project execution plan by dedicated in-country staff who are closely engaged with the relevant stakeholders and government agencies. Defining the pathway to an approval to mine, including plans for managing environmental and social impacts, a basis of agreement with government and community stakeholders and gaining adequate security of tenure are critical in any development.

### ***Wafi Transfer Structure & Regional Targets***

**Introduction:** The Wafi structural corridor is constrained between the faulted contact of the Babwaf conglomerate and the Owen Stanley metamorphics. It comprises over 25km of strike with 17km covered by MMJV tenements and which host a number of prospects defined by high-tenor gold and copper-gold geochemistry in stream sediment sampling. The entire corridor ranks as a high-priority target for major mineralized gold and porphyry copper-gold systems similar to Wafi-Golpu. Drilling activities focused on the Zimake and Kesiago prospects with target generation along the remainder of the structure.

**Geology:** The Wafi Transfer structure separates the Tertiary Babwaf conglomerate in the west from Jurassic and Cretaceous metasedimentary rocks of the Owen Stanley Metamorphic group in the east. Regional magnetics show the contact is intruded by a number of magnetic intrusive bodies similar to those at the Wafi-Golpu project and suggest excellent potential for additional mineralized porphyry copper-gold and related gold deposits.

### **Project Status:**

**Zimake:** The Zimake prospect lies approximately 12 km north-east of Wafi-Golpu. Ridge and spur soil sampling outlined highly anomalous zone of copper and gold in soils, over a 1.5 km area. Peak assays included 0.5 g/t Au and 0.2% Cu. The anomaly is associated with a bulls-eye magnetic target, and is prospective for porphyry copper-gold mineralization similar to Golpu.

Two holes were drilled to test this anomaly. The initial drillholes did not encounter economic mineralization but intersected unaltered hornblende diorite. Minor chalcopyrite occurs as vein infill, with very weak epidote alteration. The presence of chalcopyrite may explain the surface geochemical anomaly however further drilling is targeting the potassic altered hornfelsed margin of the diorite, which may be a focus for mineralization.

**Kesiago:** The Kesiago prospect lies approximately 5km south-west of Wafi-Golpu on the Wafi Transfer structure. Historical drilling obtained a best drill intercept of 337.4m at 0.25g/t Au and identified potential for a mineralized porphyry system with characteristics similar to Golpu. One hole, KDH009, was drilled and returned a result of 246m at 0.6 g/t Au from surface.

Mineralization is associated with a base metal-quartz-carbonate stockwork zone which decreases in intensity to 400m and transitions to propylitic alteration. The intercept is located at the interpreted intersection of the Nambonga and Rafferty s fault and may be indicative of porphyry mineralization at depth. A second deep follow-up hole is underway.

### ***Hidden Valley ML Exploration***

**Brownfields Exploration Project Status:** Work to delineate additional resources and delineate high-grade feedstock for Hidden Valley continued on two fronts:

generative work targeting the Watut fault commenced. 137 soil samples were collected as part of a systematic program to generate new targets along strike to the northwest of Hidden Valley; and

Kerimenge-Kulang trend: drill pad and set-up with drilling underway.

In addition detailed mapping has defined excellent potential for high quality, accessible limestone source immediately north of the Hidden Valley mining lease, on which drilling is currently taking place.

**Mungowe/Heyu prospect (EL497):** Drilling at the Heyu prospect was designed to test the Morobe Granodiorite for a large scale bulk minable deposit, similar to Hidden Valley. Hole 1 intersected several base metal carbonate zoned below mineralized structures mapped at surface,

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together with veined and altered granodiorite at depth. Initial results include:

HEYD001: 8m at 1.61 g/t Au from 287m

8m at 0.53 g/t Au from 592m

Results support the interpretation for Au mineralization as leakage into hanging wall metasediments from Hidden Valley style mineralization at depth. The results are not economic but encouraging and further work for fiscal 2013 is planned.

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**Limestone Project:** Although not gold related, but certainly important for the operations at Hidden Valley, is a supply of hard rock and preferably limestone. Mapping of the limestone bodies nearby at Hikinangowe and Mungowie over 25km<sup>2</sup> was undertaken to define a limestone source for at the site. The exercise has been highly successful with a continuous limestone body mapped over a 4 km strike length, ranging from several to tens of meters thick.

The limestone unit lies approximately 3.5 km north of the Hamata open-pit, is relatively accessible from the mine access road and has potential for significant tonnage with little to no overburden. Access to hard rock and limestone will have a positive influence in reducing operating costs and mitigating Acid Rock Drainage at Hidden Valley.

### ***Other Morobe regional exploration***

The highlight of the regional generative exploration activities is the Garawaria prospect which could be one of the largest and most prospective Au anomalies ever developed on the Morobe tenement package.

Mapping and trenching has revealed significant surface mineralization. 122 trench samples were collected and results have confirmed the prospectivity outlining a bedrock gold target over 600m of strike with +1g/t values. Individual trench results included 99m at 2.11 g/t Au, 12m at 2.06 g/t Au, and 12m at 1.21 g/t Au.

Mineralization occurs associated with a hydrothermal breccia, intensely silicified with abundant dark fine grained pyrite. Dickite and alunite identified with the mineralization suggests a high sulphidation epithermal system and potential for porphyry copper gold mineralization at depth.

A drill program is planned for fiscal 2013.

Regional greenfields exploration work continued over the other tenements to develop the project pipeline.

### ***100% Harmony PNG tenements***

A total of A\$10.5 million (K23 million) was spent on greenfields exploration outside of the Morobe JV on Harmony-owned projects in fiscal 2012 where work is now focused on three key projects:

Mount Hagen: One of the highest tenor copper-gold anomalies in the belt of rocks extending between the Frieda River and Yandera Cu-Au-Mo projects, targeting on the Kurunga intrusive complex (porphyry-related gold, copper and molybdenum) and a major epithermal gold target at Penamb prospect;

Amanab: Located in Sandaun Province of western PNG, some 160km north of the Ok-Tedi copper-gold mine, targeting vein stockwork hosted gold mineralization; and

Tari: Located in the Southern Highlands Province, around 50km south-west of Porgera, targeting porphyry copper-gold and associated gold base metal skarn mineralization.

HGEL now holds interest in over 4,254km<sup>2</sup> of exploration tenure in PNG. A budget of A\$14 million has been approved for fiscal 2013.



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### HGEL tenement portfolio:

#### *Mount Hagen Project (Harmony 100%)*

**Introduction:** The Mount Hagen project forms a contiguous block of tenure covering 994km<sup>2</sup> in the Western Highlands region. Over the past two years, exploration work at Mount Hagen focused on the Kurunga Intrusive Complex with the aim of completing first pass exploration over the target by December 2012.

**Project Status:** Drilling has been completed at Kurunga, Penamb and Bakil prospects for a total of 10,200m. Reconnaissance exploration activities comprised of ridge and spur soil sampling and mapping, rock chip and stream sediment sampling. Three main anomalies have been identified, with a copper-gold system at Kurunga prospect, epithermal-style gold mineralization at Penamb East and a copper-molybdenum porphyry system at Penamb (possibly similar to the Yanderra Cu-Mo porphyry). Drilling to date has defined a 400m zone of +0.1% copper at the Penamb porphyry prospect associated with outer potassic style alteration.

All five drill holes have obtained significant intercepts of anomalous copper mineralization:

PNDD001;	285m at 0.1% Cu, 83 Mo from 63m
PNDD002;	144m at 0.1% Cu, 27ppm Mo from 32m 190m at 0.1% Cu, 47ppm Mo from 193m
PNDD003;	225m at 0.1% Cu, 87ppm Mo from 456m
PNDD004;	379m at 0.1% Cu, 135ppm Mo from 198m
PNDD005;	264m at 0.13% Cu, 107ppm Mo from 20m

Follow-up drilling during fiscal 2013 aims to expand this footprint and determine vectors to high grade mineralization.

To the north-east of Penamb prospect on EL1611, a 3km anomalous zone in excess of 0.5 g/t gold has been defined from stream sediment and soil sampling programs which will also see drill testing over the coming months.

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### ***Amanab Project (Harmony 100%)***

**Introduction:** The Amanab Project covers 466km<sup>2</sup> in the West Sepik Province and encompasses the Amanab alluvial goldfield, which is one of 17 recognized alluvial goldfields on the PNG mainland.

Regional geology includes Cretaceous metamorphic (phyllites, slates, marble and volcanics) intruded by younger metadiorites and there is a major anomalous stream sediment footprint. Magnetic anomalies at Amanab may reflect intrusions at depth and as an under explored area with no drill testing for the hard rock source it makes it highly prospective for large-scale epithermal gold deposits (+2Moz) and porphyry copper-gold deposits.

**Project Status:** Ridge and spur soil sampling has been encouraging with first pass sampling returning values up to 13.8 g/t gold. 70 line km s of mapping has also been undertaken on the project and over 1100 surface samples collected. As a result a high tenor gold anomaly with a footprint of over 5km of strike and rock chip values to 39 g/t gold has been developed, associated with northwest trending structural breaks in the magnetics. Drill testing is being planned.

### ***Tari Project (Harmony 100%)***

**Introduction:** The Tari Project consists of one granted exploration license and one exploration license application encompassing some 2,804km<sup>2</sup> of tenure in the Southern Highlands. Regional data assessment identified the tenements as being highly prospective for an Ok-Tedi-style copper-gold system. Key porphyry-epithermal gold targets have been identified at Kopiago and Parero Creek on the Porgera transfer structure some 30 km southwest of Mount Kare. Geologically the tenements are located in Miocene carbonates, intruded by Late Miocene/Pliocene dioritic to monzonitic intrusions within the Papuan Fold Belt. The Lake Kopiago magnetic target is conspicuous as being intensely fractured by dominant NE trending fault systems, similar to the Porgera NE trending transfer.

**Project Status:** Following the tenement grant in March 2012, field work at Kopiago has included reconnaissance mapping and a detailed airborne magnetic-radiometric survey. Results have highlighted a bulls-eye magnetic target associated with strong pervasive propylitic altered intrusives. Previous explorers identified lead, zinc, and copper mineralization associated with hornblende porphyry sills intruding limestone, and gold bearing magnetite skarns on the periphery.

## **REGULATION**

### **Mineral Rights**

#### ***South Africa***

South African law no longer provides for the separate ownership of surface and mineral rights. Prior to the promulgation of the MPRDA on May 1, 2004, it was possible for one person to own the surface of a property, another to own rights to precious metals, and yet another to own rights to base minerals. In terms of the MPRDA, all mineral rights in South Africa are now vested in the South African State. The principal objectives of the Act are:

to recognize the internationally accepted right of the state of South Africa to exercise full and permanent sovereignty over all the mineral and petroleum resources within South Africa;

to give effect to the principle of South Africa s custodianship of its mineral and petroleum resources;

to promote equitable access to South Africa s mineral and petroleum resources to all the people of South Africa;

to substantially and meaningfully expand opportunities for HDSAs including women, to enter the mineral and petroleum industry and to benefit from the exploitation of South Africa s mineral and petroleum resources;

to promote economic growth and mineral and petroleum resources development in South Africa;

to promote employment and advance the social and economic welfare of all South Africans;

to provide security of tenure in respect of prospecting, exploration, mining and production operations;

to give effect to Section 24 of the South African Constitution by ensuring that South Africa's mineral and petroleum resources are developed in an orderly and ecologically sustainable manner while promoting justifiable social and economic development; and

to ensure that holders of mining and production rights contribute towards socio-economic development of the areas in which they are operating.

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Under the MPRDA, tenure over established mining operations is secured for up to 30 years (and renewable for periods not exceeding 30 years each thereafter), provided that mining companies applied for new-order mining rights over existing operations within five years of May 1, 2004, or before the existing right expired, whichever was the earlier date and fulfilled requirements specified in the MPRDA, its Regulations and the Mining Charter.

The Mining Charter was signed by the government and stakeholders in October 2002 and contains principles relating to the transfer, over a ten-year period, of 26% of South Africa's mining assets (as equity or attributable units of production) to HDSAs, as defined in the Mining Charter. An interim target of 15% HDSA participation over five years was set and to this end, the South African mining industry committed to securing financing to fund participation of HDSAs in an amount of R100 billion within the first five years of the Mining Charter's tenure. The Mining Charter provides for the review of the participation process after five years to determine what further steps, if any, are needed to achieve the 26% target participation. In order to measure progress in meeting the requirements of the Mining Charter, companies are required to complete a Scorecard, in which the levels of compliance with the Mining Charter can be ticked-off after five and ten years respectively. The Mining Charter and Scorecard require programs for black economic empowerment and the promotion of value-added production (mineral beneficiation), such as jewelry-making and other gold fabrication, in South Africa. In particular, targets are set out for broad-based black economic empowerment in the areas of human resource and skills development; employment equity; procurement beneficiation and direct ownership. In addition, the Mining Charter addresses socio-economic issues such as migrant labor, mine community and rural development, and housing and living conditions.

Following a review of the progress made by the mining industry after five years of implementing the provisions of the Mining Charter, the DMR recently amended the Mining Charter and the Revised Mining Charter was released on September 13, 2010. The requirement under the Mining Charter for mining entities to achieve a 26% HDSA ownership of mining assets by the year 2014 has been retained. Amendments to the Mining Charter in the Revised Mining Charter include, inter alia, the requirements by mining companies to:

- (i) facilitate local beneficiation of mineral commodities;
- (ii) procure a minimum of 40% of capital goods, 70% of services and 50% of consumer goods from HDSA suppliers (i.e. suppliers of which a minimum of 25% + 1 vote of their share capital must be owned by HDSAs) by 2014. These targets will however be exclusive of non-discretionary procurement expenditure;
- (iii) achieve a minimum of 40% HDSA demographic representation by 2014 at executive management (board) level, senior management (EXCO) level, core and critical skills, middle management level and junior management level;
- (iv) invest up to 5% of annual payroll in essential skills development activities; and
- (v) implement measures to improve the standards of housing and living conditions for mineworkers by converting or upgrading mineworkers' hostels into family units, attaining an occupancy rate of one person per room and facilitating home ownership options for all mineworkers in consultation with organized labor.

All targets must be achieved by 2014.

In addition, mining companies are required to monitor and evaluate their compliance to the Revised Mining Charter, and must submit annual compliance reports to the DMR. The Scorecard makes provision for a phased-in approach for compliance with the above targets over the five year period ending in 2014. For measurement purposes, the Scorecard allocates various weightings to the different elements of the Revised Mining Charter. Failure to comply with the provisions of the Revised Mining Charter will amount to a breach of the MPRDA and may result in the cancellation or suspension of a mining company's existing mining rights.

We actively carry out mining and exploration activities in all of our material mineral rights areas. Accordingly, the MPRDA has not had a significant impact on these mining and exploration activities because we applied for and were granted the conversion of all of our old-order mining rights into mining rights in terms of the MPRDA. We now have to comply with the required annual and bi-annual reporting to the DMR on the Social and Labor Plans, Environmental Management Programs, and Progress Reports on our prospecting rights.

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We have already complied with the requirements of the Mining Charter, with regards to HDSA ownership and our effective ownership as defined by the Mining Charter is 28%. We have been working on our program of licensing since 2004, which involved the compilation of a mineral assets register and the identification of all of our economic, mineral and mining rights. We have secured all old mining rights and validated existing mining authorizations. Our strategy has been to secure all strategic mining rights on a region-by-region basis.

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The conversion of mining rights for our operations were granted except for the Doornkop extension (part of the tribute agreement with Durban Roodepoort Deep) and the Lorraine mining right have not been converted as yet. However, both applications for conversion were submitted for approval before the deadline. The Doornkop extension has been approved by the regional office of the DMR but it is still with the Black Economic Empowerment department of the DMR at its head office. Other than these two areas awaiting final approval from the DMR, all of our mining areas are secured/supported by new-order mining rights.

The Mineral and Petroleum Royalty Act 28 of 2008 and the Mineral and Petroleum Royalty Administration Act 29 of 2008 were assented to on November 21, 2008 with the commencement date set as May 1, 2009. However, the date on which royalties became payable was deferred to March 1, 2010. Royalties are payable to the government according to formula based on earnings before interest and tax. This rate is then applied to revenue to calculate the royalty amount due, with a minimum of 0.5% and a maximum of 5% for gold. For fiscal 2012, the average royalty rate for our South African operations was 0.92% of gross sales.

The MPRDA intends to, among other things:

give effect to the Minister's stated intention to promote investment in the South African mining industry;

establish objective criteria for compliance with the MPRDA's socio-economic objectives;

remove the technical deficiencies of the MPRDA;

align the MPRDA with the Promotion of Administrative Justice Act, 2000; and

coordinate the environmental requirements between the MPRDA and the National Environmental Management Act.

### ***Papua New Guinea***

According to the Mining Act of 1992 (PNG) mineral rights in PNG belong to the government of PNG and they have a statutory right to obtain up to a 30% participating interest in mining development projects. The government then issues and administers mining tenements under the relevant mining legislation, and mining companies must pay royalties to the government based on production.

The key difference in PNG is that citizens have the right to carry out non-mechanized mining of alluvial minerals on land owned by them. These customary rights do not extend over a mining lease, unless an alluvial mining lease is obtained.

Almost all land in PNG is owned by a person or group of persons, and is not generally overlaid by landowner title issues. There is, however, considerable difficulty in identifying landowners of a particular area of land because land ownership may arise from both contract and inheritance, and because of the absence of a formal written registration system.

Prior to commencing exploration, compensation for loss or damage must be agreed with the landowners. Prior to commencing mining, a written agreement must be entered into with landowners dealing with compensation and other matters.

In PNG, Morobe Consolidated Goldfields Limited and Newcrest PNG 1 Limited hold a mining lease and various exploration licenses granted by the Minerals Resource Authority for the Hidden Valley Project. Both parties have obligations under a memorandum of agreement with the state, local government and the landowners.

Wafi Mining Limited and Newcrest PNG 2 Limited hold various exploration licenses granted by the Minerals Resource Authority for the Wafi-Golpu Project, and have entered into a compensation agreement with landowners on one of its exploration licenses.

HGEL manages three main project areas which include the Amanab project in the Sandaun Province, Mount Hagen project in the Western Highlands Province and Tapini project in the Central Province. A fourth project area, Tari project in the Southern Highlands was granted a

tenement in 2012 and another application remains pending.

In PNG there are no applicable exchange control restrictions but the PNG central bank does have to be informed of all transactions and has to approve lending facilities and interests rates charged.

**Environmental Matters**

We are committed to conducting our business in an ethically, morally, socially and environmentally responsible manner that will protect human health, natural resources and the environment in which we live. We aim to balance our economic, social

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and environmental goals and responsibilities to achieve sustainable, profitable growth in our business and, more importantly, to work with communities and regulatory agencies to implement sound management practices which will ensure that our mining is conducted in an environmentally-safe manner. In addition, with regard to legacy mining impacts, we remain committed to identifying and implementing coordinated remediation plans that are acceptable to all relevant parties.

### ***South Africa***

Harmony has recently approved its environmental strategy which is geared towards:

managing the business with environment as an integral part of the business processes;

focusing relentlessly on effectiveness of risk controls;

reducing the environmental liability in the organization; and

create a sharing, learning, challenging and innovative environmental culture.

Environmental compliance is monitored through internal and external audits and technical audits.

Ultimate oversight for environmental strategy and performance in Harmony rests with the Social and Ethics Committee of the board. In addition to an executive environmental manager, an environmental leadership committee drives environmental improvement strategically at group level, which cascades down to the various operations. At each operation, general managers are accountable for environmental management, and each operation develops annual environmental management plans to identify opportunities to increase compliance and minimize pollution.

In support of the above strategy, our environmental policy stipulates that:

By the very nature of our business, we impact on the environment yet we aspire to leaving a net positive legacy wherever we operate. Excellence in environmental performance is essential to our business success.

Wherever we operate, we aim to prevent pollution, or otherwise minimize, mitigate and remediate, harmful effects of our operations on the environment.

We will ensure that compliance with all applicable environmental laws and regulations is the foundation on which we build our environmental performance.

We will promote active partnerships with government, community, labor and other relevant organizations for environmental protection and conservation at international, national, regional and local levels.

We will develop, implement and maintain environmental management systems to drive continual improvement throughout Harmony.

We will set and achieve targets that promote efficient use of resources and reduce environmental exposure, and will report on progress to relevant internal and external stakeholders.



We will manage hazardous substances safely and responsibly.

We will contribute to biodiversity protection considering ecological values and land-use aspects in investment, operational and closure activities.

We will ensure transparent engagement on environmental issues with communities affected by our operations and consider their views and concerns in our decision-making.

We will close our mines in a manner that allows for reclamation of land by self-sustaining communities.

To address and minimize the impact of the Company's operations on the environment, taking into account regulatory requirements, the board has approved a number of five year targets relating to emissions to air, water consumption and usage, energy consumption, recycling and land use based on fiscal 2008, namely:

***Compliance***

The Company will reduce the number of significant incidents to zero.

***Air Pollution***

All sites with emissions >100,000 tonnes per year CO<sub>2</sub> equivalent have achieved the target of having and maintaining energy conservation plans.

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Harmony's aggregate group target for reduction in energy consumption per ton milled is 10% by 2013, based on a 2005 base year.

Harmony's aggregate group target for reduction in GHG per ton milled is 5% by 2013, based on a 2005 base year.

### ***Biodiversity***

All sites will have a biodiversity action plan by 2013, which is subject to impending changes to legislation.

### ***Water Management***

The aggregate group target for reducing fresh water consumption per ton milled is a 5% improvement by 2013, based on a 2008 base year.

The aggregate group target for recycling water is 5% by 2013, based on a 2008 base year.

### ***Land Use***

The aggregate group target is a 5% reduction in the land available for rehabilitation.

### ***Energy Management***

Each operation exceeding 100 000 tonnes CO<sub>2</sub>e emissions must develop and maintain energy conservation plans by 2012. Group aggregate target of a 10% reduction in energy consumption by 2013, based on a 2005 base year.

## **Environmental performance**

### ***Use of resources***

#### ***Water***

Harmony's operations use significant amounts of water, and access to this resource is vital for the growth of our assets. Although we have an adequate supply at present, water is fast becoming a competitive resource. A group-wide campaign to reuse process water and optimize water retreatment is producing excellent results.

Our South African operations do not draw water directly from surface sources, except for Kalgold which draws water from the aquifer. Water is sourced from:

bulk water service providers and municipalities;

surface water run-off;

water that ingresses into deep-level mining operations and is then pumped to surface;

recycled water; and

boreholes.

The Far Western Region Dolomitic Water Association is dealing with a number of water-related issues in the area, including an exercise to remediate the impact of radiation in the Wonderfonteinspruit catchment. While Harmony is a member of the committee working to reduce the impact on this area, it has no operational involvement in the upper region of this catchment, highlighted as the first area requiring intervention. Only one site may be linked to our operations, but this was deemed of lower environmental risk by an intergovernmental team and not requiring any urgent intervention. Harmony considers that any exposure in this catchment is limited and manageable.

*KOSH acid mine drainage:* Harmony carried a third of the costs of pumping and treating fissure water in the Klerksdorp, Orkney, Stilfontein and Hartbeesfontein ( **KOSH** ) Basin for nearly five years. This followed a directive from the Department of Water Affairs. Once the land in question was sold to another mining group in 2009, Harmony requested the department to withdraw the directive given that the relevant section (section 19) of the National Water Act does not provide for holding people responsible for pollution in perpetuity once they are no longer connected to the land. After the department refused to withdraw the directive, Harmony lodged an application in the High Court to have this set aside. The case was heard in October 2011 and judgment handed down in June 2012. The judge dismissed Harmony's application to have the directive set aside and made no order on cost, stating his view that Harmony was not a frivolous litigant as it raised constitutional issues of importance aimed at vindicating a constitutional principle of legality. Harmony has applied for leave to appeal. Potential exposure to the Company at June 30, 2012 was approximately R26 million.

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Our current focus is on improving our understanding of the groundwater and surface water regimes. In the last year, geo-hydrological assessments were undertaken in the Free State region, at Evander, Kalgold and Doornkop. In terms of acid mine drainage, the studies confirm there is no risk of decant from the Free State operations, Evander or Kalgold. From the perspective of surface water pollution, rehabilitation is being prioritized at the joint metallurgical scheme site and the acid plant site in the Free State, as well as at decommissioned shafts in the Free State, Winkelhaak and Deelkraal plants.

Water is being discharged from our Doornkop operation under directive but is in the process of being licensed. Based on the draft licence received, Doornkop is able to comply with its licensing conditions. An intensive water-monitoring program is in place and reporting to the regulator takes place routinely.

### *Energy consumption*

Our energy consumption is largely in the form of electricity drawn from South Africa's power utility, Eskom, which in turn is primarily driven by coal-fired power stations. Hoisting, cooling and ventilation systems all need electrical power, making Harmony a major user of electricity. Energy is therefore a significant and growing portion of our operating costs, given rising electricity tariffs.

After the electricity supply crisis in 2008/2009, domestic tariffs have increased steadily and are scheduled to rise further in the year ahead. Following a 25% hike in fiscal 2010 and 2011, with a further 16% in fiscal 2012, and are expected to increase by 16% in fiscal 2013. These cumulative increases have catapulted energy efficiency from an environmental consideration to a business imperative.

South Africa's 2005 energy efficiency strategy set a national improvement target of 12% by 2015. As industrial and mining companies are the largest users of energy in South Africa, these sectors have been set a final energy demand reduction target of 15% by 2015.

NERSA approved the renewable energy feed-in tariff guidelines in April 2009. While there is still debate on certain issues in these guidelines, this is expected to stimulate the development of renewable energy in the country once it becomes more financially feasible to invest in alternative energy options.

Harmony is committed to reducing its energy consumption and has worked closely with Eskom to manage its electricity use and peak demand both before and after the energy crisis. The Company has a number of efficiency projects under way. Harmony has also actively engaged with Eskom in demand-side management ( **DSM** ) strategies to reduce electricity consumption during peak periods such as early morning and late afternoon. This involves measures such as timing pumping to coincide with cheaper off-peak periods, making more efficient use of Eskom tariffs that reward load-shifting, and improving the efficiency of pumping operations.

We installed sophisticated equipment and variable speed motors that reduce the surge in power consumption when a pump is started. While the software supporting these systems has been complex and costly to develop and implement, significant savings are reflected in lower electrical energy consumed despite the 7% increase in rock mined. We have several projects that have been approved by Eskom for partial DSM funding and several more that have been submitted to Eskom for approval. Seven more energy efficiency projects are in the final stages of investigation.

### *Climate change and greenhouse gas emissions*

Harmony remains focused on reducing the use of fossil fuels and developing initiatives to mitigate and absorb GHGs to reduce its carbon footprint. During fiscal 2012, our total electrical energy use dropped 5.7% to 3,354,273MWh (fiscal 2011: 3,428,706MWh) for our South African operations.

In 2011, Harmony submitted its fourth response to the Carbon Disclosure P