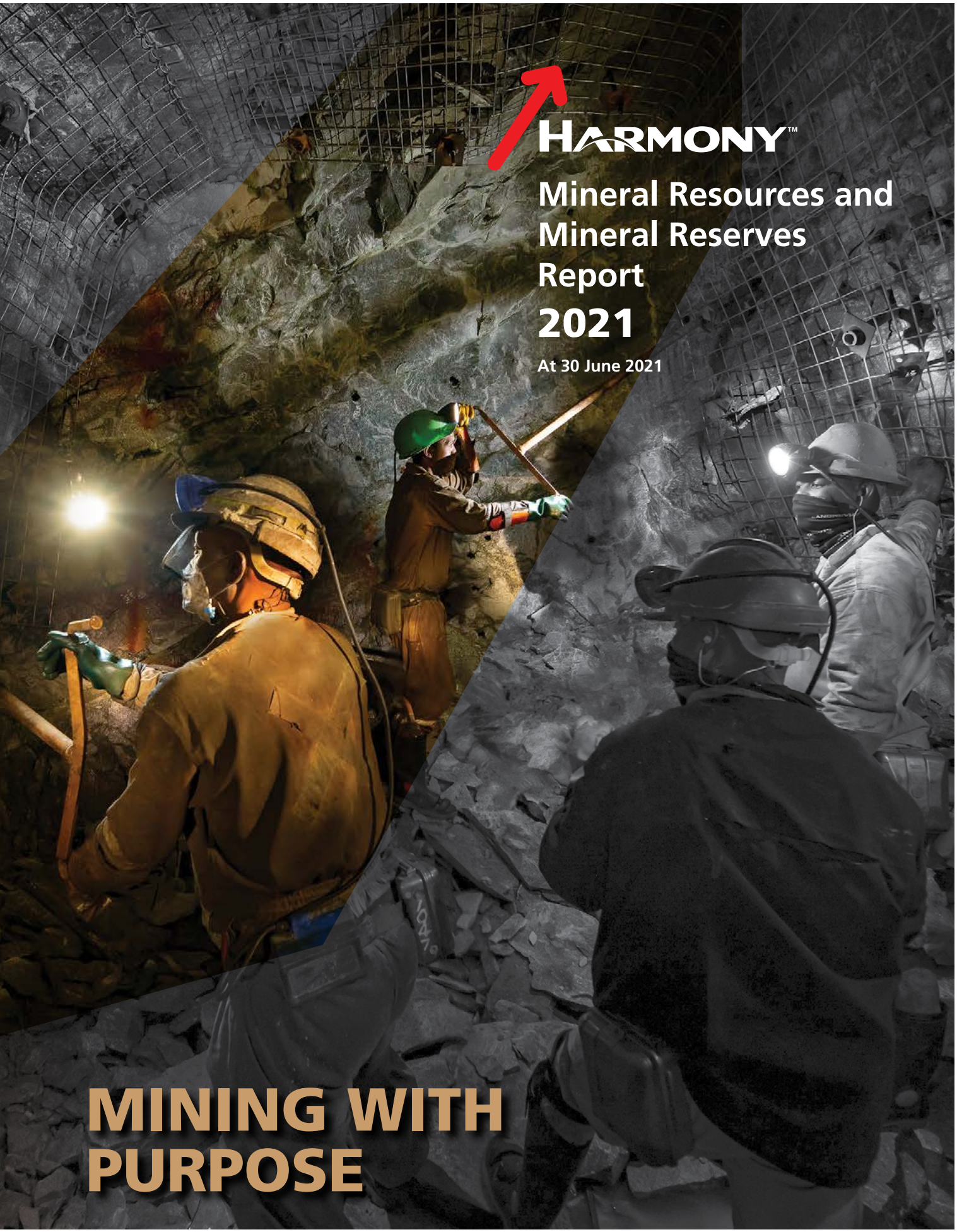

HARMONY™
Mineral Resources and Mineral Reserves Report
2021
At 30 June 2021
MINING WITH PURPOSE

Our 2021 suite of reports:

Integrated annual report 2021

Environment, social and governance report 2021 *(ESG report)*

Mineral Resources and Mineral Reserves 2021

Report to shareholders 2021

Financial report 2021

Operational report 2021

Climate-related financial disclosures 2021*

** Referred to in our reporting suite as TCFD report.*

Other reports:

Form 20-F
Annual report filed with the United States Securities and Exchange Commission, in compliance with the listing requirements of the New York Stock Exchange

These reports and supporting documents are available at **www.harmony.co.za**.

Mponeng underground development end drilling.

CONTENT

HARMONY™

ABOUT THIS REPORT

This statement of Harmony's Mineral Resources and Mineral Reserves (South Africa and Papua New Guinea) as at 30 June 2021 is produced in accordance with the South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (SAMREC) and section 12.13 of the JSE Listings Requirements (as updated from time to time).

In reporting on our Mineral Resources and Mineral Reserves, certain terms are used, such as "Measured", "Indicated" and "Inferred" Mineral Resources, which the United States' Securities and Exchange Commission guidelines strictly prohibit US-registered companies from including in their filings. United States investors are urged to consider the disclosure in this regard in our Form 20-F which is available on our website at **www.harmony.co.za/investors/reporting/20f**.

Note:

- Unless otherwise stated, Harmony's equity interest is 100%
- The convention adopted in this report is that the Measured and Indicated Mineral Resource estimates are reported inclusive of the portion converted to Mineral Reserves
- Throughout this report, "$" or "dollar" refers to US dollar, unless otherwise stated
- "K" refers to kina, the currency of Papua New Guinea
- "Moz" refers to million ounces, "Mt" refers to million tonnes and "Mlb" refers to million pounds
- All production volumes are in metric tonnes (t), unless specifically stated as being imperial tons
- Rounding of figures may result in minor computational discrepancies in the Mineral Resource and Mineral Reserve tabulations
- Where Harmony has included the Inferred Mineral Resource in a feasibility study, this is disclosed under the relevant project
- While our reporting currency is the South African rand, the US dollar equivalents of significant financial metrics, together with the applicable percentage movements, are also provided to aid sector and peer comparisons.

CORPORATE PROFILE

Harmony is an emerging-market gold mining and exploration specialist with a copper footprint. We operate in South Africa and Papua New Guinea, one of the world's premier new gold-copper regions.

With over 70 years in the industry, Harmony is an experienced emerging-market gold miner and the largest gold producer by volume in South Africa. The company is also a significant operator of gold tailings retreatment facilities. Our operations in Papua New Guinea include the Hidden Valley gold mine and our joint-venture stake in the Wafi-Golpu copper-gold project.

Our purpose

A global, sustainable gold producer, creating shared value for all stakeholders while leaving a lasting positive legacy:

- Creating longevity, profitability and sustainability
- Committed to safe, ethical, social and ecologically responsible mining
- Positioning our business to contribute to a low-carbon future.

Our mission

To create value by operating safely and sustainably, and growing our margins.

Our values

- No matter the circumstances, **safety** is our main priority
- We are all **accountable** for delivering on our commitments
- **Achievement** is core to our success
- We are all **connected** as one team
- We uphold **honesty** in all our business dealings and communicate openly with stakeholders.

Our impact

At Harmony, we understand that our activities and the way we conduct business affects the lives of the people we employ, communities that surround our mines and the environment. This impact has economic and social implications for our stakeholders and the countries in which we operate. In line with our purpose, we strive to ensure that our contribution is positive on balance and that our positive legacy endures once mining stops.

Shareholders

Our largest shareholder is African Rainbow Minerals Limited (ARM), which has a stake of 12.12% in Harmony. Our remaining shareholders are geographically diverse and include some of the largest fund managers globally. The largest shareholder base is in the United States (over 50%), followed by South Africa.

Market capitalisation

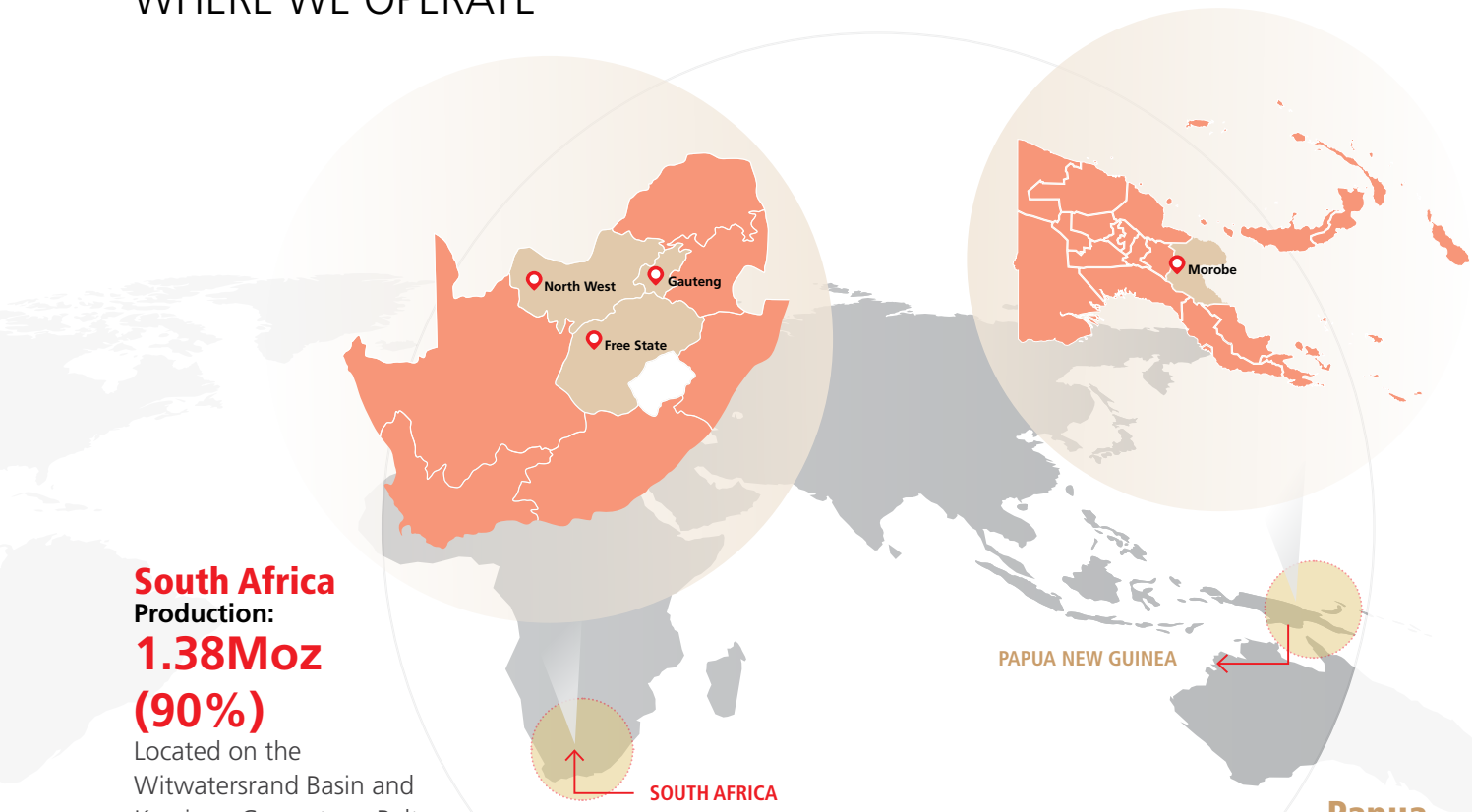
at 30 June 2021
R32.5 billion
(US$2.3 billion)

Headquartered in Randfontein, South Africa, Harmony has its primary listing on Johannesburg's stock exchange, the JSE Limited (HAR). It also has an American depositary receipt programme listed on the New York Stock Exchange (HMY). At 30 June 2021, our market capitalisation is R32.5 billion (30 June 2020: R43.3 billion; US$2.5 billion).

Doing what we know best

South African gold-mining champion – delivering value-enhancing consolidation	Proven expertise in driving efficiencies safely	Elevated margins and operating free cash flow
• Emerging-market specialist (South Africa and Papua New Guinea) • Significant increase in South African production from Moab Khotsong acquisition, followed by Mponeng and Mine Waste Solutions acquisition • Meaningful value-enhancing improvement in South African recovered grade through acquisition, development • Acquisition synergies and other investments have potential to reduce all-in sustaining costs.	• Safety, a core value • Focus – quality ounces and cost reduction aimed at lowering all-in sustaining costs • Proven track record – sustaining and prolonging operating lives of deep-level mines • Wealth of mining expertise – combined, senior executive management and prescribed officers have decades of industry experience.	• Positioned to benefit from gold price and foreign exchange (operating free cash flow highly geared to current gold price environment) • Locking in high margin for future returns • Strengthened balance sheet supports future growth and capital returns • Regional consolidation in South Africa will unlock significant value, synergies and scale • Portfolio value supported by joint ownership of Wafi-Golpu asset.

WHERE WE OPERATE



South Africa

Production:

1.38Moz (90%)

Located on the Witwatersrand Basin and Kraaipan Greenstone Belt, our South African operations accounted for 71% of group Mineral Resources (gold and gold equivalent ounces) and 58% of group Mineral Reserves at year end.

UNDERGROUND

West Rand[1]

Doornkop
LoM* 14 years
4 146 employees
Annual production 117 993oz
Grade 4.31g/t

Kusasalethu
LoM 3 years
4 260 employees
Annual production 128 570oz
Grade 5.65g/t

Mponeng[2]
LoM 8 years
5 308 employees
Annual production 175 092oz
Grade 7.97g/t

Klerksdorp goldfield[3]

Moab Khotsong
LoM 24 years[4]
6 209 employees
Annual production 230 391oz
Grade 7.94g/t

Free State

Tshepong Operations
LoM 20 years
9 164 employees
Annual production 238 526oz
Grade 4.76g/t

Bambanani
LoM 3 years
1 639 employees
Annual production 64 044oz
Grade 8.78g/t

Joel
LoM 9 years
2 032 employees
Annual production 45 783oz
Grade 3.97g/t

Masimong
LoM 1.5 years
2 064 employees
Annual production 64 687oz
Grade 3.95g/t

Target 1
LoM 7 years
1 865 employees
Annual production 51 536oz
Grade 3.28g/t

SURFACE

North West

Kalgold
LoM 12 years
700 employees
Annual production 35 655oz
Grade 0.74g/t

Mine Waste Solutions[2]
LoM: 17 years
1 276 employees
Annual production 66 133oz
Grade 0.116g/t

Waste-rock dumps
Annual production 41 250oz
Grade 0.285g/t

West Rand[1]

Waste-rock dumps
Annual production 41 506oz
Grade 0.324g/t

Free State

Central Plant Reclamation
LoM 14 years
249 employees
Annual production 18 101oz
Grade 0.140g/t

Phoenix (tailings retreatment)
LoM 7 years
333 employees
Annual production 25 046oz
Grade 0.126g/t

Waste-rock dumps
Annual production 32 343oz
Grade 0.616g/t

Papua New Guinea

Production:

~150 755oz (10%)

Located on the New Guinea Mobile Belt, in Morobe Province, our PNG operation accounted for 29% of group Mineral Resources (gold and gold equivalent ounces) and 42% of group Mineral Reserves at year end.

Hidden Valley

Open-pit gold and silver mine
LoM 6 years
2 228 employees
Annual production 150 755oz
Grade 1.37g/t

Wafi-Golpu

Proposed underground copper-gold joint operation – 50%
LoM 28 years
Projected grade 1.27% copper, 0.9g/t gold

Multiple exploration areas

[1] *The West Rand is on the border between Gauteng and North West.*
[2] *Production for nine months from October 2020 to June 2021.*
[3] *North West.*
[4] *Includes Zaaiplaats.*
* *LoM – life-of-mine.*

COMPLIANCE AND SUMMARY

AS AT 30 JUNE 2021

Harmony's statement of Mineral Resources and Mineral Reserves (South Africa and Papua New Guinea) as at 30 June 2021 is produced in accordance with the South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (SAMREC). It should be noted that Mineral Resources are reported inclusive of Mineral Reserves.

Harmony uses certain terms in the summary such as "measured", "indicated" and "inferred" resources, which the United States' Securities and Exchange Commission (SEC) guidelines strictly prohibit companies registered in the United States from including in their filings with the commission. United States investors are urged to consider the disclosure in this regard in our Form 20-F which will be available on our website at **https://www.harmony.co.za/invest/annual-reports** on 29 October 2021.

Reporting code and compliance

The SAMREC Code was developed and established in 1998 by the South African Institute of Mining and Metallurgy and is the recommended guideline for reporting on exploration results, Mineral Resources and Mineral Reserves for companies listed on the JSE.

The first version of the SAMREC Code was issued in March 2000 and adopted by the JSE in its Listings Requirements later that year; this was similarly the basis for the JSE Ongoing Reporting Requirements promulgated in 2005. The SAMREC Code was reviewed in 2004, updated in 2007 and amended in July 2009. The latest update of the SAMREC Code was launched on 19 May 2016 with this version superseding previous versions. In addition, Section 12.13 of the JSE Listings Requirements was subsequently updated with the revised SAMREC and SAMVAL Codes that came into effect on 1 January 2017.

The latest edition of the SAMREC Code includes an updated Table 1 template, which provides an extended list of the main criteria to be considered and reported when reporting on Exploration Results, Mineral Resources and Mineral Reserves. In complying with the principles of the code, comments relating to the items in the relevant sections of Table 1 must be provided on an "if not, why not" basis within the competent person's report. Guidelines for the compilation of Table 1 are for (i) the first-time declaration of exploration results, a Mineral Resource or a Mineral Reserve, and (ii) instances where this information has changed materially since last publicly reported for significant projects.

Reporting on an "if not, why not" basis ensures that it is clear to investors or other stakeholders whether items have been considered and deemed of low consequence or are not yet addressed or resolved. Harmony has adopted the compilation and updating of Table 1 as a standard to complement internal reports.

Harmony has written confirmation from the lead competent person that the information disclosed in this report is compliant with the SAMREC Code and, where applicable, with the relevant JSE Section 12 and SAMREC Table 1 requirements, and that it may be published in the form, format and context in which it was intended.

In reporting our Mineral Reserves, distinct cognisance has also been taken of Industry Guide 7 of the United States' Securities and Exchange Commission.

Our strategy

Harmony's strategy is to produce safe, profitable ounces and increase margins. This includes delivering safely on our operational plans, reducing costs and improving productivity. Harmony's growth journey entails acquiring higher grade assets and ensuring a pipeline of Mineral Reserves. In FY17, Harmony invested in a life-of-mine extension at Hidden Valley and in FY18 acquired and integrated the higher-grade Moab Khotsong operations. The transaction to acquire the remainder of AngloGold Ashanti's South African assets – Mponeng and Mine Waste Solutions – was concluded in September 2020 and we took ownership of them on 1 October 2020.

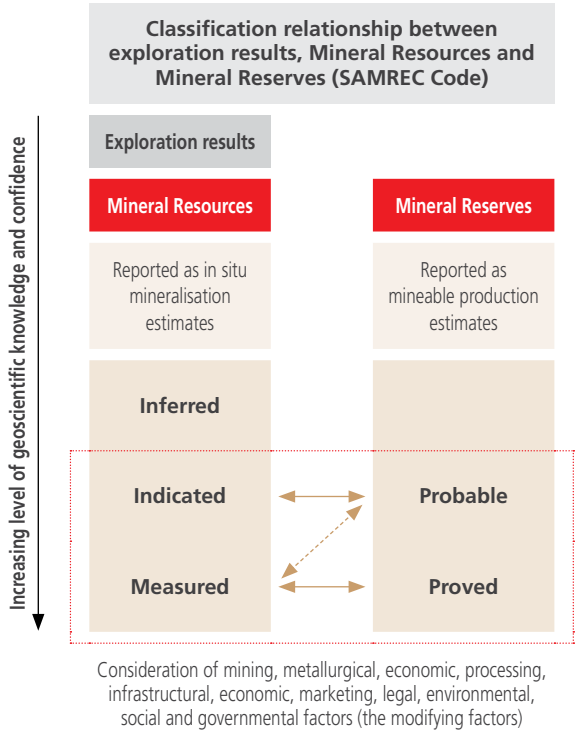
ASSUMPTIONS

In converting Mineral Resources to Mineral Reserves, the following commodity prices and exchange rates were applied:

- A gold price of US$1 500/oz
- An exchange rate of R/US$14.51
- The above parameters resulted in a rand gold price of R700 000/kg for the South African assets
- The Hidden Valley Mine and the Wafi-Golpu project used commodity prices of US$1 500/oz Au, US$20.70/oz Ag, US$10.00/lb Mo and US$3.00/lb Cu at an exchange rate of AUD1.39 per US$
- Gold equivalent ounces are calculated assuming the following: US$1 500/oz Au, US$3.00/lb Cu and US$20.70/oz Ag, and assuming a 100% recovery for all metals.

Note:
Au = gold **Cu** = copper **Ag** = silver
Mo = molybdenum **U_3O_8** = uranium

For more information on Harmony's reporting code, our SAMREC compliance and the definitions used, refer to the section, **Harmony standard for SAMREC compliant reporting**.



Independent review

Individual mines are independently reviewed on a three-year rotational basis. This year, the Mineral Resources and Mineral Reserves at Doornkop and Mponeng as well as the group SAMREC statement were independently reviewed by The Mineral Corporation for compliance with SAMREC.

Competent persons' declaration

The Mineral Resources and Mineral Reserves estimates in this report are based on information compiled by the two competent persons whose details are presented below. Both these full-time employees of Harmony Gold Mining Company Limited consent to the inclusion of the information in this report in the form and context in which it appears. They are:

MINERAL RESOURCES AND MINERAL RESERVES, SOUTH AFRICA:

Jaco Boshoff, *BSc (Hons), MSc, MBA*, has 26 years' relevant experience. He is registered with the South African Council for Natural Scientific Professions (SACNASP), and is a member of the South African Institute of Mining and Metallurgy (SAIMM) and the Geological Society of South Africa (GSSA).

Mr Boshoff is Harmony's Lead Competent Person.

Physical address:
Randfontein Office Park,
Corner Main Reef Road and Ward Avenue,
Randfontein,
South Africa

Postal address:
PO Box 2,
Randfontein 1760,
South Africa

MINERAL RESOURCES AND MINERAL RESERVES, PAPUA NEW GUINEA:

Gregory Job, *BSc, MSc*, has 33 years' relevant experience and is a member of the Australasian Institute of Mining and Metallurgy (AusIMM).

Physical address:
Level 2, 189 Coronation Drive,
Milton, Queensland 4064, Australia

Postal address:
PO Box 1562,
Milton, Queensland 4064, Australia

In South Africa, Harmony employs an Ore Reserve manager at each of its operations who takes responsibility as competent person for the compilation and reporting of Mineral Resources and Mineral Reserves at their respective operation. In Papua New Guinea, competent persons are appointed for the Mineral Resources and Mineral Reserves for specific projects and operations. Details on these competent persons are presented in the respective operational Mineral Resource and Mineral Reserve statements in this report.

Administrative information for professional organisations

Australasian Institute of Mining and Metallurgy (AusIMM)
Postal address: PO Box 660, Carlton South, Vic 3053, Australia
Telephone: +61 3 9658 6100
Facsimile: +61 3 9662 3662
Website: **www.ausimm.com.au**

South African Council for Natural Scientific Professions (SACNASP)
Postal address: Private Bag X540, Silverton, 0127, Gauteng, South Africa
Telephone: +27 12 841 1075
Facsimile: +27 86 206 0427
Website: **www.sacnasp.org.za**

Southern African Institute of Mining and Metallurgy (SAIMM)
Postal address: PO Box 61127, Marshalltown, 2107, Gauteng, South Africa
Telephone: +27 11 834 1273/7
Facsimile: +27 11 838 5923/8156
Website: **www.saimm.co.za**

Geological Society of South Africa (GSSA)
CSIR Miningtek
Carlow and Rustenburg Roads
Melville, Johannesburg
South Africa
Website: **www.gssa.org.za**

Details of the professional registrations of our competent persons can be obtained from the company secretary at:
companysecretariat@harmony.co.za

Legal entitlement to minerals reported

Harmony's South African operations operate under new order mining rights in terms of the Mineral and Petroleum Resources Development Act (MPRDA) of 2002 (Act No 28 of 2002).

In Papua New Guinea, Harmony operates under the Independent State of Papua New Guinea Mining Act 1992. All required operating permits have been obtained and are in good standing.

The legal tenure of each operation and project has been verified to the satisfaction of the accountable competent person.

Environmental management and funding

Harmony's environmental strategy aims to optimise our environmental performance by managing our environmental impacts, focusing on effective risk controls, reducing environmental liabilities, ensuring responsible stewardship of our products within our scope of influence, complying with environmental legislation and regulations.

For further information regarding Harmony's approach to sustainability and environmental performance refer to the **ESG report 2021**, which is available at **www.harmony.co.za**.

Details relating to the provision for **Environmental rehabilitation** and funding can be found in note 26 in Harmony's audited annual financial statements that are presented in a separate report, the **Financial report 2021**. This is also available online at **www.harmony.co.za**.

Mineral Resources and Mineral Reserves – summary

Post the acquisition of Mponeng and related assets in October 2020, we have concluded our life-of-mine planning process for the operations. We have also concluded our reconciliation and assessment of the Mineral Reserves and Resources based on updated models and the new life-of-mine plan. As a result, we have excluded the below infrastructure Reserves as previously published by AngloGold Ashanti Limited (AGA) while Harmony is in the process with an update of the project studies. The below infrastructure areas are being re-assessed and new project studies will be commissioned to evaluate the economic viability of these blocks of ground. As a result, we have made downward adjustments to the Reserves and Resources originally published by AngloGold Ashanti at the end of 2019. Despite these reconciliations, the company's attributable gold and gold equivalent Mineral Resources are now declared as 141.2Moz as at 30 June 2021, a 19% increase year on year from the 118.6Moz declared as at 30 June 2020. The total gold contained in the Mineral Resources at the South African operations represents 71% of the company total, with the Papua New Guinea operations representing 29% of Harmony's total gold and gold equivalent Mineral Resources as at 30 June 2021. Harmony's attributable gold and gold equivalent Mineral Reserves amounts to 42.5Moz, a 16% increase from the 36.5Moz declared at 30 June 2020. The gold Reserve ounces in South Africa represent 58% while the Papua New Guinea gold and gold equivalent Reserve ounces represent 42% of Harmony's total Mineral Reserves as at 30 June 2021. (See Appendix for Mineral Resources and Reserves detail per operation.)

SOUTH AFRICA

UNDERGROUND OPERATIONS

The company's Mineral Resources at the South African underground operations as at 30 June 2021 are 84.0Moz (262.1Mt at 9.96g/t), an increase of 33% year-on-year from the 62.9Moz (214.8Mt at 9.10g/t) declared as at 30 June 2020. This increase is mainly due to additional mineral resources from the Mponeng acquisition.

The company's Mineral Reserves at the South African underground operations as at 30 June 2021 are 14.3Moz (70.46Mt at 6.31g/t), an increase of 33% year-on-year from the 10.8Moz (56.95Mt at 5.87g/t) declared as at 30 June 2020. The increase in ounces is mainly due to the reserves added from the Mponeng acquisition and inclusion of the Zaaiplaats project at Moab Khotsong.

SURFACE OPERATIONS (INCLUDING KALGOLD)

The company's Mineral Resources at the South African surface operations as at 30 June 2021 are 16.0Moz (1 769.9Mt at 0.28g/t) an increase of 53% mainly due to the acquisition of AngloGold Ashanti South African surface sources.

The company's Mineral Reserves after normal depletion at the South African surface operations as at 30 June 2021 are 10.4Moz (1 236.6Mt at 0.26g/t), an increase of 57% due to the acquisition of AngloGold Ashanti South African surface sources.

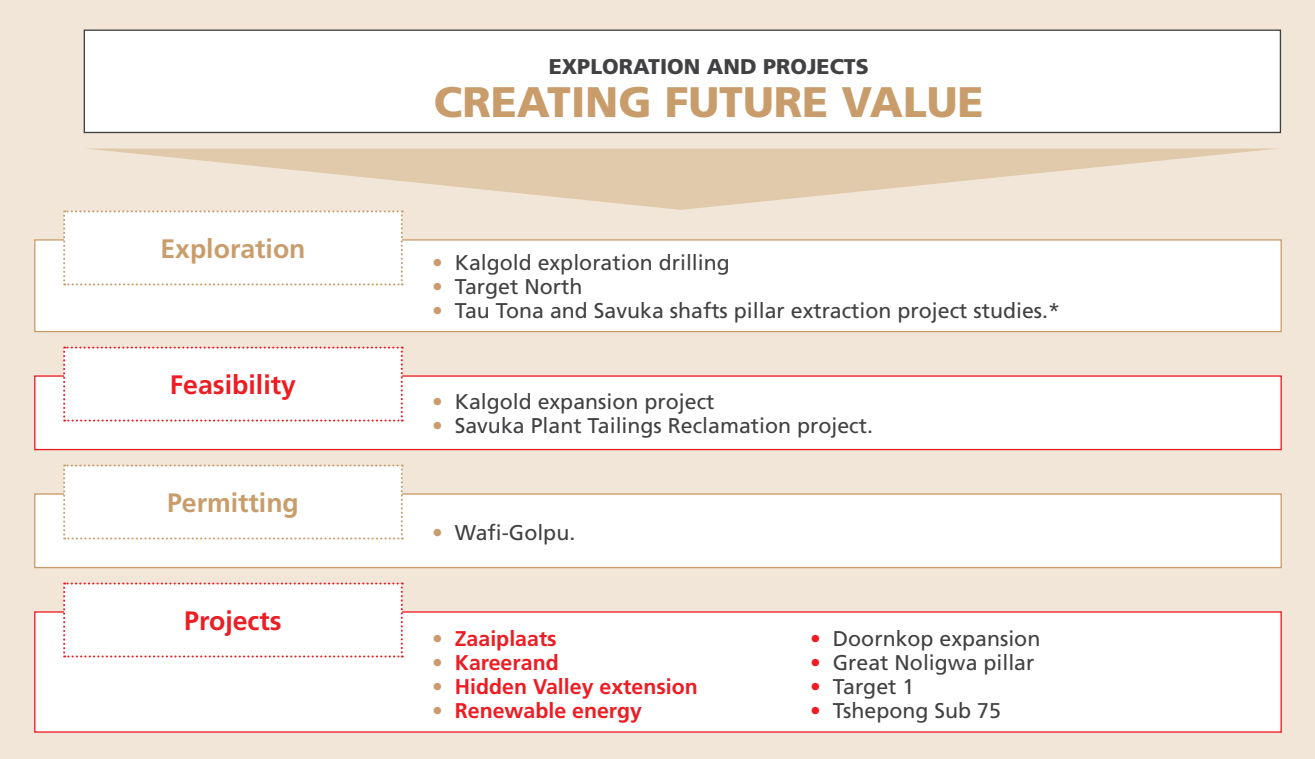
PAPUA NEW GUINEA

OPERATIONS

The company's attributable gold and gold equivalent Mineral Resources at the Papua New Guinea operations as at 30 June 2021 are 41.3Moz, a decrease of 9% year-on-year from the 45.4Moz declared as at 30 June 2020. This decrease is mainly due to a new resource model at Hidden Valley (Kaveroi), commodity price ratio changes affecting the gold equivalent ounces negatively, and depletion.

The company's gold and gold equivalent Mineral Reserves at the Papua New Guinea operations as at 30 June 2021 are 17.7Moz, a decrease of 7.3% year-on-year from the 19.1Moz declared as at 30 June 2020. The decrease is mainly due to depletion and a change in the commodity price ratios. There was a year-on-year increase of 0.5Moz of gold reserves at Hidden Valley due to the addition of Stage 8 to the life of mine plan.

Ventersdorp Contact Reef intersection.



** Study work to commence during FY22.*

Exploration

Our exploration strategy is to predominantly pursue brownfields exploration targets close to existing infrastructure. This will drive short to medium-term organic Mineral Reserve replacement and growth to support our current strategy of increasing quality ounces and to mitigate the risk of a depleting Mineral Reserve base.

Key work streams underpinning the FY21 exploration programme include:
- Brownfield exploration at Hidden Valley and Kalgold to optimise existing open-pit operations and extend mine life
- Brownfield exploration at our underground operations in South Africa
- Greenfield exploration at Target North
- Reviewing exploration opportunities as part of our new business strategy.

During the year these work streams continued to be impacted as a result of the global Covid-19 pandemic, with some work programmes suspended in the interest of the health and safety of our employees and the host communities we work in, and to preserve capital during these challenging times.

A detailed report of the exploration results will be provided as part of the suite of annual reports to be published on 28 October 2021.

KALGOLD

The brownfields drilling campaign focused on resource extension drilling for the Windmill Zone. A total of 30 boreholes were drilled which amounts to 4745 meters of RC drilling. Geotechnical, condemnation and water borehole drilling was also carried out to support the various components of the Feasibility study and provide input into the mine planning. All proposed sites have now been cleared for the future development.

The systematic geochemical soil sampling survey was completed over the selected anomalies identified by magnetic and electro-magnetic surveys. A total of 1 806 auger holes were drilled and 3 476 outcrop samples were obtained and analysed. Integration of these results with all historical geological information was concluded and identified excellent drilling targets associated with favourable cherty BIF sequence, the main host rock of Kalgold mineralisation.

TARGET NORTH

The exploration drilling programme from surface advanced well and a total of 3 744m was drilled. At MAL21A borehole the first long directional deflection targeting the VCR to the west of the original intersection was completed including a set of short grade variability deflections. Deflection drilling continues. The average grade of reef intersections obtained from the mother hole and short deflections is 10g/t over the 110cm stoping width. Drilling of the second borehole MAL22 commenced in January 2021 and the hole advanced to a depth of 1547m. Drilling continues in the Ventersdorp Lava.

Exploration *continued*

PAPUA NEW GUINEA

HIDDEN VALLEY BROWNFIELD EXPLORATION

Kerimenge Prospect – The Kerimenge prospect is located approximately 8km to the west of the Hamata Processing plant. Review of existing drill data commenced with the aim of developing a new resource estimate. Kerimenge is an historic gold deposit outlined by previous explorers that contains components of refractory and free milling oxide gold mineralisation.

Webiak Prospect – Assay results were returned for drilling at the Webiak Prospect, located approximately 7.5km north of Hidden Valley (one hole for 120.5m). While no significant gold assays were obtained, results highlighted several zones of coincident anomalous silver-arsenic-antimony-mercury element anomalism consistent with the upper parts of a low sulphidation precious metal system.

WAFI-GOLPU JOINT VENTURE (Harmony 50%)

Buvu Prospect – The Buvu prospect is located approximately 2km to the northwest of the Golpu porphyry. A programme of soil sampling supported by geological reconnaissance mapping and rockchip sampling was completed to develop a gold target in the hanging wall of the Buvu Fault. Results outlined a significant gold anomaly (open to the south) which sits within an envelope of anomalous silver, lead, and zinc geochemistry. Work completed to date has confirmed the Buvu target area as having potential for an unrecognised centre of epithermal hydrothermal alteration and mineralisation.

Target North exploration site.

Projects

We have identified substantial opportunities in our existing portfolio through exploration and brownfield projects which will extend the life of some of our larger and higher-grade assets, adding lower-risk, higher-margin ounces to Harmony's portfolio. Each project brings multiple benefits to Harmony and exceeds all our minimum criteria for allocating capital. We will continue to focus on ensuring all our mines operate safely and optimally and will continue investing across all our operations to ensure optimal production.

The salient features of our key projects are:

SOUTH AFRICA

ZAAIPLAATS PROJECT

Zaaiplaats is located to the south west of the Moab Khotsong mine in South Africa and has significant resources of 3.5Moz below the last infrastructure level. This project is expected to produce over 200 000 ounces per annum and add 24 years' life of mine at a yield of approximately 9g/t and an estimated, real all-in sustaining cost of R512 300/kg. The major capital expenditure will be funded by Moab Khotsong. There are significant benefits to pursuing this project such as leveraging existing infrastructure, increasing ounces and sustaining jobs. Harmony has proven its ability to extract value and add life of mine time and again throughout its 71-year history.

KAREERAND EXTENSION

Mine Waste Solutions was acquired in October 2020 and is a reclamation operation in the Stilfontein/Orkney area in the North West province, and treats 2.2 million tonnes per month from historical tailings facilities through the Mine Waste Solution plant. Residue is then deposited on the existing Kareerand Tailings Storage Facility. However, this facility is running out of tailings deposition capacity. The project will require major capital to extend the existing deposition site to enable the full development of our tailings resource in the region. This project will be funded out of group cash and will deliver excellent cash flow margins once this project is completed and the Franco-Nevada streaming agreement comes to an end. This project is expected to produce approximately 100 000 ounces of gold per annum and add 16 years' life of mine at an estimated all-in sustaining cost of R572 000/kg over the life of mine.

HIDDEN VALLEY EXTENSION

This project in Papua New Guinea will be self-funded and will extend the life of mine to 2027. We expect the project to deliver approximately 160 000oz to 200 000oz of gold per annum and 2.1Moz to 3.1Moz of silver per annum at a life of mine all-in sustaining cost of $1 017/oz.

OTHER PROJECTS ALREADY IN EXECUTION

These include the Doornkop levels 207 and 212 mining and engineering infrastructure upgrade, the Tshepong sub-75 development, the Target 1 recapitalisation and decline development as well as our renewable energy projects (which are expected to realise significant energy savings).

PAPUA NEW GUINEA

WAFI-GOLPU PROJECT

Harmony is committed to realising its aspiration of being a specialist emerging market copper-gold producer. In December 2020, following a rigorous environmental impact assessment, the Environmental Permit for the Wafi-Golpu project was approved by the Papua New Guinean Conservation and Environment Protection Authority and issued by the Director of Environment.

The Environmental Permit is required under the Papua New Guinean Environment Act and is a prerequisite for the grant of a Special Mining Lease under the Mining Act. Harmony, together with its Wafi-Golpu Joint Venture partner Newcrest Mining Limited, is currently engaging with the State of Papua New Guinea to progress permitting of the Wafi-Golpu Project and has commenced discussions with the State in relation to the Special Mining Lease.

The Wafi-Golpu Joint Venture Social License to Operate is in good standing and continues to receive support from the Project Impact Area communities, including the various coastal communities.

During FY21, several meetings took place between the Prime Minister, Deputy Prime Minister and the Wafi-Golpu Joint Venture proponents on the resumption of the permitting process, with the Prime Minister expressing his government's desire to have it expedited.

In July 2021, engagement on a revised draft term sheet occurred.

ESG SUMMARY

ESG highlights

Environment

Banked over R1 billion in energy saving initiatives since 2016

Recorded a **33% improvement** in electricity intensity year on year

34% reduction in carbon emissions intensity due to efficiency programmes and asset mix (including Mine Waste Solutions)

4.46 hectares of impacted land rehabilitated

Robust and meticulous **Tailings Management** strategy

Social

Achieved record **3.38 million fatal free shifts** in the fourth quarter of FY21 over our 71 year history

R488 million (US$32 million) spent on training and development for our employees

Effective **Covid-19** management and **vaccination** roll-out strategy

74% of SA discretionary spend or **R7.9 billion (US$0.5 billion)** is spent on BEE compliant spend

Governance

Corporate governance **compliance** with regulatory frameworks and legislation

Ethical leadership = ethical mining

Executive remuneration set against **ESG KPIs**

Embrace diversity; 27% female board representation; 20% of management is female

Lead independent director

"To strengthen the role of the chair and ensure independence for the board where the chair is in conflict."

For further detail link to our **ESG report**.

Good governance is overarching and embodies everything we do as a business. Ethical leadership equals ethical mining.

We have implemented the necessary governance frameworks to ensure that we are held accountable and deliver on our sustainability targets and ambitions. Our sustainable development strategy is an all-encompassing risk-based strategy – one in which all the components of the business are considered, and the various capitals are weighed up against each other.

E, S and G are all interlinked and inform our sustainability framework.

On 22 June 2021, Harmony held its inaugural investor ESG day. The virtual event was streamed via Harmony's dedicated YouTube channel, 'Harmony Gold'. The theme for the day was "Who cares, wins" with the key message being that we understand the importance of mining for the future, and as the South African gold mining champion, we have illustrated time and again that sustainability is the driving force of our business.

Our copper-gold aspirations will ensure we continue to deliver on the "E" in ESG while our response to the Covid-19 pandemic, combined with our existing health and wellness initiatives, job creation and enterprise development, clearly demonstrate that the "S" in ESG is part of Harmony's DNA. Good governance is non-negotiable and is demonstrated through our transparency and governance structures throughout our company.

Renewable energy and power

We are pleased to report a reduction in our water, energy and emission intensities as a result of our focus on driving efficiencies combined with our sizeable surface source business. In addition, we have embarked on our renewable energy journey which will be rolled out in a phased approach. Our initial phase will see the construction 3 x 10 Megawatts (MW) (30MW) solar plants in the Free State province, with plans in the next phase for an additional 70-80MW of renewable energy over the next 18 months. In addition to these two phases, we have a pipeline of renewable and alternative energy projects in various stages of development.

We have also implemented more than 200 energy savings initiatives which have yielded an estimated savings of R1 billion since 2016 and an energy reduction of approximately 1.3 terawatt hours or 1.2 million tonnes of carbon dioxide.

Climate change and environmental reporting

In October 2021, we will publish our second Task Force for Climate-related Financial Disclosure report alongside our ESG report and as part of our suite of annual reports.

External recognition

Our ESG efforts have resulted in our inclusion in the **FTSE4Good Index** where we continue to outperform the gold sub-sector and basic metals sector averages.

In FY21, **MSCI** upgraded Harmony's score to a 'B' rating on the back of our strong governance framework.

We were included in the **Bloomberg Gender-Equality Index** for a third consecutive year as well as the Standard Bank Top gender empowerment company 2021.

It is evident from these external recognitions and continual improvements in our ratings that we are committed to a greener and more equitable future, creating and sharing value for all our stakeholders.

INDEPENDENT AUDIT OPINION

THE MINERAL CORPORATION

Mr A J Boshoff
Executive: Mineral Resources and Reserves
Harmony Gold Mining Company Limited
Randfontein Office Park
Corner Main Reef Road and Ward Avenue
Randfontein

12 August 2021

Dear Mr Boshoff

INDEPENDENT AUDIT OF THE 2021 MINERAL RESOURCES AND MINERAL RESERVES

Mineral Corporation Consultancy (Pty) Limited (The Mineral Corporation or TMC), at the request of Harmony Gold Mining Company Limited (Harmony), carried out an independent audit (the Audit) of the 30 June 2021 Mineral Resource and Mineral Reserve Estimates and Mineral Resource and Mineral Reserve Statements for Harmony's various gold operations in South Africa (Harmony SA Operations). The Mineral Resource and Mineral Reserve Estimates audited by TMC were prepared and signed off as at 30 June 2021 by in-house Competent Persons appointed by Harmony following the guidelines of the 2016 Edition of the South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (The SAMREC Code, 2016), as required for inclusion in the Group Mineral Resources and Mineral Reserves Statement for 2021, and disclosed according to Section 12 of the JSE Limited Listing Requirements and the United States Securities and Exchange Commission's (SEC's) Industry Guide 7.

The Audit was carried out by Mineral Resource and Mineral Reserve Competent Persons from TMC following a risk-based audit methodology with reference to the guidelines of The SAMREC Code (2016). This entailed systematic and detailed reviews of the key elements of the Mineral Resource and Mineral Reserve estimation processes to validate adherence to internal procedures and to identify any fatal flaws and material errors and/or omissions for remediation by Harmony. The Audit also included detailed reviews of the input base data, grade block models, Modifying Factors, Life of Mine plans, economic testing and classification and reporting of the Mineral Resources and Mineral Reserves. The Doornkop and Mponeng gold operations were selected for detailed audit focus whereas the remainder of the operations were subjected to high-level audit.

TMC could not identify any fatal flaws or material errors and/or omissions in relation to the input data, geological modelling, mine planning and estimation, classification and reporting of the 2021 Mineral Resources and Mineral Reserves for Harmony SA Operations. The input data, estimation process flow and final estimates were subjected to scrutiny and validation before sign-off by Competent Persons. The Modifying Factors and planning parameters employed to develop Life of Mine plans for the various operations were benchmarked to historical performance. The Mineral Resource Estimates satisfy The SAMREC Code (2016) requirements for reasonable prospects for eventual economic extraction while the Life of Mine plans and the Mineral Reserves were tested for economic viability using reasonable economic parameters and price forecasts.

TMC concludes that the Mineral Resources and Mineral Reserve Estimates for Harmony SA Operations have been compiled following Harmony's internal procedures and the guidelines of The SAMREC Code (2016). Accordingly, the Mineral Resources and Mineral Reserve Estimates can be included in the Harmony Consolidated Mineral Resource and Mineral Reserve Statements for 2021, and disclosed according to Section 12 of the JSE Limited Listing Requirements and the SEC's Industry Guide 7.

These opinions do not imply that TMC has accepted the role of Competent Person for the purpose of reporting the 30 June 2021 Mineral Resources and Mineral Reserves for the Harmony SA Operations. Such a role resides with the nominated personnel of Harmony.

Yours faithfully

Darren Portela
Director
BSc (Honours), Pr.Sci.Nat. (400040/12)

DIRECTORS: JE Murphy (Managing), AH Hart, RA Heins (British), C Madamombe (Zimbabwean), D Portela, GK Wilson

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> ADVISORS TO THE MINERAL BUSINESS

RELATIONSHIP BETWEEN HARMONY'S MINERAL RESOURCES AND MINERAL RESERVES

SOUTH AFRICA UNDERGROUND

Increasing level of geoscientific knowledge and confidence

Mineral Resources (total)

Tonnes		Gold	
Mt	g/t	000kg	000oz
262.1	9.96	2 611	83 957

Reported as in situ mineralisation estimates

Mineral Reserves (total)

Tonnes		Gold	
Mt	g/t	000kg	000oz
70.5	6.31	445	14 299

Reported as mineable production estimates

Inferred

Tonnes		Gold	
Mt	g/t	000kg	000oz
99.3	10.25	1 019	32 746

Indicated

Tonnes		Gold	
Mt	g/t	000kg	000oz
88.6	10.50	930	29 909

Measured

Tonnes		Gold	
Mt	g/t	000kg	000oz
74.2	8.93	663	21 301

Probable

Tonnes		Gold	
Mt	g/t	000kg	000oz
30.8	6.91	213	6 846

Proved

Tonnes		Gold	
Mt	g/t	000kg	000oz
39.6	5.85	232	7 453

Consideration of mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors (the modifying factors)

SOUTH AFRICA – SURFACE (INCLUDING KALGOLD)

Increasing level of geoscientific knowledge and confidence

Mineral Resources (total)

Tonnes		Gold	
Mt	g/t	000kg	000oz
1 769.0	0.28	497	15 971

Reported as in situ mineralisation estimates

Mineral Reserves (total)

Tonnes		Gold	
Mt	g/t	000kg	000oz
1 236.6	0.26	325	10 440

Reported as mineable production estimates

Inferred

Tonnes		Gold	
Mt	g/t	000kg	000oz
63.3	0.32	20	642

Indicated

Tonnes		Gold	
Mt	g/t	000kg	000oz
1 368.6	0.28	384	12 361

Measured

Tonnes		Gold	
Mt	g/t	000kg	000oz
337.1	0.27	92	2 968

Probable

Tonnes		Gold	
Mt	g/t	000kg	000oz
1 029.4	0.26	266	8 550

Proved

Tonnes		Gold	
Mt	g/t	000kg	000oz
207.2	0.28	59	1 890

Consideration of mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors (the modifying factors)

SOUTH AFRICA – TOTAL

Increasing level of geoscientific knowledge and confidence

Mineral Resources (total)

Tonnes	Gold	
Mt	000kg	000oz
2 031.1	3 108	99 928

Reported as in situ mineralisation estimates

Mineral Reserves (total)

Tonnes	Gold	
Mt	000kg	000oz
1 307.1	769	24 739

Reported as mineable production estimates

Inferred

Tonnes	Gold	
Mt	000kg	000oz
162.6	1 039	33 389

Indicated

Tonnes	Gold	
Mt	000kg	000oz
1 457.1	1 315	42 271

Probable

Tonnes	Gold	
Mt	000kg	000oz
1 060.3	479	15 397

Measured

Tonnes	Gold	
Mt	000kg	000oz
411.3	755	24 268

Proved

Tonnes	Gold	
Mt	000kg	000oz
246.8	291	9 343

Consideration of mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors (the modifying factors)

PAPUA NEW GUINEA – ATTRIBUTABLE GOLD

Increasing level of geoscientific knowledge and confidence

Mineral Resources (total)

Tonnes		Gold	
Mt	g/t	000kg	000oz
805.9	0.70	561	17 956

Reported as in situ mineralisation estimates

Mineral Reserves (total)

Tonnes		Gold	
Mt	g/t	000kg	000oz
223.5	0.92	206	6 634

Reported as mineable production estimates

Inferred

Tonnes		Gold	
Mt	g/t	000kg	000oz
352.6	0.41	144	4 567

Indicated

Tonnes		Gold	
Mt	g/t	000kg	000oz
449.9	0.92	414	13 385

Probable

Tonnes		Gold	
Mt	g/t	000kg	000oz
220.1	0.92	203	6 530

Measured

Tonnes		Gold	
Mt	g/t	000kg	000oz
3.4	0.95	3	103

Proved

Tonnes		Gold	
Mt	g/t	000kg	000oz
3.4	0.95	3	103

Consideration of mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors (the modifying factors)

RELATIONSHIP BETWEEN HARMONY'S MINERAL RESOURCES AND MINERAL RESERVES continued

TOTAL ATTRIBUTABLE GOLD – HARMONY UNDERGROUND AND SURFACE

Increasing level of geoscientific knowledge and confidence

Mineral Resources (total)

Tonnes	Gold	
Mt	000kg	000oz
2 837.0	3 669	117 884

Reported as in situ mineralisation estimates

Mineral Reserves (total)

Tonnes	Gold	
Mt	000kg	000oz
1 530.6	976	31 373

Reported as mineable production estimates

Inferred

Tonnes	Gold	
Mt	000kg	000oz
515.2	1 183	37 956

Indicated

Tonnes	Gold	
Mt	000kg	000oz
1 907.1	1 729	55 656

Probable

Tonnes	Gold	
Mt	000kg	000oz
1 280.4	682	21 927

Measured

Tonnes	Gold	
Mt	000kg	000oz
414.7	758	24 372

Proved

Tonnes	Gold	
Mt	000kg	000oz
250.2	294	9 446

Consideration of mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors (the modifying factors)

TOTAL ATTRIBUTABLE GOLD EQUIVALENTS – HARMONY UNDERGROUND AND SURFACE

Increasing level of geoscientific knowledge and confidence

Mineral Resources (total)

Tonnes	Gold	
Mt	000kg	000oz
2 837.0	4 395	141 231

Reported as in situ mineralisation estimates

Mineral Reserves (total)

Tonnes	Gold	
Mt	000kg	000oz
1 530.6	1 320	42 453

Reported as mineable production estimates

Inferred

Tonnes	Gold	
Mt	000kg	000oz
515.2	1 379	44 262

Indicated

Tonnes	Gold	
Mt	000kg	000oz
1 907.1	2 258	72 672

Probable

Tonnes	Gold	
Mt	000kg	000oz
1 280.4	1 026	32 981

Measured

Tonnes	Gold	
Mt	000kg	000oz
414.7	759	24 398

Proved

Tonnes	Gold	
Mt	000kg	000oz
250.2	295	9 472

Consideration of mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors (the modifying factors)

MINERAL RESOURCES STATEMENT **METRIC**

ESTIMATES AT 30 JUNE 2021

Operations	Measured Resources			Indicated Resources			Inferred Resources			Total Mineral Resources		
GOLD	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)
SOUTH AFRICA UNDERGROUND												
Free State region												
Tshepong operations	24.9	11.47	286	12.3	10.61	130	35.3	10.76	380	72.5	10.98	796
Bambanani	0.4	13.48	6	–	–	–	–	–	–	0.4	13.48	6
Joel	4.0	7.89	32	3.8	7.24	27	7.3	5.13	38	15.2	6.39	97
Masimong	2.5	8.98	22	0.2	7.35	1	0.02	6.48	0.2	2.7	8.85	24
Target 1	7.8	6.99	54	5.2	6.57	34	4.5	5.50	25	17.4	6.48	113
Target 3	0.6	9.19	6	2.9	10.17	30	1.2	8.66	11	4.8	9.66	46
Total Free State underground	**40.2**	**10.08**	**406**	**24.3**	**9.15**	**223**	**48.3**	**9.36**	**453**	**112.9**	**9.57**	**1 081**
West Rand region												
Doornkop South Reef	5.2	7.93	41	3.8	6.88	26	3.5	7.65	27	12.5	7.53	94
Doornkop Main Reef	0.1	5.38	0.4	0.05	5.51	0.3	0.02	5.32	0.1	0.1	5.41	1
Doornkop Kimberly Reef	18.1	3.36	61	12.1	3.15	38	10.1	3.28	33	40.3	3.28	132
Kusasalethu	3.4	11.15	38	12.6	9.05	114	3.7	8.63	32	19.7	9.33	184
Mponeng	2.9	15.61	46	21.7	14.11	306	28.1	13.60	382	52.7	13.92	733
Total West Rand region	**29.7**	**6.26**	**186**	**50.3**	**9.65**	**485**	**45.4**	**10.43**	**473**	**125.4**	**9.13**	**1 145**
Klerksdorp operation												
Moab Khotsong	4.2	16.75	71	14.0	15.95	223	5.6	16.42	92	23.8	16.20	386
Total North West region	**4.2**	**16.75**	**71**	**14.0**	**15.95**	**223**	**5.6**	**16.42**	**92**	**23.8**	**16.20**	**386**
TOTAL SOUTH AFRICA UNDERGROUND	**74.2**	**8.93**	**663**	**88.6**	**10.50**	**930**	**99.3**	**10.25**	**1 019**	**262.1**	**9.96**	**2 611**
SOUTH AFRICA SURFACE												
Kraaipan Greenstone Belt												
Kalgold open pit	9.4	0.88	8	67.8	0.89	60	4.4	0.63	3	81.6	0.88	72
Kalgold tailing dam	–	–	–	–	–	–	23.8	0.26	6	23.8	0.26	6
Kalgold	**9.4**	**0.88**	**8**	**67.8**	**0.89**	**60**	**28.2**	**0.32**	**9**	**105.4**	**0.74**	**78**
Free State region – Surface												
Tailings												
Other Free State tailings	–	–	–	571.7	0.22	128	15.5	0.19	3	587.1	0.22	131
Phoenix	42.6	0.28	12	–	–	–	–	–	–	42.6	0.28	12
St Helena	191.3	0.27	52	–	–	–	–	–	–	191.3	0.27	52
Central	–	–	–	52.0	0.27	14	–	–	–	52.0	0.27	14
Waste rock dumps												
Free State WRD	–	–	–	2.3	0.48	1	16.7	0.43	7	19.0	0.44	8
Total Free State	**233.9**	**0.27**	**63**	**626.0**	**0.23**	**143**	**32.2**	**0.31**	**10**	**892.1**	**0.24**	**216**
North West region – Surface												
Tailings												
Mispah	–	–	–	74.8	0.30	22	–	–	–	74.8	0.30	22
Kop Paydam	–	–	–	11.0	0.20	2	–	–	–	11.0	0.20	2
Vaal River tailings	10.8	0.20	2	369.7	0.26	95	–	–	–	380.6	0.26	98
Mine Waste Solutions	82.9	0.22	18	164.9	0.26	42	–	–	–	247.8	0.24	61
Waste rock dumps												
Moab MOD	–	–	–	3.4	0.41	1	–	–	–	3.4	0.41	1
Vaal River WRD	–	–	–	3.3	0.31	1	2.9	0.28	1	6.2	0.30	2
Total North West	**93.80**	**0.22**	**20**	**627.1**	**0.26**	**165**	**2.9**	**0.28**	**1**	**723.7**	**0.26**	**186**
West Rand region – Surface												
Tailings												
West Wits tailings	–	–	–	45.5	0.34	16	–	–	–	45.5	0.34	16
Waste rock dumps												
West Wits WRD	–	–	–	2.2	0.40	1	–	–	–	2.2	0.40	1
Total West Rand	**–**	**–**	**–**	**47.8**	**0.35**	**17**	**–**	**–**	**–**	**47.8**	**0.35**	**17**
TOTAL SOUTH AFRICA SURFACE (including Kalgold)	**337.1**	**0.27**	**92**	**1 368.6**	**0.28**	**384**	**63.3**	**0.32**	**20**	**1 769.0**	**0.28**	**497**
TOTAL SOUTH AFRICA	**411.3**		**755**	**1 457.1**		**1 315**	**162.6**		**1 039**	**2 031.1**		**3 108**
PAPUA NEW GUINEA[1]												
Hidden Valley	3.4	0.95	3	54.1	1.42	77	1.4	1.06	1	58.9	1.39	82
Hamata	0.006	1.63	0.01	1.9	1.90	4	0.2	1.50	0.3	2.1	1.86	4
Wafi	–	–	–	54.0	1.65	89	20.0	1.37	26	74.0	1.58	114
Golpu	–	–	–	340.0	0.72	245	70.0	0.63	44	410.0	0.70	289
Nambonga	–	–	–	–	–	–	24.0	0.69	16	24.0	0.69	16
Kili Teke	–	–	–	–	–	–	237.0	0.24	56	237.0	0.24	56
Total Papua New Guinea	**3.4**	**0.95**	**3**	**449.9**	**0.92**	**414**	**352.6**	**0.41**	**144**	**805.9**	**0.70**	**561**
GRAND TOTAL	**414.7**		**758**	**1 907.1**		**1 729**	**515.2**		**1 183**	**2 837.0**		**3 669**

MINERAL RESOURCES STATEMENT **METRIC** continued

ESTIMATES AT 30 JUNE 2021

Operations	Measured Resources		Indicated Resources		Inferred Resources		Total Mineral Resources	
GOLD EQUIVALENTS [1]	Tonnes (Mt)	Au eq (000kg)	Tonnes (Mt)	Au eq (000kg)	Tonnes (Mt)	Au eq (000kg)	Tonnes (Mt)	Au eq (000kg)
Silver								
Hidden Valley	3.4	1	54.1	17	1.4	0.4	58.9	18
Total	**3.4**	**1**	**54.1**	**17**	**1.4**	**0.4**	**58.9**	**18**
Copper								
Golpu	–	–	340.0	513	70.0	79	410.0	592
Nambonga	–	–	–	–	24.0	6	24.0	6
Kili Teke	–	–	–	–	237.0	110	237.0	110
Total	**–**	**–**	**340.0**	**513**	**331.0**	**196**	**671.0**	**708**
Total silver and copper as gold equivalents	**3.4**	**1**	**394.1**	**529**	**332.4**	**196**	**729.8**	**726**
Total PNG including gold equivalents	**3.4**	**4**	**449.9**	**944**	**352.6**	**340**	**805.9**	**1 287**
TOTAL HARMONY including equivalents	**414.7**	**759**	**1 907.1**	**2 258**	**515.2**	**1 379**	**2 837.0**	**4 395**

OTHER METALS

PAPUA NEW GUINEA [1]	Measured Resources			Indicated Resources			Inferred Resources			Total Mineral Resources		
Silver	Tonnes (Mt)	Grade (g/t)	Ag (000kg)	Tonnes (Mt)	Grade (g/t)	Ag (000kg)	Tonnes (Mt)	Grade (g/t)	Ag (000kg)	Tonnes (Mt)	Grade (g/t)	Ag (000kg)
Hidden Valley	3.4	17.31	59	54.1	22.26	1 203	1.4	20.63	29	58.9	21.93	1 291
Golpu	–	–	–	340.0	1.29	449	70.0	1.10	77	410.0	1.28	526
Total	**3.4**	**17.31**	**59**	**394.1**	**4.19**	**1 652**	**71.4**	**1.49**	**106**	**468.9**	**3.88**	**1 817**
Copper	Tonnes (Mt)	Grade (%)	Cu (000t)	Tonnes (Mt)	Grade (%)	Cu (000t)	Tonnes (Mt)	Grade (%)	Cu (000t)	Tonnes (Mt)	Grade (%)	Cu (000t)
Golpu	–	–	–	340.0	1.00	3 750	70.0	0.85	600	410.0	1.00	4 300
Nambonga	–	–	–	–	–	–	24.0	0.20	47	24.0	0.20	47
Kili Teke	–	–	–	–	–	–	237.0	0.34	802	237.0	0.34	802
Total	**–**	**–**	**–**	**340.0**	**1.00**	**3 750**	**331.0**	**0.44**	**1 448**	**671.0**	**0.77**	**5 148**
Molybdenum	Tonnes (Mt)	Grade (ppm)	Mo (000t)	Tonnes (Mt)	Grade (ppm)	Mo (000t)	Tonnes (Mt)	Grade (ppm)	Mo (000t)	Tonnes (Mt)	Grade (ppm)	Mo (000t)
Golpu	–	–	–	340.0	94	32	70.0	72	5	410.0	90	37
Kili Teke	–	–	–	–	–	–	237.0	168	40	237.0	168	40
Total	**–**	**–**	**–**	**340.0**	**94**	**32**	**307.0**	**146**	**45**	**647.0**	**119**	**77**

SOUTH AFRICA

Uranium	Tonnes (Mt)	Grade (kg/t)	U_3O_8 (Mkg)	Tonnes (Mt)	Grade (kg/t)	U_3O_8 (Mkg)	Tonnes (Mt)	Grade (kg/t)	U_3O_8 (Mkg)	Tonnes (Mt)	Grade (kg/t)	U_3O_8 (Mkg)
Free State surface	–	–	–	135.7	0.11	14	–	–	–	135.7	0.11	14
Mispah 1	–	–	–	74.8	0.12	9	–	–	–	74.8	0.12	9
Kop Paydam	–	–	–	11.0	0.13	1	–	–	–	11.0	0.13	1
Vaal River tailings	–	–	–	380.6	0.09	32	–	–	–	380.6	0.09	32
Mine Waste Solutions	82.9	0.07	6	164.9	0.08	13	–	–	–	247.8	0.08	19
North West surface	82.9	0.07	6	631.2	0.09	56	–	–	–	714.1	0.09	62
Moab Khotsong underground	–	–	–	18.2	0.63	11	5.6	0.65	4	23.8	0.63	15
GRAND TOTAL	**82.9**	**0.07**	**6**	**785.0**	**0.10**	**82**	**5.6**	**0.65**	**4**	**873.6**	**0.10**	**91**

[1] *Total attributable.*
Gold equivalent ounces are calculated assuming a US$1 500/oz Au, US$3.00/lb Cu and US$20.70/oz Ag with 100% recovery for all metals.
NB Rounding of numbers may result in slight computational discrepancies.
Note: 1 tonne = 1 000 kg = 2 204 lbs.
1 troy ounce = 31.10348 grams.

MINERAL RESERVES STATEMENT **METRIC**

ESTIMATES AT 30 JUNE 2021

Operations	Proved Reserves			Probable Reserves			Total Mineral Reserves		
GOLD	Tonnes (Mt)	Grade (g/t)	Gold [2] (000kg)	Tonnes (Mt)	Grade (g/t)	Gold [2] (000kg)	Tonnes (Mt)	Grade (g/t)	Gold [2] (000kg)
SOUTH AFRICA UNDERGROUND									
Free State region									
Tshepong operations	20.0	5.77	116	4.7	4.46	21	24.7	5.53	137
Joel	2.6	5.00	13	1.5	4.50	7	4.1	4.82	20
Bambanani	0.6	8.48	5	–	–	–	0.6	8.48	5
Masimong	0.7	4.37	3	0.03	3.08	0.1	0.8	4.32	3
Target 1	2.9	4.46	13	1.8	3.89	7	4.7	4.24	20
Total Free State underground	**26.9**	**5.57**	**150**	**8.0**	**4.33**	**35**	**34.9**	**5.29**	**185**
West Rand region									
Doornkop South Reef	6.0	4.73	29	4.4	4.17	19	10.5	4.49	47
Kusasalethu	1.9	7.51	14	0.3	4.76	1	2.2	7.15	15
Mponeng	1.9	8.72	17	5.8	8.47	49	7.7	8.53	65
Total West Rand region	**9.8**	**6.04**	**59**	**10.5**	**6.55**	**69**	**20.3**	**6.30**	**128**
North West region									
Moab Khotsong	2.9	7.77	23	12.3	8.89	109	15.2	8.68	132
Total North West region	**2.9**	**7.77**	**23**	**12.3**	**8.89**	**109**	**15.2**	**8.68**	**132**
TOTAL SOUTH AFRICA UNDERGROUND	**39.6**	**5.85**	**232**	**30.8**	**6.91**	**213**	**70.5**	**6.31**	**445**
SOUTH AFRICA SURFACE									
Kraaipan Greenstone Belt									
Kalgold	6.1	0.93	6	12.5	1.12	14	18.5	1.06	20
Free State region – Surface									
Tailings									
Other Free State tailings	–	–	–	571.7	0.22	128	571.7	0.22	128
Phoenix	42.6	0.28	12	–	–	–	42.6	0.28	12
St Helena	108.6	0.27	29	–	–	–	108.6	0.27	29
Central	–	–	–	52.0	0.27	14	52.0	0.27	14
Total Free State	**151.1**	**0.27**	**41**	**623.7**	**0.23**	**142**	**774.8**	**0.24**	**183**
North West region – Surface									
Tailings									
Vaal River tailings	–	–	–	190.3	0.29	56	190.3	0.29	56
Mine Waste Solutions	50.0	0.24	12	164.9	0.26	42	214.9	0.25	54
Total North West	**50.0**	**0.24**	**12**	**355.2**	**0.28**	**98**	**405.1**	**0.27**	**110**
West Rand – Surface									
West Wits tailings	–	–	–	38.2	0.32	12	38.2	0.32	12
Total West Rand	**–**	**–**	**–**	**38.2**	**0.32**	**12**	**38.2**	**0.32**	**12**
TOTAL SOUTH AFRICA SURFACE (including Kalgold)	**207.2**	**0.28**	**59**	**1 029.4**	**0.26**	**266**	**1 236.6**	**0.26**	**325**
TOTAL SOUTH AFRICA	**246.8**		**291**	**1 060.3**		**479**	**1 307.1**		**769**
PAPUA NEW GUINEA									
Hidden Valley	3.4	0.95	3	19.9	1.59	32	23.3	1.50	35
Hamata	0.006	1.63	0.01	0.2	1.82	0.4	0.2	1.82	0.5
Golpu[1]	–	–	–	200.0	0.86	171	200.0	0.86	171
Total Papua New Guinea	**3.4**	**0.95**	**3**	**220.1**	**0.92**	**203**	**223.5**	**0.92**	**206**
HV Hamata	3.4	0.95	3	20.1	1.59	32	23.5	1.50	35
GRAND TOTAL	**250.2**		**294**	**1 280.4**		**682**	**1 530.6**		**976**

MINERAL RESERVES STATEMENT **METRIC** continued

ESTIMATES AT 30 JUNE 2021

Operations	Proved Reserves		Probable Reserves		Total Mineral Reserves	
GOLD EQUIVALENTS	Tonnes (Mt)	Au eq [2] (000kg)	Tonnes (Mt)	Au eq [2] (000kg)	Tonnes (Mt)	Au eq [2] (000kg)
Silver						
Hidden Valley	3.4	1	19.9	7	23.3	8
Copper						
Golpu[1]	–	–	200.0	336	200.0	336
Total silver and copper as gold equivalents	**3.4**	**1**	**219.9**	**344**	**223.3**	**345**
Total PNG including gold equivalents	**3.4**	**4**	**220.1**	**547**	**223.5**	**551**
TOTAL HARMONY including equivalents	**250.2**	**295**	**1 280.4**	**1 026**	**1 530.6**	**1 320**

OTHER METALS

PAPUA NEW GUINEA	Proved Reserves			Probable Reserves			Total Mineral Reserves		
Silver	Tonnes (Mt)	Grade (g/t)	Ag [2] (000kg)	Tonnes (Mt)	Grade (g/t)	Ag [2] (000kg)	Tonnes (Mt)	Grade (g/t)	Ag [2] (000kg)
Hidden Valley	3.4	17.31	59	19.9	27.18	540	23.3	25.75	599
Copper	Tonnes (Mt)	Grade (%)	Cu [2] (000t)	Tonnes (Mt)	Grade (%)	Cu [2] (000t)	Tonnes (Mt)	Grade (%)	Cu [2] (000t)
Golpu[1]	–	–	–	200.0	1.20	2 450	200.0	1.20	2 450
Molybdenum	Tonnes (Mt)	Grade ppm	Mo [2] (000t)	Tonnes (Mt)	Grade ppm	Mo [2] (000t)	Tonnes (Mt)	Grade ppm	Mo [2] (000t)
Golpu	–	–	–	–	–	–	–	–	–

SOUTH AFRICA

Uranium	Tonnes (Mt)	Grade (kg/t)	U_3O_8 [2] (Mkg)	Tonnes (Mt)	Grade (kg/t)	U_3O_8 [2] (Mkg)	Tonnes (Mt)	Grade (kg/t)	U_3O_8 [2] (Mkg)
Moab Khotsong underground	–	–	–	15.2	0.25	4	15.2	0.25	4

[1] Total attributable.
Gold equivalent ounces are calculated assuming a US$1 500/oz Au, US$3.00/lb Cu and US$20.70/oz Ag with 100% recovery for all metals.
[2] Metal figures are fully inclusive of all mining dilutions and gold losses, and are reported as mill delivered tonnes and head grades. Metallurgical recovery factors have not been applied to the reserve figures.
NB Rounding of numbers may result in slight computational discrepancies.
Note: 1 tonne = 1 000 kg = 2 204 lbs.
1 troy ounce = 31.10348 grams.

MINERAL RESOURCES STATEMENT **IMPERIAL**

ESTIMATES AT 30 JUNE 2021

Operations	Measured Resources			Indicated Resources			Inferred Resources			Total Mineral Resources		
GOLD	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)
SOUTH AFRICA UNDERGROUND												
Free State region												
Tshepong operations	27.5	0.335	9 195	13.5	0.309	4 191	38.9	0.314	12 210	79.9	0.320	25 596
Bambanani	0.5	0.393	181	–	–	–	–	–	–	0.5	0.393	181
Joel	4.5	0.230	1 026	4.2	0.211	878	8.1	0.149	1 209	16.7	0.186	3 113
Masimong	2.7	0.262	710	0.2	0.215	42	0.03	0.189	5	2.9	0.258	757
Target 1	8.6	0.204	1 750	5.7	0.192	1 089	4.9	0.161	788	19.2	0.189	3 627
Target 3	0.7	0.268	178	3.3	0.297	965	1.3	0.253	340	5.3	0.282	1 483
Total Free State underground	**44.4**	**0.294**	**13 040**	**26.8**	**0.267**	**7 164**	**53.3**	**0.273**	**14 553**	**124.5**	**0.279**	**34 756**
West Rand region												
Doornkop South Reef	5.7	0.231	1 326	4.2	0.201	838	3.9	0.223	860	13.8	0.220	3 024
Doornkop Main Reef	0.1	0.157	14	0.1	0.161	8	0.02	0.155	3	0.2	0.158	25
Doornkop Kimberly Reef	20.0	0.098	1 957	13.4	0.092	1 226	11.1	0.096	1 066	44.5	0.096	4 249
Kusasalethu	3.8	0.325	1 226	13.9	0.264	3 668	4.1	0.252	1 026	21.7	0.272	5 919
Mponeng	3.2	0.455	1 464	23.9	0.412	9 851	30.9	0.397	12 266	58.1	0.406	23 581
Total West Rand region	**32.8**	**0.183**	**5 987**	**55.4**	**0.281**	**15 591**	**50.0**	**0.304**	**15 221**	**138.2**	**0.266**	**36 798**
Klerksdorp operation												
Moab Khotsong	4.7	0.489	2 274	15.4	0.465	7 155	6.2	0.479	2 973	26.2	0.473	12 402
Total North West region	**4.7**	**0.489**	**2 274**	**15.4**	**0.465**	**7 155**	**6.2**	**0.479**	**2 973**	**26.2**	**0.473**	**12 402**
TOTAL SOUTH AFRICA UNDERGROUND	**81.8**	**0.260**	**21 301**	**97.6**	**0.306**	**29 909**	**109.5**	**0.299**	**32 746**	**288.9**	**0.291**	**83 957**
SOUTH AFRICA SURFACE												
Kraaipan Greenstone Belt												
Kalgold	10.4	0.026	268	74.7	0.026	1 942	4.8	0.018	89	89.9	0.026	2 299
Kalgold tailing dam	–	–	–	–	–	–	26.2	0.008	201	26.2	0.008	201
Total Kalgold	**10.4**	**0.026**	**268**	**74.7**	**0.026**	**1 942**	**31.1**	**0.009**	**290**	**116.2**	**0.022**	**2 501**
Free State region – Surface												
Tailings												
Other Free State tailings	–	–	–	630.2	0.007	4 106	17.0	0.006	94	647.2	0.006	4 200
Phoenix	46.9	0.008	385	–	–	–	–	–	–	46.9	0.008	385
St Helena	210.9	0.008	1 656	–	–	–	–	–	–	210.9	0.008	1 656
Central	–	–	–	57.3	0.008	450	–	–	–	57.3	0.008	450
Waste rock dumps												
Free State WRD	–	–	–	2.5	0.014	36	18.4	0.013	231	21.0	0.013	267
Total Free State	**257.8**	**0.008**	**2 041**	**690.0**	**0.007**	**4 591**	**35.5**	**0.009**	**326**	**983.3**	**0.007**	**6 958**
North West region – Surface												
Tailings												
Mispah	–	–	–	82.4	0.009	719	–	–	–	82.4	0.009	719
Kop Paydam	–	–	–	12.1	0.006	72	–	–	–	12.1	0.006	72
Vaal River tailings	11.9	0.006	70	407.6	0.008	3 070	–	–	–	419.5	0.007	3 140
Mine Waste Solutions	91.4	0.006	588	181.8	0.007	1 358	–	–	–	273.2	0.007	1 946
Waste rock dumps												
Moab MOD	–	–	–	3.7	0.012	45	–	–	–	3.7	0.012	45
Vaal River WRD	–	–	–	3.7	0.009	33	3.2	0.008	26	6.9	0.009	60
Total North West	**103.4**	**0.006**	**659**	**691.2**	**0.008**	**5 296**	**3.2**	**0.008**	**26**	**797.8**	**0.007**	**5 981**
West Rand region – Surface												
Tailings												
West Wits tailings	–	–	–	50.2	0.010	503	–	–	–	50.2	0.010	503
Waste rock dumps												
West Wits WRD	–	–	–	2.5	0.012	29	–	–	–	2.5	0.012	29
Total West Rand	**–**	**–**	**–**	**52.6**	**0.010**	**532**	**–**	**–**	**–**	**52.6**	**0.010**	**532**
TOTAL SOUTH AFRICA SURFACE (including Kalgold)	**371.6**	**0.008**	**2 968**	**1 508.6**	**0.008**	**12 361**	**69.8**	**0.009**	**642**	**1 950.0**	**0.008**	**15 971**
TOTAL SOUTH AFRICA	**453.4**		**24 268**	**1 606.2**		**42 271**	**179.3**		**33 389**	**2 238.9**		**99 928**
PAPUA NEW GUINEA [1]												
Hidden Valley	3.7	0.028	103	59.6	0.041	2 471	1.6	0.031	48	64.9	0.040	2 622
Hamata	0.007	0.048	0.33	2.1	0.055	115	0.2	0.044	9	2.3	0.054	124
Kili Teke	–	–	–	–	–	–	261.2	0.007	1 810	261.2	0.007	1 810
Wafi	–	–	–	59.5	0.047	2 800	22.0	0.036	800	81.6	0.044	3 600
Golpu	–	–	–	374.8	0.021	8 000	77.2	0.018	1 400	451.9	0.021	9 300
Nambonga	–	–	–	–	–	–	26.5	0.019	500	26.5	0.019	500
Total Papua New Guinea	3.7	0.028	103	496.0	0.027	13 385	388.6	0.012	4 567	888.4	0.020	17 956
GRAND TOTAL	**457.1**		**24 372**	**2 102.2**		**55 656**	**567.9**		**37 956**	**3 127.2**		**117 884**

MINERAL RESOURCES STATEMENT **IMPERIAL** continued

ESTIMATES AT 30 JUNE 2021

Operations	Measured Resources		Indicated Resources		Inferred Resources		Total Mineral Resources	
GOLD EQUIVALENTS [1]	Tons (Mt)	Au eq (000oz)	Tons (Mt)	Au eq (000oz)	Tons (Mt)	Au eq (000oz)	Tons (Mt)	Au eq (000oz)
Silver								
Hidden Valley	3.7	26	59.6	534	1.6	13	64.9	573
Total	**3.7**	**26**	**59.6**	**534**	**1.6**	**13**	**64.9**	**573**
Copper								
Golpu	–	–	374.8	16 482	77.2	2 548	451.9	19 030
Nambonga	–	–	–	–	26.5	207	26.5	207
Kili Teke	–	–	–	–	261.2	3 538	261.2	3 538
Total	**–**	**–**	**374.8**	**16 482**	**364.8**	**6 293**	**739.6**	**22 775**
Total Silver and Copper as gold equivalents	**3.7**	**26**	**434.4**	**17 016**	**366.4**	**6 306**	**804.5**	**23 347**
Total PNG including gold equivalents	**3.7**	**129**	**496.0**	**30 401**	**388.6**	**10 873**	**888.4**	**41 304**
TOTAL HARMONY including equivalents	**457.1**	**24 398**	**2 102.2**	**72 672**	**567.9**	**44 262**	**3 127.2**	**141 231**

OTHER METALS

PAPUA NEW GUINEA [1]	Measured Resources			Indicated Resources			Inferred Resources			Total Mineral Resources		
Silver	Tons (Mt)	Grade (oz/t)	Ag (000oz)	Tons (Mt)	Grade (oz/t)	Ag (000oz)	Tons (Mt)	Grade (oz/t)	Ag (000oz)	Tons (Mt)	Grade (oz/t)	Ag (000oz)
Hidden Valley	3.7	0.505	1 886	59.6	0.649	38 682	1.6	0.602	941	64.9	0.640	41 508
Golpu	–	–	–	374.8	0.037	14 000	77.2	0.030	2 300	451.9	0.038	17 000
Nambonga	–	–	–	–	–	–	–	–	–	–	–	–
Total	**3.7**	**0.505**	**1 886**	**434.4**	**0.121**	**52 682**	**78.7**	**0.041**	**3 241**	**516.8**	**0.113**	**58 508**
Copper	Tons (Mt)	Grade (%)	Cu (Mlb)	Tons (Mt)	Grade (%)	Cu (Mlb)	Tons (Mt)	Grade (%)	Cu (Mlb)	Tons (Mt)	Grade (%)	Cu (Mlb)
Golpu	–	–	–	374.8	1.001	8 250	77.2	0.778	1 250	451.9	0.963	9 500
Nambonga	–	–	–	–	–	–	26.5	0.177	104	26.5	0.177	104
Kili Teke	–	–	–	–	–	–	261.2	0.307	1 767	261.2	0.307	1 767
Total	**–**	**–**	**–**	**374.8**	**1.001**	**8 250**	**364.8**	**0.397**	**3 120**	**739.6**	**0.594**	**11 370**
Molybdenum	Tons (Mt)	Grade (lb/t)	Mo (Mlb)	Tons (Mt)	Grade (lb/t)	Mo (Mlb)	Tons (Mt)	Grade (lb/t)	Mo (Mlb)	Tons (Mt)	Grade (lb/t)	Mo (Mlb)
Golpu	–	–	–	374.8	0.188	70	77.2	0.143	11	451.9	0.180	81
Kili Teke	–	–	–	–	–	–	261.2	0.335	88	261.2	0.335	88
Total	**–**	**–**	**–**	**374.8**	**0.188**	**70**	**338.4**	**0.291**	**99**	**713.2**	**0.237**	**169**

SOUTH AFRICA

Uranium	Tons (Mt)	Grade (lb/t)	U_3O_8 (Mlb)	Tons (Mt)	Grade (lb/t)	U_3O_8 (Mlb)	Tons (Mt)	Grade (lb/t)	U_3O_8 (Mlb)	Tons (Mt)	Grade (lb/t)	U_3O_8 (Mlb)
Free State surface	–	–	–	149.5	0.213	32	–	–	–	149.5	0.213	32
Mispah 1	–	–	–	82.4	0.242	20	–	–	–	82.4	0.242	20
Kop Paydam	–	–	–	12.1	0.260	3	–	–	–	12.1	0.260	3
Vaal River tailings	–	–	–	419.5	0.171	72	–	–	–	419.5	0.171	72
Mine Waste Solutions	91.4	0.136	12	181.8	0.162	30	–	–	–	273.2	0.154	42
North West Surface	91.4	0.136	12	695.8	0.178	124	–	–	–	787.2	0.174	137
Moab underground	–	–	–	20.0	1.252	25	6.2	1.295	8	26.2	1.262	33
GRAND TOTAL	91.4	0.136	12	865.3	0.209	181	6.2	1.295	8	963.0	0.209	202

[1] *Total attributable.*
Gold equivalent ounces are calculated assuming a US$1 500/oz Au, US$3.00/lb Cu and US$20.70/oz Ag with 100% recovery for all metals.
NB Rounding of numbers may result in slight computational discrepancies.
Note: 1 ton = 907 kg = 2 000 lbs.
1 troy ounce = 32.1507 grams.

MINERAL RESERVES STATEMENT **IMPERIAL**

ESTIMATES AT 30 JUNE 2021

Operations	Proved Reserves			Probable Reserves			Total Mineral Reserves		
GOLD	Tons (Mt)	Grade (oz/t)	Gold [2] (000oz)	Tons (Mt)	Grade (oz/t)	Gold [2] (000oz)	Tons (Mt)	Grade (oz/t)	Gold [2] (000oz)
SOUTH AFRICA UNDERGROUND									
Free State region									
Tshepong operations	22.1	0.168	3 722	5.2	0.130	672	27.3	0.161	4 394
Bambanani	0.6	0.247	152	–	–	–	0.6	0.247	152
Joel	2.9	0.146	423	1.6	0.131	215	4.5	0.141	639
Masimong	0.8	0.127	105	0.03	0.090	3	0.9	0.126	108
Target 1	3.2	0.130	416	2.0	0.113	231	5.2	0.124	647
Total Free State underground	**29.6**	**0.163**	**4 818**	**8.9**	**0.126**	**1 121**	**38.5**	**0.154**	**5 939**
West Rand region									
Doornkop South Reef	6.7	0.138	918	4.9	0.122	596	11.5	0.131	1 513
Kusasalethu	2.1	0.219	455	0.3	0.139	43	2.4	0.209	498
Mponeng	2.1	0.254	535	6.3	0.247	1 569	8.5	0.249	2 104
Total West Rand region	**10.8**	**0.176**	**1 907**	**11.6**	**0.191**	**2 208**	**22.4**	**0.184**	**4 115**
North West region									
Moab Khotsong	3.2	0.227	727	13.6	0.259	3 518	16.8	0.253	4 245
Total North West region	**3.2**	**0.227**	**727**	**13.6**	**0.259**	**3 518**	**16.8**	**0.253**	**4 245**
TOTAL SOUTH AFRICA UNDERGROUND	**43.7**	**0.171**	**7 453**	**34.0**	**0.201**	**6 846**	**77.7**	**0.184**	**14 299**
SOUTH AFRICA SURFACE									
Kraaipan Greenstone Belt									
Kalgold	6.7	0.027	182	13.7	0.033	449	20.4	0.031	631
Free State region – Surface									
Tailings									
Other Free State tailings	–	–	–	630.2	0.007	4 106	630.2	0.007	4 106
Phoenix	46.9	0.008	385	–	–	–	46.9	0.008	385
St Helena	119.7	0.008	933	–	–	–	119.7	0.008	933
Central	–	–	–	57.3	0.008	450	57.3	0.008	450
Total Free State	**166.6**	**0.008**	**1 318**	**687.5**	**0.007**	**4 555**	**854.1**	**0.007**	**5 873**
North West region – Surface									
Tailings									
Vaal River tailings	–	–	–	209.7	0.009	1 789	209.7	0.009	1 789
Mine Waste Solutions	55.1	0.007	390	181.8	0.007	1 358	236.9	0.007	1 749
Total North West	**55.1**	**0.007**	**390**	**391.5**	**0.008**	**3 148**	**446.6**	**0.008**	**3 538**
West Rand – Surface									
West Wits tailings	–	–	–	42.1	0.009	398	42.1	0.009	398
Total West Rand	**–**	**–**	**–**	**42.1**	**0.009**	**398**	**42.1**	**0.009**	**398**
TOTAL SOUTH AFRICA SURFACE (including Kalgold)	**228.4**	**0.008**	**1 890**	**1 134.8**	**0.008**	**8 550**	**1 363.1**	**0.008**	**10 440**
TOTAL SOUTH AFRICA	**272.0**		**9 343**	**1 168.8**		**15 397**	**1 440.8**		**24 739**
PAPUA NEW GUINEA									
Hidden Valley	3.7	0.028	103	21.9	0.046	1 016	25.6	0.044	1 119
Hamata	0.007	0.048	0.33	0.3	0.053	14	0.3	0.053	15
Golpu [1]	–	–	–	220.5	0.025	5 500	220.5	0.025	5 500
Total Papua New Guinea	**3.7**	**0.028**	**103**	**242.6**	**0.027**	**6 530**	**246.4**	**0.027**	**6 634**
HV Hamata	**3.7**	**0.028**	**103**	**22.2**	**0.046**	**1 030**	**25.9**	**0.044**	**1 134**
GRAND TOTAL	**275.8**		**9 446**	**1 411.4**		**21 927**	**1 687.2**		**31 373**

MINERAL RESERVES STATEMENT **IMPERIAL** continued

ESTIMATES AT 30 JUNE 2021

Operations	Proved Reserves		Probable Reserves		Total Mineral Reserves	
GOLD EQUIVALENTS	Tons (Mt)	Au eq [2] (000oz)	Tons (Mt)	Au eq [2] (000oz)	Tons (Mt)	Au eq [2] (000oz)
Silver						
Hidden Valley	3.7	26	21.9	240	25.6	266
Copper						
Golpu[1]	–	–	220.5	10 814	220.5	10 814
Total Silver and Copper as gold equivalents	3.7	26	242.4	11 054	246.1	11 080
Total PNG including gold equivalents	3.7	129	242.6	17 584	246.4	17 714
TOTAL HARMONY including equivalents	**275.8**	**9 472**	**1 411.4**	**32 981**	**1 687.2**	**42 453**

OTHER METALS

PAPUA NEW GUINEA [1]	Proved Reserves			Probable Reserves			Total Mineral Reserves		
Silver	Tons (Mt)	Grade (oz/t)	Ag [2] (000oz)	Tons (Mt)	Grade (oz/t)	Ag [2] (000oz)	Tons (Mt)	Grade (oz/t)	Ag [2] (000oz)
Hidden Valley	3.7	0.505	1 886	21.9	0.793	17 363	25.6	0.751	19 249
Copper	Tons (Mt)	Grade (%)	Cu [2] (Mlb)	Tons (Mt)	Grade (%)	Cu [2] (Mlb)	Tons (Mt)	Grade (%)	Cu [2] (Mlb)
Golpu	–	–	–	220.5	1.111	5 400	220.5	1.111	5 400

SOUTH AFRICA

Uranium	Tons (Mt)	Grade (lb/t)	U_3O_8 [2] (Mlb)	Tons (Mt)	Grade (lb/t)	U_3O_8 [2] (Mlb)	Tons (Mt)	Grade (lb/t)	U_3O_8 [2] (Mlb)
Moab Khotsong underground	–	–	–	16.8	0.493	8	16.8	0.493	8

[1] Total attributable.
Gold equivalent ounces are calculated assuming a US$1 500/oz Au, US$3.00/lb Cu and US$20.70/oz Ag with 100% recovery for all metals.
[2] Metal figures are fully inclusive of all mining dilutions and gold losses, and are reported as mill delivered tonnes and head grades. Metallurgical recovery factors have not been applied to the reserve figures.
NB Rounding of numbers may result in slight computational discrepancies.
Note: 1 ton = 907 kg = 2 000 lbs.
1 troy ounce = 32.1507 grams.

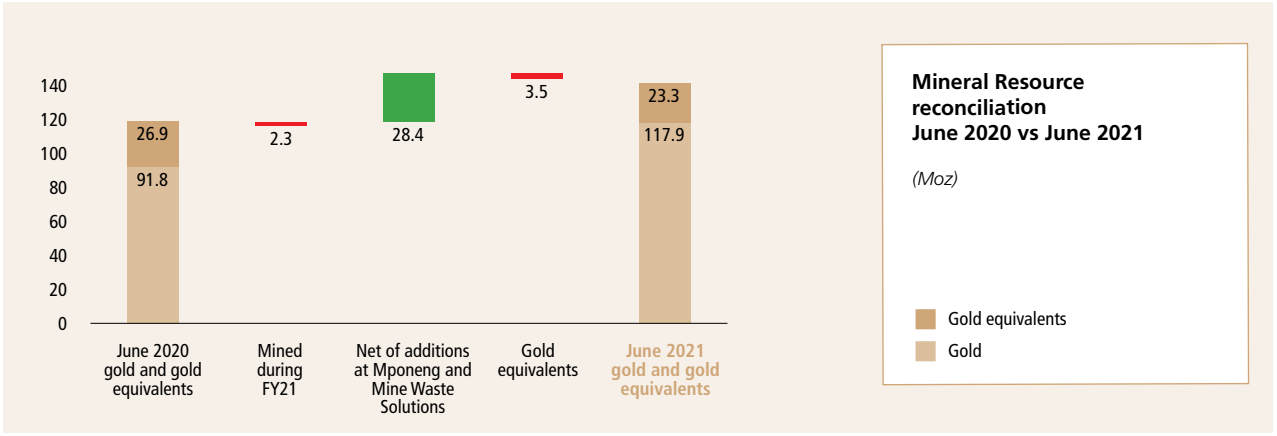
MINERAL RESOURCE AND MINERAL RESERVE RECONCILIATION

MINERAL RESOURCES

As at 30 June 2021, attributable gold equivalent Mineral Resources were 141.2Moz, up from 118.6Moz in June 2020. The following tables show the year on year reconciliation of the Mineral Resources.

Mineral Resource reconciliation – gold and gold equivalents

	kg (000)	Moz
June 2020 – Gold and gold equivalents	3 690	118.6
Changes during FY21:		
Mined	(72)	(2.3)
Net of additions at Mponeng and Mine Waste Solutions	884	28.4
Gold equivalents	(110)	(3.5)
June 2021 – Gold and gold equivalents	4 393	141.2



MINERAL RESOURCE AND MINERAL RESERVE RECONCILIATION continued

Mineral Resource comparison – FY20 vs FY21

SOUTH AFRICA UNDERGROUND	FY20 Gold oz (mil)	**FY21 Gold oz (mil)**	Depletion Gold oz (mil)	Net of depletion variance Gold oz (mil)	Net of depletion % variance Gold oz (mil)	**Comments**
Tshepong operations	26.024	**25.596**	0.376	(0.052)	(0.2)	Negative variance mainly due to year on year increase in abandoned blocks especially in the western area of Tshepong North shaft
Bambanani	0.248	**0.181**	0.089	0.021	8.7	Year on Year differences from changes in the size of remnant pillars as per the latest Rock Engineering model
Joel	3.144	**3.113**	0.072	0.041	1.3	Additional Resource blocks from drilling results at "Klippan" and 129-E12 areas
Masimong 5	0.783	**0.757**	0.130	0.103	13.1	Good development grades achieved, resulting in additional m² being above the cut-off
Target 1	3.517	**3.627**	0.064	0.174	4.9	Decrease in cut-off from 3.80 g/t to 3.49 g/t year on year. Cut-off decrease as a result of increase in gold price and decrease in R/t. The R/t decreased after introduction of new and cheaper mining method (SLOS) in Block12
Target 3	1.483	**1.483**	–	–	–	No changes
Total Free State underground	35.198	**34.756**	0.730	0.288	0.8	
West Rand						
Doornkop South Reef	3.391	**3.024**	0.171	(0.197)	(5.8)	Reduction mainly due to a decrease in the resource grade as a result of lower sampled grades. There is also a reduction in area as result of the introduction of safety pillar as per rock engineering recommendations
Doornkop Main Reef	0.025	**0.025**	–	–	–	No changes
Doornkop Kimberly Reef	4.249	**4.249**	–	–	–	No changes
Total Doornkop	7.666	**7.299**	0.171	(0.197)	(2.6)	
Kusasalethu	6.995	**5.919**	0.189	(0.887)	(12.7)	Decreased due to a 3% reduction in the Mineral inventory grade. Major change was in geozones 1, 3 and 9 where there is now additional blocks below the resources cut-off
Mponeng	–	**23.581**		23.581	100.0	Resources acquired from AGA
Total West Rand	14.660	**36.798**	0.360	22.498	153.5	
North West						
Moab Khotsong including Zaaiplaats	12.994	**12.402**	0.366	(0.225)	(1.7)	The resource decreased due to: Zaaiplaats: Structure change based on exploration drilling Middle Mine: Structure change on 101Level based on new exploration drilling and raise development. Top Mine: Due to an inventory clean-up of Isolated blocks not feasible to mine in future
Total North West	12.994	**12.402**	0.366	(0.225)	(1.7)	
Total South Africa underground	62.853	**83.957**	1.456	22.560	35.9	

GOLD	FY20 (Moz)	**FY21 (Moz)**	Depletion (Moz)	Net of depletion variance (Moz)	Net of depletion % variance (Moz)	**Comments**
SOUTH AFRICA SURFACE						
Kraaipan Greenstone Belt						
Kalgold	2.345	**2.299**	0.043	(0.003)	(0.1)	Depletion only – No model changes year on year
Kalgold tailing dam	0.201	**0.201**	–	–	–	No changes
Total	2.546	**2.501**	0.043	(0.003)	(0.1)	
Free State Surface						
Other Free State tailings	4.152	**4.200**	–	0.048	1.2	Deposition from current operations
Free State (Phoenix)	0.442	**0.385**	0.057	–	(0.1)	
Free State (St Helena)	1.656	**1.656**	–	–	–	No change
Free State (Central)	0.476	**0.450**	0.038	0.011	2.4	
Waste rock dumps	0.287	**0.267**	0.128	0.109	37.9	Depletion offsetted by adding Mponeng WRD mining
Total Free State Surface	7.013	**6.958**	0.223	0.167	2.4	
North West Surface						
Mispah	0.713	**0.719**	–	0.006	0.8	Additions from Moab Operations plant residue
Kop Paydam	0.072	**0.072**	–	–	–	No change
Moab MOD	0.064	**0.045**	0.017	(0.002)	(3.8)	Depletion
Vaal River tailings	–	**3.140**	–	3.140	100.0	Resources acquired from AGA
Vaal River WRD	–	**0.060**	–	0.060	100.0	Resources acquired from AGA
Mine Waste Solutions	–	**1.946**		1.946	100.0	Resources acquired from AGA
Total North West Surface	0.849	**5.981**	0.017	5.149	606.5	
West Wits Surface						
West Wits tailings	–	**0.503**	–	0.503	100.0	Resources acquired from AGA
West Wits WRD	–	**0.029**	–	0.029	100.0	Resources acquired from AGA
Total West Wits Surface	–	**0.532**	–	0.532	100.0	
Total South Africa Surface (including Kalgold)	10.408	**15.971**	0.283	5.846	56.2	
Total South Africa (including u/g, surface, Kalgold)	73.261	**99.928**	1.739	28.405	38.8	
Papua New Guinea						
Hidden Valley/Kaveroi	3.074	**2.622**	0.182	(0.270)	(8.8)	New conservative Resource Model not offsetted by the addition of Stage HVX into LOM
Hamata	0.127	**0.124**	–	(0.003)	(2.1)	Depletion
Wafi	3.600	**3.600**	–	–	–	No change
Golpu	9.300	**9.300**	–	–	–	No change
Nambonga	0.500	**0.500**	–	–	–	No change
Kili Teke	1.810	**1.810**	–	–	–	No change
Total Papua New Guinea	18.511	**17.956**	0.182	(0.373)	(2.0)	
Grand Total	91.772	**117.884**	1.921	28.033	30.5	
Silver – Equivalent gold ounces						
Hidden Valley	0.602	**0.573**	–	(0.029)	(4.8)	New conservative Resource Model not offsetted by the addition of Stage HVX into LOM
Copper – Equivalent gold ounces						
Golpu	22.110	**19.030**	–	(3.080)	(13.9)	Due to commodity price ratio changes
Nambonga	0.240	**0.207**	–	(0.033)	(13.7)	Due to commodity price ratio changes
Kili Teke	3.926	**3.538**	–	(0.388)	(9.9)	Due to commodity price ratio changes
Total Copper – Equivalent gold ounces	26.276	**22.775**	–	(3.501)	(13.3)	
Total PNG equivalent gold ounces	26.877	**23.347**	–	(3.530)	(13.1)	
Total PNG including equivalent gold ounces	45.389	**41.304**	0.182	(3.902)	(8.6)	
GRAND TOTAL (excluding equivalent)	91.772	**117.884**	1.921	28.033	30.5	
GRAND TOTAL (including equivalent)	118.649	**141.231**	1.921	24.503	20.7	

MINERAL RESOURCE AND MINERAL RESERVE RECONCILIATION continued

SILVER	FY20 (Moz)	FY21 (Moz)	Depletion (Moz)	Net of depletion variance (Moz)	Net of depletion % variance (Moz)	Comments
Hidden Valley	47.754	**41.508**		(6.246)	(13.1)	
Golpu	16.500	**17.000**		0.500	3.0	
Total silver	64.254	**58.508**	–	(5.746)	(8.9)	

COPPER	FY20 (Mlb)	FY21 (Mlb)	Depletion (Mlb)	Net of depletion variance (Mlb)	Net of depletion % variance (Mlb)
Kili Teke	1 767.000	**1 766.987**		(0.013)	–
Golpu	9 500.000	**9 500.000**		–	–
Nambonga	88.000	**103.503**		15.503	17.6
Total copper	11 355.000	**11 370.491**	–	15.491	0.1

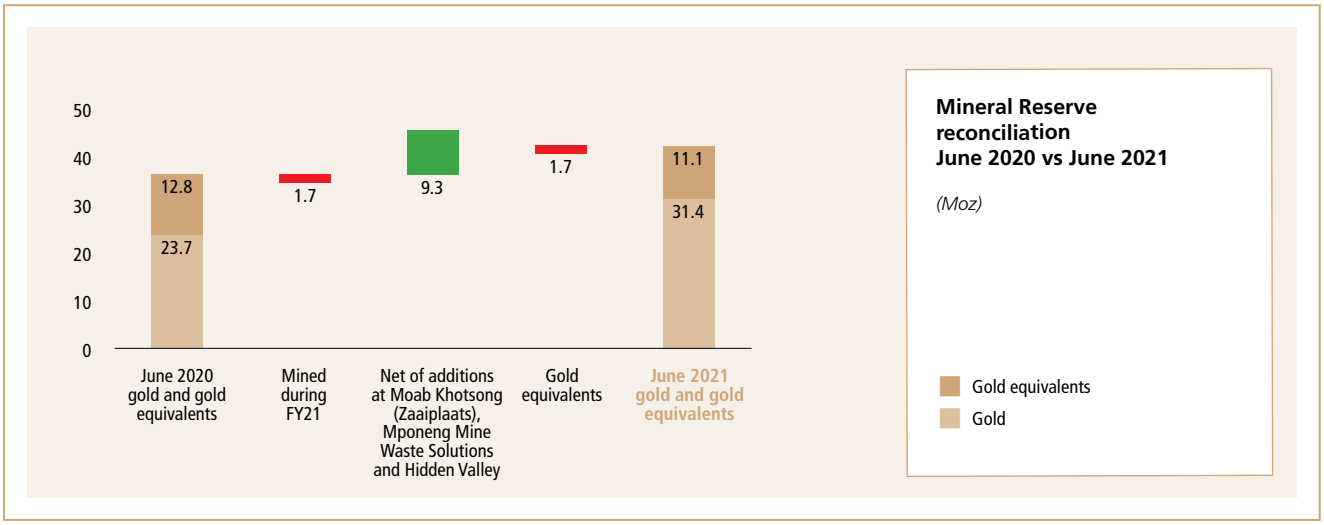
MOLYBDENUM	FY20 (Mlb)	FY21 (Mlb)	Depletion (Mlb)	Net of depletion variance (Mlb)	Net of depletion % variance (Mlb)
Kili Teke	88.000	**88**		(0.432)	(0.5)
Golpu	83.000	**81**		(1.659)	(2.0)

MINERAL RESERVES

As at 30 June 2021, Harmony's attributable gold equivalent Mineral Reserves were 42.5Moz, up from 36.5Moz. The year on year Mineral Reserve reconciliation is shown below.

Mineral Reserve reconciliation – gold and gold equivalents

	kg (000)	Moz
June 2020 – Gold and gold equivalents	1 135	36.5
Changes during FY21		
Mined	(52)	(1.7)
Net of additions at Tshepong Operations, Moab Khotsong, Masimong, Kalgold, Target and Hidden Valley	289	9.3
Gold equivalents	(52)	(1.7)
June 2021 – Gold and gold equivalents	1 320	42.5



Mineral Reserve comparison – FY20 vs FY21

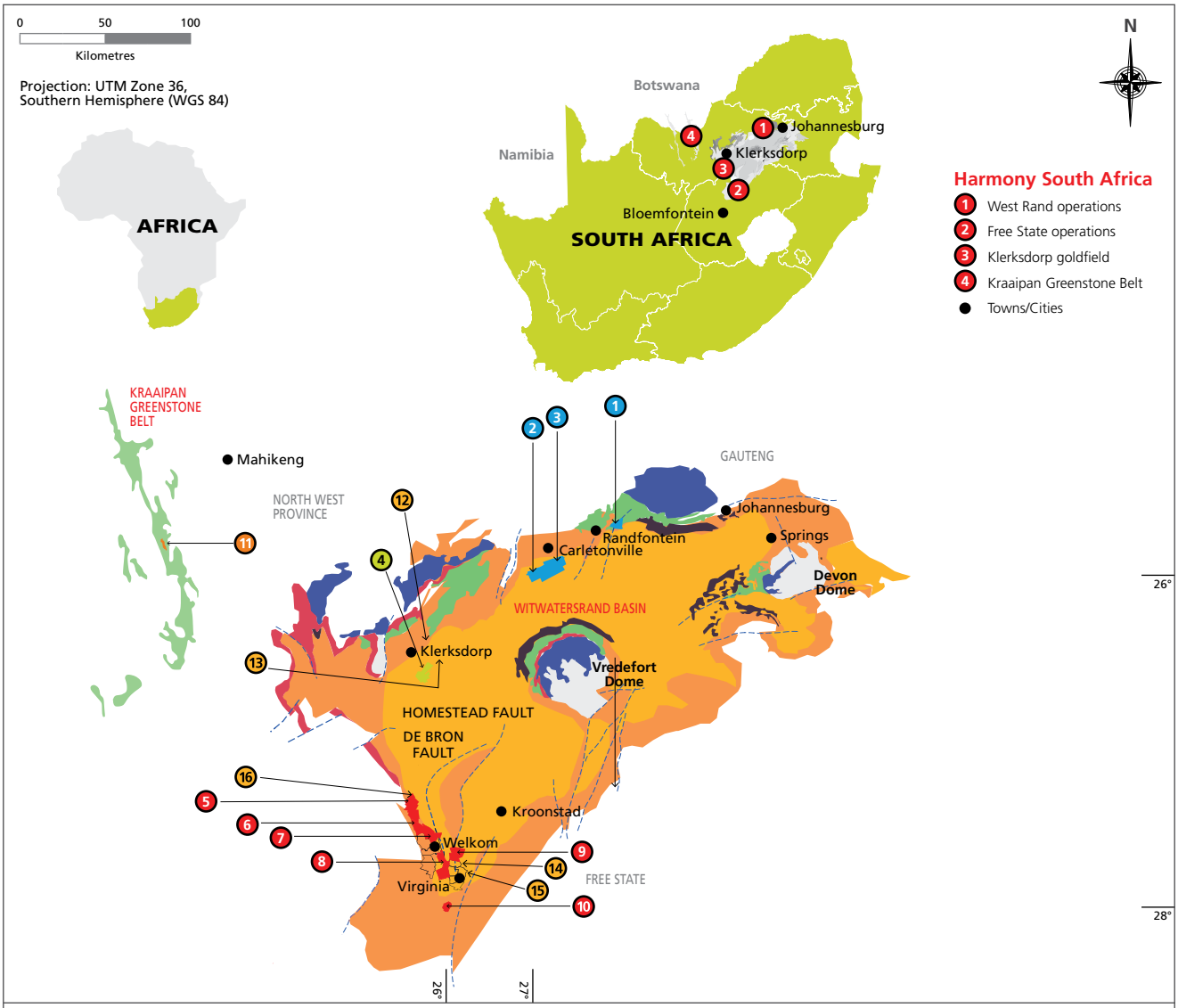
GOLD	FY20 (Moz)	FY21 (Moz)	Depletion (Moz)	Net of depletion variance (Moz)	Net of depletion % variance (Moz)	Comments
SOUTH AFRICA UNDERGROUND						
Free State						
Tshepong operations	4.980	**4.394**	0.251	(0.334)	(6.7)	Tshepong South – Year on Year variance mainly due to Geological Losses to the North section of the shaft. Tshepong North – Decrease mainly due to an increase in abandoned blocks
Bambanani	0.207	**0.152**	0.067	0.012	5.7	Year on Year differences from changes in the size of remnant pillars. Latest Rock Engineering model enabling additional mining
Joel	0.661	**0.639**	0.049	0.026	4.0	Joel managed to complete exploration drilling which proved additional Reserves in the "Klippan" and the 129-E12 areas which is included in the LOM plan
Masimong 5	0.110	**0.108**	0.068	0.066	59.6	Good development grades achieved, resulting in additional m² being above the cut-off
Target 1	0.707	**0.647**	0.055	(0.005)	(0.7)	Additional reserves available to mine in BLK12 due to decrease in the massives reserves cut-off from 3.80g/t to 3.49g/t
Total Free State	6.664	**5.939**	0.490	(0.236)	(3.5)	

MINERAL RESOURCE AND MINERAL RESERVE RECONCILIATION continued

GOLD	FY20 (Moz)	**FY21 (Moz)**	Depletion (Moz)	Net of depletion variance (Moz)	Net of depletion % variance (Moz)	Comments
SOUTH AFRICA UNDERGROUND						
West Rand						
Doornkop South Reef	1.638	**1.513**	0.122	(0.002)	(0.2)	Reduction in grade and area mined as result of the introduction of safety pillars as per rock engineering recommendations
Kusasalethu	0.730	**0.498**	0.141	(0.092)	(12.6)	Decrease in reserves due to the removal of high risk areas as well as the change in strike of the kittems fault
Mponeng	–	**2.104**		2.104	100.0	Reserves acquired from AGA
Total West Rand	2.368	**4.115**	0.262	2.010	84.9	
North West						
Moab Khotsong	1.718	**1.449**	0.238	(0.031)	(1.8)	Moab Khotsong Top and Middle Mine decreased marginally due to a delay in the Shaft Pillar scheduling
Zaaiplaats	–	**2.796**	–	2.796	100.0	
Moab Khotsong including Zaaiplaats	1.718	**4.245**	0.238	2.765	161.0	Inclusion of Zaaiplaats in the LoM Reserves
Total North West	1.718	**4.245**	0.238	2.765	161.0	
Total South Africa underground	10.750	**14.299**	0.990	4.539	42.2	
South Africa Surface						
Kraaipan Greenstone Belt						
Kalgold	0.683	**0.631**	0.043	(0.009)	(1.4)	Mainly Depletion – No model changes
Free State Surface						
Other Free State tailings	4.114	**4.106**	–	(0.008)	(0.2)	Mainly Depletion – No model changes
Phoenix	0.442	**0.385**	0.057	–	(0.1)	Mainly Depletion – No model changes
St Helena	0.933	**0.933**	–	–	–	No changes
Central	0.476	**0.450**	0.038	0.011	2.4	Depletion offset by higher recoveries
Total Free State Surface	5.965	**5.873**	0.094	0.003	–	
North West Surface						
Vaal River tailings	–	**1.789**	–	1.789	100.0	Reserves acquired from AGA
Mine Waste Solutions	–	**1.749**	–	1.749	100.0	Reserves acquired from AGA
Total North West Surface	–	**3.538**	–	3.538	100.0	
West Rand Surface						
West Wits tailings	–	**0.398**		0.398	100.0	Reserves acquired from AGA
Total West Rand Surface	–	**0.398**		0.398	100.0	
Total South Africa Surface (including Kalgold)	6.648	**10.440**	0.137	3.929	59.1	
Total South Africa (including u/g, surface, Kalgold)	17.398	**24.739**	1.127	8.468	48.7	
Papua New Guinea						
Hidden Valley/Kaveroi	0.831	**1.119**	0.172	0.460	55.3	Addition of Stage 8 HVX into the LOM
Hamata	0.016	**0.015**	0.002	–	–	Depletion
Golpu	5.500	**5.500**	–	–	–	Rounded to match CP statement
Total Papua New Guinea	6.347	**6.634**	0.173	0.460	7.2	
Grand Total	23.746	**31.373**	1.300	8.928	37.6	
Silver – Equivalent gold ounces						
Hidden Valley	0.214	**0.266**	–	0.052	24.3	Addition of Stage 8 HVX into the LOM
Copper – Equivalent gold ounces						
Golpu	12.538	**10.814**	–	(1.724)	(13.7)	Due to commodity price ratio changes
Total PNG equivalent gold ounces	12.752	**11.080**	–	(1.672)	(13.1)	
Total PNG including equivalent gold ounces	19.099	**17.714**	–	(1.385)	(7.3)	
GRAND TOTAL (excluding equivalent)	23.746	**31.373**	1.300	8.928	37.6	
GRAND TOTAL (including equivalent)	36.497	**42.453**	1.300	7.256	19.9	

LOCATION AND GEOLOGY OF OPERATIONS, PROJECTS AND EXPLORATION

Harmony – South Africa



LEGEND

- Exposed Central Rand Group
- Covered Central Rand Group
- Exposed West Rand Group
- Covered West Rand Group
- Dominion Group
- Exposed Granitoid Basement
- Major faults

West Rand operations

		Latitude	Longitude
1	Doornkop	26°13'03.36"S	27°47'26.55"E
2	Kusasalethu	26°27'16.23"S	27°21'32.91"E
3	Mponeng	26°26'15.60"S	27°25'41.24"E

Klerksdorp goldfield

4	Moab Khotsong	26°59'12.7"S	26°48'03.3"E
16	Exploration Target North		
	MAL21A	27°40'58.29"S	26°36'11.95"E
	MAL22	27°40'43.75"S	26°36'12.49"E

Free State operations

		Latitude	Longitude
5	Target 1	27°45'42.59"S	26°38'24.92"E
6	Target 3*	27°49'42.93"S	26°38'29.27"E
7	Tshepong operations**	27°51'56.45"S	26°42'45.15"E
8	Bambanani	28°2'28.24"S	26°48'9.13"E
9	Masimong	27°58'23.93"S	26°52'39.41"E
10	Joel	28°16'17.19"S	26°48'57.97"E

Surface sources

Kraaipan Greenstone Belt

11	Kalgold	26°10'12.85"S	25°14'02.70"E

MWS Klerksdorp

12	MWS Plant	26°50'10.50"S	26°47'50.41"E
13	Kareerand	26°53'21.49"S	26°53'21.24"E

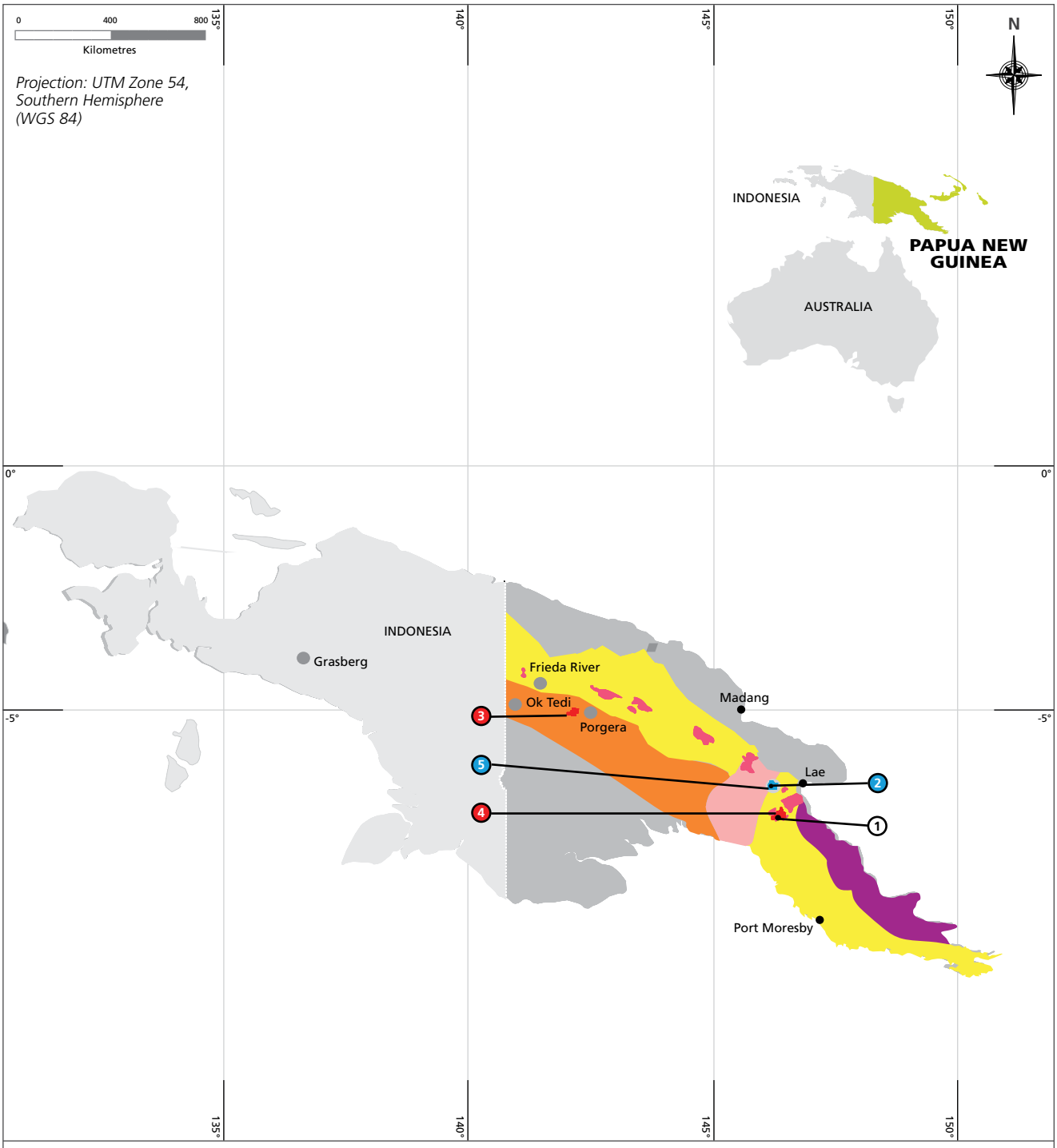
Free State

14	Saaiplaas Plant	28°2'6.64"S	26°52'4.02"E
15	Central Plant	28°3'36.57"S	26°53'14.18"E

* *Care and maintenance*
** *Tshepong Operations includes Tshepong and Phakisa sections combined*

LOCATION AND GEOLOGY OF OPERATIONS, PROJECTS AND EXPLORATION continued

Harmony – Papua New Guinea



EXPLORATION

Key work streams underpinning the FY21 exploration programme included:

- Brownfield exploration at Hidden Valley and Kalgold to optimise existing open pit operations and extend mine life
- Brownfield exploration at our underground operations in South Africa
- Greenfield exploration at Target North
- Reviewing exploration opportunities as part of the new business strategy.

In line with the company's strategy and growth targets, capital allocated to exploration projects for organic growth in FY21 focused on near-mine, brownfield targets. Although greenfield exploration activities have been scaled back, as part of a balanced approach, Harmony continued to maintain its greenfield tenement interests for exposure to major new gold and copper-gold discoveries in highly prospective underexplored terranes and mining districts throughout Papua New Guinea.

PAPUA NEW GUINEA

Key geological features

Papua New Guinea is one of the world's most prospective, yet under-explored, terrains for porphyry copper-gold and epithermal gold mineralisation. The New Guinea Mobile Belt, which spans the core of the Irian Jaya-Papua New Guinea mainland, is host to a number of world-class porphyry copper-gold and gold deposits, including Golpu (Cu-Au), Ok Tedi (Cu-Au), Grasberg (Cu-Au), and Porgera (Au).

The central rock belt that makes up the highland spine of Papua New Guinea formed as a result of subduction-related interaction between the Pacific plate (in the north), converging with the Australian plate (in the south). Deposits typical of subduction-related arc settings include:

- Epithermal gold deposits which form at shallow depths, relatively close to the earth's surface, examples of which include Hidden Valley, Hamata, Kerimenge, Wau and Wafi
- Porphyry copper-gold systems which form at deeper levels in the crust are associated with the emplacement of intrusive stocks and dykes. These systems are among the largest sources of copper ore in the world, and can also contain significant amounts of gold, molybdenum and silver as by-products. Golpu is a high-grade porphyry copper-gold system.

Key legal and regulatory features

Mining in Papua New Guinea is governed by the Mining Act of 1992. Minerals are owned by the State, which issues and administers mining tenements through the offices of the Mineral Resources Authority. The types of tenements comprise exploration licence, mining lease, special mining lease, alluvial mining lease, lease for mining purpose, and mining easement.

Exploration licences are issued for a term not exceeding two years and are renewable for further two-year terms, subject to compliance with expenditure and other conditions. Each licence contains a condition conferring on the State the right, exercisable at any time prior to the commencement of mining, to make a single purchase of up to 30% equitable interest in any mineral discovery under the licence at a price pro rata to the accumulated exploration expenditure.

If (pursuant to a feasibility study approved by the board of directors) a decision is made to develop a mine on a resource, a permitting process must be followed, including:

- Applying to the Mineral Resources Authority for a mining lease (or, at the discretion of the Minister for Mines, a special mining lease). This includes entering into a memorandum of agreement with local, provincial and national governments and landowners regarding the allocation to those parties of a share of the royalties payable by the company to the State, and other community and local business-related matters. If the Minister determines that a special mining lease is required, it will be necessary to enter into a mining development contract with the State, setting out the applicable project implementation, fiscal and other arrangements in respect of the proposed mining operation. Other relevant agreements include a Fiscal Stabilisation Agreement and a State Equity Acquisition Agreement
- Applying to the Conservation and Environment Protection Authority for a level 3 environment permit. This includes undertaking an environmental impact study.

The permitting process can be very time consuming (18-24 months, or longer in some cases).

Over the past five years, the national government has undertaken a wide-ranging review of the fiscal and regulatory regime governing the mining industry. This process accelerated with the appointment in May 2019 of the Honourable James Marape as Prime Minister, following a vote of no confidence in the previous government.

Legislation the subject of the review includes the Mining Act 1992, the Mining Safety Act 1997, the Income Tax Act 1959 and the Environment Act 2000. In addition, the review has addressed mineral policy generally, and such mining-specific issues as fly-in, fly-out employment arrangements, offshore mining, sustainable development, carbon replacement, downstream processing, involuntary relocation and mine closure.

The review has also considered changes to the quantum of the royalty payable to the State, and to the provisions of the State purchase option reservation, including possible changes to the percentage interest "cap", the consideration payable for the interest and the allocation of ownership of the acquired interest between the State nominee, the relevant provincial government and affected landowners.

Pursuant to the tax regime review and notwithstanding industry objections, certain adverse changes to the fiscal regime were introduced with effect from 1 January 2017. The main changes were the introduction of an additional profit tax, the cessation of the double deduction allowance for exploration expenditure, and an increase in the rates of interest withholding and dividend withholding taxes.

In June 2020, a bill, entitled the Mining (Amendment) Bill 2020 and proposing various amendments to the Mining Act 1992 (Papua New Guinea), was passed by the national parliament. The amendments are in two parts, with the first part introducing additional reporting requirements and the second part expanding the State's ability, via a holding company, to apply for tenement and other related permits and authorisations in respect of reserved land.

In July 2020, a proposed Organic Law on Ownership and Development of Hydrocarbons and Minerals and the Commercialisation of State Businesses was tabled for comment. The Organic Law (if adopted) will materially alter the legislative and regulatory regime governing mining in Papua New Guinea, including the ownership of minerals by the government and the transformation of the methodology of its participation in mining operations from a concessionary to a production sharing regime.

The Papua New Guinea Chamber of Mines and Petroleum, as the representative mining industry body, has engaged with the State in response to these proposed legislative changes, some of which industry considers to be materially adverse. However, there has been only limited engagement with the State.

Harmony's operations and projects in Papua New Guinea will potentially be adversely affected by the fiscal and regulatory changes presently being considered.

HARMONY IN PAPUA NEW GUINEA – A SUMMARY

Harmony began actively exploring in Papua New Guinea in 2003. Since then, we have developed a high-quality project portfolio, both in established mineral provinces and in emerging gold and copper districts. Harmony has advanced several gold and copper-gold prospects which are at various stages of exploration and evaluation across Harmony's tenement areas.

In line with the company's strategy and growth targets, capital allocated to exploration projects for organic growth in FY21 focused on near-mine, brownfield targets. Although greenfield exploration activities have been scaled back, as part of a balanced approach, Harmony continued to maintain its greenfield tenement interests for exposure to major new gold and copper-gold discoveries in highly prospective underexplored terranes and mining districts throughout Papua New Guinea.

Exploration FY21

Key work streams underpinning the FY21 exploration programme included:

- The Wafi-Golpu copper-gold deposit permitting process and progressing the special mining lease application
- Near-mine exploration and projects in support of extending mine life at Hidden Valley
- Rationalisation of non-prospective tenure.

In FY21, we spent R74.6 million (US$5.4 million) on exploration in Papua New Guinea, driven largely by activities related to the Wafi-Golpu project (FY20: R203 million; US$13 million). Exploration expenditure of R77.6 million (US$5.3 million) is planned for FY22.

The FY21 work programme was impacted by the resurgent Covid-19 pandemic in PNG, which severely disrupted the social and business operational environment, including global travel restrictions and compulsory work stoppages.

The company has adapted its work programmes and resourcing to reflect travel constraints (both within and outside of PNG) and social distancing and group gathering constraints that particularly affect our engagement with communities and other stakeholders. Of particular focus has been limiting contact with remote communities who would not otherwise be at risk of exposure to the pandemic.

In relation to Covid-19 safeguards, company employees are currently progressing through the Covid-19 vaccination process, which is a two-phase, 12-week programme. Concurrently, updated field Covid-19 protocols and procedures are being prepared to enable a restart to work that is safe from a community health perspective.

The country is highly prospective and under-explored and the case for exploration investment in Papua New Guinea will remain strong if the current or proposed legislative environment remains supportive.

Tenements held in joint venture

Wafi-Golpu joint venture and exploration portfolio joint venture (Harmony 50%)

Harmony is in a 50:50 joint venture with Newcrest Mining over a number of tenements in the Morobe Province. The aggregate tenement package in Morobe Province, held in 50:50 joint venture between Newcrest and Harmony, stands at 152.81km^2 (unchanged year on year). These tenements encompass the Wafi-Golpu project and span the Wafi transfer zone and its strike extensions.

The Wafi-Golpu project is presently in the permitting phase. The joint venture participants are awaiting the conclusion by the State of its assessment of their proposals for development, whereafter relevant agreements with the State will be negotiated.

The Wafi transfer zone and its strike extensions are prospective for epithermal gold and porphyry style copper-gold deposits, and the exploration strategy is to discover bulk tonnage (~1Moz) or high-margin gold or copper-gold deposits to provide new resource options that can leverage infrastructure or complement the Wafi-Golpu project.

In line with the greater focus on brownfields exploration, regional joint venture work concentrated on tenements contiguous with the Wafi-Golpu project.

During FY21, the joint venture exploration work programme was heavily disrupted as a result of various controls and travel constraints adopted to prevent spread of the virus into local communities. Generative work to further evaluate an epithermal target approximately 1.5km north-west of the Golpu porphyry is planned to resume in FY22 in order to develop near mine drill targets within the Wafi-Golpu project area.

Exclusively held tenements

Morobe Consolidated Goldfields Limited and Harmony Gold (PNG) Exploration Limited) (Harmony 100%)

Rationalisation of regional greenfield tenure within Harmony's 100%-owned tenement portfolio in Papua New Guinea continued. The tenement portfolio comprised 464km^2 as at 30 June 2021, compared with FY20: 599.8km^2 (a 23% decrease year on year).

Work programme expenditure focused on the development of brownfield gold targets within a 10km radius of the Hamata processing plant at Hidden Valley. This included study work on the depth extension of the Hidden Valley deposit.

Papua New Guinea – overview of joint venture exploration (Harmony 50%)

Objectives	Progress in FY21	Targets/plans for FY22
Exploration portfolio tenements (Wafi-Golpu district)		
Wafi transfer zone – grassroots exploration targeting discovery of additional resources to expand Wafi-Golpu into a mineral district.	• A programme of follow-up soil sampling supported by geological reconnaissance mapping and rockchip sampling was completed to further evaluate an epithermal target ~1.5km north-west of the Golpu porphyry • Very encouraging results were obtained with a coherent gold anomaly of +0.1g/t Au identified over a 500m x 200m area (open to the south). The anomaly contained peak gold values up to 2.8g/t Au, which sit within an envelope of anomalous Ag, Pb, and Zn geochemistry. Work completed to date has confirmed the Buvu Thrust target area as having potential for an unrecognised centre of epithermal hydrothermal alteration/mineralisation.	• Complete mapping and surface sampling on ranked targets along the Wafi transfer structure including follow up of open anomalism at new Buvu fault target (EL440) via extension of systematic soil sampling grid and mapping • Undertake bulk material characteristic sampling on sites identified as potentially suitable sources for road construction materials in support of the Wafi-Golpu joint venture project.

Papua New Guinea – overview of brownfield exploration activity and greenfield tenement portfolio (Harmony 100%)

Objectives	Progress in FY21	Targets/plans for FY22
Kili Teke project – EL2310		
Targeting copper-gold porphyry.	• Fieldwork was paused to limit contact with remote communities who would not otherwise be at risk of exposure to the pandemic • A review of soil pathfinder distribution patterns over the Kili Teke project area has highlighted a potential area of untested hydrothermal alteration located ~1.5km east of the known mineralised porphyry area. This area of interest is considered the most prospective area on EL2310 for a potential new centre of mineralisation.	• Community engagement and social mapping • Complete a programme of systematic soil sampling and mapping. The soil sampling aims to extend geochemical coverage over the eastern and northern extensions of this highly prospective target. The geological mapping will try to map out the existence of any marble fronts developed within the overlying Darai Limestone.

Brownfields exploration within a 10km radius of the Hidden Valley plant to develop replacement resources and support the mine-life extension

Objectives	Progress in FY21	Targets/plans for FY22
Brownfields exploration within a 10km radius of the Hidden Valley plant to develop replacement resources and support the mine-life extension.	• Mining studies to investigate options to extend mine life of Hidden Valley orebody continued and included: – Studies on the down plunge extensions of the Hidden Valley orebody which remain open – Resource modelling of the historic Kerimenge Resource area commenced with the aim of developing high-grade satellite deposits with trucking distance to Hidden Valley plant. • A programme of target generative systematic soil sampling and mapping was completed south of the Hidden Valley Mine on EL677 adjacent to ML151 • Partial relinquishment applications were processed as part of a broader consolidation plan, reducing Hidden Valley District tenure by 39% from 347km^2 to 212km^2.	• Complete resource development work and progress mining option studies for Kerimenge and Hidden Valley extensions • Restart of the Webiak exploration programme including: – Grass roots generative systematic soil sampling and mapping extending soil grids at both Webiak (EL497) and Kobiak (EL2313) – Drill testing of ranked anomalies.

SOUTH AFRICA

All our underground mines are located within the Witwatersrand Supergroup. Most are situated in the south-western corner of the Witwatersrand Basin or Free State goldfields, and comprise sedimentary rocks extend laterally for hundreds of kilometres into the West Rand goldfields and East Rand Basin. Our mining assets include an open-pit operation on the Kraaipan Greenstone Belt to the north-west of the Witwatersrand Basin. Additional information on geology is provided per operation in this report.

Exploration FY21

In FY21, Harmony spent R91 million (US$6 million) on exploration in South Africa (FY20: R56 million; US$4 million). Expenditure of R195 million (US$13 million) planned for FY22 includes R48 million budgeted for Target North and R27 million budgeted for Kalgold.

Underground resource definition drilling

In all, 61 630 metres were drilled across Harmony's underground operations in South Africa (FY20: 68 764 metres).

Using a method known as continuous coring, underground exploration drilling is conducted as per required intervals from existing underground excavations (haulages and cross cuts). This drilling provides information to determine the elevation and grade of the targeted reef horizon as well as geological features in the immediate surrounding lithology. It assists in structural geological interpretation and evaluation of specific areas as well as compilation of regional structural geological and evaluation models. Mine geologists and planners use drilling information to determine a mine's development strategy and eventually its economic viability.

Kalgold brownfield exploration programme

The Kalgold operation is 100% owned by Harmony and located approximately 276km west of Johannesburg, in North West Province, South Africa.

The brownfield infill drill campaign carried out in FY20 focused on the main line of lode and potential satellite targets. Intercepts returned confirmed an expanded, robust mineralised system with over 2.1 kilometres of strike, extending more than 300 metres below surface (a full list of drill intercepts is included in the SAMREC Table 1 report available at www.harmony.co.za). The expanded resource base underpins the Kalgold expansion prefeasibility study that was completed this year.

South Africa – summary of brownfields exploration

Objectives	Progress in FY21	Targets/plans for FY22
Kalgold expansion		
Advance feasibility studies in support of an expansion of the Kalgold open-pit mining operation: • Additional resource growth to underpin expansion studies and improve operational flexibility • New high-grade satellite resources • Extensions to known deposits.	Resource extension drilling was carried for the Windmill Zone; total of 30 boreholes[1] were drilled (4 745 metres of RC drilling). Drilling returned very encouraging initial results. Windmill resource model update is planned once all assay results are obtained and verified. Geotechnical, condemnation and water borehole drilling was also completed to support the various components of the feasibility study and provide input into the mine planning. All proposed sites have now been cleared for the future development.	A feasibility study has advanced and will be concluded during the year.

[1] *Complete assay results and resource details are tabulated in the technical annexure available on the website at www.harmony.co.za: SAMREC Table 1 Report – Kalgold operation, North West province, Republic of South Africa*

South Africa – summary of brownfields exploration continued

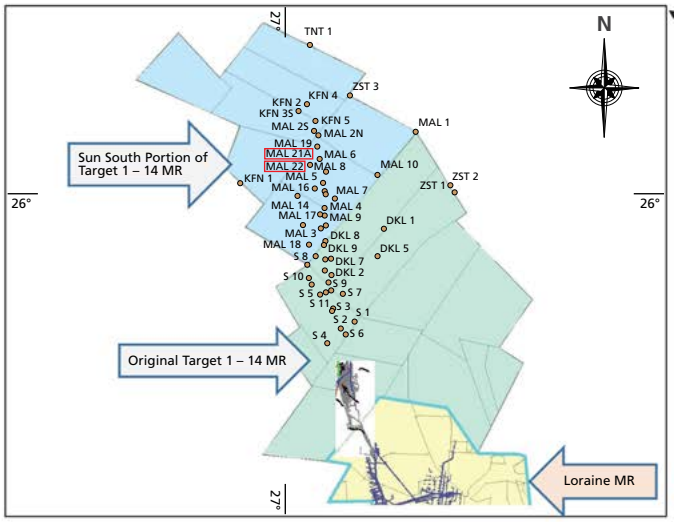
Objectives	Progress in FY21	Targets/plans for FY22
Kalgold prospecting rights		
Exploration aimed at improving understanding of the potential to develop the Kraaipan Greenstone Belt into a new mineralised province with multiple mining centres.	The systematic geochemical soil sampling survey was completed over the selected anomalies identified by magnetic and electro-magnetic surveys. A total of 1 806 auger holes were drilled and 3 476 of outcrop samples were obtained and analysed. Integration of these results with all historical geological information was concluded and identified excellent drilling targets associated with favourable Cherty BIF sequence.	Planned regional exploration includes reverse circulation drilling programme over the selected potential targets and continuation of systematic, geological investigations of the identified geophysical anomalies, including mapping and surface geochemistry.
Doornkop – South Reef		
The objective of the project is to de-risk the mine in terms of geological confidence, delineation of geological structures and understanding of grade trends. The main aim is to better define the resource base on 207 and 212 level while reducing the inferred resource in the life of mine.	A total of 15 boreholes has been drilled to date which has assisted with the structural geological confidence.	Exploration is scheduled to continue into identified areas to further increase the geological confidence and grow the resource base. LIB drilling sites are strategically selected to give enough drilling coverage to target resource blocks that will be mined in the LOM (life of mine). Exploration targets: • The north-eastern block • South-western block.
Tshepong Operations: Phakisa section, B Reef		
Currently, there is no stoping of the B Reef at the Phakisa section, however footwall development is in progress to access the EV10 payshoot area. Exploration drilling is underway to identify areas of economic value in the down-dip extensions of those channels being mined in the neighbouring Tshepong section. Significant potential may exist to mine the B Reef in the Phakisa section.	Drill results, combined with historic regional information, have improved understanding of the B Reef's boundaries. This has allowed enhanced definition of the EV10 pay shoot which is currently being explored by drill holes. The potential of the existence of the pay shoot is being extrapolated from current mining across the Dagbreek fault as well as from two surface boreholes in the extrapolated pay shoot.	The capital exploration drilling project was completed in October 2020. Four reef intersections confirmed the existence of the B Reef facies with well mineralised buckshot pyrite and visible flyspeck carbon. No further capital drilling is planned.

EXPLORATION continued

South Africa – summary of brownfields exploration continued

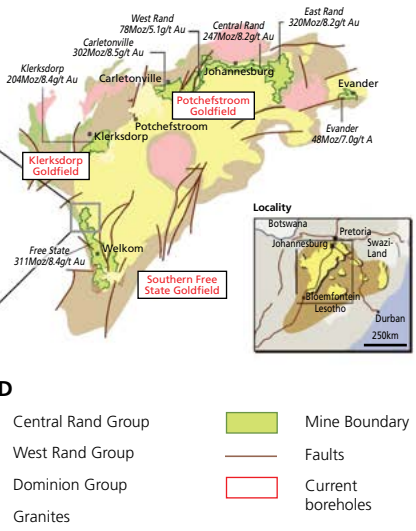
Objectives	Progress in FY21	Targets/plans for FY22
Target North		
The aim of the current exploration programme is to confirm the geological model, which was created on the completion of the Target North study work. The model defined a potential block of well-mineralised Ventersdorp Contact Reef where it overlies the alluvial fans of the upper Elsburg and Dreyerskuil reefs. Two fans have been interpreted in the Target North area of the Dreyerskuil and Mariasdal fans. Further resource definition drilling will be planned, pending the results of the current exploration programme.	The exploration drilling programme from surface advanced and a total of 3 744 metres was drilled. At MAL21A borehole, the first long directional deflection targeting the VCR to the west of the original intersection was completed including a set of short grade variability deflections. Deflection drilling continues. Drilling of the second borehole MAL22 commenced in January 2021 and the hole advanced to a depth of 1 547 metres. Drilling continues.	Drilling of the remaining two long directional deflections for MAL21A borehole is planned to test the postulated Mariasdal Fan Head. Continue drilling of the second borehole MAL22 as planned. The sedimentological model will be updated once the deflection programme has been completed.

Target North Project Area showing historic boreholes



Not to scale

Witwatersrand Basin



Joel – high-grade Beatrix Reef extension (Klippan)		
Exploration is planned to upgrade the Mineral Resource to Indicated level and determine the economic mining limit in the north and north-east areas originally classified as non-depositional zones. Opening up this area will greatly reduce the risks of the initial development-constrained mining areas in the 137 level project area.	Since this project started, Joel has completed six exploration holes which resulted in the declaration of additional Resources and Reserves.	Further exploration is planned for this area as it is now evident that there is more opportunity in this "Klippan" area.
Joel – 145 level exploration		
Exploration here is aimed at upgrading the current Mineral Resource to Indicated level and to determine the economic mining limit to the north and north-east, below current mining infrastructure, to ensure the 145 level decline project remains economically viable.	Exploration drilling began in August 2019. Three long inclined boreholes will be drilled in total. The first hole was completed and the 2nd/3rd holes intersected major water which is currently being drained. The drill machine was moved to a new area to explore for the continuation of the Beatrix Reef below 137 level.	Exploration drilling is currently ongoing towards 145 level and further west from the 137 E4 Raise.

PROJECTS

Harmony currently has two projects in Papua New Guinea:

- The **Wafi-Golpu project** is owned by the Wafi-Golpu Joint Venture, a 50:50 unincorporated joint venture between subsidiaries of Harmony and Newcrest Mining Limited respectively
- **Hidden Valley extension project** – a feasibility study is being conducted to assess the viability of exploiting the large Mineral Resource below the current life of mine pit. This project depends on finding a suitable location for a tailings storage facility.

Harmony has several projects underway in Papua New Guinea and South Africa which are essential to the longevity of the business. The aim of these projects is to ensure a pipeline of exploitable, cost efficient Mineral Reserves.

PAPUA NEW GUINEA

Harmony currently has two major projects in Papua New Guinea, both located in the Morobe Province:

- The Wafi-Golpu project, being a greenfield undeveloped deep level block cave mine, currently in the permitting phase. The project is held under a 50:50 unincorporated Wafi-Golpu joint venture between wholly owned PNG-registered subsidiaries of Harmony Gold Mining Company Limited (namely, Wafi Mining Limited) and Newcrest Mining Limited (namely, Newcrest PNG2 Limited).
- The Hidden Valley extension project, being a life-of-mine extension of the established Hidden Valley Mine which is owned by a 100% subsidiary of Harmony (namely, Morobe Consolidated Goldfields Limited). The project is underpinned by a completed feasibility study and was recently permitted.

Wafi-Golpu project (Harmony 50%)

Headline summary:

- **Location:** Eastern Papua New Guinea in the Morobe Province (supports Harmony's geographical diversification strategy)
- **Tenement holding:** The Wafi-Golpu joint venture participants are the holders in equal shares of exploration licences EL440 and EL1105. The Golpu, Wafi and Nambonga deposits are located on exploration licence EL440.
- **Commodity:** Copper-gold (supports Harmony's commodity diversification strategy)
- **Deposits:** The Golpu, Wafi and Nambonga deposits
- **Resource:** Contains 18.6Moz gold and 8.6Mt copper
- **Level of confidence:** Feasibility study completed March 2018
- **Mining method:** Block cave with multi-cave options
- **Production rate:** 16.85Mtpa, steady-state production estimated at 161 000t of copper, 266 000oz of gold (more than 1.4Moz of gold equivalent ounces annually)
- **Grade:** Above average grades for Gold – 0.90g/t and Copper – 1.27%
- **Costs:** of US$0.26/lb are in the lowest decile for copper production
- **All-in sustaining cost:** Expressed in terms of gold production minus US$2 128/oz is estimated
- **Operating life of mine:** >28 years (potential to extend to 40 years)
- **Project lifecycle:** In permitting phase. The Wafi-Golpu joint venture participants have applied for a special mining lease (SML 10) and an environment permit to undertake the construction, operation and ultimately, closure of the greenfield block cave copper-gold mine. The environment permit was granted in December 2020.

Project technical overview

The Golpu, Wafi and Nambonga deposits are located in eastern Papua New Guinea (PNG), approximately 60km southwest of Lae in Morobe Province. The proposed mine site is situated at an elevation of approximately 400m above sea level in moderately hilly terrain located near the Watut River, approximately 30km upstream from its confluence with the Markham River. Lae, the second largest city in Papua New Guinea, will host at its port the project's concentrate export facilities, which will be linked to the mine-site by a concentrate pipeline. Tailings will be disposed of by means of deep sea tailings placement in the Huon Gulf, near the mouth of the Markham River.

The 2018 feasibility study update, which remains the basis for the business case, is based on block caving the Golpu resource. The project is a viable development of a high-quality resource, capitalising on the high-grade nature of the copper-gold Golpu orebody, an optimised capital expenditure profile and the ability to optimise the production rate and cash flow by preferentially (in time) targeting higher-grade sections of the Ore Reserve early.

The primary project deliverable is the commissioning of a mining operation to produce at nameplate capacity of 16.84Mtpa a high-quality copper and gold concentrate with ore sourced from three block caves, namely BC44 and BC42 and BC40.

Project permitting overview

The Wafi-Golpu project is in the permitting phase. The proposal for development underpinning the Special Mining Lease 10 (SML 10) application was submitted to the Papua New Guinea Mineral Resources Authority in August 2016 and was updated in March 2018, when the feasibility study update was completed.

This update identified deep sea tailings placement as the tailings management solution for the project. Informed by the feasibility study update, the environment impact statement (EIS) was submitted to the Conservation and Environment Protection Agency in July 2018, which after the conclusion of its assessment of the project's environment permit application, granted an environment permit for the Wafi-Golpu Project in December 2020. The grant of the environment permit is currently the subject of an application for judicial review by the Governor and the Provincial Government of the Morobe Province.

Since the lodgement in 2016 of the application for Special Mining Lease 10 and associated tenements, the Government of Papua New Guinea has undertaken a wide-ranging review of the fiscal and legislative regimes governing mining in Papua New Guinea. That review is ongoing, and its outcomes are presently unclear.

In addition, the assessment by the Minerals Resources Authority of the Wafi-Golpu Project's Proposal for Development is ongoing. Negotiations with the State Negotiating Team regarding the terms and conditions of the grant of SML 10 and its associated tenements, including the terms and conditions of participation in the Project by the State and its nominees, can only commence upon finalisation of that assessment.

In the interim, no mining has occurred in the project area.

The Wafi-Golpu Project will progress to execution only once:

- SML 10 and all other associated tenements and necessary permits required for Project development have been granted. This will only occur after all required agreements with the State have been negotiated and executed, including a Mining Development Contract, a Fiscal Stability Agreement and a State Equity Agreement
- All required agreements with the State and landowners have been negotiated and executed, including a Memorandum of Agreement and individual compensation agreements
- The judicial review of the environment permit has been dismissed, and/or the validity of the environment permit for the life of the Project has been confirmed
- All necessary approvals have been received from the boards of directors of the ultimate holding companies of the Wafi-Golpu joint venture participants, namely Harmony and Newcrest Mining Limited.

Initial activities after the achievement of the above execution conditions will focus on the establishment of Project delivery capacity and capability. This will be followed by the validation and update of the Feasibility Study completed in March 2018 which will further inform decisions associated with the commencement of site access roads and bridges, the construction of accommodation facilities and the construction of the Nambonga and Watut declines.

Hidden Valley extension project (Harmony 100%)

Headline summary:

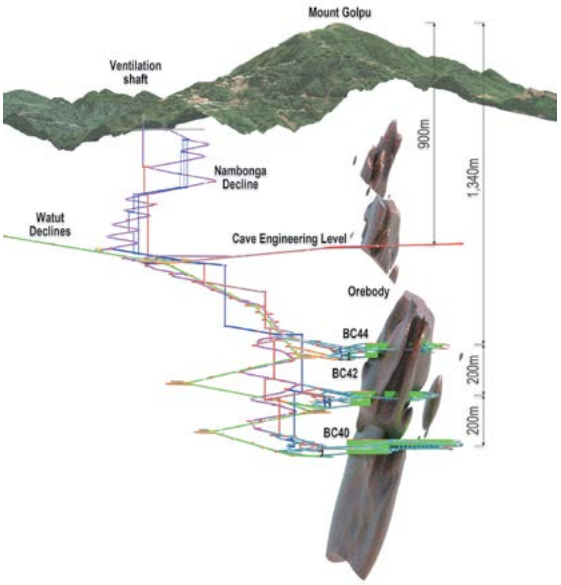
- **Location:** Eastern Papua New Guinea in the Morobe Province (supports Harmony's geographical diversification strategy)
- **Tenement holding:** Morobe Consolidated Goldfields Limited, being a wholly owned subsidiary of Harmony registered in Papua New Guinea, is the 100% owner and operator of the Hidden Valley Mine, which is situated on Mining Lease ML 151
- **Environment permit:** EP L3(578).

The Hidden Valley extension project reported on last year was completed, gated and approved for execution commencing in FY22. The project now informs the production base and Mineral Reserves. The project will deliver to the Hidden Valley operation:

- A 2.5-year mine-life-extension to FY27
- Additional gold production of 350Koz
- Additional silver production of 5.4Moz
- Ave AISC US$1050.

The extension of the mining lease and the amendment to the environment permit required to facilitate this extension were granted in June 2021.

Morobe Consolidated Goldfields Limited is in continuing discussions with the Mineral Resources Authority regarding the conditions of the grant of the extension of the mining lease.



Decline Cross Section – Ore Body.

PREFERRED DEVELOPMENT OPTION FOR WAFI-GOLPU

The diagram alongside illustrates the preferred development option. Evaluation of this preferred development option in the feasibility study update is based on:

- Mining 155Mt (approximately 40%) of the current known Ore Reserve in two block cave levels being block cave 44 (BC44, 65Mt) at 4400mRL and block cave 42 (BC42, 90Mt) at 4200mRL, both at a feasibility level of confidence
- Mining and processing the remaining Ore Reserve (210Mt), currently at a prefeasibility level of confidence, in a third block cave level, block cave 40 (BC40) at 4000mRL
- Total ore mined of 376Mt over 28 years
- (26 years post commercial production), including 11Mt of development ore.

Note that when development tonnages are allocated to the block caves levels, the volumes per cave are 68Mt (BC40), 93Mt (BC42) and 215Mt (BC44). The values (tonnages and durations) per block cave level refer to production from the drawpoints, not development.

SOUTH AFRICA

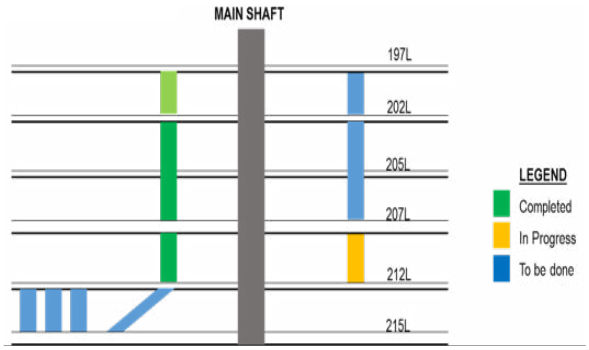
In South Africa, projects are currently in progress at Kalgold, Doornkop, Joel and Moab Khotsong, all of which are aimed at extending the life of mine at these operations.

South Africa – summary of projects currently underway

South Africa – summary projects

Objectives	Progress in FY21	Targets/plans for FY22
Kalgold – expansion project		
The Kalgold plant currently treats approximately 130 000 tonnes a month. Following on from the current exploration drilling programme, the project is aimed at increasing production.	A feasibility study was started and almost completed by year end. The study is investigating the building of a new 300 000 tpm plant which will see the current plant stopping production. An EIA was also started and will only be completed after the finalisation of the feasibility study.	The feasibility study will be completed in the first quarter of FY22 and will be gate kept pending a favourable EIA decision. The EIA is expected to be completed by the end of FY22.
Doornkop – 207 and 212 levels project		
The project extends the mining of the orebody at depth. The levels need to be developed while the shaft infrastructure needs to be completed in order for both levels to be able to handle the planned production. An ore handling system incorporating 215 level also needs to be put in place.	Only critical early works, including development on 207 level, widening (drilling and drop raising) of the 192 to 212 level ore passes, as well as re-commissioning of the ventilation shaft rock hoisting and mid shaft loading arrangements, were executed in FY20. A feasibility study was initiated in September 2019 to firm up the project scope, costs and timelines to allow for a formalised decision-making process. The study was complete by year end. Exploration drilling is being done to improve the geological confidence, increase the Mineral Reserves and better define the resource.	The project is scheduled to continue to complete the mid-shaft loading, drop raises as well as all required shaft infrastructure. Exploration will continue in line with a strategy that supports better definition of the resource base.

Ore pass on Level 212.



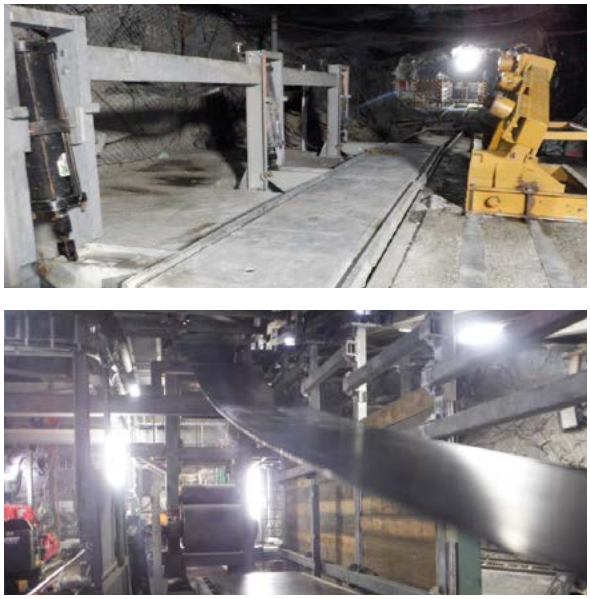
Drop Raising Layout.

South Africa – summary of projects currently underway

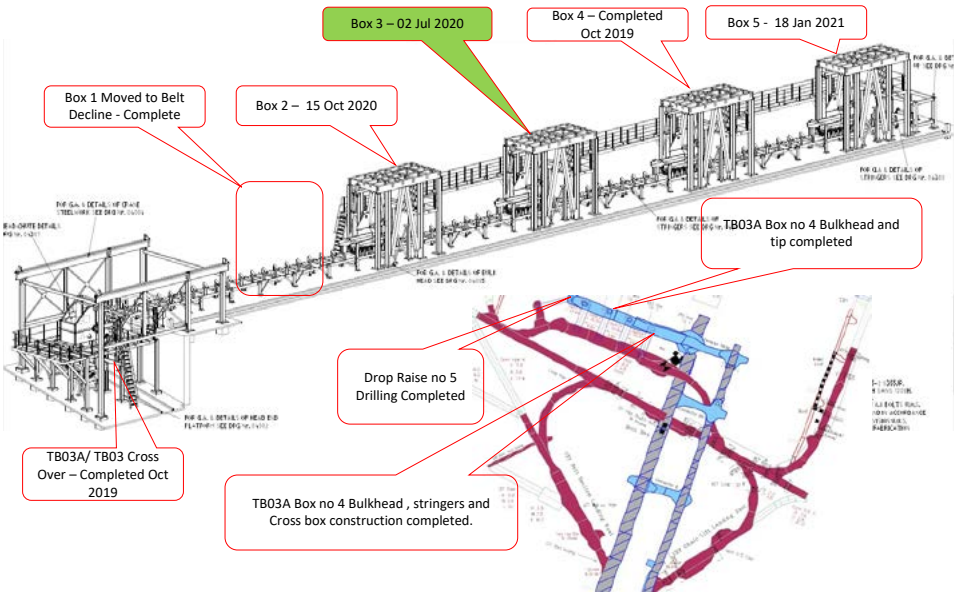
South Africa – summary projects

Objectives	Progress in FY21	Targets/plans for FY22
Joel North		
To access the orebody on 137 level, two declines were developed at 12° from 129 level – a chairlift decline and a conveyor belt decline. Primary footwall development is currently taking place on 137 level to intersect the reef.	A permanent conveyor was commissioned. Construction of the box fronts on 137 level is 97% complete. Work on the 137 level east haulage began. The 137 E4 and E5 crosscuts and raises were completed and started stoping.	The chairlift construction was planned to be completed by the end of June 2021. All other engineering construction work to be completed in 2021. Primary development to the east and west of the mine is scheduled.

TBO3A Box 4.



Belt.



TBO3A Bulkheads – critical path.

South Africa – summary of projects currently underway

South Africa – summary projects

Objectives	Progress in FY21	Targets/plans for FY22
Joel tailings reclamation		
Increase tailings reclamation capacity by using the Joel plant and tailings storage facility which have become available following the transfer of the Joel run-of-mine ore to Harmony One plant for processing.	The prefeasibility study was completed, however, the economics of the project did not allow it to proceed to feasibility.	Investigate possible collaboration with owners of other mining infrastructure in the area.
Moab Khotsong – Mispah tailings dam retreatment project		
The Mispah tailings reclamation feasibility study investigated the recovery of gold from reclamation of Mispah 1 tailings storage facility (TSF) with treatment at 220ktpm in the Noligwa gold plant and 350ktpm, ramping up to 500ktpm in three years in the Kopanang gold plant. Deposition would be onto existing TSFs and the footprint of the south-east TSF once it becomes available. The Mispah tailings reclamation project entails reclaiming gold from the Mispah 1 tailings storage facility. The tailings will be treated in existing plants and residue will be deposited on existing tailings storage facilities.	The study was concluded in March 2021 and indicated that the project is not viable. The feasibility study was completed however the high capital cost for tailings deposition resulted in the project not being financially viable.	FY22 to investigate the inclusion of the Mispah 1 TSF in the MWS operation. Investigate potential of treating only through Kopanang plant with minimal capital expenditure. (Deposition remains a high cost item). An optimisation study is planned which will look at alternative option for the treatment of the Mispah 1 TSF.
Moab Khotsong – Great Noligwa shaft pillar extraction		
This project was approved by the technical and investment committees for implementation in FY20. The chosen option is based on the partial extraction of reef blocks with a central stabilising pillar to maintain the integrity of both shaft barrels.	The GN# Pillar continued with project execution phase in FY21. The waste development achieved 1 478m and reef development achieved 133m for FY21. Infrastructure rehabilitation upgrades was conducted on the GN shaft surface and underground access routes. Opening up and startup was conducted on the required development ends on 70, 71 and 73 levels and the early work to over-stope 73 level infrastructure commenced in FY21.	The GN# Pillar capital was approved to continue with project execution in FY22. The project has scheduled to continue with waste and reef development on 70, 71 and 73 level. Infrastructure rehabilitation upgrades is scheduled at GN. The over-stope of 73 level infrastructure will continue in FY22.
Moab Khotsong – Zaaiplaats project		
The Zaaiplaats project is to mine the orebody below the current Moab Khotsong middle mine. New infrastructure below 101 level will need to be developed to access the orebody.	A feasibility was completed in March 2021 confirming the economic value add to the existing Moab operations. Limited early works had been identified and commenced on 101 level supporting a prompt project start-up. The project has made its way through Harmony's project review process and the capital for the project has been approved by the board.	A detailed design phase is planned in early FY22 for aspects of the project that the feasibility study identified as needing additional work. This work will run in parallel with project execution.

SOUTH AFRICA

Doornkop shaft.

Harmony's South African operations include nine deep-level mines, an open pit mining operation and several surface retreatment facilities. Combined, these account for gold Mineral Resources of 99.9Moz and gold Mineral Reserves of 24.7Moz. These are equivalent to 71% and 58% respectively of total group Mineral Resources and Mineral Reserves.

WEST RAND

Harmony has three underground mining operations on the West Rand – Doornkop, Kusasalethu and Mponeng. As at 30 June 2021, their combined Mineral Resource (inclusive) was 36.8Moz and the combined Mineral Reserve, 4.1Moz.

LOCATION OF WEST RAND OPERATIONS

Harmony's West Rand operations are located on the north and north-western rim of the Witwatersrand Basin.

The **Doornkop** shaft complex is south of Krugersdorp, 30km west of Johannesburg, in the province of Gauteng. The property lies between Sibanye-Stillwater's Cooke 1 shaft and Durban Roodepoort Deep.

Kusasalethu is on the West Wits Line, adjacent to the Savuka and Mponeng mines to the east and the dormant Deelkraal to the west. Kusasalethu is situated 14km south of Carletonville and 90km southwest of Johannesburg. Post year-end 2020 the acquisition from AngloGold Ashanti of Mponeng, as well as infrastructure related to Tau Tona and Savuka, was completed.

Mponeng Mine was purchased by Harmony Gold in October 2020 as part of the transaction whereby the ownership of the remaining AngloGold Ashanti Limited's South African operations were transferred. Mponeng Mine is 100%-owned by Harmony Gold and forms part of the West Rand operations.

REGIONAL GEOLOGY

For a description of the geological characteristics of the West Rand, refer to the Geology section under each operation.

MINERAL RESOURCES AND MINERAL RESERVES BY OPERATION

West Rand	44 – 71
Doornkop	48
Kusasalethu	54
Mponeng	60

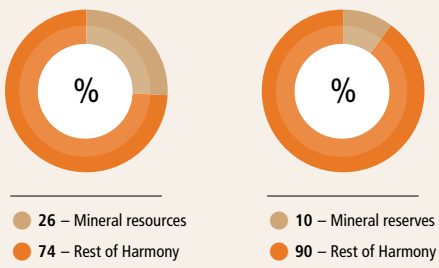
Mineral Resources (inclusive)

36.8Moz

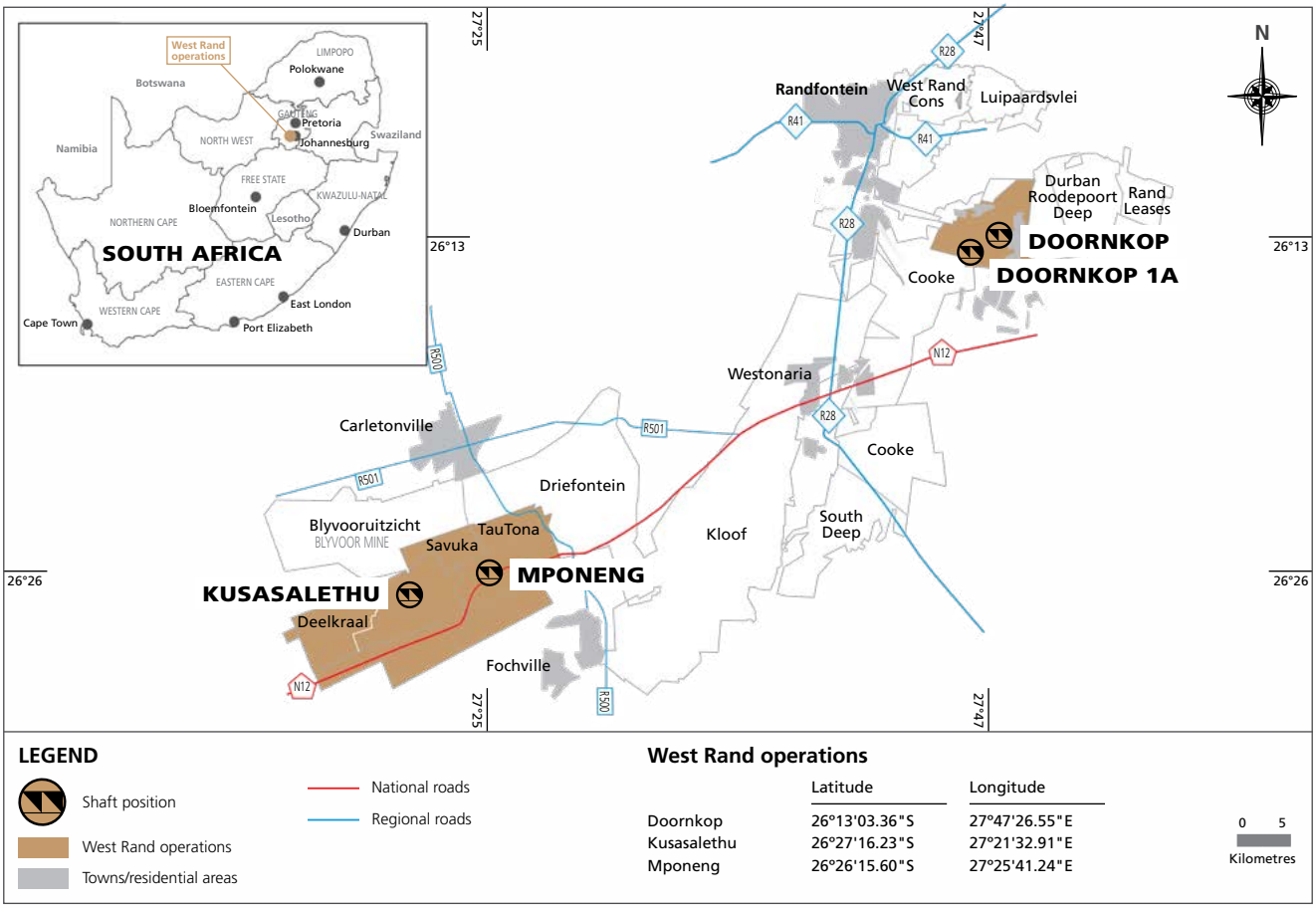
Mineral Reserves

4.1Moz

Gold and Gold equivalents
Contribution to Harmony



West Rand Operations – Locality



Mponeng: the deepest point.

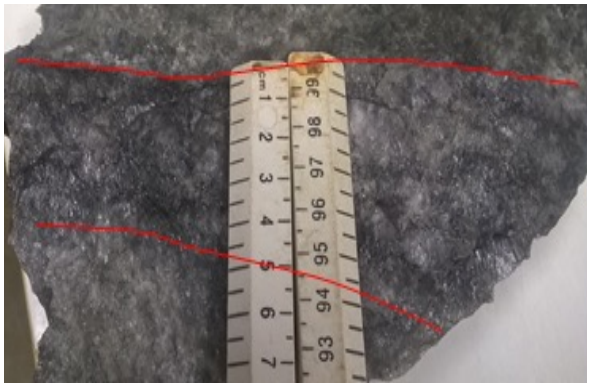
KUSASALETHU/MPONENG STRATIGRAPHIC COLUMN

SACS no 42 (2006)					Mponeng	
			Formation	Member	Mponeng classification (2010)	LOG
Ventersdorp Supergroup		Klipriviersberg group	Alberton Porphyry		Alberton lava	
			Ventersdorp			
					VCR	
Witwatersrand Supergroup	Central Rand Group	Turffontein subgroup	Elsburg		Elsburg Quartzite Denny's Quartzite	
			Kimberley	Libanon Reef	LIBA5, LIBA4 LIBA3, LIBA2 LIBARZ Libanon Reef	
		Johannesburg subgroup	Booysens	Doornkop member	Doornkop Quartzite Booysens Shale	
			Krugersdorp	Bird Reef	Krugersdorp Quartzite Bird Reef	
			Luipaardsvlei	Livingstone Reef	Luipaardsvlei Quartzite Livingstone Reef	
			Randfontein	Johnstone Reefs Middlevlei Reef	Johnstone Reef Randfontein Quartzite Middlevlei Reef	
			Main	Carbon Leader	Main Quartzite Green Bar Carbon Leader	
			Blyvooruitzicht		Blyvooruitzicht Quartzite North Leader Reef	
	West Rand Group	Jeppestown Subgroup	Maraisburg		Maraisburg Quartzite	
			Roodepoort		Transition Zone Roodepoort Shales	
			Crown		Crown Lavas	
			Babrosco	Veldschoen Reef	Florida Quartzites Veldschoen Reef	

WEST RAND STRATIGRAPHIC COLUMN (DOORNKOP)

Group	Sub-group	Formation	Informal unit	Member
Klipriviers-berg		Westonaria	Klipriviersberg	
		Venterspost	VCR	VCR
Central Rand Group	Turffontein	Elsburg	Elsburg massives and individuals	Modderfontein Waterpan
		Westonaria	Quartzites and conglomerates	Gemsbokfontein Panvlakte Gemspost Vlakfontein
		Robinson	Shale	Kimberley Reefs
	Johannesburg	Booysens Shale	Upper transitional Shale Lower transitional	Kimberley Shale
		Krugersdorp	Bird Amygdaloid Bird Reefs White Reef	Bird
			Luipaardsvlei Quartzite	Luipaardsvlei
		Livingstone Conglomerate	Livingstone Reef	Livingstone Reef
		Randfontein Quartzite		
		Johnstone Conglomerate	Johnstone Reef	Johnstone Reef
		Langlaagte Quartzite		
		Main Conglomerate	Main Reef, Leader Reef, South Reef	Langlaagte
West Rand Group	Jeppestown	Roodepoort		

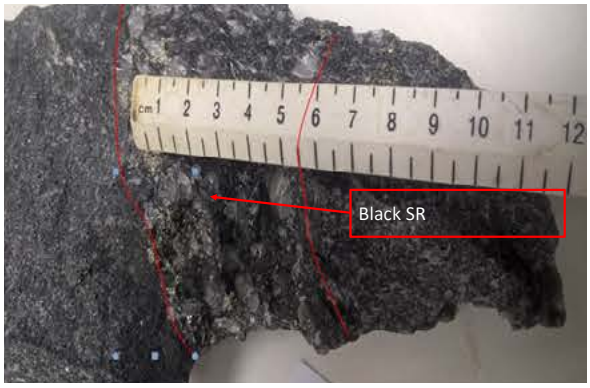
Doornkop Reef samples



South Reef facies.

- Characterised by 1cm to 3cm thick
- Single pebbly lag
- Scattered pebbly – pyrite/black stringer.

Thin SR.



Black SR.

- Thickness ranges from 4cm to 12cm thickness
- Well packed with milky, smoky and blue pebbles.

Thick SR facies.

DOORNKOP

Doornkop shaft.

Mineral Resources (inclusive)

7.3Moz

Mineral Reserves

1.5Moz

Detailed Mineral Resource and Mineral Reserve estimates are presented in this section.

History

Exploration in the area started in the early 1930s with the sinking of the main and ventilation shafts, by JCI, from 1983. By 1989, steady production had been achieved from mining the Kimberley Reef, which is shallower than the South Reef that is currently being mined. The South Reef shaft extension was approved in October 1991 and the reef was intersected in October 1993. Stoping of the South Reef began in 1995. Shaft deepening continued with stoppages between November 1996 and May 1999. Harmony acquired Doornkop in January 2000. The South Reef project was relaunched in January 2003, resulting in the deepening of the mine to 1 980m below collar.

Nature of the operation

Doornkop is a single-shaft operation currently exploiting the South Reef to some 2 000m below surface. The narrow South Reef is exploited by means of conventional stoping. The ore mined at Doornkop is processed at the mine's carbon-in-pulp plant, which is directly beside the shaft. Mining of the Kimberley Reef was suspended during FY14 to focus on the build-up production from the South Reef and to prevent losses as a result of the lower gold price. Mining of the Kimberley Reef may resume should economic circumstances improve sufficiently.

Geology

The Doornkop shaft lease area 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 comprises the stratigraphically older sediments of the West Rand Group, with the overlying Central Rand Group sediments having been removed by erosion. Doornkop is bounded by the Roodepoort fault and a number of other faults, including the Saxon fault, which constitute conspicuous structural breaks. Another major fault, the Doornkop fault, which trends in an east-west direction, occurs toward the southern portion of the lease area. This fault dips to the south and has an up-throw to the north.

As nearly the entire upper Witwatersrand section lies within the lease area, all major zones are present. However, given the distance of the area from the primary source of gold, the number of economic bands and their payability is limited. Eight of the well-known reefs are present in the area but only the South Reef and potentially the Kimberley Reef are considered viable at this stage.

The South Reef is between 7.5m and 60m above the Main Reef horizon. The hanging wall of the South Reef consists of siliceous quartzite with non-persistent bands of "blue shot" grit and thin argillite partings. The South Reef footwall is a light coloured 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 flat dip from 5 to 15 degrees.

Exploration drilling is set to continue in the coming financial year, and will target potential high-grade areas and those with limited geological information, to further increase geological confidence.

Mineral rights/legal aspects and tenure

The current mining right encompasses an area of 2 941.021ha and was successfully converted, executed and registered as a new order mining right at the Mineral and Petroleum Resources Titles Office (MPRTO) on 25 February 2009 under MPT 18/2009. The Department of Mineral Resources reference GP30/5/1/2/2/09MR is valid from 7 October 2008 to 6 October 2038.

Mining methods and mine planning

The mining method used is longwall mining with stability pillars on major geological structures. Geotechnical dip pillars have been introduced between raiseline to minimise seismicity. The flat dip, which results in the development of long cross cuts, presents challenges in terms of ore handling, especially for the bottom part of the raises, ventilation and in the long lead times between the start of cross cut development to completion of stoping per raise line.

Mineral processing

The carbon-in-pulp plant has a monthly milling capacity of 225 000 tonnes. Before Sibanye-Stillwater's Cooke shafts were placed on care and maintenance, this included toll treatment of approximately 120 000 tonnes a month of ore from these shafts.

Infrastructure

Doornkop's surface and underground infrastructure, including its power and water supplies, can cope with current planned peak production level requirements. The 192, 197 and 202 levels are track-bound while current development on 207 and 212 levels is trackless. Plans are in place to eventually make these levels track-bound. Work continues on certain essential underground infrastructure on the South Reef, including the permanent tipping arrangements required to bring 207 and 212 levels to full production. Ore is hoisted through the main shaft. Currently, the mine uses Sibanye-Stillwater's Cooke 1 shaft, which is 7km away, as a second escape way.

Mineral resource estimation

The estimation method used for local measured data on the shaft is ordinary kriging. For local indicated and inferred data, it is simple macro-kriging. Estimates are generally kriged into 30m x 30m blocks for the measured resources from the point support data. Indicated resources are kriged into 60m x 60m blocks, using the associated regularized variograms together with a macro-kriging decluster. Similarly, inferred resources are estimated using the associated regularised variograms and kriging into 120m x 120m blocks. Any unkriged areas in the inferred regions are then covered by global mean estimates. Geozones are based on grade distribution and structure to ensure correct grade estimates for the different areas.

Environmental impact

In line with the Mineral and Petroleum Resources Development Act, Doornkop has the environmental management programme (Ref: GP 30/5/1/2/2/ (09) EM), approved by the Department of Minerals Resources and Energy on 7 June 2010. According to the EMPr approval, and regulation 55(3) of the MPRDA regulations as well as the EMPr itself, regular scheduled EMPr audits should be undertaken and are required to be submitted to the DMRE. The audit conducted for the year 2019/20 indicates that Harmony Doornkop operation obtained a total compliance score of 94.31% for the audit.

All environmental impacts emanating from mining, processing activities and associated infrastructure are documented in the environmental management programme and in the environmental aspect register, as required by both the MPRDA and the ISO 14001 standard.

Annual environmental compliance audits/inspections are conducted by the relevant government departments and independent environmental auditors to verify the status compliance against all applicable environmental laws such as National Water Act, National Environmental Management Act the and the National Nuclear regulations.

An online Doornkop environmental legal register, available at www.drayer-legal.co.za, is used to monitor compliance and to obtain relevant legal environmental updates for the operation to ensure compliance.

Environmental monitoring of key environmental indicators is also undertaken by the operation to monitor compliance which includes:

- Air quality monitoring
- Ground and surface water monitoring
- Biodiversity
- Monitoring the ecological status of the klipriver.

Doornkop operation is both certified in terms of ISO 14001:2015 standard and by the International Cyanide Management Institute in terms of the cyanide management code. As required by both the ISO14001 standard and cyanide management code, every effort is made to either eliminate or minimise the impacts of mining activities on the environment and surrounding communities.

SOUTH AFRICA – WEST RAND **DOORNKOP** continued

MATERIAL RISKS

Material risks that may impact Doornkop's Mineral Resource and Reserve Statements.

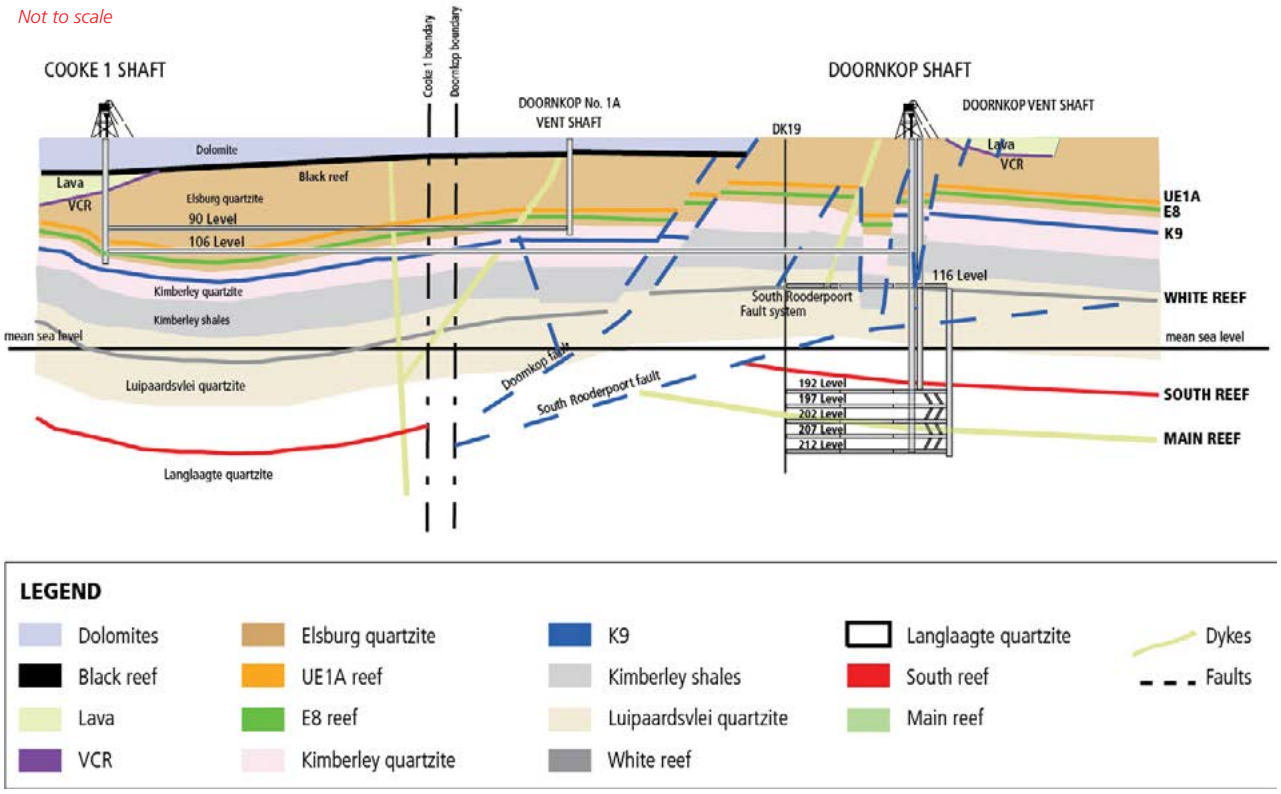
Significant risk	Remedial action
• Unexpected geological features.	• Exploration drilling planned into all areas with low geological confidence included in the life-of-mine.

COMPETENT PERSON

Ore Reserve manager

Hilton Chirambadare
BSc (Geology, Mathematics), BSc Hons (Geology), GDE, MENG, MBA, SACNASP
19 years' experience in gold mining, 15 years on Witwatersrand gold deposits (underground) and three years on the Kraaipan Greenstone Belt (surface).

Not to scale



Doornkop geological section looking west.

DOORNKOP

Gold – Mineral Resource estimates at 30 June 2021 (inclusive)

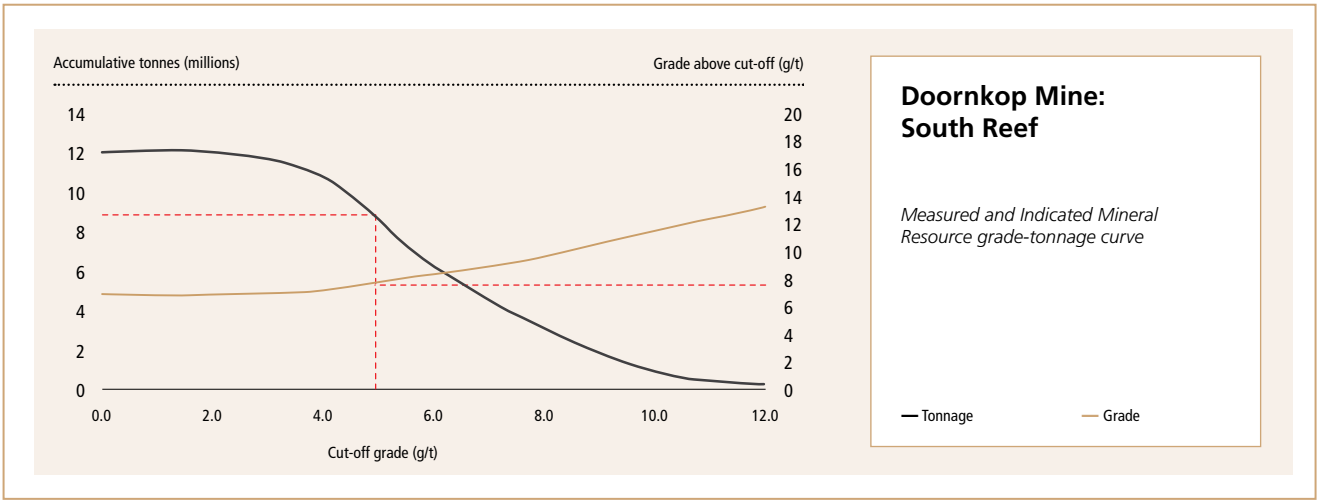
	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
South Reef	5.2	7.93	41	1 326	3.8	6.88	26	838	3.5	7.65	27	860	12.5	7.53	94	3 024
Main Reef	0.1	5.38	0.4	14	0.05	5.51	0.3	8	0.02	5.32	0.1	3	0.1	5.41	1	25
Kimberley Reef	18.1	3.36	61	1 957	12.1	3.15	38	1 226	10.1	3.28	33	1 066	40.3	3.28	132	4 249
Total	**23.4**	**4.38**	**103**	**3 297**	**15.9**	**4.04**	**64**	**2 072**	**13.6**	**4.41**	**60**	**1 929**	**53.0**	**4.29**	**227**	**7 299**

Modifying factors

South Reef	MCF (%)	SW (cm)	MW (cm)	PRF (%)	Cut-off (cmg/t)
2020	80	123	146	96	800
2021	79	124	152	96	739

Gold – Mineral Reserve estimates at 30 June 2021

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
South Reef	6.0	4.73	29	918	4.4	4.17	19	596	10.5	4.49	47	1 513



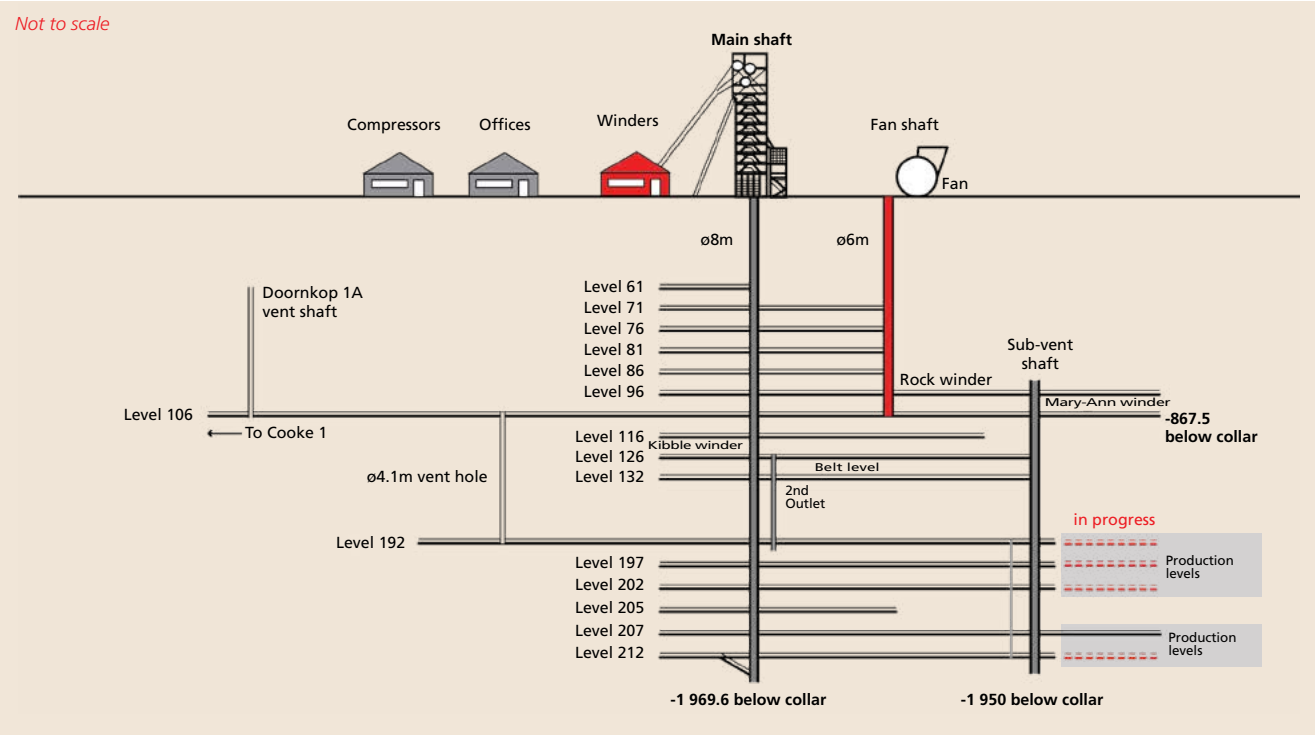
SOUTH AFRICA – WEST RAND **DOORNKOP** continued

OPERATIONAL PERFORMANCE

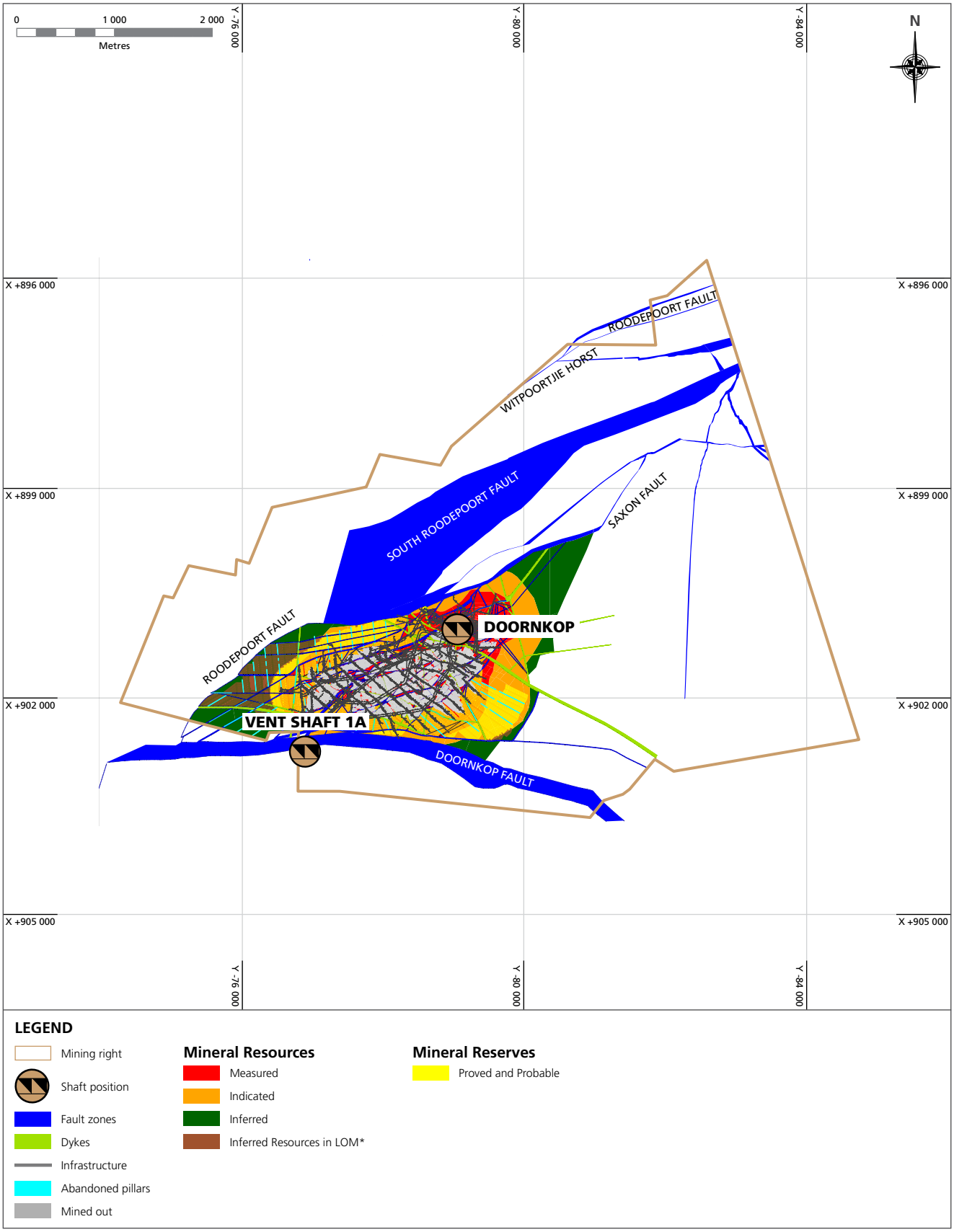
Doornkop: Key operating statistics

	Unit	FY21	FY20	FY19	FY18	FY17
Operation						
Volumes milled	000t (metric)	**851**	681	730	696	641
	000t (imperial)	**983**	750	805	767	706
Gold produced	kg	**3 670**	2 994	3 273	3 429	2 673
	oz	**117 993**	96 259	105 229	110 245	85 939
Grade	g/t	**4.31**	4.40	4.48	4.93	4.17
	oz/t	**0.126**	0.128	0.131	0.144	0.122
Development						
Total metres (excluding capital metres)		**6 271**	6 042	8 337	9 595	9 961
Reef metres		**1 713**	1 474	1 621	1 478	1 337
Capital metres		**1 149**	315	497	806	1 316
Financial						
Average gold price received	R/kg	**853 957**	747 282	593 301	575 077	572 494
	US$/oz	**1 725**	1 484	1 302	1 392	1 310
Capital expenditure	Rm	**425**	281	308	274	243
	US$m	**28**	18	22	21	18
Cash operating cost	R/kg	**595 550**	567 632	486 795	413 586	457 752
	US$/oz	**1 203**	1 127	1 068	1 001	1 047
All-in sustaining cost	R/kg	**680 524**	649 041	572 132	508 065	562 907
	US$/oz	**1 374**	1 289			

Doornkop: Schematic of shaft and mining layout

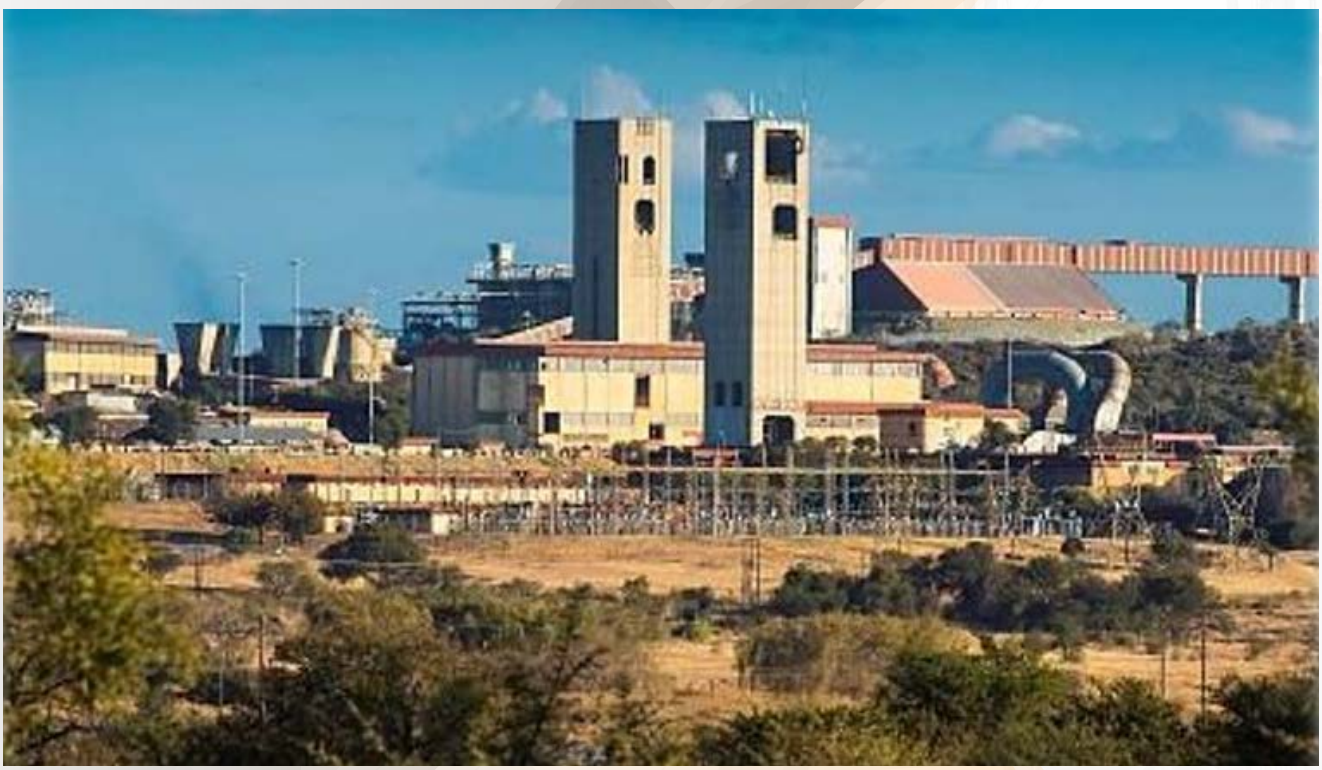


Doornkop Mine – South Reef: Mineral Resources and Mineral Reserves



** Inferred Resources are incorporated into the life-of-mine plan, based on the good track record of our ability to convert Inferred Mineral Resources into Indicated and Measured Mineral Resources through ongoing development and exploration work.*

KUSASALETHU



Kusasalethu shaft.

Mineral Resources (inclusive)

5.9Moz

Mineral Reserves

0.5Moz

Detailed Mineral Resource and Mineral Reserve estimates are presented in this section.

History

Harmony acquired the Elandsrand and Deelkraal mines from the then AngloGold Limited in 2001. Shaft sinking of twin vertical shafts at Elandsrand had begun in January 1975 and been completed in December 1978. First gold was produced in 1979. In February 2010, Elandsrand changed its name to Kusasalethu, which means "our future" in Zulu.

Nature of the operation

The 10m-diameter rock/ventilation shaft was initially sunk to 2 195m and the man/material shaft to 2 127m. By June 1984, a 10m-diameter sub-vertical rock/service shaft had been completed to a depth of 3 048m and a 7m-diameter sub-vertical ventilation shaft to a depth of 3 048m. Both shafts were deepened to a final depth below surface of 3 318m and 3 388m respectively as part of the deepening project to extract the higher-grade pay shoot towards the west of the mine. In December 2014, a decision was taken to suspend operations in the old portion of Kusasalethu and to restructure the mine. Subsequently, mining above 98 level ceased.

Kusasalethu employs sequential-grid mining, which is in essence an upside-down Christmas tree configuration. This method is used to direct seismic stresses away from current working areas into virgin rock areas.

Given the decrease in the Mineral Reserve at Kusasalethu in recent years, a result of normal depletion, a revised, shortened life-of-mine

plan was implemented in FY15. This plan aims to optimise the mine's cash flow at a higher grade and create a stronger operating margin while providing the flexibility necessary to access the high-grade payshoot of the Ventersdorp Contact Reef below infrastructure should economic circumstances allow.

Geology

Kusasalethu is situated in the West Wits Basin and mines the VCR as its main orebody.

The Ventersdorp Contact Reef facies model at Kusasalethu is based on the paleotopographic or slope and terrace model. Nine facies types have been recognised at Kusasalethu – eight sedimentological and one structural. Four of the facies are thick, high-grade, geologically distinct reef terraces separated from one another by a thin low-grade slope reef.

The sand-filled channel is a thick low-grade facies. The Sandy Terrace Complex is found on the same elevation as the Terrace Complex but is essentially a pebbly quartzite with no grade. The Mondeor conglomerates have been identified sub-cropping against the Ventersdorp Contact Reef in stopes in certain areas and have been delineated as separate facies in these areas.

The Elsburg conglomerates, found on the western side of Kusasalethu, form the footwall to the Ventersdorp Contact Reef and are part of the Turffontein Supergroup. It is a predominantly polymictic matrix-supported conglomerate of well-packed and moderately sorted, sub-rounded smoky (80%), black-grey (15%) quartz pebbles, chert (3%) and some elongated shale pebbles (2%). The matrix is pale yellow to light green and medium-grained and pyritic in places.

The Ventersdorp Contact Reef is overlain by the Ventersdorp Lava belonging to the Ventersdorp Supergroup. The reef is light to mid-grey in colour and fine crystalline, seldom containing phenocrysts. In places it is amygdaloidal with quartz and pyrite mineralisation. Flow structures are also present at the base of the lava. It breaks into very angular fragments due to weak jointing and flow banding – it would appear to be andesitic in composition.

Geological discontinuities observed at Kusasalethu include faults, dykes and sills. Sills may occur in the footwall in areas adjacent to certain dykes. Flat bedding plane faulting also occurs and results in reef duplication, elimination and brecciation. Faults and dykes are classified according to their relative geologic ages as follows: Pre-Ventersdorp Contact Reef, Ventersdorp, Platberg, Bushveld and Pilanesberg structures.

Kusasalethu mines in blocky ground created by structures in the form of dykes and faults. The dykes are fairly basic in composition and they tend to strike north-north east and south-south west with a general dip of 75 degrees. The faults, however, have a strike mostly of east-south east and west-north west with a few exceptions. Generally, these are normal faults with the accompanying loss of ground with varying throws – from mere centimetres to a massive 60m (the Kittims and De Twem faults).

Mineral rights/legal aspects and tenure

The current mining right encompasses a total area of 7 000ha. Kusasalethu's mining right has been successfully converted, executed and registered as a new order mining right at the Mineral and Petroleum Resources Titles Office (MPRTO). GP30/5/1/2/2/07MR is valid from 18 December 2007 to 17 December 2037. In terms of section 102 of the Mineral and Petroleum Resources Development Act (MPRDA), the farms Buffelsdoorn and Deelkraal have been successfully included into Kusasalethu's mining right, increasing the extent of the original mining right from 51km² to 70km². These farms are contiguous to the south of the principal mining right.

Mining methods and mine planning

Mining is by means of sequential grids with regional dip stabilising pillars, backfill and pre-conditioning to offset the effects of mining at this depth. Mining is conducted over five levels from 98 level to 113 level. Large geological structures are stabilised by means of clamping pillars. Mine planning is done in two major phases, a life-of-mine plan is done annually and six-month mine plans are reviewed monthly to ensure ample time to react to changes in the dynamic mining environment. All planning is done in the digital environment by means of computer-assisted draughting.

Mineral processing

Ore mined is processed on-site at the Kusasalethu gold plant. Gold is extracted by means of milling, cyanide leaching, carbon-in-pulp concentration and electrowinning to absorb the carbon to produce ore. No smelting is done on-site and the gold doré is dispatched to Rand Refinery.

Infrastructure

Ore mined is transported by rail-bound equipment to the shaft's main ore pass system where it gravity feeds to 115 level. Ore is then hoisted via the sub-vertical shaft to above 73 level and then to surface. Given the depth of mining, major engineering infrastructure required includes refrigeration and cooling installations on surface and underground.

Mineral resource estimation

Data for valuation is obtained by means of chip sampling on the reef horizon in a 6m x 6m grid. Supplemental information is obtained from underground exploration drilling and existing surface exploration boreholes. All sampling done is subject to quality assurance/quality control, as prescribed by SAMREC, to ensure data quality and accuracy. Based on similarities in geology, the mining lease is divided into a total of eight geozones. Based on confidence levels for geostatistical data, valuation is by means of a computer-generated block model as follows:

- Measured blocks (30m x 30m grid)
- Indicated blocks (60m x 60m grid)
- Inferred blocks (120m x 120m grid)

The block model is then digitally transferred to the digital environment for valuation.

Environmental impact

Kusasalethu's environmental aspects and impacts are managed according to the environmental management programme, as approved by the Department of Mineral Resources (DMR), in terms of the MPRDA. All environmental aspects and impacts emanating from mining activities are documented in a dedicated report and in the environmental aspect register, as required by the MPRDA and the ISO 14001:2015 standard.

The approved environmental management programme was amended in 2014, in terms of section 102 of the MPRDA. This amendment allowed for the inclusion of the dimensions of the waste rock dumps, as well as the new height details and footprint of the tailings storage facility, reclamation of the rock dumps and the expansion of the existing underground workings for numerous portions of the farm Deelkraal 142 IQ. The DMR approved the amendments in 2018.

SOUTH AFRICA – WEST RAND **KUSASALETHU** continued

Annual performance monitoring audits are conducted by various departments, including the DMR and the Department of Water and Sanitation to verify compliance with the following legislation:
- Mine Health and Safety Act
- National Water Act
- National Environmental Management Act
- MPRDA.

All environmental impacts arising from mining activities are managed in terms of the requirements of the approved environmental management programme, the water use licence, the waste permit and in line with the ISO 14001:2015 standards.

As required by relevant regulations, environmental audits or performance assessments to verify compliance with the approved environmental management programme are conducted every second year by independent environmental consultants and a report is submitted to the DMR. External and internal environmental legal compliance audits are also conducted. An off-site legal environmental register is used to monitor compliance, and to obtain applicable and relevant environmental legal updates for the operation.

In line with Harmony's biodiversity and rehabilitation position statement, Kusasalethu management has successfully implemented an alien invader plant eradication programme since 2016. To date, this programme, which continues to run, has cleared invasive plant species from more than 3 500ha of 5 113ha of the surface mining right area.

Bio-monitoring surveys are also conducted on surface water resources, close to the operation, to safeguard the scarce resource and to ensure compliance with the conditions of the water use licence issued in terms of National Water Act to:
- Determine the condition of biological communities in the rivers and streams and to determine the chemical water quality in streams during the wet and dry seasons
- Provide baseline reference conditions for future studies in order to assist Kusasalethu management in identifying environmental liabilities that might result from current mining activities regarding the potential contamination of surface streams.

Full chemical analyses include:
- Monthly sampling of surface streams
- Quarterly analysis of borehole water to monitor groundwater quality.

Kusasalethu is ISO 14001:2015-certified and complies with the requirements of the ISO 14001:2015 standard for which it is audited annually by an independent certification body. The operation was initially certified in 2011, and most recently in 2018, under the new ISO 14001 standard (2015). In line with this accreditation, every effort is made to eliminate or minimise the negative effects of mining activities on the environment and adjacent communities.

The operation has also been accredited in terms of the Cyanide Management Code by the International Cyanide Management Institute. Independent third-party audits are conducted every three years to check compliance with the Cyanide Code.

MATERIAL RISKS

Material risks that may impact Kusasalethu's Mineral Resource and Reserve Statement.

Significant risks	Remedial action
• Seismicity • Water build-up at Deelkraal • Backfill volumes • Major engineering infrastructure failure.	• Extended production breaks scheduled over past three years to allow for infrastructure upgrades • Control of mining sequence and appropriate support systems • Dewatering of the Deelkraal area through 98 level • Waste rock dump on surface used to supplement backfill volumes.

COMPETENT PERSON

Johann Ackermann
BSc Geology with distinction (UFS, 2005), SAIMM
27 years' hard rock, deep-level and ultra-deep level gold mining experience in the Witwatersrand Supergroup.

Sample of Ventersdorp Contact Reef (VCR) Mined at our Kusasalethu mine

The sample description is as follows: Poorly sorted and moderately packed clast to matrix supported conglomerate of predominantly medium-sized quarts pebbles (oligomectic: with an 85:15 ratio: milky Quartz versus smokey Quartz ratio) – set within a medium-grained arenetic to pyritic matrix.

Well mineralized (20% – 25%) disseminated pyrite to heavily bottom-loaded pyrrhotite basal contact (with an estimated {AU value} of between 1500 – 2000 cm.g/t). At its base is a dual band – flow banded mylonite with micro xenoliths. The twin mylonite bands on the bottom contact is indicative of two distinct phases of deformation, likely associated with the world's largest known meteor crater, known as the Vredefort dome.

VCR Reef.

KUSASALETHU

Gold – Mineral Resource estimates at 30 June 2021 (inclusive)

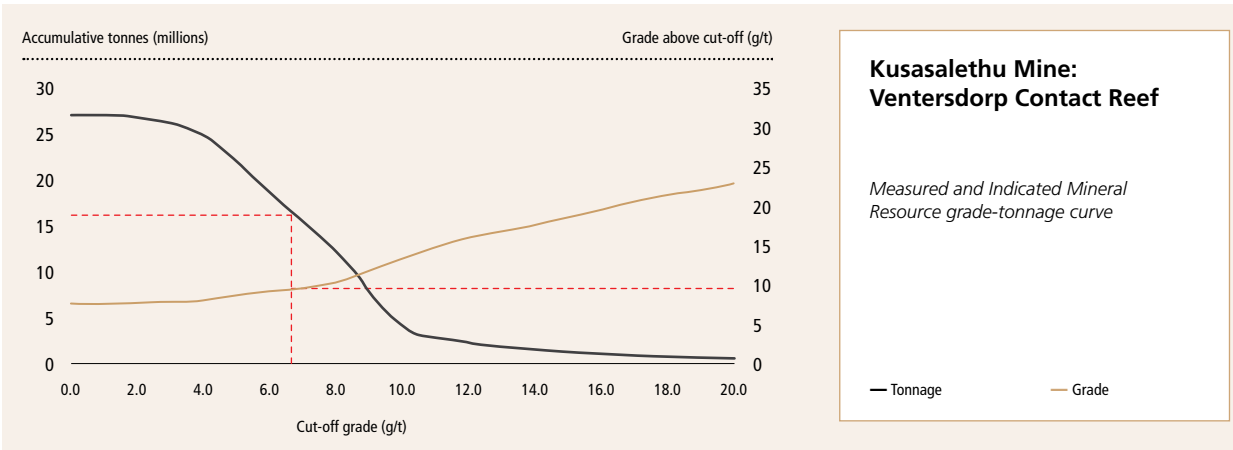
	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Ventersdorp Contact Reef	3.4	11.15	38	1 226	12.6	9.05	114	3 668	3.7	8.63	32	1 026	19.7	9.33	184	5 919

Modifying factors

Ventersdorp Contact Reef	MCF (%)	SW (cm)	MW (cm)	PRF (%)	Cut-off (cmg/t)
2020	85	136	164	93	1 100
2021	86	136	165	95	1 100

Gold – Mineral Reserve estimates at 30 June 2021

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Ventersdorp Contact Reef	1.9	7.51	14	455	0.3	4.76	1	43	2.2	7.15	15	498



Kusasalethu Mine: Ventersdorp Contact Reef

Measured and Indicated Mineral Resource grade-tonnage curve

— Tonnage — Grade

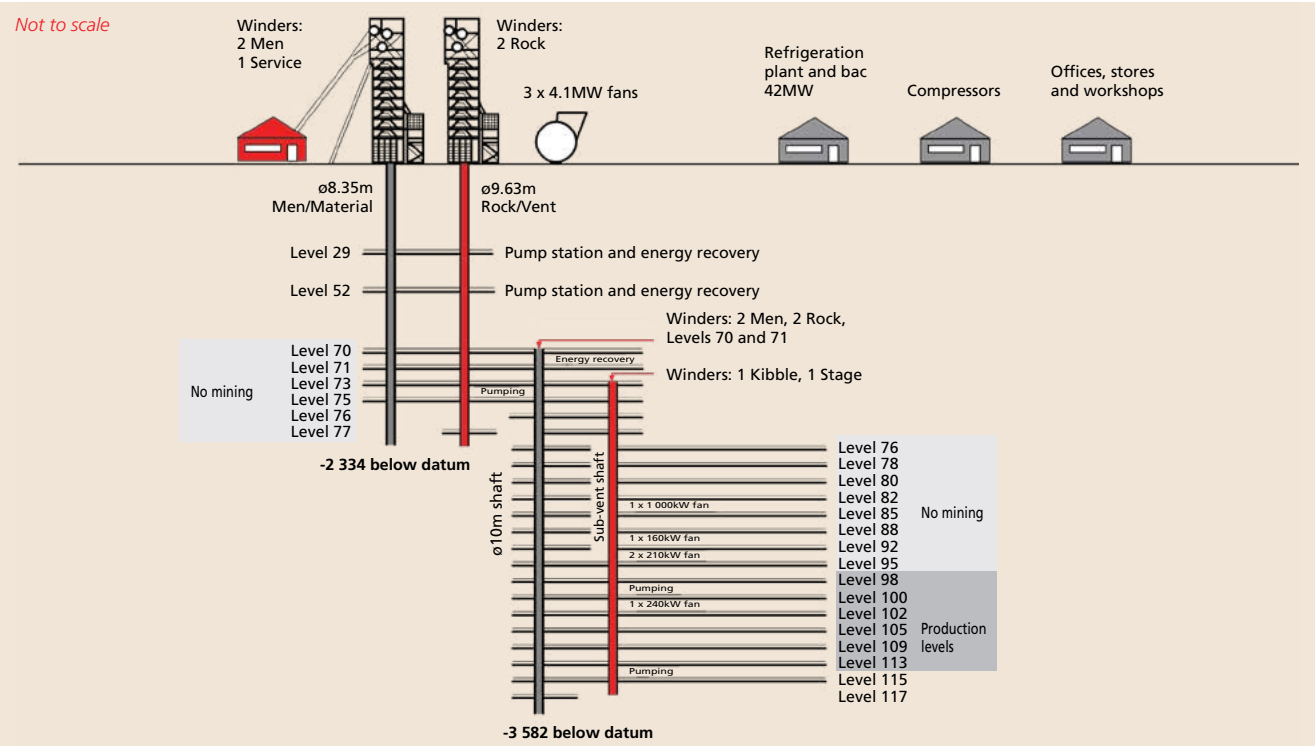
SOUTH AFRICA – WEST RAND **KUSASALETHU** continued

OPERATIONAL PERFORMANCE

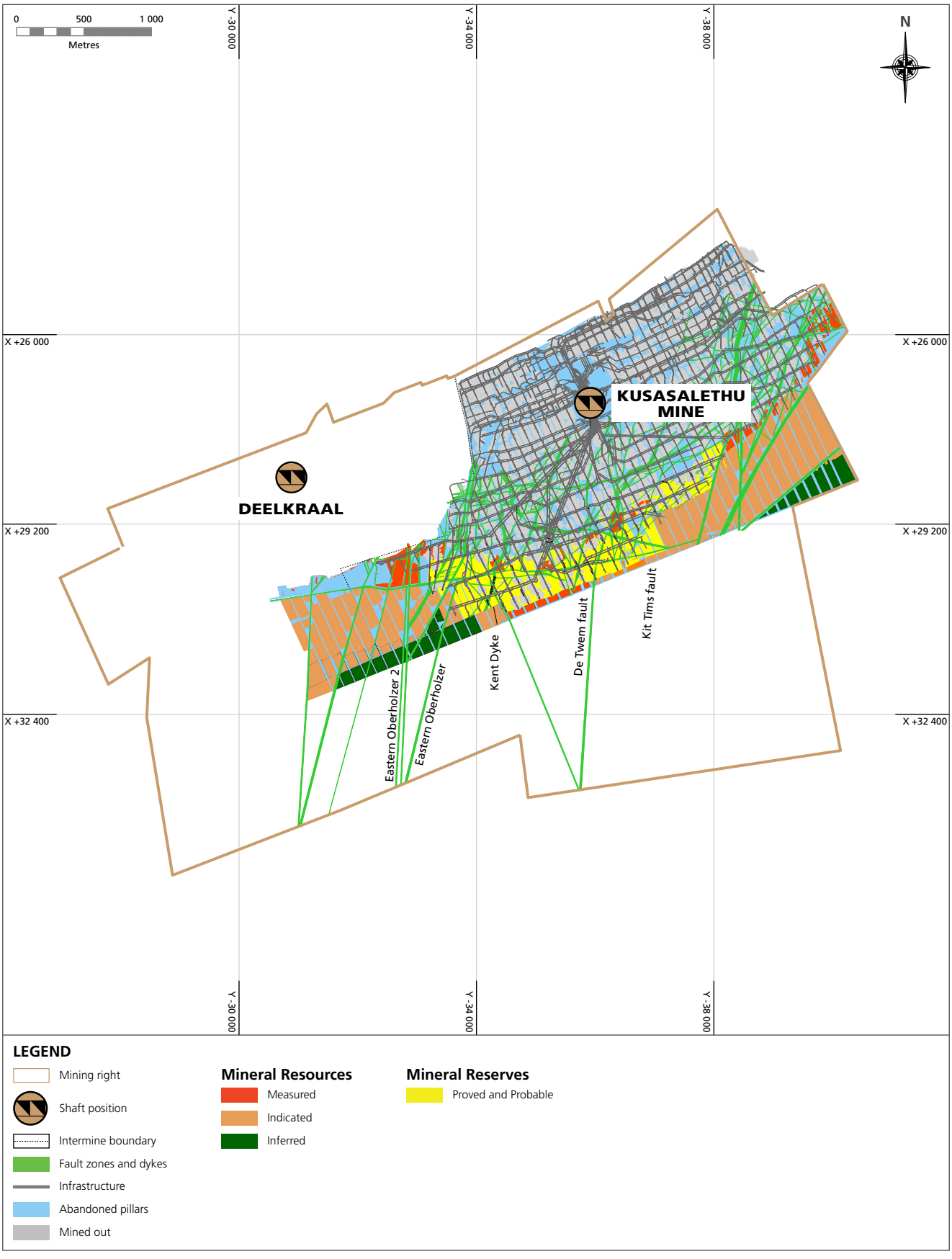
Kusasalethu: Key operating statistics

	Unit	FY21	FY20	FY19	FY18	FY17
Operation						
Volumes milled	000t (metric)	**708**	615	742	670	607
	000t (imperial)	**780**	678	817	738	670
Gold produced	kg	**3 999**	3 015	4 989	4 429	4 394
	oz	**128 570**	96 934	160 400	142 395	141 270
Grade	g/t	**5.65**	4.90	6.72	6.61	7.24
	oz/t	**0.165**	0.143	0.196	0.193	0.211
Development						
Total metres (excluding capital metres)		**2 202**	3 039	5 437	4 016	5 101
Reef metres		**282**	1 019	1 217	776	1 185
Capital metres		**–**	–	–	–	–
Financial						
Average gold price received	R/kg	**854 201**	743 153	591 742	577 313	572 376
	US$/oz	**1 725**	1 476	1 298	1 397	1 309
Capital expenditure	Rm	**205**	188	316	289	289
	US$m	**13**	12	22	22	21
Cash operating cost	R/kg	**742 452**	849 782	476 417	472 177	459 422
	US$/oz	**1 500**	1 687	1 045	1 143	1 051
All-in sustaining cost	R/kg	**814 048**	923 054	556 621	554 302	541 247
	US$/oz	**1 644**	1 833	1 221	1 342	1 238

Kusasalethu: Schematic of shaft and mining layout



Kusasalethu Mine – Ventersdorp Contact Reef June 2021: Mineral Resources and Mineral Reserves



MPONENG

Mponeng shaft.

Mineral Resources (inclusive)

23.6Moz

Mineral Reserves

2.1Moz

Detailed Mineral Resource and Mineral Reserve estimates are presented in this section.

History

Mponeng Mine is located on a site that has been operational for over 30 years.

Mponeng was previously known as the Western Deep Levels South shaft, or No 1 shaft. The original twin shaft sinking from surface commenced in 1981 and was commissioned along with the gold plant complex in 1986 when mining began. Production started through the use of two hoisting shafts, a sub-shaft and two service shafts. The name changed to Mponeng Mine in 1999.

In 2017, Savuka and Tau Tona mines commenced orderly closure and the remaining Tau Tona Mineral Resources and Ore Reserves are published as part of Mponeng Mine.

Western Deep Levels commenced mining in 1957 as part of the Anglo-American operations. Mponeng, previously known as Western Deep Levels 1 shaft or South Mine, commenced in February 1980 and the first ore was hoisted in June 1986.The initial scope of the operation was to set up the shaft infrastructure consisting of a main shaft and a service shaft that was complemented with horizontal development from Tau Tona Mine and Savuka Mine on 75 level and 81 level to establish the mining in the main shaft area.

The sub-shaft complex was established and commissioned to 109 level in 1993. The deepening project ensured access down to 120/123 level, by commissioning the shaft in 2001 and executing the Ore Reserve development in the period 2001 to 2004 to establish the mining area from 109 level to 120 level. The SSV shaft and the SS2 shaft were sunk and equipped in the period 2004 to 2009. In 2007, the VCR B120 project was approved and is known today as B120 Phase 1. Phase 1 is currently being executed, accesses the VCR ore body through four parallel declines at 7.5 degrees down to 126 level which at the time was the limit of the Mponeng lease area. Mponeng Mine has to date only mined the VCR ore body but started extracting gold from CLR ore in 2020 from limited stopes opened up on the old Tau Tona lease area.

Nature of the operation

Mponeng Mine is a deep-level gold mine operating between 3 160m and 3 740m below mine datum (BMD) and is currently the deepest mine in the world with development at 3 841m BMD. Future mining is planned to deepen the shaft bottom to 4 227m BMD. The orebody is part of the Witwatersrand basin and the majority of production was always from Ventersdorp Contact Reef (VCR) with limited Carbon Leader Reef (CLR) mining starting in 2020. Future expansion opportunities on both VCR and the CLR horizons are under review.

Geology

The Ventersdorp Contact Reef (VCR) is the main reef horizon mined at Mponeng Mine.

The VCR forms the base of the Ventersdorp Supergroup, which caps the Witwatersrand Supergroup through an angular unconformity. The overlying Ventersdorp Lavas halted the deposition of the VCR, preserving it in its current state. The Carbon Leader Reef (CLR), previously mined at Tau Tona and Savuka mines, is found within the Witwatersrand Supergroup. The CLR lies 900m beneath the VCR on Mponeng. The VCR is preserved across the Mponeng lease area and dips at approximately 22 degrees in a SSE direction.

The VCR was deposited on uneven footwall strata due to uplift and is now represented by a shallow angular unconformity. The footwall lithologies to the VCR therefore vary across Mponeng Mine as the unconformity cuts deeper in an easterly direction into older strata of the Witwatersrand Supergroup. Fluvial action during deposition of the VCR continually eroded and reworked the conglomerate, creating steep slopes and embayment's between relatively undisturbed terraces.

The CLR conglomerate was deposited by several sedimentary cycles. Erosion and reworking of the conglomerate and quartzite sediments has resulted in the preservation of the CLR within the Central Rand Group of the Witwatersrand Supergroup.

Deposit type

The VCR consists of a quartz pebble conglomerate, which can be up to 3m thick in places. The footwall stratigraphy, following periods of uplift and erosion, controlled the development and preservation of the VCR, which is characterised by a series of channel terraces preserved at different relative elevations, and the highest gold values are preserved in these channel deposits.

The different channel terraces are divided by zones of thinner slope reef, which are of lower value and become more prevalent on the higher terraces and on the harder footwall units.

The relatively argillaceous protoquartzites of the Kimberley Formation in the central portion of Mponeng are covered by the best-preserved VCR conglomerates.

The Elsburg Formation in the west is relatively more durable while the eastern side of the mine is dominated by shales and siltstones of the Booysens formation.

No VCR is preserved on the Krugersdorp formation on the far eastern side of Mponeng.

The CLR is the other gold-bearing reef reported as part of the total Mineral Resource for Mponeng. The CLR is located near the base of the Johannesburg Subgroup, which forms part of the Central Rand Group of the Witwatersrand Supergroup of rocks.

The CLR has historically been mined extensively at Savuka and Tau Tona mines and the remaining portions thereof have now been transferred to Mponeng Mine. The CLR in the West Wits consists of, on average, a 20cm thick, tabular, auriferous quartz pebble conglomerate and three sedimentary facies. Economically, the most important facies is Unit 1, which overlies Unit 2. Unit 1 is a complex channel deposit that is only present along the eastern side of the West Wits lease area.

Unit 2 can be up to 2m thick. Unit 3 is exposed in the southern edges of the lease area and is the oldest of the conglomerates.

Mineralisation style

Gold mineralisation followed an episode of deep burial, fracturing and alteration. A variant of Archean gold-bearing hydrothermal fluid was introduced into the conglomerates and circulated throughout in hydrothermal cells. The fluids precipitated gold and other elements through reactions that took place at elevated temperatures along the reef horizon, which was the more favourable fluid conduit. In the case of the VCR, the resulting gold grades are mostly uniformly distributed throughout the reef package.

CLR mineralisation associated with the conglomerate occurs in the form of fine layers and stringers of pyrite rather than finely disseminated pyrite around the pebbles. Flyspeck carbon can be frequently found at the base of the conglomerate. The hydrocarbon precipitated also in thin, flat veins, usually at the base of the Carbon Leader conglomerate, and this is where the majority of the gold is concentrated.

The VCR displays strong alteration features, which can be explained by the hydrothermal fluids that infiltrated the reef and have overprinted on the original mineral assemblage. Portions of the reef contain authigenic sulphides such as pyrite, pyrrhotite, chalcopyrite, spahelerite and galena, incorporated in the conglomerate matrix. Gold associations with these mineral assemblages indicate a strong correlation of gold mobilisation and redistribution at the time of the hydrothermal fluid influx. There is also a strong association of gold with a chloritisation event focused along the reef horizon. The chlorite alteration gives a dark coloration to the reef. Gold was precipitated by cooling and reactions between the fluids and wallrock, in this case pyritic conglomerates. Gold mineralisation was enhanced in certain areas of high fluid throughput, which were often the sites of high carbon precipitation and early alteration in the case of the CLR.

Reef sedimentology (VCR and CLR)

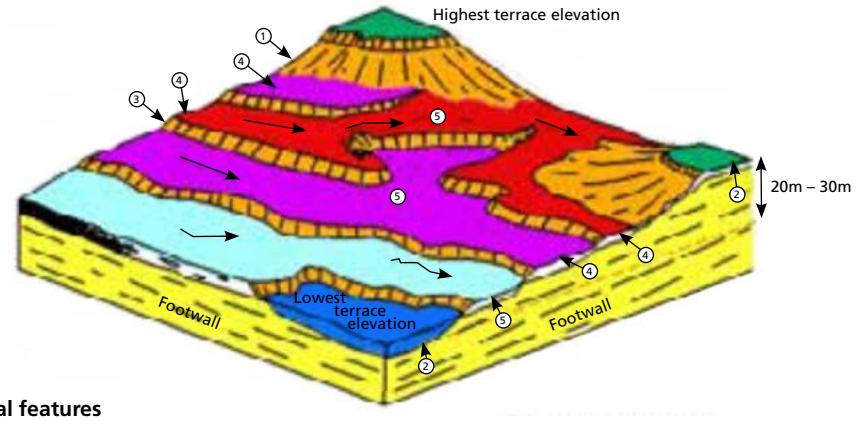
The VCR is characterised by a predominantly pebble to matrix-supported conglomerate that was deposited on an uneven topographic surface (see Figure 1).

The first pulse of VCR deposition followed a prolonged episode of regional uplift centred on the Bank Anticline to the east and north-east of the mine property. The VCR sedimentary package displays all the characteristics associated with a braided fluvial environment.

Following the initial depositional phase, a series of fluvial regressions, caused by continuing regional uplift, resulted in the erosion and reworking of the sediments. This created embayment's which eroded into the original conglomerate terraces. The area between these embayment's and terraces is referred to as slope, where extensive slumping often left only a thin veneer of preserved conglomerate.

Figure 1: Schematic 3D representation showing the depositional environment

Not to scale



LEGEND

Main lithofacies

- Terrace A
- Terrace B
- Terrace C
- Terrace D
- Terrace E
- Terrace F
- Slope

Morphological features

1. Extensive slope type area
2. Terrace
3. Terrace slope/riser
4. Embayment
5. Erosion channel

- Current directions
- Footwall quartzite

Samplers taking reef samples.

Towards the end of each regressional fluvial cycle, more quiescent fluvial conditions prevailed in which fluvial winnowing and sorting of existing sediment took place.

The three major sedimentary facies of VCR are referred to as upper, middle and lower-terrace reefs, the upper terraces representing the original pulse of conglomerate deposition, and the lower terraces the final reworked product. The terraces are separated by narrow, laterally impersistent areas of slope reef. These slope reef areas constitute approximately 10-15% of the total surface area of VCR. This number does change and has done so the more east and west the mine develops on the VCR across the softer footwall units of the Booysens shale in the east and west onto the Elsburg subunits.

Intermediate (middle) terrace elevations between upper and lower terraces are observed throughout the mining areas and represent areas where late stage fluvial cutback into upper terraces was incomplete.

Distribution and orientation of slopes and terraces was largely influenced by the nature of the underlying footwall rock and its natural susceptibility to fluvial and erosional processes. As a consequence, the more competent and siliceous footwall lithologies generally host a high proportion of upper reef terraces, whereas the less competent lithologies host a higher proportion of lower terrace and slope-type VCR.

The competent Denny's quartzite which underlies the VCR on the western side of Mponeng and the eastern side of Savuka therefore hosts a higher percentage of upper terrace reef than the less competent Kimberley quartzites that underlie the reef in the central portion of Mponeng and Tau Tona mines.

Quartzites of the Elsburg formation lie beneath the VCR on the western portion of Mponeng and Savuka. On Mponeng the quartzites generally host a poorly developed VCR that often consists of a single pebble layer. On Savuka, the VCR on the Elsburg footwall has been extensively mined, suggesting that a breakthrough might exist on Mponeng. On a local scale, prominent subcrop-parallel channels of thicker reef occur which are oriented along sedimentary troughs in the footwall, and probably represent accumulation of sediment at the bases of ridges.

The Elsburg facies is thought to represent an extensive area of denudation where early VCR was washed off a gentle westward-facing surface by seasonal flooding, thus indicating an over-bank depositional environment. Recently it has been exposed that VCR on the lower terraces have developed and eroded onto the Elsburg units further west than on the upper levels showing good preservation and persistent channel development. The mine is currently mining 30% of its ore on the Elsburg footwall unit.

On the eastern side of Mponeng and Tau Tona, the VCR lies on the Booysens shale formation, which represents an area of highly variable and undulating palaeo-topography. Terrace elevation differences often exceed 15m. The Booysens facies VCR is considered as representing the more proximal facies of the reef, with a general increase in average pebble size compared with the adjacent Kimberley footwall. Reef thickness is generally reduced on the upper terraces due to the undulating topography but is above the mine average in the lower terraces. On the lower levels in the east the erratic nature of the VCR is dominant on the Booysens shale. The preservation of the VCR is erratic, and the terrain is currently exhibiting a thinly preserved VCR with thick channel developed in places. The soft footwall is considered to affect the thick reef development.

The terraces that lie on the Booysens shale gradually become less extensive in an eastward direction, as the Krugersdorp footwall contact is approached. The contact between the Booysens and the Krugersdorp is generally considered to be the eastern limit of economic VCR resource.

The long axes of the lower terraces reflect the local palaeo-drainage direction during the reworking phase of the VCR. Drainage from the higher terraces onto slopes and lower terraces resulted in local embayment's and valleys aligned perpendicular to the main drainage direction.

VCR terrace complexes on the Kimberley footwall extend across the Booysens shale contact for distances up to 400m. The reef channel orientations on the Booysens shale geozone appear to be similar to those on the Kimberley quartzites on the western side of the Booysens footwall, but swing parallel to the regional palaeo-footwall strike on the eastern side of the geozone. Areas of slope, erosional facies or non-depositional facies separate the channels.

Deposition of the VCR was followed by rapid extrusion of lavas and tuffs of the Ventersdorp Supergroup. Fluvial activity was abruptly halted, causing preservation of the underlying palaeo-topographic features.

The facies model consists of three geological parameters: Terrace elevation, footwall lithology, and channel development (or "reef architecture").

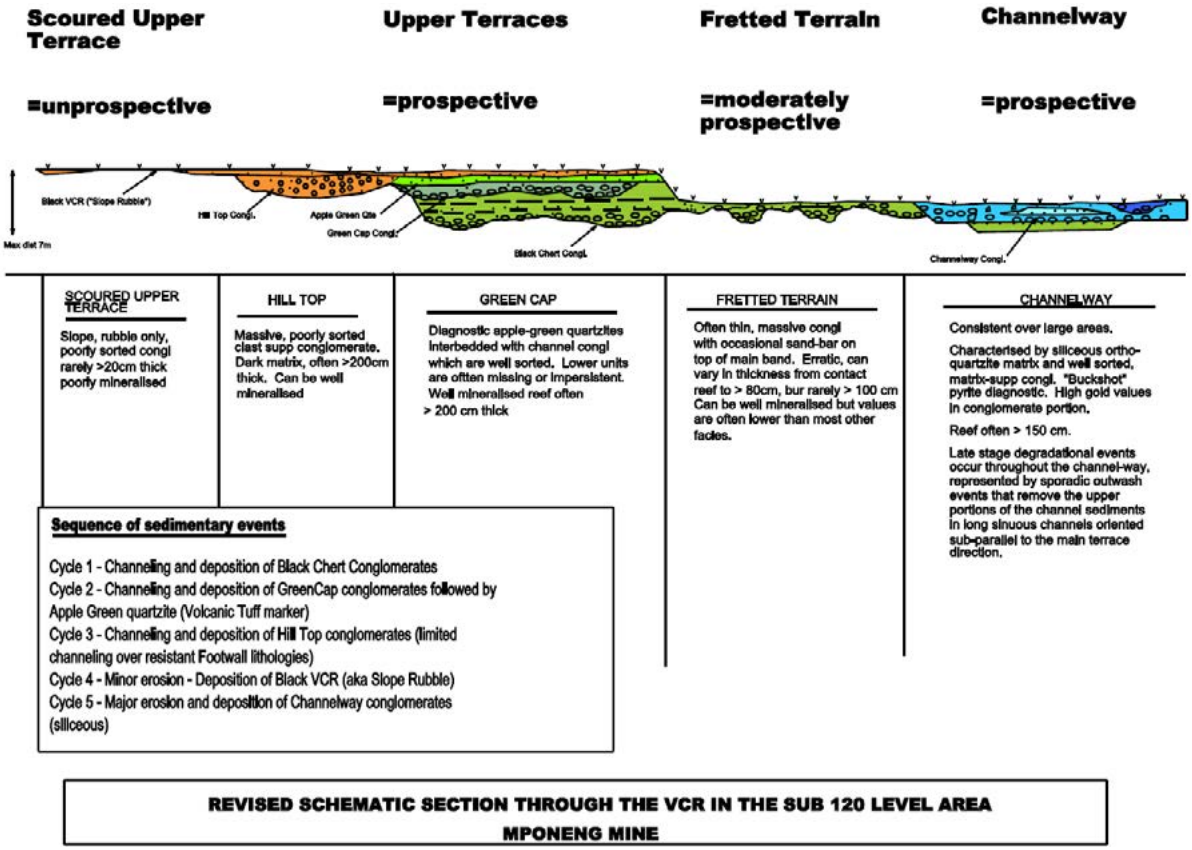
The output of the model provides the geological basis for the evaluation model. Polygons defining areas of thick and thin VCR are outlined using new geological information. Figure 3 illustrates how the VCR orebody is subdivided according to the footwall lithology and used within the estimation process. The estimation domains are based on geological information.

The estimation domains are defined and refined using mostly data from chip sampling and, to a lesser extent, borehole sampling. The thick/thin (VTK/VTN) of the Kimberley domain split is largely confined to mined, and therefore sampled, areas, with very little projection of those areas into unmined ground. The unmined ground is estimated separately as a "mixed" domain (VMD) by means of a percentage krig in which each macro block is assigned a certain percentage thick and thin channel.

The resultant new estimation domain areas defining VTN were derived from the low-value areas defined in this study done through an inhouse study.

The trends of new VTN areas are similar to those areas defined above 120 level and north of the Mponeng shaft area and the rest of the VCR areas above 120 level. Similar trend of the thick domain (VTK) is followed.

Figure 2: Schematic section of the proposed VCR palaeo-morphology indicating the variation of terrace deposition characteristics



The dark blue of the Kimberley zone (Figure 3) defines the thick facies and the light blue defines the thin facies.

Similarly, on the Booysens domain where the yellow defines the thin facies and the pink defines the thick facies.

The other principal economic horizon mined at Mponeng Mine is the Carbon Leader Reef (CLR).

The CLR is part of the Central Rand Group near the base of the Carletonville formation. The CLR possesses a considerable lateral persistence, covering an area of approximately 5km x 30km. The CLR lies 800-900 metres stratigraphically deeper than the VCR. The CLR resides on a disconformity as it truncates the underlying North Leader, which appears to be a reef body in many ways with varying gold content.

Following the burial of the North Leader by a succession of protoquartzites and immature conglomerates (the footwall beds or Blyvooruitzicht formation), the West Wits area was eroded to produce a scoured but generally planar unconformity. Oligomictic small-pebble conglomerates (10-50 cm thick). Also known as Carbon Leader Reef were deposited on this unconformity, followed by mature sands. This conglomerate is referred to as the No 3 band. The No 3 band was gently folded, scoured and eroded and then overlain by a thick (c.400cm) package of sediments, the No 2 package. This unit in turn was gently folded and eroded. Later a planar unconformity (possibly the result of a marine transgression) formed over the entire region. Pre-existing conglomerates were re-worked in places, forming a very mature oligomictic conglomerate (the No 1 band) that was subsequently well mineralised with gold. No conglomerate is present on this No 1 unconformity in places, probably due to a combination of variations in transport direction and the presence of sandy material under the unconformity.

Gold mineralisation followed an episode of deep burial, fracturing and alteration. A variant of Achaean greenstone gold-bearing hydrothermal fluid was introduced into the reef environment and was probably circulated in hydrothermal cells.

The Carbon Leader conglomerate system proved a suitable fluid conduit and various minerals were precipitated in the permeable, often structurally prepared host. Solid hydrocarbon precipitated in very thin, flat veins, which usually formed at the base of the Carbon Leader. Gold was precipitated by cooling and reactions between the fluid and the wall rocks, in this case pyritic conglomerates. The regional distribution of gold was strongly influenced by subtle changes in the physical properties of the conglomerates and their footwall lithologys. Gold mineralisation was enhanced in areas of high fluid throughput, which were often the sites of high carbon precipitation and strong early alteration.

Mineral rights, legal aspects and tenure

Table 1: Prospecting and Mining Rights registered in the name of Harmony gold for Mponeng Mine

DMR Ref No	MPTRO No	AGA File Cover No	Farm	Minerals	Effective date	Expiry date	Comments
GP30/5/1/2/2(01) MR	10/2006	1948	Elandsfontein Mining Right	Gold	14.02.2006	13.02.2036	Granted and registered
	DoA: 04/2012		Ptns of the farms Elandsfontein 115 IQ, Elandsfontein 135 IQ, Elandsfontein 144 IQ, Elandsfontein 146 IQ, Elandsfontein 115 IQ, Elandsfontein 135 IQ, Elandsfontein 140 IQ, Elandsfontein144 IQ, Elandsfontein 145 IQ, Elandsfontein 146 IQ	Silver, nickel, uranium			

Mining methods and mine planning

Gold prices applied are R700 000/kg for Ore Reserve and R820 000/kg for Mineral Resource. The Mineral Resource is reported at an average width of 136cm overall of which 160cm applied to VCR and WUDLS and 120cm applied to CLR.

The orebody is extracted by means of mostly breast mining methods with associated waste mining in addition to the reef being extracted. The dilution resulting from these waste sources is captured and incorporated in the tonnage calculation with historic performance being the benchmark. In addition to the in-stope dilution sources being accounted for allowance is also made for dilution from development waste sources to mill by both schedule results and factors based on history. Widths used are based on the channel width of the orebody being mined and are aligned with the mining method (stoping and ledging) and historical achievements.

Geological models and the sampling data are presented for the mine's evaluation in a Datamine file format.

Cut-off grades are derived by taking into consideration the available resource for the selected project areas, the operating cost as captured for the business plan and the required margin. Modifying factors are also being brought into the equation.

Due to the variability of the VCR with respect to value and the seismic risk associated with deep level mining the sequential grid mining method is used at Mponeng. The aim is to create sufficient flexibility to mitigate the risks posed to the production plan by doing sufficient development to have at least 24 months of minable reserves available.

(a) Some design criteria include the following for the VCR ore body:
- Breast mining to strike spans of 180m with 30m wide dip stabilising pillars orientated on true dip
- Major geological features are bracketed
- Incorporation of 30m strike stability pillars at a maximum dip spacing of 100m (skin to skin) on the side of the raise where the mining is conducted last in order to minimise closure in the stoping areas below 109 level
- Rock engineering requirements are adhered to.

(b) Some design criteria include the following for the CLR ore body:
- Breast mining to strike spans of 180m with 40m wide dip stabilising pillars orientated on true dip
- Major geological features are bracketed
- Incorporation of 30m strike stability pillars at a maximum dip spacing of 100m (skin to skin) on the side of the raise where the mining is conducted last in order to minimise closure
- Rock engineering requirements are adhered to.

(c) On the VCR horizon above 109 level the access haulages have all been developed in the hanging wall with the exception of 99 level. For the areas below 109 level all the haulages are being developed in the footwall. In the case of the CLR all haulages will be developed in the footwall.
- Middling to reef 85-150m for the VCR and 70m for footwall placement in the CLR orebody
- Where possible the VCR haulages are placed out of the Booysens shale, however, where these shales are traversed allowance is made for reduced rate of advance to account for delays due to additional support requirements.

(d) The overall mining sequence is an inverted Christmas tree, however, within each raise the face configuration is underhand when mining towards the west and overhand (top panels leading) when mining towards the east (the bottom panels leading). This is, however, governed by the presence of large geological structures within the raise line.

Based on the latest geological structure model and the selected mining method (sequential grid) the geotechnical team designed a suitable pillar layout based on modelling results. These include dip stabilising-bracket and strike pillars. A detailed mine design and schedule is done based on the pillar design taking cognisance of uneconomical areas which on macro-scale is excluded. This design and schedule are the basis of the mine plan and the Ore Reserves declared. With the exploitation of ever deepening resources and the need for flexibility on a mine of this nature the sequential grid mining method was adopted. This has been proven as the method best suited to the deep-level gold mining with its associated seismicity and therefore flexibility requirements.

Mining rates are based on current and expected performance depending on underground conditions and constraints. Development is done by either mechanised, mechanical or conventional method depending on the most suitable method for the specific requirements. Dilution is included in the production plan mainly from external waste sources from the stoping operations, but allowances are also made for dilution occurred in the ore flow process.

Planning resource is based on the resources available at a required mining value where a cut-off value (971cmg/t) is determined and these resources are excluded from the planning resource on a macro scale. Geotechnical design is done of the available planning resource and mine design is done accordingly. All level 1 reserves are accessible via current infrastructure.

Mineral processing

Mponeng has its own processing plant situated adjacent to the mine. Ore and waste material are hoisted separately with ore being delivered to the plant by means of a conveyor belt and the waste rock going to the low-grade stockpile.

Ore mined is treated and smelted at the Mponeng gold plant, which also processes low grade ore from the stockpile adjacent to the shaft.

The ore is initially ground down by means of semi-autogenous milling, after which a conventional gold leach process incorporating liquid oxygen injection is applied. The gold is then recovered by means of carbon in pulp (CIP) technology together with electro-winning and smelting processes.

Infrastructure

Mponeng is an established mine which has been in operation since 1986. All surface and underground infrastructure is in place to support the current reserve declaration and includes processing plant, tailing dam, roads, water and power supply, offices, housing, security, etc.

Mponeng is an operating mine with well-established logistic support. Transport of ore is done on premises as well as processing which is done next to the mine at the Mponeng Mine gold plant.

Mineral resource estimation

The estimation method used for local measured estimates on the shaft is Ordinary Kriging (OK) and for local indicated and inferred estimates is simple macro kriging (SMK). The orientations and ranges of each geozone's semi-variogram are used to determine the kriging search parameters, and the estimation parameters are also optimised. Estimates are generally kriged into 30m x 30m blocks for the measured resources from the point support data. The indicated resources are kriged into 60m x 60m blocks data is capped at Mponeng Mine.

Gold is the only variable estimated for large block sizes. ChW is estimated for all block sizes.

The Ore Reserve classification is based on the Mineral Resource category. The choice of the appropriate category of Mineral Resource depends upon the quantity, distribution and quality of data available and the level of confidence attached to the data. The Mineral Resource is classified per the SAMREC guidelines into the following components: Measured, Indicated and Inferred Resources.

Discounts are applied to the Resource due to the "unknown" complex geological structure ahead of current mining faces and are based on the level of information available. These discounts are regularly checked to confirm that they are still appropriate for the areas being mined in.

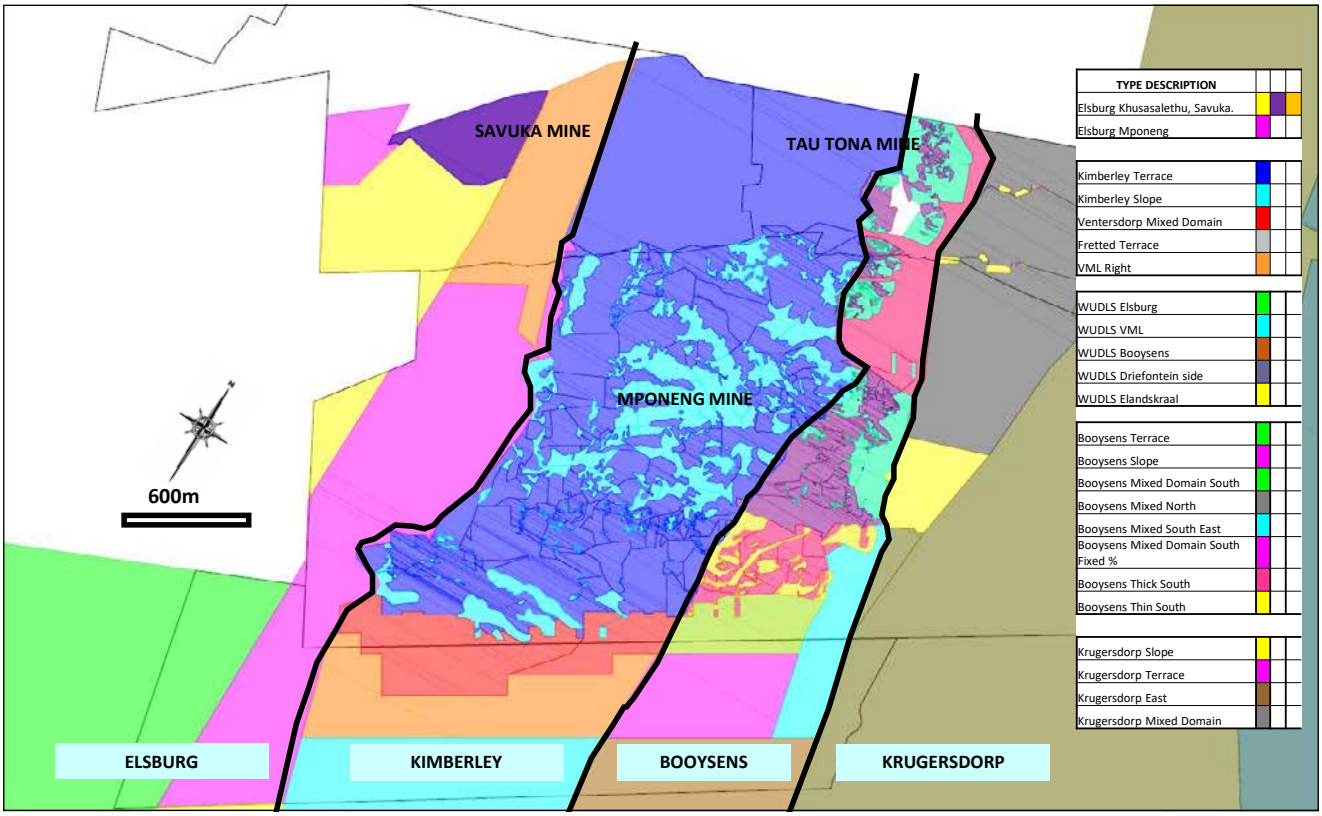
For the Ore Reserves, which are modified Indicated and Measured Mineral Resources, consideration was given to the modifying factors affecting extraction. No Measured Mineral Resources have been converted to Probable Ore Reserves instead of Proved Ore Reserve due to uncertainties associated with modifying factors that are considered in the conversion from Mineral Resources to Ore Reserves.

The Datamine mining software system is currently in use on this shaft. A scripting/macro system has been generated, which is linked to a customised scripting menu. This menu allows for professional and easy managing of the data and building of geostatistical models.

The imported data is associated to the geozones for the geostatistical model generation. It is also assumed that the differing support sizes for chip samples and borehole samples are negligible. Histograms and statistics of the raw data are then calculated for each geozone for comparison purposes.

The various search parameters files are based on the modelled semi-variograms. The defined search ellipse adheres to the direction of the associated semi-variogram, as well as the range distances. The current minimum and maximum is variable for VCR measured estimation per geozone as well as for the Indicated/Inferred estimation VCR.

Figure 3: Footwall Geozones which form the basis of the Geological facies model. Each footwall zone is subdivided



Environmental impact

Mponeng's environmental aspects and impacts are managed according to the environmental management programme, as approved by the Department of Mineral Resources (DMR), in terms of the MPRDA. All environmental aspects and impacts emanating from mining activities are documented in a dedicated report and in the environmental aspect register, as required by the MPRDA and the ISO 14001:2015 standard.

Annual performance monitoring audits are conducted by various departments, including the DMR and the Department of Water and Sanitation to verify compliance with the following legislation:

- Mine Health and Safety Act
- National Water Act
- National Environmental Management Act
- MPRDA.

All environmental impacts arising from mining activities are managed in terms of the requirements of the approved environmental management programme, the water use licence, the waste permit is in line with the ISO 14001:2015 standards.

As required by relevant regulations, environmental audits or performance assessments to verify compliance with the approved environmental management programme are conducted every second year by independent environmental consultants and a report is submitted to the DMR. External and internal environmental legal compliance audits are also conducted. An off-site legal environmental register is used to monitor compliance, and to obtain applicable and relevant environmental legal updates for the operation.

Full chemical analyses include:

- Monthly sampling of surface streams
- Quarterly analysis of borehole water to monitor groundwater quality.

Mponeng is ISO 14001:2015-certified and complies with the requirements of the ISO 14001:2015 standard for which it is audited annually by an independent certification body. The operation was initially certified in 2011, and most recently in 2018, under the new ISO 14001 standard (2015). In line with this accreditation, every effort is made to eliminate or minimise the negative effects of mining activities on the environment and adjacent communities.

The operation has also been accredited in terms of the Cyanide Management Code by the International Cyanide Management Institute. Independent third-party audits are conducted every three years to check compliance with the Cyanide Code.

SOUTH AFRICA – WEST RAND **MPONENG** continued

MATERIAL RISKS

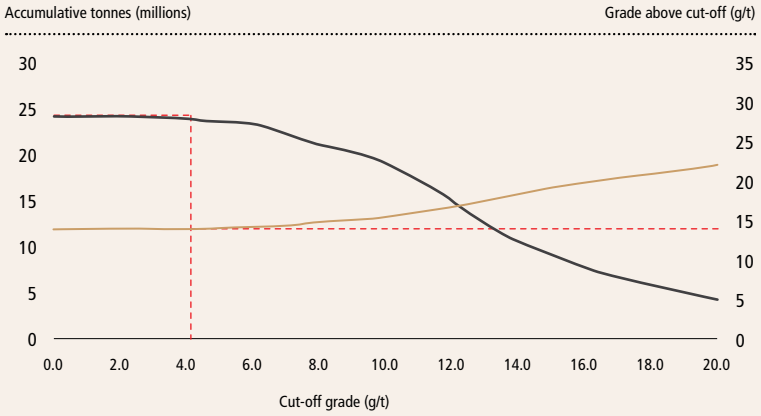
Material risks that may impact Mponeng's Mineral Resource and Reserve Statement.

Significant risks	Remedial action
• Seismicity	• Support strategy • Seismic management around mass response • Cycle mining implemented • Preconditioning • Monitor seismic potency.
• Face length flexibility	• Optimise development rates • Critical raise line scrutiny • Maintain affective mining mix.
• Flooding of shaft bottom	• Commissioning of 123l pumping column • Sealing of dam sidewall 127 level.

COMPETENT PERSON

Ore Reserve manager

William Herman Olivier
Certificate of Competency for Mine Survey, GDE, South African Geomatics Council (SAGC)0136



Mponeng Mine: Ventersdorp Contact Reef

Measured and Indicated Mineral Resource grade-tonnage curve

— Tonnage — Grade

MPONENG

Gold – Mineral Resource estimates at 30 June 2021 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Mponeng	2.9	15.61	46	1 464	21.7	14.11	306	9 851	28.1	13.60	382	12 266	52.7	13.92	733	23 581

Modifying factors

Mponeng	MCF (%)	SW (cm)	MW (cm)	PRF (%)	Cut-off (cmg/t)
2020	–	–	–	–	–
2021	81	152	215	98	971

Gold – Mineral Reserve estimates at 30 June 2021

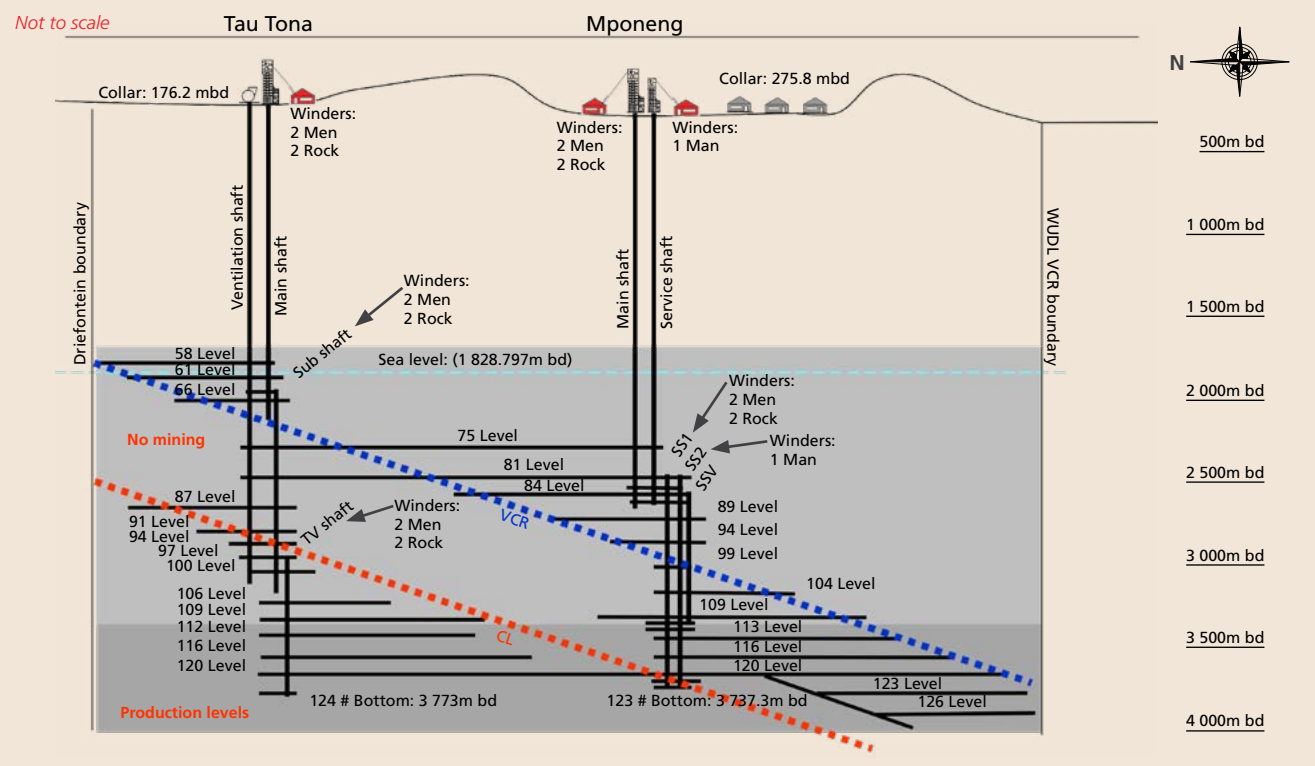
	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Mponeng	1.9	8.72	17	535	5.8	8.47	49	1 569	7.7	8.53	65	2 104

OPERATIONAL PERFORMANCE

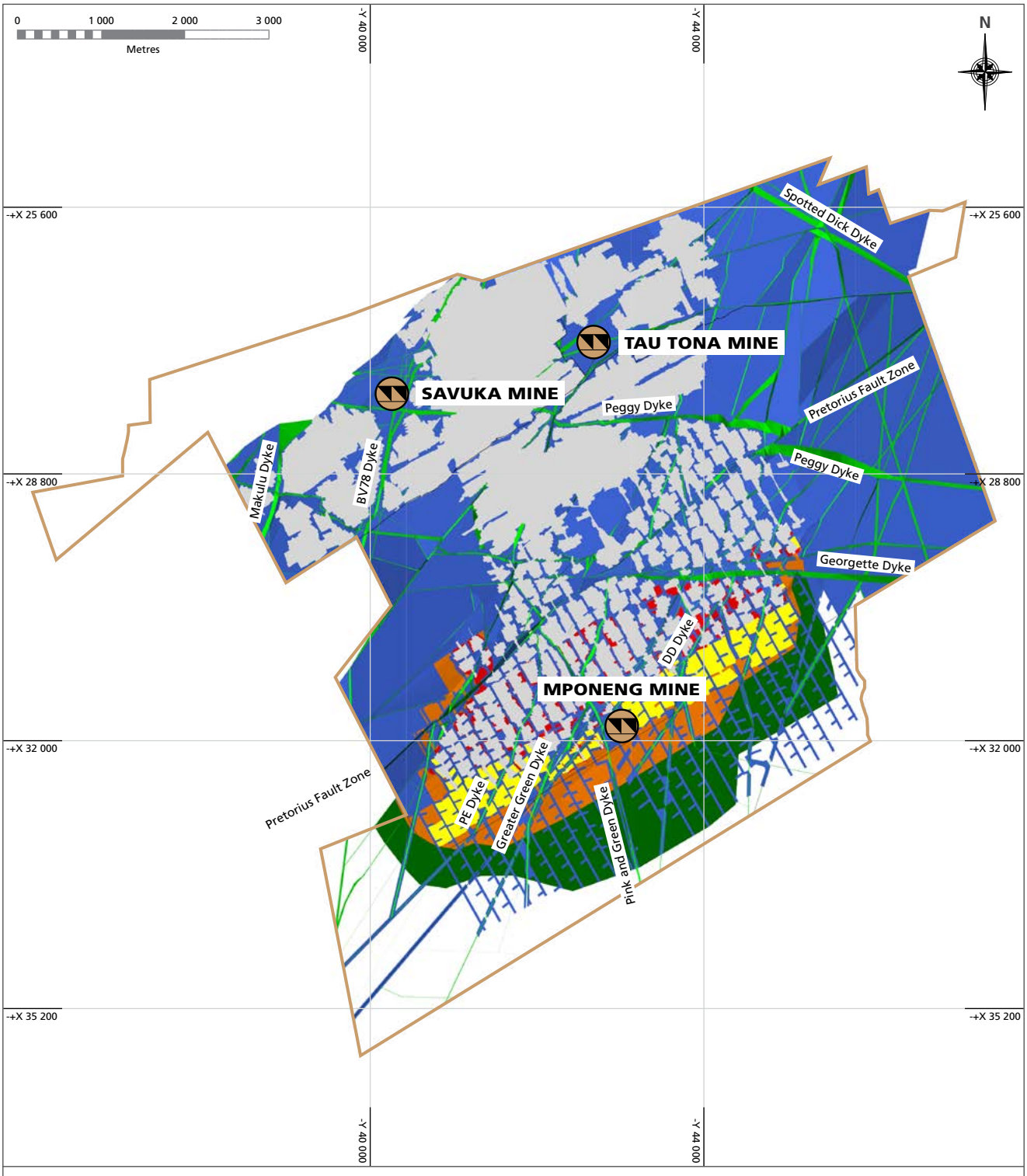
Mponeng: Key operating statistics

	Unit	FY21
Operation		
Volumes milled	000t (metric)	**683**
	000t (imperial)	**753**
Gold produced	kg	**5 446**
	oz	**175 092**
Grade	g/t	**7.97**
	oz/t	**0.233**
Development		
Total metres (excluding capital metres)		**6 299**
Reef metres		**815**
Capital metres		**–**
Financial		
Average gold price received	R/kg	**896 474**
	US$/oz	**1 811**
Capital expenditure	Rm	**493**
	US$m	**32**
Cash operating cost	R/kg	**532 812**
	US$/oz	**1 076**
All-in sustaining cost	R/kg	**659 760**
	US$/oz	**1 333**

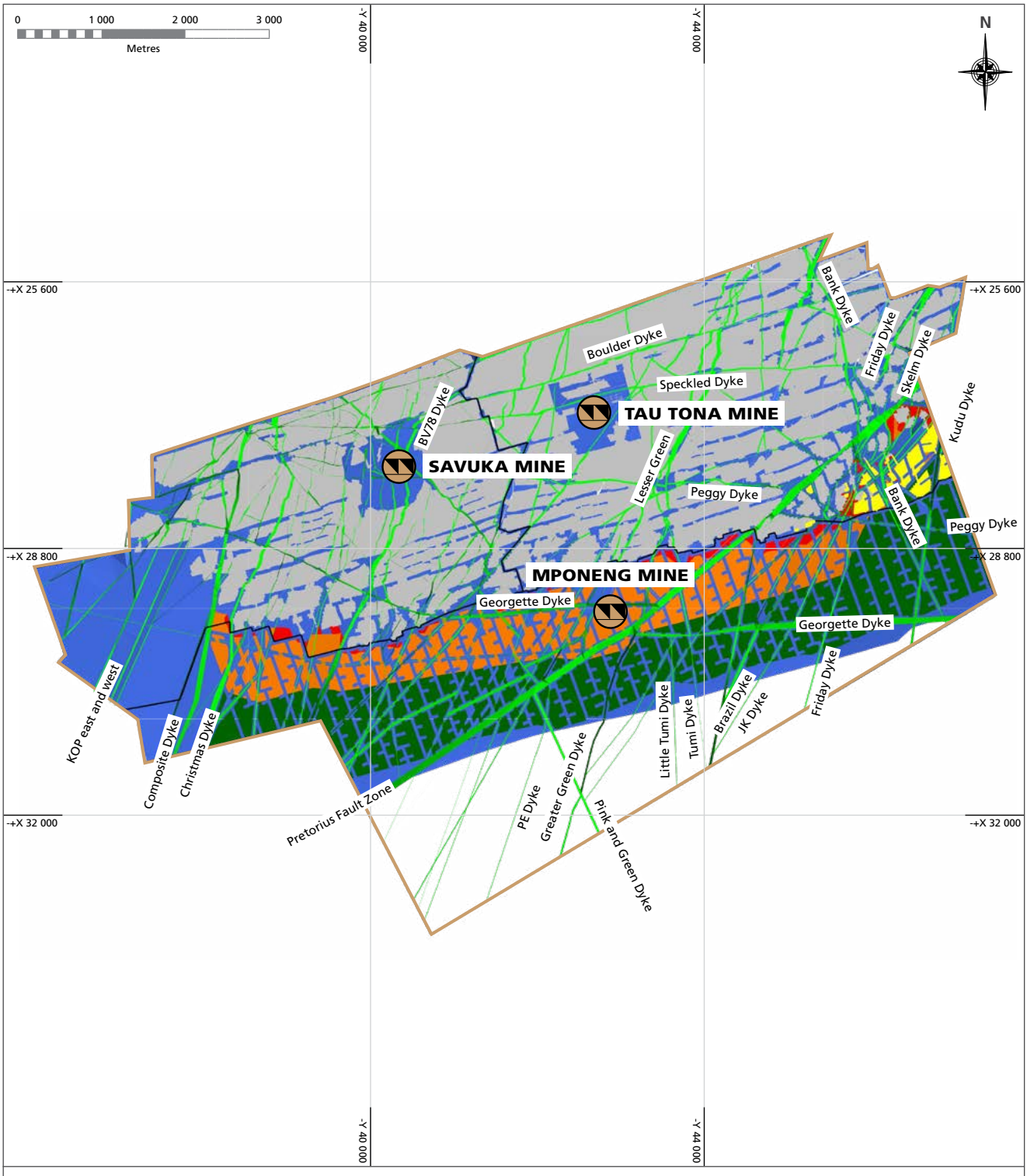
Mponeng: Schematic of shaft and mining layout



Mponeng Mine
Ventersdorp Contact Reef Mineral Resources



Mponeng Mine
Carbon Leader Reef Mineral Resources



KLERKSDORP GOLDFIELD

Harmony has one underground mining operation in the Klerksdorp goldfield – Moab Khotsong. As at 30 June 2021, the estimated Mineral Resource (inclusive) was 12.4Moz and the estimated Mineral Reserve, 4.2Moz.

MINERAL RESOURCES AND MINERAL RESERVES BY OPERATION

Klerksdorp goldfield	**72 – 81**
Moab Khotsong	**74**

Mineral Resources (inclusive)

12.4Moz

Mineral Reserves

4.2Moz

LOCATION OF OPERATION IN KLERKSDORP GOLDFIELD

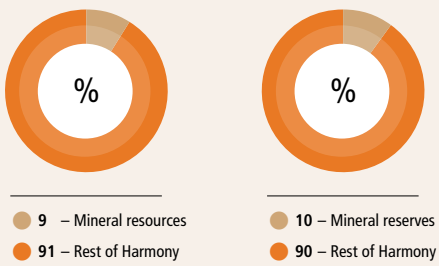
Moab Khotsong, which includes the mining and surface infrastructure of the adjacent Great Noligwa, is located in the Free State province, near the towns of Orkney and Klerksdorp, about 180km south-west of Johannesburg. The mining lease area lies just south of the Vaal River, which forms a natural boundary between South Africa's North West and Free State provinces.

REGIONAL GEOLOGY

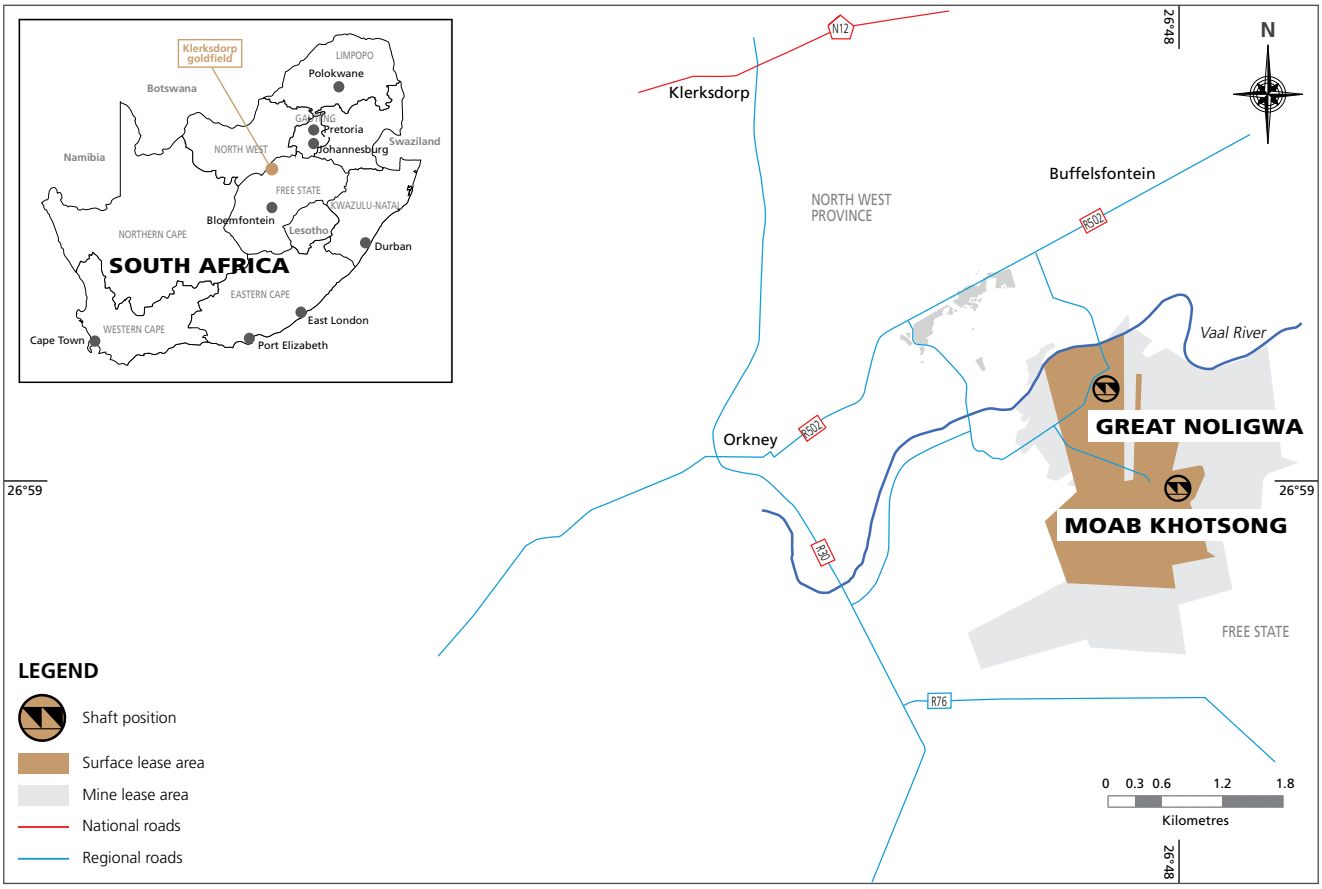
For a description of the geological characteristics of the Klerksdorp goldfield, refer to the Geology section under Moab Khotsong.

From FY20 to FY21, Moab Khotsong's Mineral Reserves increased by 147% due to the inclusion of Zaaiplaats. Moab top and middle mine Reserve was influenced mainly by depletions. The Mineral Resource decreased by 1.7% due to a structure change in the Zaaiplaats area which was based on new information from exploration drilling.

Gold and Gold equivalents
Contribution to Harmony



Klerksdorp Goldfield Operations – Locality



KLERKSDORP GOLDFIELD STRATIGRAPHIC COLUMN

Group	Sub-group	Formation	Informal unit and reefs	Member
Klipriviersberg		Alberton/ Orkney	Lava beds	
		Venterspost	VCR	VCR
Central Rand Group	Turffontein	Mondeor	Elsburg massives and individuals	Modderfontein Waterpan
		Klerksdorp	Quartzites and conglomerates	Gold Estates Quartzite
				Dennys Reef
		Gold Estate		Kimberley Reefs
	Johannesburg	Crystalkop	C-Reef	C-Reef
		Strathmore	Zandpan Marker Vaal Reef	Bird
			Vaal Reef	
		Stilfontein	Quartzite	Quartzites with minor interbedded conglomerates
			Millar Reef	Millar Reef
			Quartzites	
			Livingstone Reef	Livingstone Reef
		Commonage		Quartzite
			Commanage Reef	
			Ada May or Reef	
West Rand Group	Jeppestown	Roodepoort		

MOAB KHOTSONG

Moab Khotsong shaft.

Mineral Resources (inclusive)

12.4Moz

Mineral Reserves

4.2Moz

Detailed Mineral Resource and Mineral Reserve estimates are presented in this section.

History

The Moab Khotsong Mine began production in 2003 while Great Noligwa, which was merged with Moab Khotsong in 2014, began production in 1968. These mines are collectively referred to as Moab Khotsong. Harmony acquired Moab Khotsong from AngloGold Ashanti Limited in March 2018. Lower mine (Zaaiplaats) Reserves were included into the Moab Khotsong Reserves as at June 2021 following the conclusion of the feasibility study and approval of capital by the board.

Nature of the operation

Moab Khotsong is the youngest of the South African deep-level gold mines with three vertical shaft systems maintained to service the mine. The orebody is divided into three distinguishable blocks through major faulting. These geographical areas are referred to as top mine (Great Noligwa), middle mine and lower mine (Zaaiplaats).

Geology

The Vaal Reef is the primary economic horizon at Moab Khotsong. A secondary economic horizon, the C Reef, contributes less than 5% of total mining volumes. Both reefs are narrow tabular deposits forming part of the Witwatersrand Supergroup and are stratigraphically located near the middle of the Central Rand Group. The Vaal Reef lies approximately 255m below the C Reef.

The geology at Moab Khotsong is structurally complex with large fault-loss areas between the three mining areas (top mine, middle mine and Zaaiplaats). The geological setting is one of crustal extension, dominated by major south-dipping fault systems with north-dipping Zuiping faults wedged between the south-dipping faults. The De Hoek and Buffels East faults are structural bounds for the reef blocks of the middle mine to the north-west and south-east respectively. The northern boundary of Moab Khotsong's middle mine is the north-dipping Zuiping fault. Moab Khotsong requires a reduced drill spacing pattern of the order of 50m x 50m, which allows for accurate delineation of the structurally bound mineable blocks so that accurate and efficient mine designs can be implemented to ensure optimal extraction and maximum orebody use.

The mineralisation model adopted for the deposit is that of gold precipitation in the conglomerates through the actions of hydrothermal fluids. The fluids precipitated gold and other elements through reactions that took place at elevated temperatures (300-350°C). Migrating liquid and gaseous hydrocarbons precipitated as solid hydrocarbon (carbon), which was then mesophased through metamorphism and structural deformation. Carbon was preferentially precipitated in bedding-parallel fractures that most commonly followed the base of the Vaal Reef package (A-bottom sub-facies), however, gold and uranium mineralisation is also commonly observed within the A-middle and A-top sub-facies of the Vaal Reef. Gold was precipitated very soon after the carbon, giving the critical gold-carbon association that characterises many of the high-grade Vaal Reef localities.

A geological model is employed to delineate variations (either lateral or vertical) in characteristics of the Vaal Reef and C Reef. The current geological model thus sub-divides these two reefs into homogeneous zones based on geological and grade characteristics.

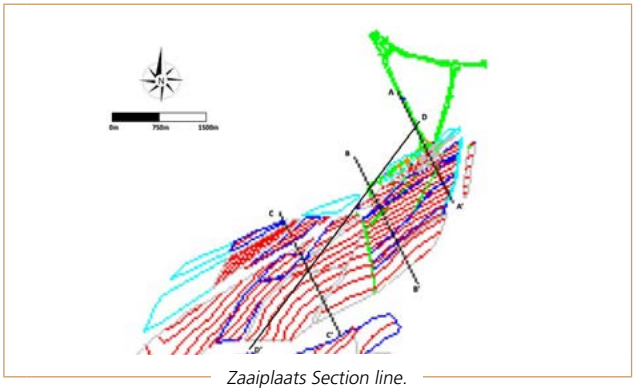
The Vaal Reef consists of a thin basal conglomerate (the C-facies) and a thicker sequence of upper conglomerates (A-facies). These two sedimentary facies are separated by the B-facies, which is a layer of barren orthoquartzite. The A-facies is the primary economic horizon at Moab Khotsong, however, remnants of the C-facies are sporadically preserved below the A-facies. High gold values in the Vaal Reef are often located at the base of this unit and are associated with high uranium values and the presence of carbon. Uranium is an important by-product recovered from the Vaal Reef.

The C Reef is mined on a limited scale in the central part of top mine where a high-grade, north-south trending sedimentary channel, containing two economic horizons, has been exposed. To the east and the west of this channel, the C Reef is poorly developed with limited areas containing economic concentrations of gold and uranium. As with the Vaal Reef, high uranium values are also often associated with high gold values. A carbon seam, with a thickness of 5mm to 20mm, commonly occurs at the base of the conglomerate. To the north of the mine, the C Reef sub-crops against the Gold Estates Conglomerate Formation and, in the extreme south of the mine, the C Reef has been eliminated by a deep Kimberley erosion channel and the Jersey fault.

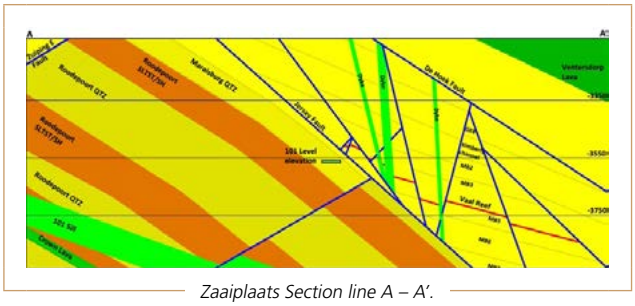
Mining methods and mine planning

The tabular nature of the orebody, along with its depth and structural complexity, dictates the mining method employed at Moab Khotsong. Mining here is based on a scattered mining method together with an integrated backfill support system that incorporates bracket pillars. The economic reef horizons are exploited between depths of 1 791m and 3 052m below surface.

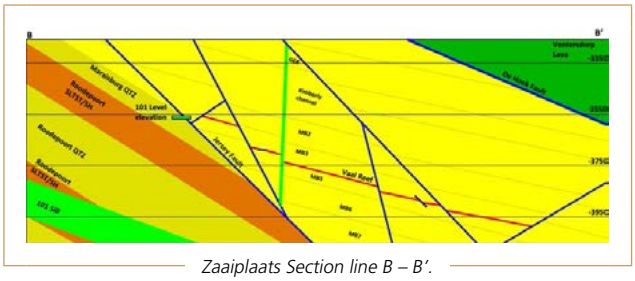
Zaaiplaats is located between the elevations of 2 866m and 3 471m below surface. Zaaiplaats will be accessed by declines from the north-eastern end of the Zaaiplaats ground to take advantage of the existing access development in place. Stoping will be conventional scattered breast mining together with an integrated backfill support system, with raises spaced 200m apart.



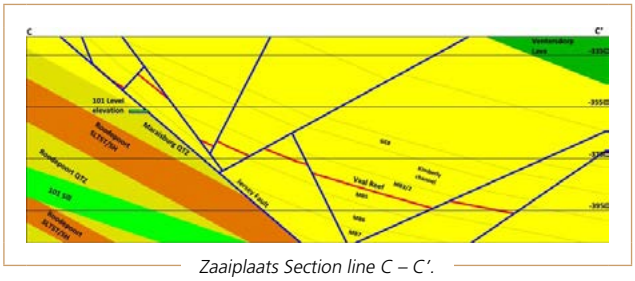
Zaaiplaats Section line.



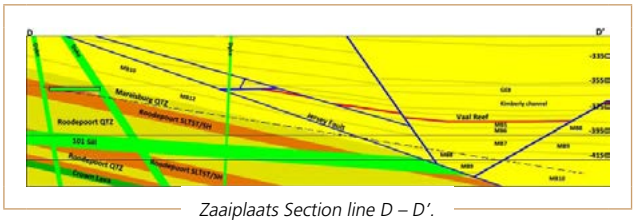
Zaaiplaats Section line A – A'.



Zaaiplaats Section line B – B'.



Zaaiplaats Section line C – C'.



Zaaiplaats Section line D – D'.

LEGEND

SOUTH AFRICA – KLERKSDORP GOLDFIELD **MOAB KHOTSONG** continued

Mineral rights/legal aspects and tenure

Harmony holds the following mining rights, which have been successfully converted, executed and registered as new order mining rights at the Mineral and Petroleum Resources Titles Office.

- NW30/5/1/2/2/15MR valid from 12 September 2007 to 11 September 2037
- NW30/5/1/1/2/16MR valid from 20 August 2008 to 19 August 2038.

These rights cover a combined area of 10991.1296ha. (15MR = 1372.4696ha and 16MR = 9618.660ha).

Mineral processing

Moab Khotsong's mineral processing is done through the Great Noligwa gold plant with design capacity exceeding the maximum planned production volume from the operation. The plant uses the reverse gold leach method which recovers gold and uranium through gold cyanide and acid uranium leaching.

Infrastructure

Moab Khotsong and Great Noligwa's surface and underground infrastructure, as well as the power and water services, are designed to fully meet planned life-of-mine production and service capacity requirements. The operation has a dedicated ore processing plant in close proximity to Moab Khotsong and tailings are pumped to existing tailings storage facilities. Most of the waste rock is separated from reef ore underground and accounted for separately. All waste and reef are delivered to the metallurgical plant.

Mineral Resource estimation

The geostatistical estimation model is created per reef type and per geological zone.

Measured model: Point data and drill hole data, capped to the 99th percentile, uses the ordinary kriging method with experimental semi-variograms, search/estimation parameters, kriging efficiency and slope of regression. Commonly measured models are done on a 10m x 10m and 30m x 30m estimation block size.

Indicated model: Declustered data uses simple macro kriging (SMK) with experimental semi-variograms, search/estimation parameters. Commonly indicated models are done on a 60m x 60m estimation block size.

Inferred model: Declustered data uses SMK with experimental semi-variograms, search/estimation parameters. Commonly indicated models are done on a 120m x 120m estimation block size.

Inferred model beyond estimation confidence: Global arithmetic mean of the declustered data for all the areas to the lease boundary.

Environmental impact

Harmony, holder of the tenement, has addressed the requirements of the Department of Mineral Resources and Energy (DMRE). An environmental impact assessment report and environmental management programme report is in place and approved by the DMRE. An environmental performance assessment report was submitted to the DMRE in 2019.

Moab Khotsong operations has applied for its own water use licence, which entails splitting the current approved licence between Harmony, Village Main Reef and AngloGold Ashanti (sold to Harmony/owned by Harmony). Moab Khotsong operations is awaiting the issuing of the licence by the Department of Water and Sanitation.

Moab Khotsong also have the following licences/certification in place:

(1) Atmospheric emission licence, AEL/FS/MKO-HGM/14/10/2019 issued to Moab Khotsong operations (Harmony Gold Mining Company) in terms of section 41(1) of the National Environmental Management: Air Quality Act, 2004 (Act No 39 of 2004), in respect of Listed Activity No.4.1: Drying and Calcining and 4.17: Precious and Base Metal Production and Refining.

(2) Waste disposal site licence, NWP/DK2/WM/2018/04/01/02, issued for the management of the Harmony Vaal Reefs waste disposal site.

(3) Moab Khotsong is ISO 14001 certified for its environmental management system. As part of its certification and compliance obligations, Moab Khotsong is committed to continually improve its processes and services to prevent pollution, minimise waste, increase carbon efficiency, use natural resources efficiently and protect the environment.

There are no sensitive areas that may affect the project or any other environmental factors, including interested and affected parties and/or studies that could have a material effect on the likelihood of eventual economic extraction.

Regarding environmental rehabilitation liability, all costs associated with demolition and rehabilitation of the footprint after mining activities cease have been considered in the environmental rehabilitation liabilities. This liability covers all buildings, offices, water tanks, plants, tailings storage facilities, waste rock dumps and properties, among others. The liability is assessed annually and updated to include new infrastructure or demolition and all rates are updated (either escalated or revised) annually. These costs are then escalated to future values and discounted back to present value for inclusion in Harmony's current liability in the financial statements.

Great Noligwa UG Stope new drills.

MATERIAL RISKS

Material risks that may impact Moab Khotsong's Mineral Resource and Mineral Reserve statements.

Significant risks

- Flooding from neighbouring mines
- Seismicity
- Structural complexity.

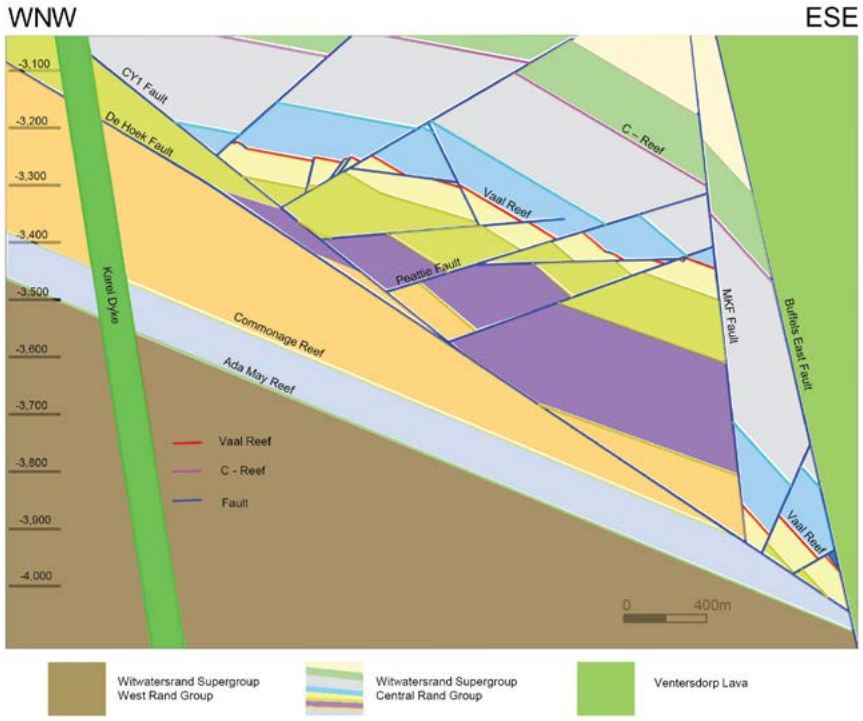
Remedial action

- Pumping
- Mining industry occupational safety and health programme
- Maintaining seismic network system
- Comprehensive risk drilling programme.

COMPETENT PERSON

Ore Reserve manager

Leanne Brenda Freese
BSc Geology, BSc Hons (Geology), GDE, SACNASP, GSSA
23 years' hard rock, deep level and ultra-deep level gold mining experience on the Witwatersrand Supergroup



Geological cross-section through Moab Khotsong (west-north west and east-south east).

Ultracataclasite fault rock above Vaal Reef.

Base of Vaal Reef.

SOUTH AFRICA – KLERKSDORP GOLDFIELD **MOAB KHOTSONG** continued

MOAB KHOTSONG

Gold – Mineral Resource estimates at 30 June 2021 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Moab Khotsong	4.2	16.75	71	2 274	14.0	15.95	223	7 155	5.6	16.42	92	2 973	23.8	16.20	386	12 402

Modifying factors

Moab Khotsong	MCF (%)	SW (cm)	MW (cm)	PRF (%)	Cut-off (cmg/t)
2020	73	170	219	97	1 801
2021	75	177	223	97	1 801

Gold – Mineral Reserve estimates at 30 June 2021

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Moab Khotsong	2.9	7.77	23	727	12.3	8.89	109	3 518	15.2	8.68	132	4 245

Uranium – Mineral Resource estimates at 30 June 2021

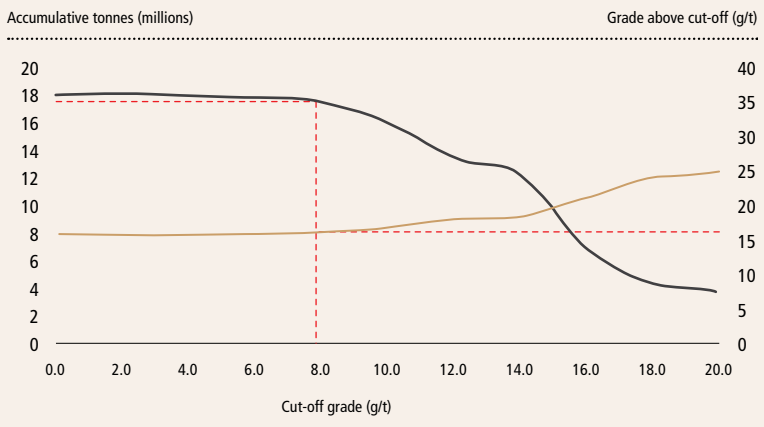
	Measured				Indicated				Inferred				Total			
	Tonnes		U_3O_8		Tonnes		U_3O_8		Tonnes		U_3O_8		Tonnes		U_3O_8	
	(Mt)	(kg/t)	(Mkg)	(Mlb)	(Mt)	(kg/t)	(Mkg)	(Mlb)	(Mt)	(kg/t)	(Mkg)	(Mlb)	(Mt)	(kg/t)	(Mkg)	(Mlb)
Total	–	–	–	–	18.2	0.63	11	25	5.6	0.65	4	8	23.8	0.63	15	33

Modifying factors

Moab Khotsong	MCF (%)	SW (cm)	MW (cm)	PRF (%)
2020	69	170	219	97
2021	65	177	223	97

Uranium – Mineral Reserve estimates at 30 June 2021

	Proved				Probable				Total			
	Tonnes		U_3O_8		Tonnes		U_3O_8		Tonnes		U_3O_8	
	(Mt)	(kg/t)	(Mkg)	(Mlb)	(Mt)	(kg/t)	(Mkg)	(Mlb)	(Mt)	(kg/t)	(Mkg)	(Mlb)
Total	–	–	–	–	15.2	0.25	4	8	15.2	0.25	4	8



Moab Khotsong Mine: Vaal Reef

Measured and Indicated Mineral Resource grade-tonnage curve

Top, Middle and Lower Mines

— Tonnage — Grade

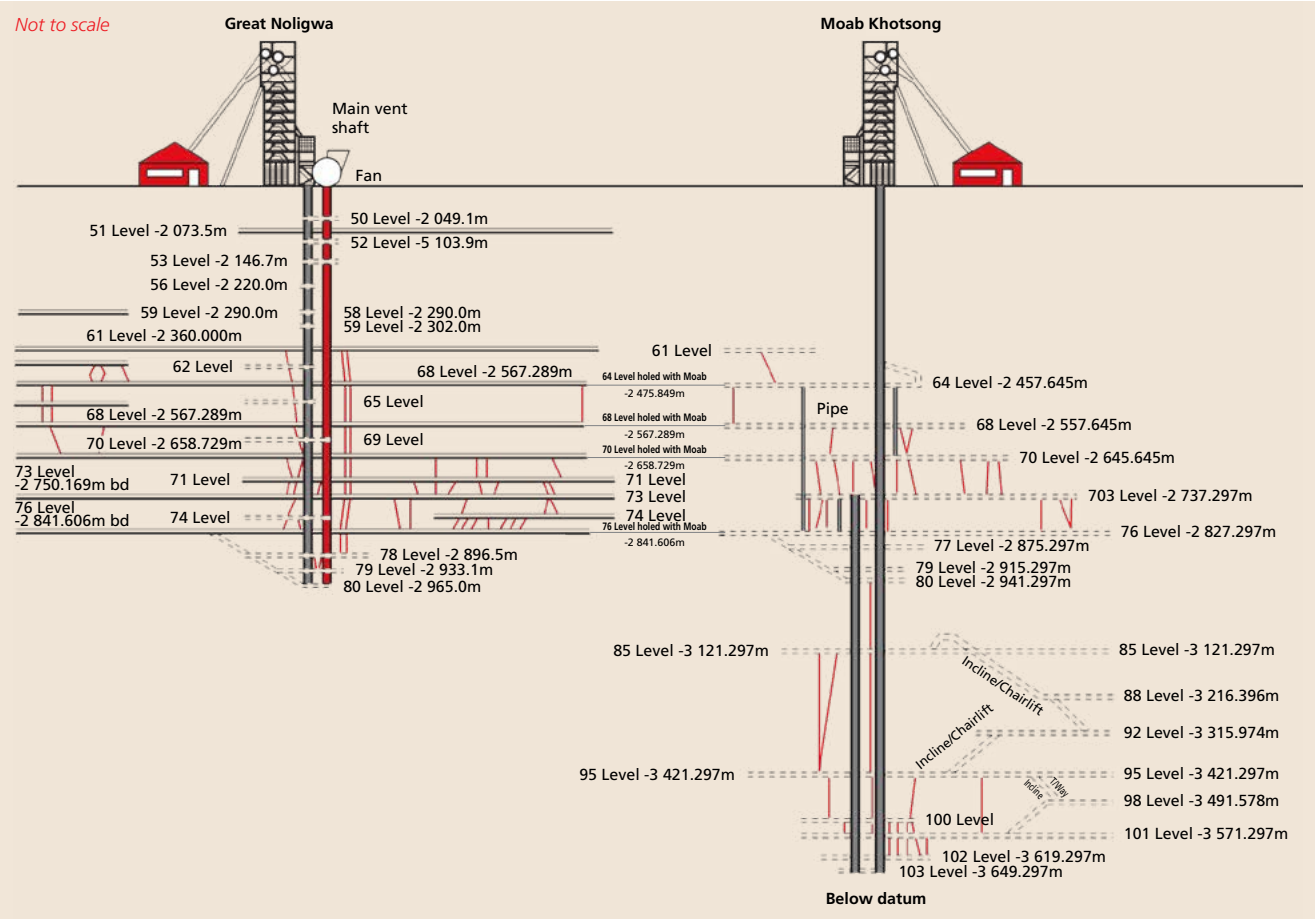
OPERATIONAL PERFORMANCE

Moab Khotsong: Key operating statistics

	Unit	FY21	FY20	FY19	FY18*
Operation					
Volumes milled	000t (metric)	**903**	746	970	327
	000t (imperial)	**995**	822	1 069	360
Gold produced	kg	**7 166**	6 592	7 928	3 296
	oz	**230 391**	211 938	254 891	105 969
Grade	g/t	**7.94**	8.84	8.17	10.08
	oz/t	**0.232**	0.258	0.238	0.294
Development					
Total metres (excluding capital metres)		**6 981**	8 815	10 472	9 527
Reef metres		**1 144**	1 173	1 202	1 328
Capital metres		**2 070**	1 363	1 432	380
Financial					
Average gold price received	R/kg	**852 392**	736 533	573 522	528 387
	US$/oz	**1 722**	1 463	1 258	1 279
Capital expenditure	Rm	**633**	498	559	173
	US$m	**41**	32	39	13
Cash operating cost	R/kg	**536 710**	497 953	399 414	314 526
	US$/oz	**1 084**	989	876	761
All-in sustaining cost	R/kg	**626 795**	566 942	477 581	420 286
	US$/oz	**1 266**	1 126	1 048	1 017

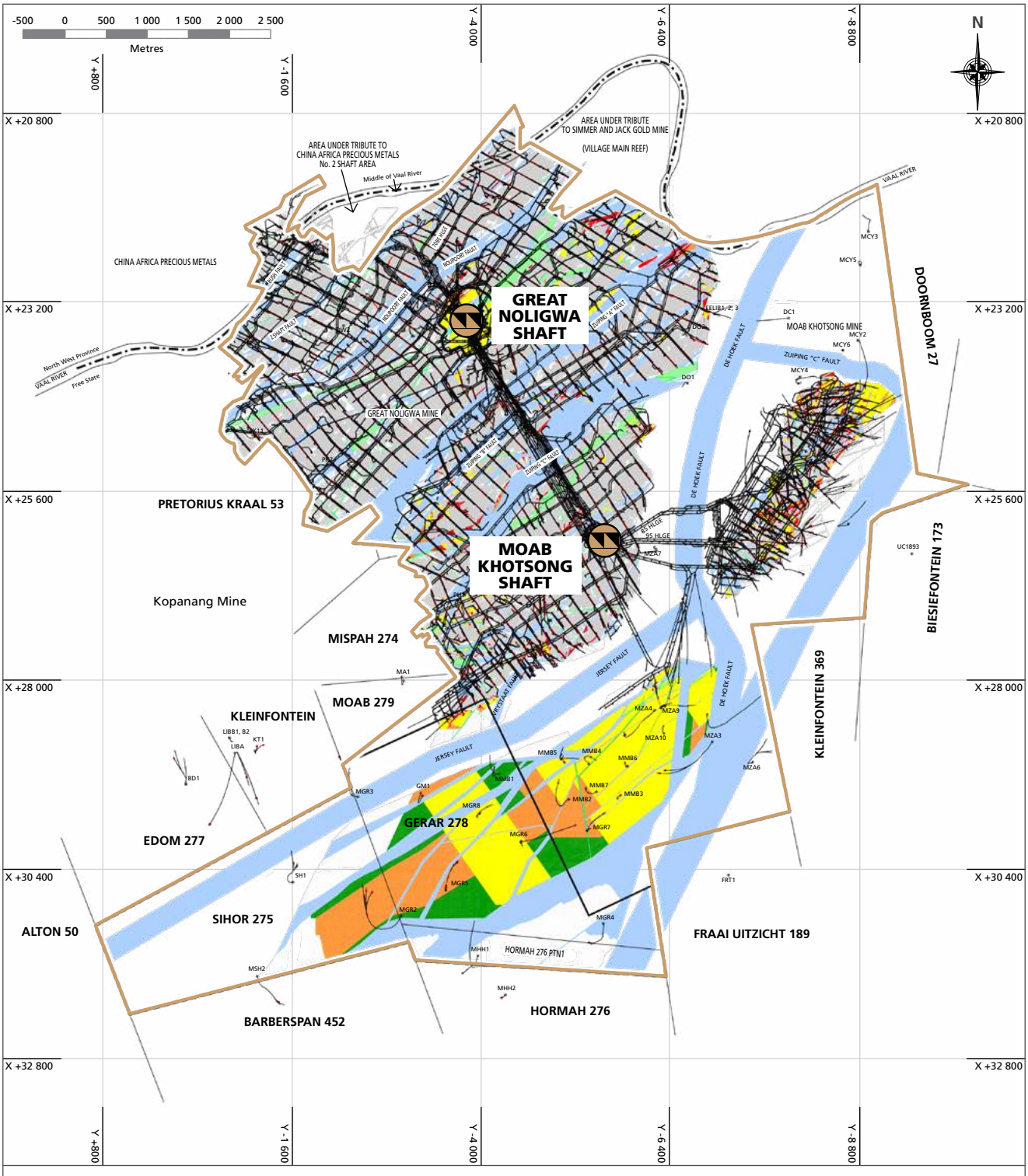
** Moab Khotsong was acquired on 1 March 2018. The FY18 data is for the four months from 1 March 2018 to end June 2018.*

Moab Khotsong: Schematic of shaft and mining layout of the Moab Khotsong and Great Noligwa shafts

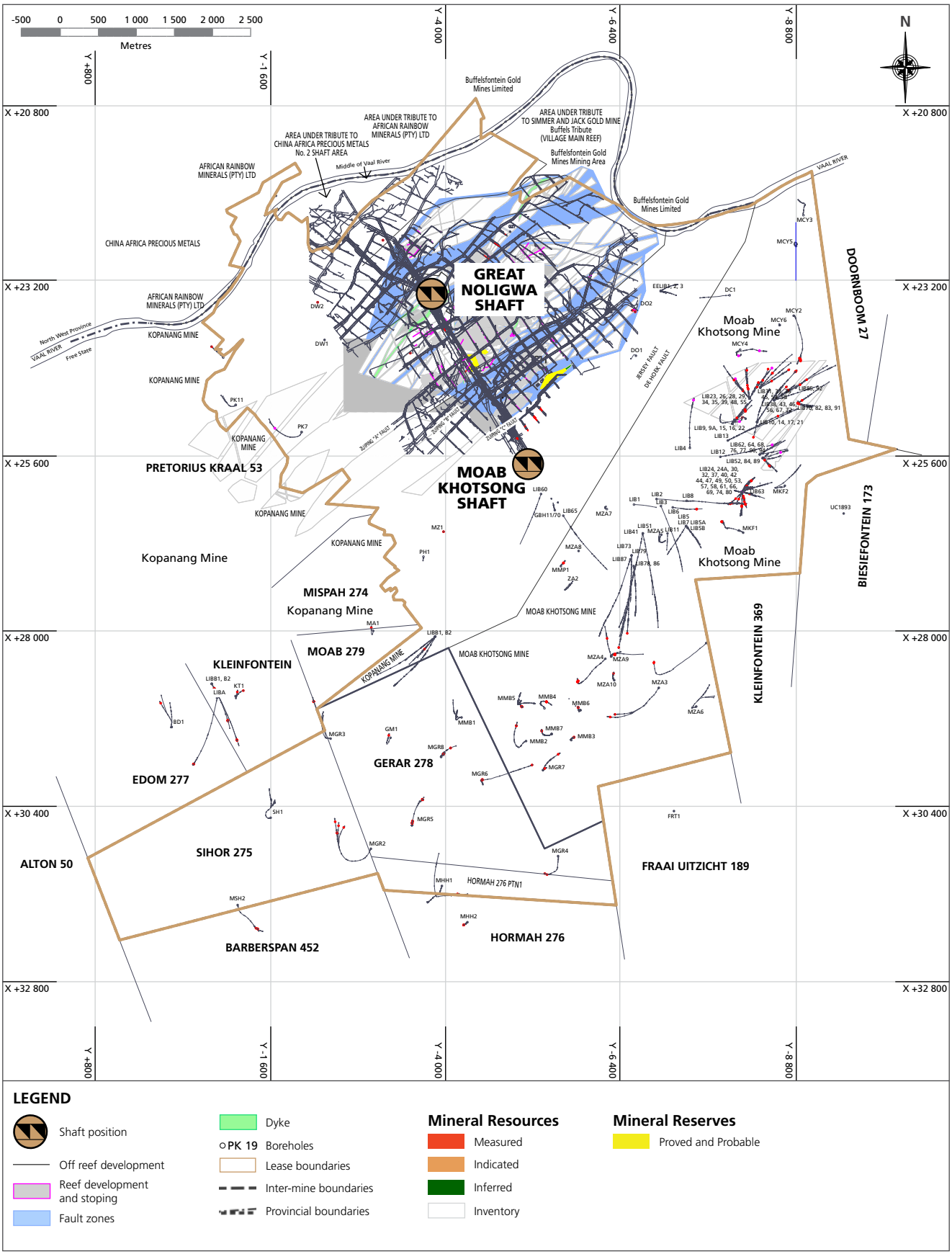


SOUTH AFRICA – KLERKSDORP GOLDFIELD **MOAB KHOTSONG** continued

Great Noligwa and Moab Khotsong operations – Vaal Reef: Mineral Resources and Mineral Reserves



Great Noligwa and Moab Khotsong operations – C Reef



MINERAL RESOURCES AND MINERAL RESERVES BY OPERATION

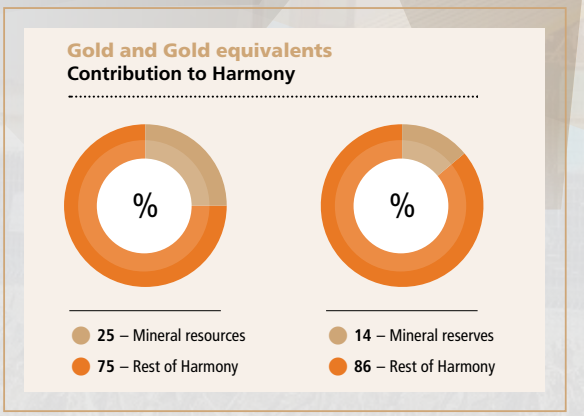
Free State	82 – 114
Tshepong Operations	86
Bambanani	92
Joel	98
Masimong	104
Target 1	110

Mineral Resources (inclusive)

34.8Moz

Mineral Reserves

5.9Moz



FREE STATE

Harmony has five operating entities and six operating underground shafts in the Free State. As at 30 June 2021, their combined estimated Mineral Resource (inclusive) was 34.8Moz and the combined estimated Mineral Reserve, 5.9Moz.

LOCATION OF FREE STATE OPERATIONS

Harmony has five underground mining operations in the Free State located in the south-western corner of the Witwatersrand Basin, between the towns of Allanridge, Welkom, Theunissen and Virginia. These operations are as follows:

Joel, the most southerly of the gold mines in the Harmony stable, is situated some 40km south of Welkom, 30km south-east of Virginia and 20km north of Theunissen. The mine has a common boundary with Sibanye-Stillwater's Beatrix gold mine to the west.

Bambanani is 10km south-east of Welkom. The Bambanani East shaft is bound to the west by Bambanani West shaft, to the north by President Steyn 2 shaft and to the south-east by Unisel.

Masimong is located on the north-eastern side of the De Bron Fault, approximately 12km east of Welkom and 10km north of Virginia. It is bounded to the south by Masimong 4 shaft and Saaiplaas 3 shaft.

Tshepong Operations comprises:

- Phakisa section, which is located north-west of Masimong 5 shaft, between the town of Odendaalsrus and the city of Welkom. It is some 13km north of Welkom and is bounded to the south by Eland shaft, to the west by Nyala shaft and to the north by Tshepong shaft
- Tshepong section, to the north of Phakisa, is between the town of Odendaalsrus and the township of Kutloanong, some 20km north of Welkom. It is bounded to the north by the dormant Jeanette mine, to the south and east by the Phakisa shaft, and to the south-west by Nyala shaft.

Target 1, the most northerly of Harmony's mines in the Free State, is situated some 30km north of the town of Welkom. Target 3, to the south of Target 1, is on care and maintenance.

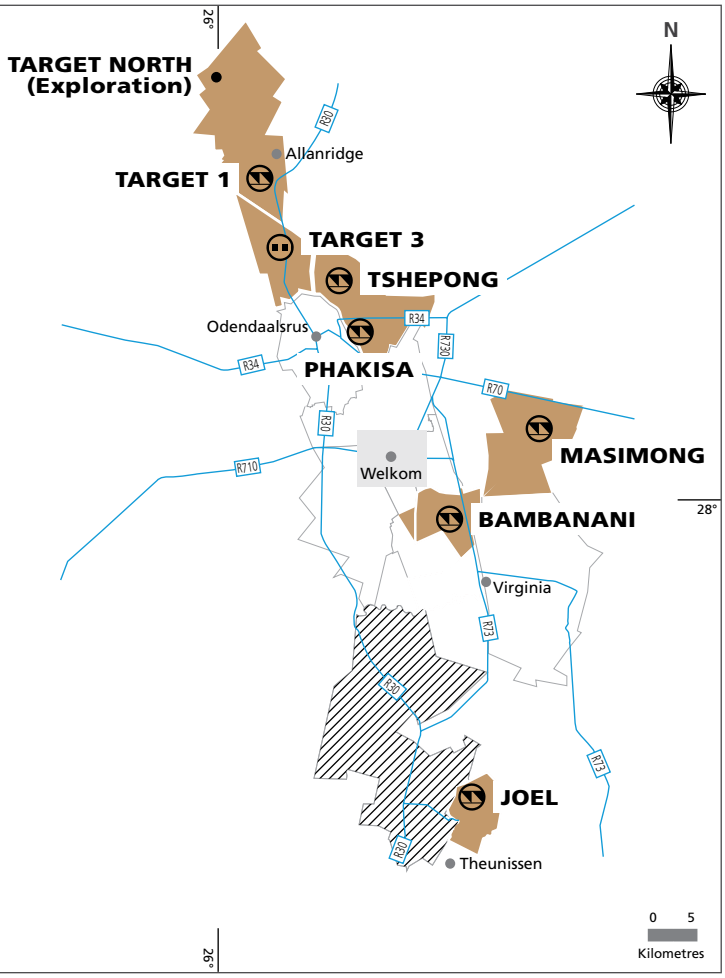
Free State Operations – Locality

Free State operations

	Latitude	Longitude
Target 1	27°45'42.59"S	26°38'24.92"E
Target 3	27°49'42.93"S	26°38'29.27"E
Tshepong	27°51'56.45"S	26°42'45.15"E
Phakisa	27°54'1.27"S	26°43'30.05"E
Masimong	27°58'23.93"S	26°52'39.41"E
Bambanani	28°2'28.24"S	26°48'9.13"E
Joel	28°16'17.19"S	26°48'57.97"E

LEGEND

- Location of operating shafts
- Free State operations
- Neighbouring mines
- Care and maintenance



Processing plants in the Free State

Harmony has four gold processing plants in the Free State:

- Harmony One, which processes the ore mined at Tshepong operations, Bambanani, Masimong and Joel. Harmony One plant is a carbon-in-leach (CIL) plant with a processing capacity of 390t a month.
- Target plant, which has a monthly capacity of 105 000t
- Central plant, which has capacity to retreat 300 000t of tailings a month
- Saaiplaas plant which retreats tailings for the Phoenix (Tswelopele beneficiation) operation has a monthly capacity of 500 000t.

All of these plants, except Saaiplaas, have received their certification in terms of the International Cyanide Management Code for the manufacture, transport, and use of cyanide in the production of gold (Cyanide Code).

Regional geology of the Free State goldfield

The Witwatersrand Basin, situated on the Kaapvaal Craton, has been filled by a 6km thick succession of sedimentary rocks, which extends laterally for hundreds of kilometres. Our Free State mining operations exploit the Basal, B, Elsburg, Dreyerskuil and Beatrix reefs.

The Free State goldfield is divided into two sections, cut by the north-south striking De Bron fault. This major structure has a downward vertical displacement to the west of about 1 500m in the region of Bambanani, as well as a dextral shift of 4km. This known lateral shift allows a reconstruction of the orebodies to the west and east of the De Bron Fault. Several other major faults, such as the Homestead fault, lie parallel to the De Bron fault.

To the west of the De Bron fault, current operating mines are Target, Tshepong, Phakisa, Bambanani and Joel. Dips of the reef are mostly towards the east, averaging 30 degrees but become steeper approaching the De Bron fault. To the east of the fault lies the Masimong Mine. The reefs occurring here mostly dip towards the west at 20 degrees, although Masimong is structurally complex and dips of up to 40 degrees have been measured. Between these two blocks lies the uplifted Horst block of West Rand group sediments with no reef preserved.

The western margin area is bound by synclines and reverse thrust 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.

SOUTH AFRICA – FREE STATE continued

Most of the Mineral Resource tends to be concentrated in reef bands located on one or two distinct unconformities. A minor portion of the Mineral Resource is located on other unconformities. Mining is mostly deep-level underground mining, exploiting the narrow, generally shallow dipping tabular reefs.

The Basal Reef is the most common reef horizon and is mined at all shafts except Target 1 and Joel. It varies from a single pebble lag to channels of more than 2m thick. It is commonly overlain by shale, which thickens northwards. Tshepong section has resorted to undercutting in its mining panels to reduce the effect of shale dilution.

The B Reef is a highly channelised orebody located 140m stratigraphically above the Basal Reef. Because of its erratic nature, it has only been mined at Masimong, Tshepong, and the Target 2 and Target 3 shafts. Within the channels, grades are excellent, but this reduces to almost nothing outside the channels. Consequently, these shafts have undertaken extensive exploration to locate these pay channels.

Joel Mine, 30km south of Welkom, is the only Harmony Free State operation to mine the Beatrix Reef.

The Target operation is at the northern extent of the Free State goldfields, some 20km north of Welkom. The reefs currently exploited here are the Elsburg-Dreyerskuil conglomerates, which form a wedge-shaped stacked package, comprising 35 separate reef horizons, often separated by quartzite beds. The Elsburg Reefs are truncated by an unconformity surface at the base of the overlying Dreyerskuil member. Below the sub-crop, the Elsburg Reefs dip steeply to the east, with dips becoming progressively shallower down dip. Close to the sub-outcrop, the thickness of the intervening quartzites reduces, resulting in the Elsburg Reefs coalescing to form composite reef packages that are exploited by massive mining techniques at Target. The Dreyerskuil Reefs also consists of stacked reefs dipping shallowly to the east. These reefs tend to be less numerous, but more laterally extensive than the underlying Elsburg Reefs.

FREE STATE STRATIGRAPHIC COLUMN

Group	Sub-group	Formation	Informal unit	Member
Central Rand Group	Turffontein	Eldorado	VS1	Uitkyk
			VS2	
			VS3	Van Den Heevers Rust
			VS4	Rosedale
			Eldorado Basal Reef VS5	
		Aandenk	EC1	Earls Court
			A Reef	
			Beatrix Reef Big Pebble Reef EC 2	
			EC 3/4	Spes Bona
			B Reef	
	Johannesburg	Dagbreek	ES 1	Upper Shale Marker
			ES 2/3	Leader Reef Zone
			Leader Reef	Leader Reef
		Harmony	Grey Glassy Leader Quartzite EL1/2 Waxy Brown Leader Quartzite Middle Reef Khaki Shale	Leader Quartzite
			Basal Reef	Basal Reef
		Welkom	UF1-UF3	Upper Footwall
			UF4	Intermediate Reef
		St Helena	MF1-MF4	Middle Footwall
		Virginia	LF1-LF6	Lower Footwall
			Commanage Reef Ada May or Beisa Reef	Ada May/Beisa Reef
West Rand Group	Jeppestown	Roodepoort		Palmietkuil

Tshepong Operations
Phakisa Shaft

Basal Reef here are two facies of Basal Reef on Phakisa shaft, namely the Lower Cycle Black Chert facies in the North trending from Tshepong, and the Upper Cycle Black Chert facies in the South coming from Eland.

The Lower Cycle Black Chert facies consists of an oligomictic matrix-supported small pebble conglomerate lag of about 1cm to 5cm thick. The conglomerate consists of rounded, unsorted quartz and chert clasts, with fine disseminated interstitial pyrite and a carbon contact. Above the conglomerate is a grey fine-grained siliceous barren Internal Basal Quartzite, which can contain grit bands and pyrite stringers. At the top of the reef is a granular textured often gritty quartzite with fine pyrite stringers about 10cm thick. Mineralisation is associated with the carbon contact and conglomerate, although some concentration is also found just below the upper reef contact. The reef package ranges from 100cm to 160cm thick.

The Upper Cycle Black Chert facies is a slightly polygomictic matrix-supported small to medium pebble conglomerate which can reach about 10cm thick. It does not have such a well-developed carbon contact as the Lower Cycle facies, and is often of lower grade. The feature that defines the Upper Cycle facies is the presence of fine scattered yellow shale specks and grits. The same Internal Basal Quartzite and granular top reef bands are found above the conglomerate contact. The reef package ranges from 30cm to 80cm thick.

Basil Reef.

Tshepong Shaft

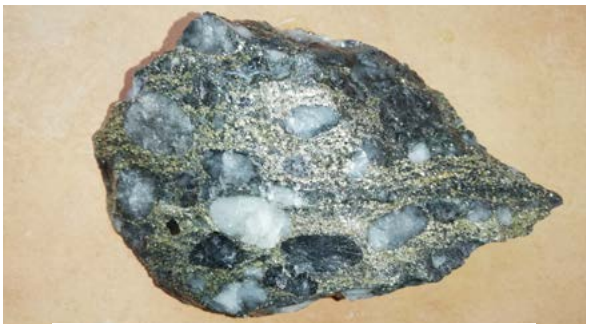
Well developed and mineralized B reef(B1) conglomerate Oligomictic conglomerate with large to very large smoky quarts pebbles. Matrix mainly consists of carbon and primary sulphides.

Visible gold is indicated and is generally associated with B1 facies (10cm to 40cm channel width) as well as B1 lag facies (channel width <10cm).

B Reef.

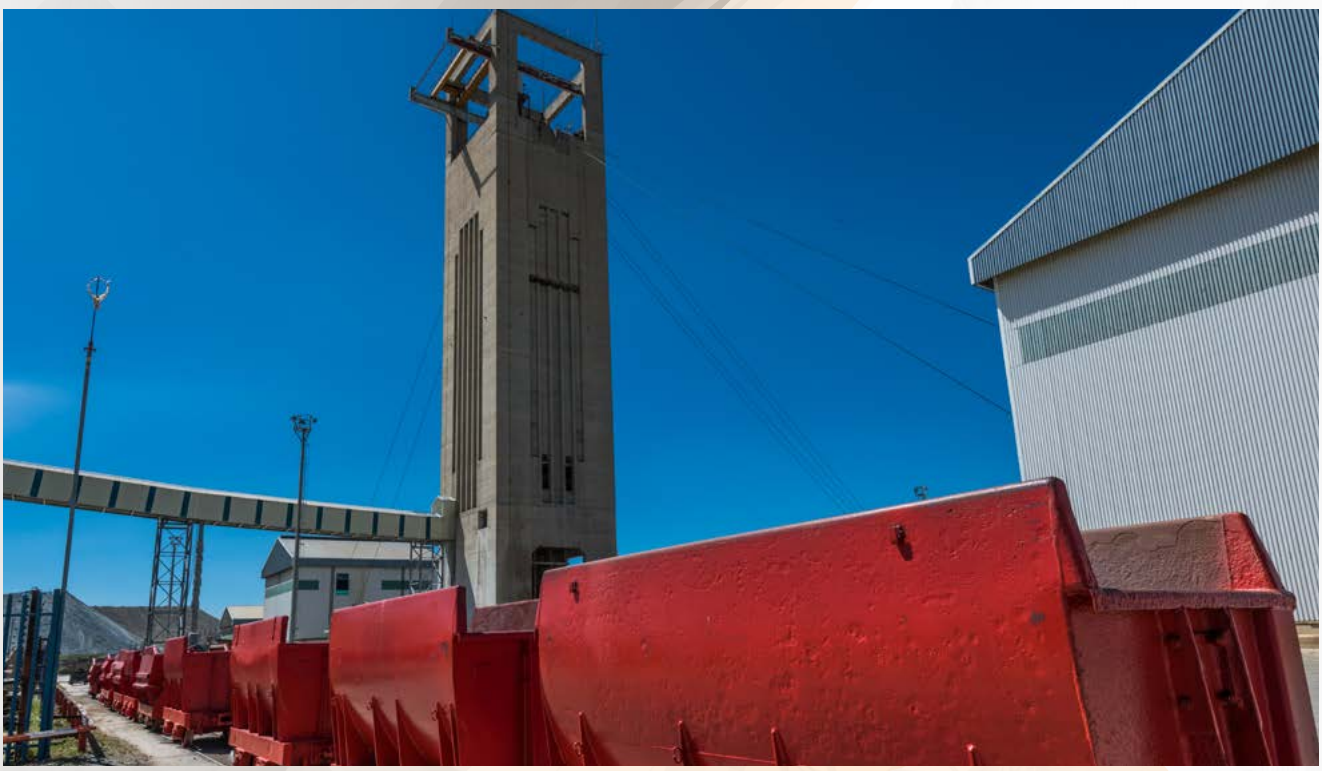
Joel Reef samples

Beatrix Reef with argillaceous matrix and buckshots.



Beatrix Reef with argillaceous matrix and pyrite stringers.

TSHEPONG OPERATIONS



Tshepong shaft.

Mineral Resources (inclusive)

25.6Moz

Mineral Reserves

4.4Moz

Detailed Mineral Resource and Mineral Reserve estimates are presented in this section.

Following the successful conclusion of the study to investigate their integration, the Tshepong and Phakisa sections were consolidated as a single entity, the Tshepong operations, in FY17. The integration and consolidation of these two mines will enable Harmony to optimise existing synergies, reduce costs and make better use of Tshepong's underused infrastructure.

History

The feasibility study for the initial development of the Tshepong section was concluded in 1984. Work to establish the site started in September 1984 and by 1986 shaft sinking was underway. Sinking and equipping of the shaft were completed in 1991, with the mine being commissioned in November 1991.

The Phakisa section began as a project in October 1993, with shaft sinking commencing in February 1994. It was formerly known as Free State Geduld 4, Freddies 4 and Tshepong South. In 1995, shaft sinking was halted on 59 level due to the low gold price prevailing at that time. Subsequently, the financial climate improved and operations resumed in September 1996. Sinking was then completed to the station brow on 75 level. Low gold prices again resulted in the shaft being mothballed in the last quarter of 1999. In January 2002, Harmony acquired a stake in Phakisa as part of the

Freegold acquisition from the then AngloGold Limited, following which the operation was acquired in full in September 2003. Sinking and equipping of the shaft to a depth of 2 427m was completed in 2006.

Nature of the operation

The Tshepong section is a mature underground operation mining at moderate depths of between 1 600m and 2 400m below surface. The bulk of mining currently takes place in the decline (Sub 66) and north-eastern portions of the lease area.

The Phakisa section is a moderate to deep-level conventional underground operation which now, together with the Tshepong section, makes up the Tshepong operations. Currently, mining activity takes place largely in the north and south of the mine lease area. However, over the next three years the focus will shift solely to the south of the lease area.

Geology

The principal gold-bearing orebody is the stratiform and strata-bound Basal Reef (known as the Basal Reef Zone or BRZ). This unit comprises a thin conglomerate at the base of the BRZ, overlain by clean "placer" quartzites. The Basal Reef is underlain by a thick series of siliceous and argillaceous quartzites comprising the Welkom Formation and overlain by shales and quartzites of the Harmony Formation, both of the Johannesburg sub-group of the Central Rand Group. Although not apparent within the mine lease area, the Basal Reef sits unconformably on the Welkom Formation.

In the Phakisa section, the reef dips towards the east at 25° in the north and up to 45° in the south. The lower cycle black chert facies predominates in the north with a north-west south-east value trend. The reef consists of an oligomictic small pebble matrix-supported conglomerate lag with fly-speck carbon contact. The rest of the reef package constitutes barren siliceous fine-grained reef quartzite. The entire reef package reaches up to 160cm thick and is overlain by 1cm to 30cm of lower khaki shale. This in turn is overlain by the approximately 3-4m thick waxy brown leader quartzite, above which lies the 3-4m thick upper khaki shale.

The upper cycle black chert facies Basal Reef prevails in the south of the lease area, and consists of a slightly polymictic (yellow shale specks present), matrix-supported medium-pebble conglomerate with a more gradational contact absent of carbon where mineralisation is associated with fine disseminated and buck-shot pyrite. The conglomerate is slightly thicker compared to the Lower Cycle, but is also overlain by barren reef quartzite, the entire package being characteristically up to only 40cm thick. The lower khaki shale is up to 1m thicker.

The Central Rand Group itself is overlain in turn by lavas and sediments of the Ventersdorp System and the more recent sediments of the Karoo Group.

The B Reef occurs approximately 150m stratigraphically above the Basal Reef (or approximately two production working levels). Consequently, the B Reef is not normally intersected in either Basal Reef development or routine diamond drilling.

The lowest unit is a basal lag (Zone A), sitting on the underlying Doornkop Quartzite Formation. Where this unit is developed (or preserved), it may be highly mineralised oligomictic or polymictic conglomerate, with visible gold, buckshot pyrite and carbon mineralisation. This unit may carry gold values of many thousands of cmg/t and represents a potentially rewarding exploration target.

The unit overlying the Zone A may be either Zone B, which is comprised of a mildly erosive pebbly quartzite formation, and/or the stratigraphically younger Zone C, which is a polymictic conglomerate with low values which is also erosional into the underlying A and B zones.

Legal aspects and tenure

The current mining right for the Tshepong operations encompasses an area of 10 798.74ha. The ARMgold/Harmony Freegold joint venture holds several mining rights in the Free State goldfields which have been successfully converted and executed as new order mining rights, some of which are still to be registered at the Mineral and Petroleum Resources Titles Office (MPRTO). The mining right for Tshepong operations, FS30/5/1/284MR, is valid from 11 December 2007 to 10 December 2029.

Mining method

At the Tshepong section, the reef horizon is accessed via conventional grid development. The shaft's primary economic reef horizon is the Basal Reef that is extracted by undercut mining, leaving a quartzite beam in the hangingwall to ensure the stability of the overlaying shale. Minor amounts of B Reef that do not exceed 18% of the on-reef area mined annually are extracted via open stoping mining. The B Reef is located approximately 140m stratigraphically above the Basal Reef, necessitating separate infrastructure (ie footwall development) from that for the Basal Reef. The presence of khaki shale approximately 6m thick above the Basal Reef strains the footwall development rates of the B Reef, requiring the installation of ring sets for the first 25m of development. The Tshepong section has significant reserves to maintain a long-term life, however, extraction of ore from pillars will become more important as the life of mine progresses, but volumetrically these reserves are not significant.

At the Phakisa section, the Basal Reef is mined conventionally from a single shaft barrel reaching a depth of 2 600m below collar. The reef horizon is accessed by means of conventional grid development and is extracted as an open mining operation to the south of the 69 raise line, but undercut mining began as the mining continued to the north. Phakisa reached full production in October 2016. Pillar crews are also planned as the life of mine progresses to ensure depletion of the pillar reserves within the life-of-mine time frame.

Mineral processing

Stoping ore and development rock from the Tshepong section are hoisted and processed separately above 66 level. Currently, below 66 level, stoping and development rock is hoisted and processed as one product.

At the Phakisa section, stoping ore and development rock are hoisted and processed separately. The reef, or stoping ore, is milled and processed at Harmony One plant with gold recovered by means of cyanide leaching.

Tshepong operations shares the Harmony One plant with three other Harmony mines and four Harmony waste rock dumps. The plant's design capacity exceeds the maximum planned production from these sources. Gold is recovered by means of gold cyanide leaching.

Infrastructure

The surface and underground infrastructure for the Tshepong section as well as the power and water supplies available exceed planned peak production requirements. Broken rock handling above 66 level is track-bound, transferred to a number of inter-level sub-vertical transfer systems that gravity feeds to the main silos on 68 level. The broken rock handling below 66 level is track-bound, transferred

to a decline belt system that feeds to the silos on 66 level from where the rock is transferred by track to the main inter-level sub-vertical transfer system on 66 level. The rock is hoisted to surface through the main shaft. From the shaft the rock is transported to the processing plant by train.

At the Phakisa section, surface and underground infrastructure as well as the power and water services available exceed planned peak life-of-mine production requirements. Broken rock handling on all levels is track-bound. Several inter-level sub-vertical transfer systems feed the main silos on 77 level. From 77 level, the rock is hoisted to 55 level where a rail-veyor system transports the rock from Phakisa to the Nyala shaft, from where the rock is hoisted to surface by means of the koepe winder, and then transported to the processing plant by train.

Mineral resource estimation

The Datamine valuation model uses all the underground chip sampling data points and boreholes values drilled in the Phakisa lease area. Geozones are determined based on reef facies types and value trends. The Phakisa and Tshepong sections share 13 geozones in the Tshepong operations mega-mine. The geozones are capped at an optimal percentile using a system called the quantile process to avoid over-estimation due to high outlying values. Based on confidence levels for geostatistical data, valuation is by means of a computer-generated block model as follows:

- Measured blocks 30m x 30m grid
- Indicated blocks 60m x 60m grid
- Inferred blocks 120m x 120m grid.

The block model is then digitally transferred to the digital environment for valuation. The entire lease area is blocked and cut against major structure, geozones and haloes. The blocks are evaluated by importing the valuation model from Datamine into Deswik, and applying the kriging method in the valuation browser of Deswik.

Mineral resources have been estimated on the basis of geoscientific knowledge with input from the ore reserve manager, geologists and geostatistical staff. The mine's Mineral Resources are categorised, blocked-out and ascribed an estimated value. Computerised geostatistical estimation processes are used.

Environmental impact

The Tshepong operations strive to prevent pollution, or otherwise minimise, mitigate and remediate harmful effects of our operations on the environment and hence maintain its ISO 14001 certification. We are also committed to ensuring compliance with applicable environmental legislation. A key focus is the development of integrated water and waste management plans. These plans will be pivotal to the overall management of water and will indicate how we can better use and re-use our water. Another area of focus is promoting awareness and training around green environmental management in general.

There has been a notable improvement in terms of waste management and the storage of potential contaminants. However, construction of a surface receiving store is a possible solution to the management and control of chemical spills and housekeeping issues.

MATERIAL RISKS

Material risks that may impact the Tshepong operations' Mineral Resource and Reserve statements are:

Tshepong section

Significant risks	Remedial action
• Orebody complexity • Ventilation of decline area.	• Extensive exploration drilling and increased development to improve the execution of the production plan • Installation of booster fans on 75 level.

Phakisa section

Significant risks	Remedial action
• Logistics • Ventilation • Mining flexibility.	• Upgrade of Koepe rock winder and rail-veyor • Completion of Alimac hole and ice dam on 55 level and holing to the Tshepong section on 75 level • Increased development and more equipping crews in the south area of the mine.

COMPETENT PERSON

Ore Reserve manager – Tshepong section

Andrew Murray Louw
BSc Hons (Geohydrology), SACNASP
25 years' relevant experience.

Ore Reserve manager – Phakisa section

Bothepha Phetlhu
BTech (Geology), MEng, SACNASP
18 years' relevant experience.

TSHEPONG OPERATIONS

Gold – Mineral Resource estimates at 30 June 2021 (inclusive)

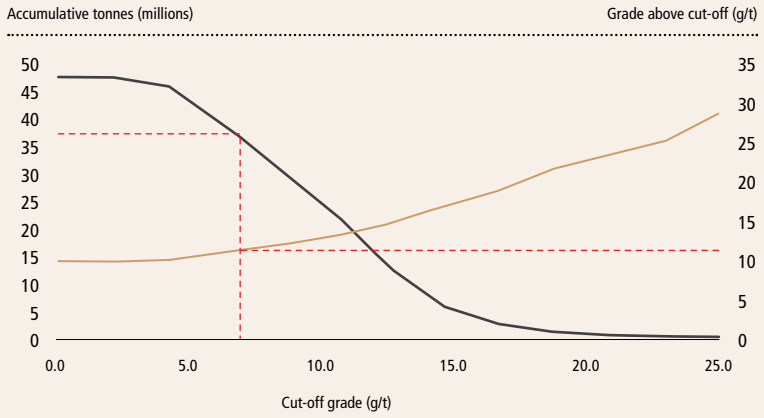
	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Tshepong operations	24.9	11.47	286	9 195	12.3	10.61	130	4 191	35.3	10.76	380	12 210	72.5	10.98	796	25 596

Modifying factors

Tshepong Operations	MCF (%)	SW (cm)	MW (cm)	PRF (%)	Cut-off (cmg/t)
2020	74	113	135	95	677
2021	73	113	137	95	671

Gold – Mineral Reserve estimates at 30 June 2021

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Tshepong operations	20.0	5.77	116	3 722	4.7	4.46	21	672	24.7	5.53	137	4 394



Tshepong Operations: Basal Reef Resource grade tonnage curve

Measured and Indicated Mineral Resource grade-tonnage curve

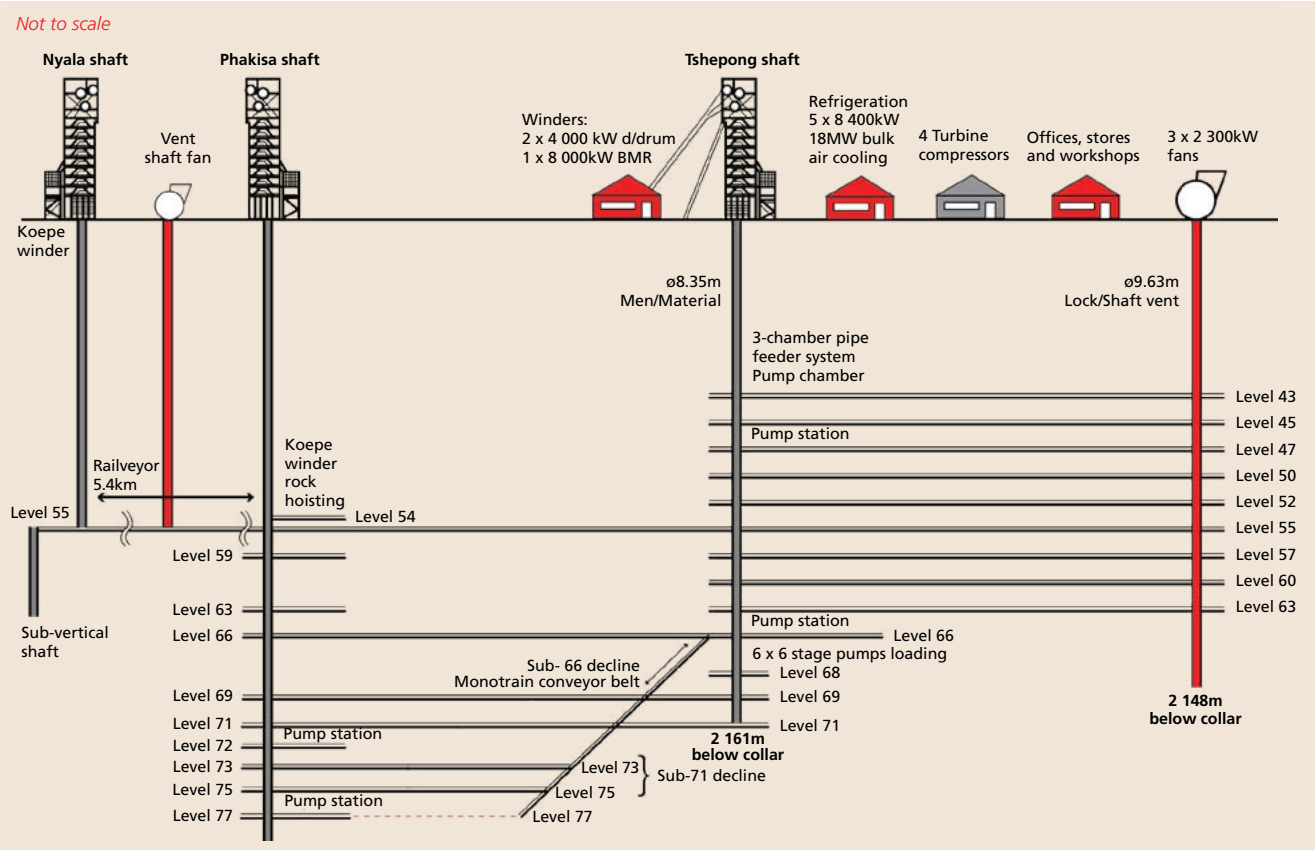
— Tonnage — Grade

OPERATIONAL PERFORMANCE

Tshepong Operations: Key operating statistics

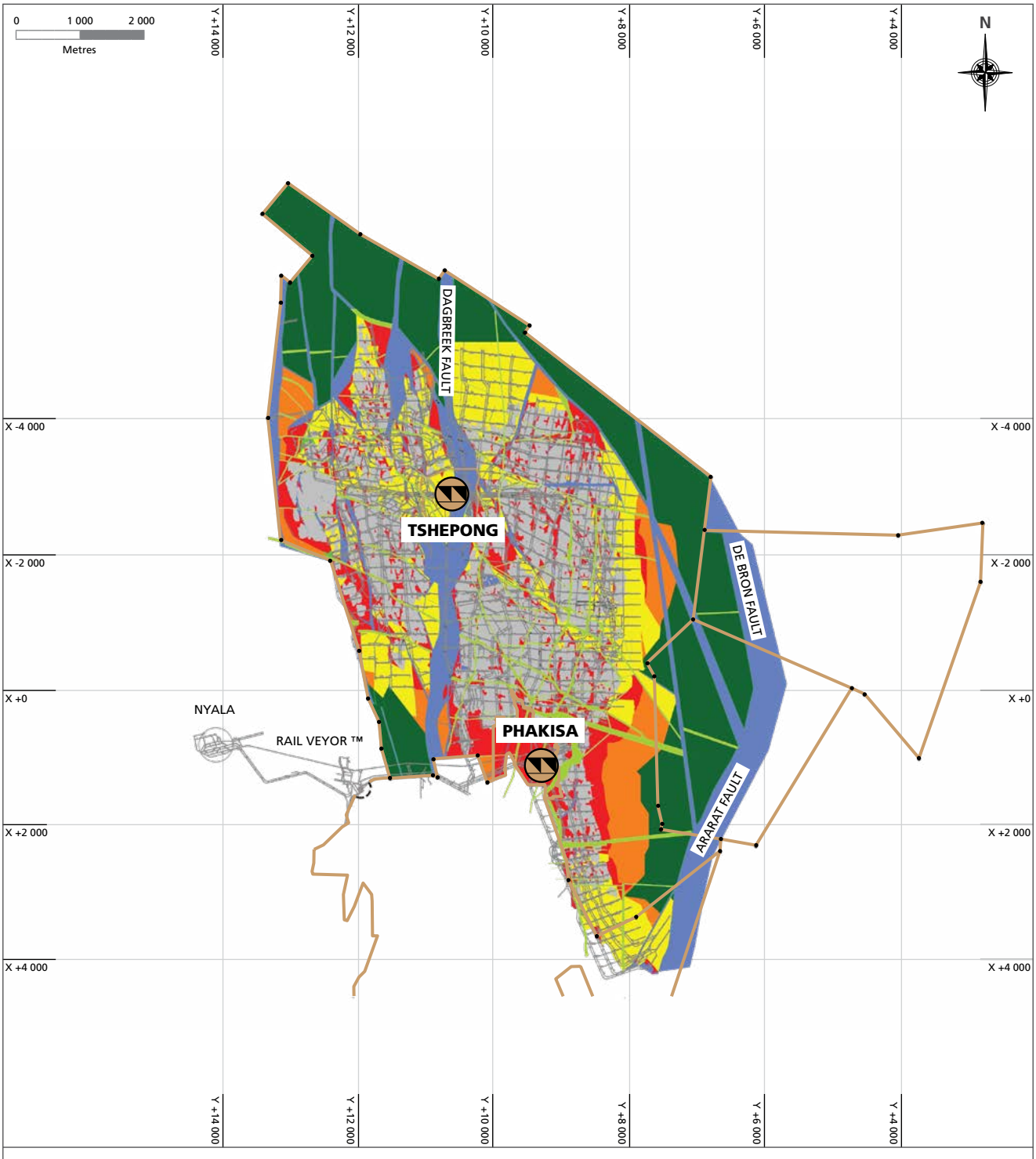
	Unit	FY21	FY20	FY19	FY18	FY17*
Operation						
Volumes milled	000t (metric)	**1 558**	1 417	1 612	1 716	1 695
	000t (imperial)	**1 718**	1 562	1 777	1 893	1 869
Gold produced	kg	**7 419**	7 293	7 967	9 394	8 828
	oz	**238 526**	234 475	256 146	302 026	283 827
Grade	g/t	**4.76**	5.15	4.94	5.47	5.21
	oz/t	**0.139**	0.150	0.144	0.16	0.152
Development						
Total metres (excluding capital metres)		**20 813**	17 551	22 450	23 089	19 462
Reef metres		**2 385**	3 131	3 323	3 159	3 028
Capital metres		**1 000**	140	809	588	599
Financial						
Average gold price received	R/kg	**845 031**	736 863	591 331	577 058	574 165
	US$/oz	**1 707**	1 463	1 297	1 397	1 314
Capital expenditure	Rm	**1 112**	930	1 130	1 008	717
	US$m	**72**	59	80	78	52
Cash operating cost	R/kg	**663 030**	583 018	503 033	407 575	416 493
	US$/oz	**1 339**	1 411	1 103	987	953
All-in sustaining cost	R/kg	**815 333**	713 202	636 281	514 537	507 368
	US$/oz	**1 647**	1 416	1 396	1 245	1 161

Tshepong Operations: Schematic of shaft and mining layout of the Nyala, Phakisa and Tshepong shafts



** Tshepong Operations, comprising the Phakisa and Tshepong sections, is reported as a single-operating entity from FY18. As these were reported separately in previous years, the historic data for the years FY16 to FY17 has been combined.*

Tshepong Operations – Basal Reef: Mineral Resources and Mineral Reserves



BAMBANANI

Bambanani shaft.

Mineral Resources (inclusive)

0.2Moz

Mineral Reserves

0.2Moz

Detailed Mineral Resource and Mineral Reserve estimates are presented in this section.

History

Shaft-sinking operations (by Anglo American Corporation) began at President Steyn 4 shaft in February 1969 and were completed, to a final depth of 2 365m below surface, in September 1971. The Basal Reef was intersected at a depth of 2 075m yielding 1 252cmg/t over 235.7cm. The sub-vertical shaft, sunk in the late 1970s to a depth of 3 328m below surface, came into production in 1982.

The shaft then became known as Freegold 1 East in 1997 when President Steyn was closed. In October 1998, the shaft became part of the then AngloGold and its name was changed again to Bambanani East. In January 2002, the shaft was sold to the Harmony/ARM consortium and, in October 2003, Harmony became the sole owner.

Geology

The Basal Reef is the predominant gold-bearing reef at Bambanani. The Steyn facies of the Basal Reef cover approximately 90% of Bambanani's mining lease area and overlays, with a very slight angular sub-conformity, the UF1 quartzite of the Welkom Formation. It is overlain by the khaki shale unit of the Harmony Formation in the north. To the south, it is overlain by the younger waxy brown leader quartzite, which erodes the khaki shale. The presence and thickness of the khaki shale may influence decisions to undercut the Basal Reef. While the reef's thickness may vary from a few centimetres to more than 10m, it is typically between 1m and 3m thick.

The Stuurmanspan Fault in the west and the De Bron-Vermeulenskraal Fault system in the east are bound to the Basal Reef at Bambanani. Both are northward-striking dextral extensional faults with significant westerly downthrows. The reef dips easterly and varies from 25 degrees in the west to 45 degrees in the east but, in places, local deformation against a fault leads to vertical reefs. Smaller faults break up the reef but are generally sub-parallel to the main structures.

Mineral rights, legal aspects and tenure

The Mine Call factor has been reduced from 96% to 85% for the remainder of the life of mine. This decision was taken due to the increase in seismic risk that occurs as the extraction percentage of the shaft pillar increases.

The current mining right encompasses an area of 2 355.85ha and was successfully converted, executed and registered as a new order mining right at the Mineral and Petroleum Resources Titles Office on 26 January 2008. The mining right FS30/5/1/2/2/83MR is valid from 11 December 2007 to 10 December 2029.

Mining methods and mine planning

Bambanani is in the final stages of its life of mine and mining is limited to the extraction of the shaft pillar. Mining of the shaft pillar is focused on mini longwalls on the north side and, centre of the pillar, it is separated by safety pillars that have been left along designated geological structures.

Most of the panels are mined on full width, leaving a reef beam of approximately 80cm in the hanging wall in order to build a beam to support the shale. The challenge remains to control the stoping width and the stability of the beam in a highly fractured and faulted environment with sill intrusions, a weak waxy-brown quartzite hanging wall above the shale being complicated by ball and pillow formations.

Backfill has been successfully introduced in all panels. The quality of installation has improved drastically as the crew has acquired knowledge and understanding of its underground application. The focus is currently on improving the volume of backfill placed versus the square metres mined, as well as quality control, which will include regular testing of the backfill product.

The seismic system is operational and the seismic data gathered is used and applied in the design of the mining sequence. Seismic responses are also monitored and correlated with monthly production data to establish the relationship between volumes mined and the seismic response.

Mineral processing

As Bambanani does not have its own mineral processing plant, the mine's ore is transported 7km by rail to the Harmony One plant for processing. This is a centrally located plant that is used by other Harmony mines in the Free State.

Infrastructure

Work on the shaft pillar continues at levels 66, 69, 71 and 73. Ore is transported via a decline system – from 58 to 75 levels – on the northern side of the shaft pillar, to Bambanani West, from where it is hoisted to surface. The shafts are linked by cross-tramming at 60 level.

Mineral Resource estimation

The estimation method used for local measured estimates on the shaft is ordinary kriging and for local indicated and inferred estimates, ordinary kriging. The orientations and ranges of each geozone's semi-variogram are used to determine the kriging search parameters, which are optimised. Estimates are generally kriged into 10m x 10m blocks for the measured resources from the point support data.

Environmental impact

Bambanani's environmental aspects and impacts are managed according to its environmental management programme, as approved by the Department of Mineral Resources, in terms of the Mineral and Petroleum Resources Development Act (MPRDA). All environmental aspects and impacts emanating from mining activities are documented in the approved environmental management programme report and the environmental aspect register, as required by the MPRDA and ISO 14001:2004 standard, and are managed accordingly.

Annual performance monitoring and audits are conducted by the Department of Mineral Resources to verify compliance with the following legislation:

- Mine Health and Safety Act 29 of 1996
- National Water Act 36 of 1998
- National Environmental Management Act 107 of 1998
- Mineral and Petroleum Resources Development Act 28 of 2002.

MATERIAL RISKS

Material risks that may impact Bambanani's Mineral Resource and Reserve Statement.

Significant risks	Remedial action
• Seismicity	• Support design and monitoring system

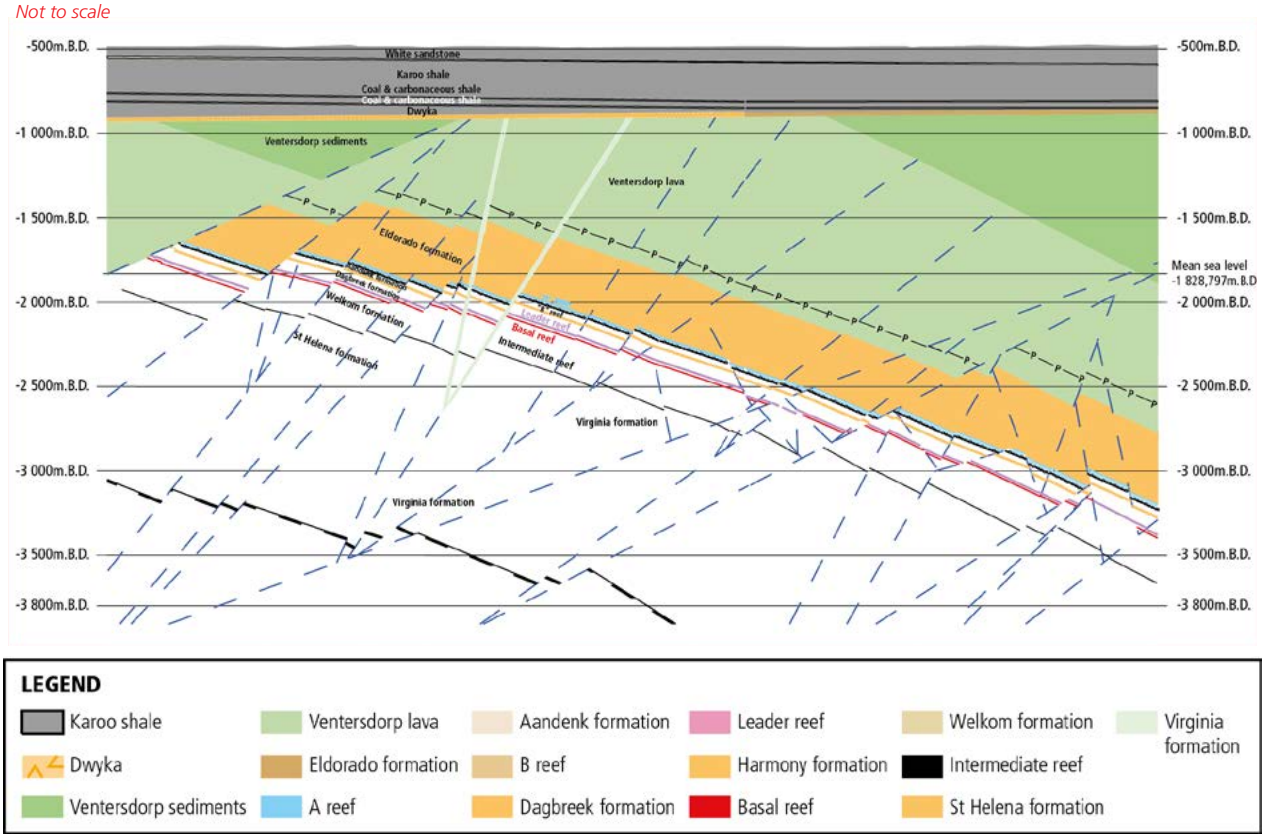
COMPETENT PERSON

Ore Reserve manager

Fhulufhelo Olga Muthelo
BSc (Hons), Postgraduate Diploma in Engineering, SACNASP
14 years' experience in Witwatersrand gold mining.

SOUTH AFRICA – FREE STATE **BAMBANANI** continued

Not to scale



Bambanani geological section looking north.

BAMBANANI

Gold – Mineral Resource estimates at 30 June 2021 (inclusive)

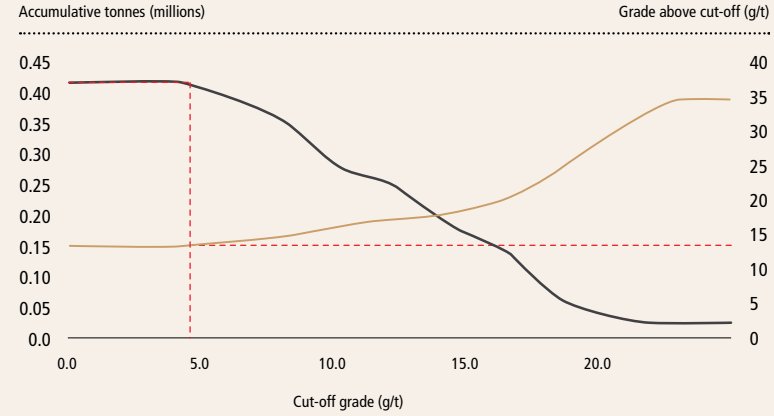
	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Bambanani	0.4	13.48	6	181	–	–	–	–	–	–	–	–	0.4	13.48	6	181

Modifying factors

Bambanani	MCF (%)	SW (cm)	MW (cm)	PRF (%)	Cut-off (cmg/t)
2020	95	203	241	95	2 303
2021	85	210	246	96	2 602

Gold – Mineral Reserve estimates at 30 June 2021

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Bambanani	0.6	8.48	5	152	–	–	–	–	0.6	8.48	5	152



Bambanani Mine: Basal Reef

Measured and Indicated Mineral Resource grade-tonnage curve

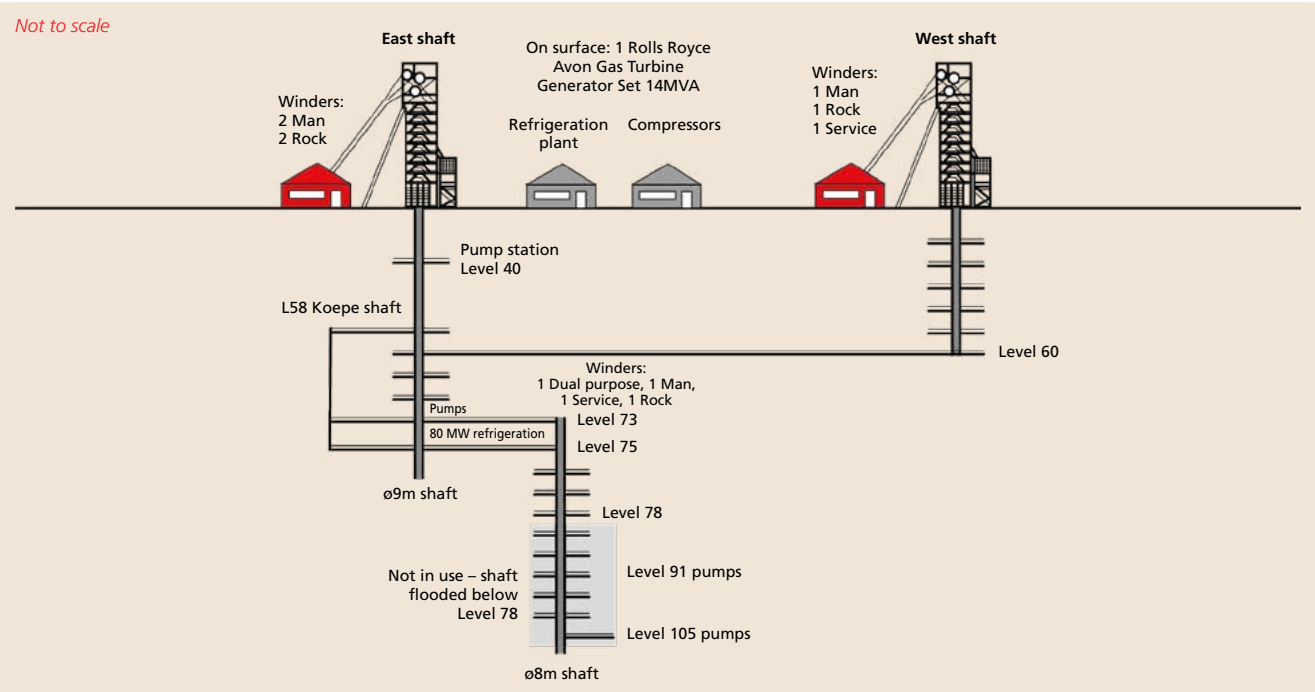
— Tonnage — Grade

OPERATIONAL PERFORMANCE

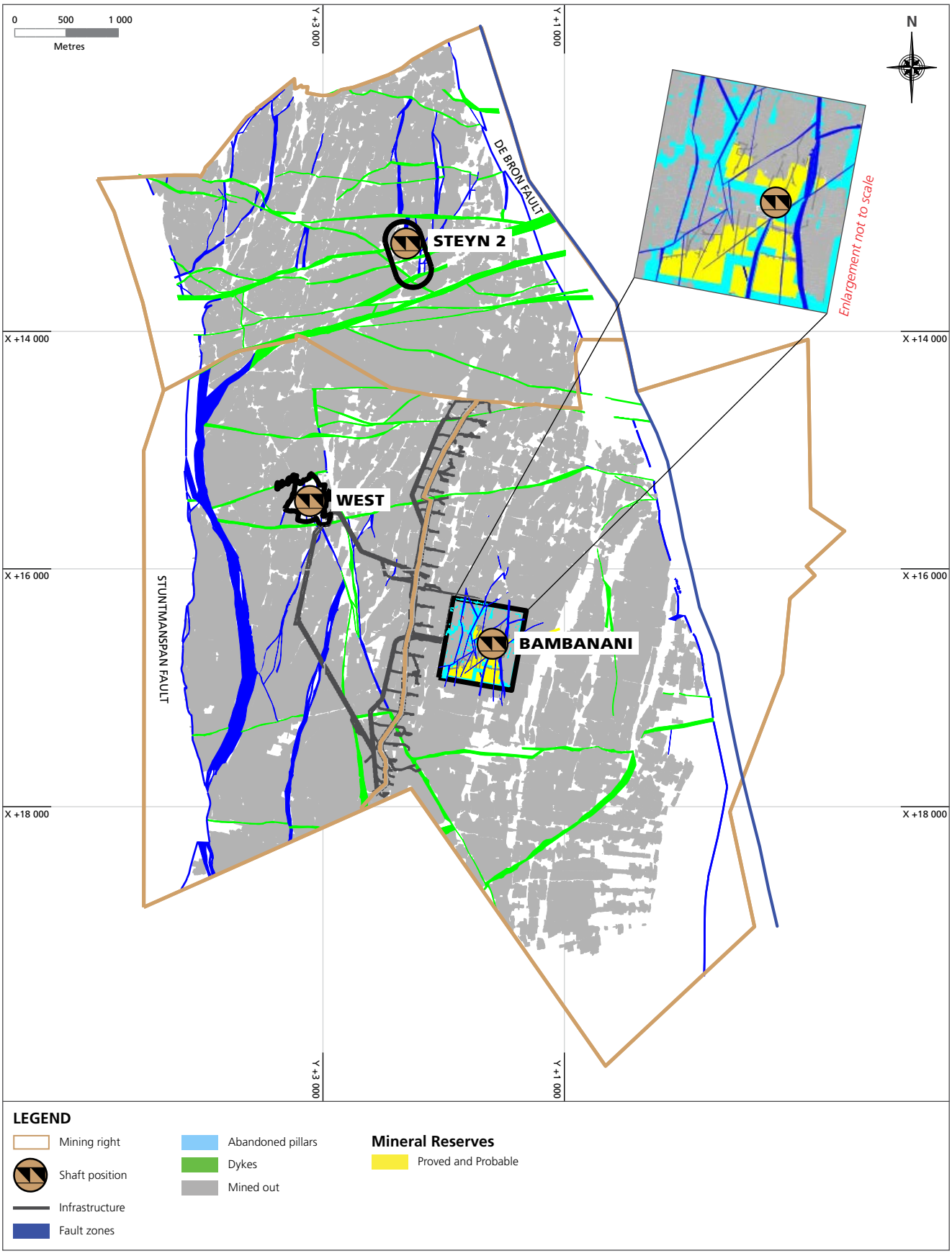
Bambanani: Key operating statistics

	Unit	FY21	FY20	FY19	FY18	FY17
Operation						
Volumes milled	000t (metric)	**227**	200	230	233	231
	000t (imperial)	**250**	221	245	257	254
Gold produced	kg	**1 992**	2 132	2 515	2 821	2 750
	oz	**64 044**	68 545	80 860	90 698	88 415
Grade	g/t	**8.78**	10.66	10.93	12.11	11.90
	oz/t	**0.256**	0.310	0.318	0.353	0.348
Development						
Total metres (excluding capital metres)		**1 414**	1 184	1 173	1 495	1 591
Reef metres		**–**	–	–	–	130
Capital metres		**–**	–	–	–	–
Financial						
Average gold price received	R/kg	**854 392**	735 972	591 962	576 398	574 227
	US$/oz	**1 726**	1 461	1 299	1 395	1 314
Capital expenditure	Rm	**71**	50	61	64	77
	US$m	**5**	3	4	5	6
Cash operating cost	R/kg	**586 588**	480 620	391 550	320 724	317 833
	US$/oz	**1 185**	954	859	776	727
All-in sustaining cost	R/kg	**641 426**	522 990	441 226	360 462	357 025
	US$/oz	**1 295**	1 039	968	873	817

Bambanani: Schematic of shaft and mining layout



Bambanani Mine – Basal Reef: Mineral Reserves



JOEL

Joel shaft.

Mineral Resources (inclusive)

3.1Moz

Mineral Reserves

0.6Moz

Detailed Mineral Resource and Mineral Reserve estimates are presented in this section.

History

Active prospecting in the area began on the farms Leeuwbult 580 and Leeuwfontein 256 in 1981. Construction of the twin-shaft system began in September 1985 and was completed by December 1987. Joel South was designed to be a fully trackless mining operation. Previously known as HJ Joel, the mine's name changed to Joel in 1998 when the then AngloGold Ltd was established. The mine's name was later changed to Taung in 1999, reverting to Joel in January 2002 when the Freegold joint venture between Harmony and ARMgold assumed responsibility for the operation.

Nature of the operation

Joel consists of two interconnected shaft complexes: the south shaft complex, which is currently in operation, and the north shaft complex.

The south shaft complex has two shafts, namely 3 shaft (men and material) and 4 shaft (ventilation). This shaft system was sunk beyond the reef sub-outcrop and is located on the southern extremity of the orebody. These two shafts go down to 1 050m below collar and cover four levels, namely 60 and 70 levels (which are mined-out trackless levels), 90 level, which is the main transfer level, and 95 level, which houses the pumping and loading facilities.

The north shaft complex is a single-shaft system, sunk and lined to 1 471m below collar, but not yet equipped to hoist people. Feasibility studies were conducted in 2005 to determine whether

this shaft could assist in extending Joel's life of mine by opening up 129 level. This shaft was upgraded in February 2006 to enable hoisting of ore through the north shaft barrel. Hoisting was halted in March 2007, owing to the deteriorating shaft infrastructure. The shaft has since been re-equipped to hoist ore and acts as a second outlet for the mine. A short one-compartment lift shaft from 110 level gives access to 121 level. The single drum winder at this level is used to transport men and material down to 121 level and for hopper hoisting of development and some stoping ore. The lift shaft has since been deepened to access 129 level. The lift shaft will service men and material only whereas the north shaft will be dedicated to hoisting ore.

The two shaft complexes (north and south) are connected via a triple decline system, spanning four levels and consisting of an approximately 1 600m belt decline (decommissioned), a chairlift decline to 110 level and two material declines in tandem down to 117 level. The decline levels are 98, 104, 110 and 117 with the last two connected to the north shaft. Although they share a boundary, there are no holing connections between Joel and Beatrix.

Joel currently has a life-of-mine expectancy of nine years. This includes mining up to 137 level and the Beatrix block swop.

To access the orebody from 137 level, two declines were developed at 12° from 129 level – a chairlift decline and a conveyor belt decline. Primary footwall development is currently underway on 137 level.

Geology

The main structures at Joel are associated with the Platberg Extension. These faults are north-south striking, steeply dipping and typically have downthrows to the east of 10m to 100m. These downthrows form a graben against the De Bron fault, which has a 450m upthrow to the east. East of the De Bron fault, the reef has been either truncated or eroded against the Karoo Supergroup.

Minor east-west striking faults are also present. However, displacements on these faults are generally less than 10m, which are believed to be Klipriviersberg in age. Low angle reverse faulting is also present. These structures trend north-south, have small displacements and dip towards the east. These structures may be related to the central Rand Contractional event.

The Klippan Formation has been preserved as an east-west trending erosional channel that has eroded deeply through the Witwatersrand sediments and has eliminated the Beatrix/VS5 horizon in the eastern portion of the mine and cut out a significant chunk in an east-west direction through the middle of the lease area. Regionally the Klippan Formation is preserved in the north-south striking basin, known as the Virginia Basin in the Southern Free State, which parallels the De Bron Fault.

A deep erosional channel of Platberg group volcano-sedimentary rock, known as the Klippan channel, truncates the Beatrix Reef some 1.8km to the north of south shaft. This washout feature is wedge-shaped with its apex to the west and widening to the east. The estimated dimension from the apex to the eastern property boundary is approximately 1.8km. The reef has been shown to be continuous to the north of this feature.

Where unaffected by the Klippan channel, the reef is bound to the east by the De Bron Fault, which strikes north-north-east. The CD Fault, which strikes north-east and is roughly halfway between the two shafts, has a 320m sinistral lateral displacement south of the fault towards the north-east.

The complex nature of the reef has resulted in a highly irregular distribution of gold throughout the mining area. There are broad low and high-grade zones over 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.

Mineral rights/legal aspects and tenure

The current mining right, encompassing an area of 2 355.8ha, was successfully converted, executed and registered as a new order mining right at the Mineral and Petroleum Resources Titles Office on 6 August 2010 under 73/2010MR. The right was granted on 3 December 2007 for a period of 11 years, ending on 2 December 2018. The right has been successfully renewed in terms of section 24 (1) of the Mineral and Petroleum Resources Development Act for a further 11 years, ending on 14 February 2030.

Mining methods and mine planning

Joel operates at an intermediate mining depth and the mining method is tailor-made for the variable grades intersected as well as the associated rock-related hazards anticipated at this depth.

Given the variable grades and geological complexity, mining is conducted mainly in terms of a pre-developed scattered mining system. This system allows for unpay and geologically complex areas to be left unmined with some cognisance taken of the overall panel configuration and stability of footwall development. This allows for selective mining, based on the proven ore reserve during the development phase.

In addition, stoping panel stability in an intermediate stress environment may require additional stabilising pillars be left to support the immediate hangingwall. These take the form of inter-panel crush pillars between neighbouring mining panels. The major rock-related risk is the occurrence of unexpected panel collapses.

Minor falls of ground, due to geology, bedding, shale and jointing, do occur but are mostly addressed via a proven in-stope support system. As the largest portion of Joel's production is currently mined between 129 and 137 levels, production is focused mainly on four or five raise lines.

In addition, as mining has advanced into more complex geological areas, dip and strike-related structures are more commonly intersected. The change to a higher support resistance system, given the intersection of a more complex geological environment, has been largely successful and the occurrence of large geological "back breaks" and falls of ground are rare. Timber-based packs were installed along gullies and as breaker line support in panels to improve hangingwall stability. From a management perspective, it is of utmost importance that geological structures are reported, mapped and properly supported using high-support resistance pack units to ensure a stable stoping horizon.

With the marginal increase in depth and the more complex geological environment, the incidence of low magnitude (<1.5) seismic events has slowly increased. This activity has manifested mainly in reasonably low stress (45Mpa) strike-orientated dyke intersections with stoping excavations. The installation of a 10-station regional seismic network to highlight potentially unstable areas and structures prone to bursting was completed with the

seismic data used to highlight potential problem areas. The seismic network is maintained, and its operational and health status are kept well above the 80% mark.

Mineral processing

Mined ore is transported by road for processing at the Harmony One carbon-in-pulp plant, which is situated some 40km from the shaft.

Infrastructure

Joel's upper mining levels are in a mature phase of operation. The decline project development, from 129 to 137 levels, which started in 2011, is completed. Decline project engineering construction were completed and started stoping. The 137 level E5 raise is holed and production is ongoing.

Mineral Resource estimation

The method used to estimate local measurements on the shaft is ordinary kriging with simple macro kriging used for local indicated and inferred estimates. Estimates are generally kriged into 30m x 30m blocks for measured resources from the point support data. Indicated Mineral Resources are kriged into 60m x 60m blocks, using associated regularised variograms together with a macro kriging decluster.

Similarly, Inferred Mineral Resources are estimated using associated regularised variograms and kriging into 120m x 120m blocks. Any un-kriged areas in the Inferred regions are then covered by global mean estimates. Geozones are based on grade distribution to ensure correct grade estimates are conducted for each area.

Environmental impact

Environmental aspects and impacts at Joel are managed in terms of an environmental management programme, as approved by Department of Mineral Resources and Energy, and in line with the Mineral and Petroleum Resources Development Act. All environmental aspects and impacts emanating from mining activities are documented in the associated environmental management programme report and the environmental aspect register as required by the Act and the ISO 14001:2004 standard.

Annual performance monitoring and audits are conducted by the Department of Mineral Resources and Energy to verify compliance with the following legislation:

- Mine Health and Safety Act
- National Water Act
- National Environmental Management Act
- Mineral and Petroleum Resources Development Act.

All environmental impacts emanating from mining activities are managed in terms of the environmental management programme and ISO 14001:2004 requirements.

Environmental audits or performance assessments are conducted by independent environmental consultants every second year to verify compliance with Joel's approved environmental management programme, as required by Regulation 55 of the Mineral and Petroleum Resources Development Act, and the report is submitted to the Department of Mineral Resources and Energy. In addition, an internal environmental legal compliance audit is conducted to verify compliance. An online environmental legal register is maintained at www.drayer-legal.co.za to monitor compliance and to provide applicable and relevant environmental legal updates for the operation.

Bio-monitoring surveys are also conducted on surface water streams close to the operation in compliance with draft water use licence conditions and the National Water Act to:

- Determine the condition of biological communities as well as the chemical water quality in rivers and streams during the wet seasons
- Provide baseline reference conditions for future studies in order to assist Joel Mine management in identifying environmental liabilities relating to the potential contamination of surface streams resulting from current mining activities.

The operation is ISO 14001 accredited and conforms with the requirements of the ISO 14001:2004 standard for which it is audited annually. Joel is also accredited in line with the International Cyanide Management Code, initially in 2010 and most recently on 1 February 2017. Joel is committed to eliminating and/or minimising the effects of mining activities on the environment and adjacent communities.

Joel Beatrix Reef.

MATERIAL RISKS

Material risks that may impact Joel's Mineral Resource and Mineral Reserve statements.

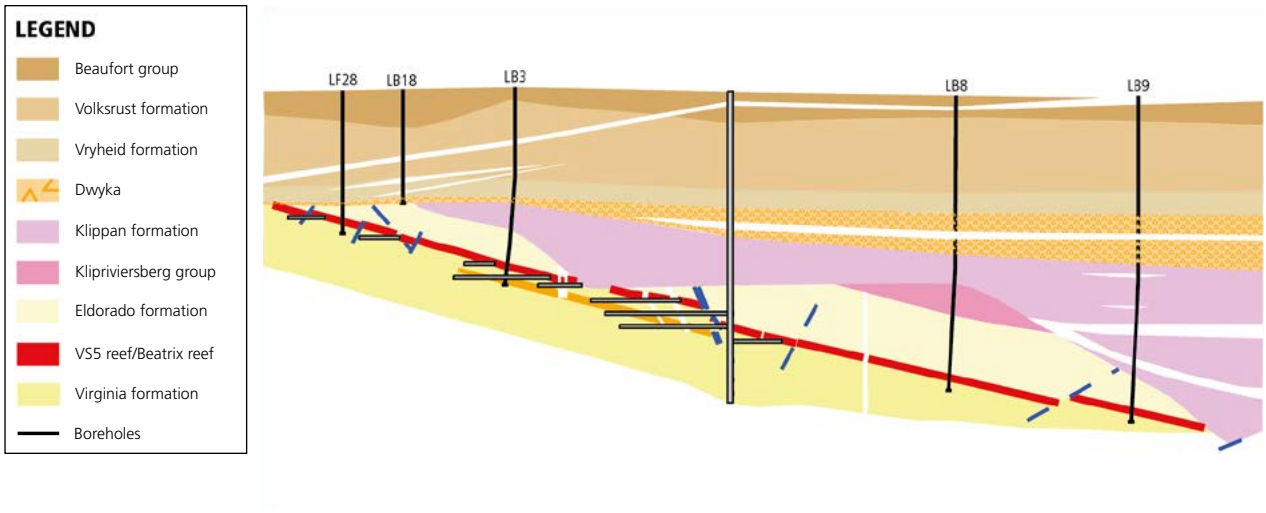
Significant risks	Remedial action
• Flooding of 145 level (shaft bottom) • Lack of mining flexibility.	• Installation of second submersible pump as a standby • Clean up of dam on 145 level • Prioritising development to open Raise lines.

COMPETENT PERSON

Ore Reserve manager

Deon Lodder
Professional Mine Surveyor (PMS 0169 – PLATO), Business Management and Leadership Degree (UFS), Mine Surveyor's Certificate of Competency: National Higher Diploma – Mine Surveying, NTC 6 – Civil Engineering, Mine Manager's Certificate of Competency
35 years' experience in gold mining.

Not to scale



Joel geological section looking west.

JOEL

Gold – Mineral Resource estimates at 30 June 2021 (inclusive)

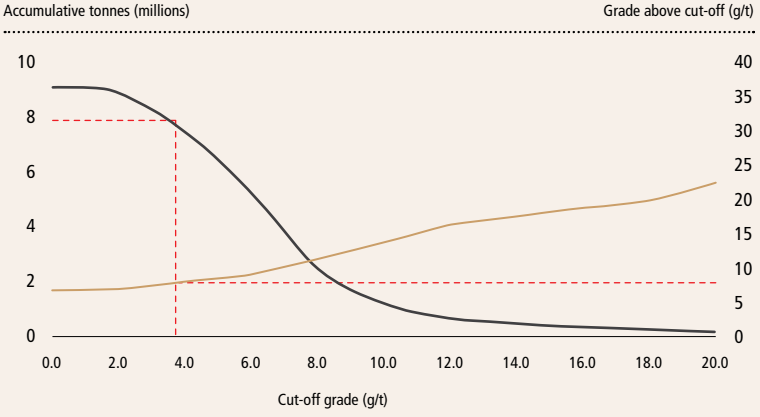
	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Joel	4.0	7.89	32	1 026	3.8	7.24	27	878	7.3	5.13	38	1 209	15.2	6.39	97	3 113

Modifying factors

Joel	MCF (%)	SW (cm)	MW (cm)	PRF (%)	Cut-off (cmg/t)
2020	83	172	190	95	898
2021	83	174	190	95	915

Gold – Mineral Reserve estimates at 30 June 2021

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Joel	2.6	5.00	13	423	1.5	4.50	7	215	4.1	4.82	20	639



Joel Mine: Beatrix Reef

Measured and Indicated Mineral Resource grade-tonnage curve

— Tonnage — Grade

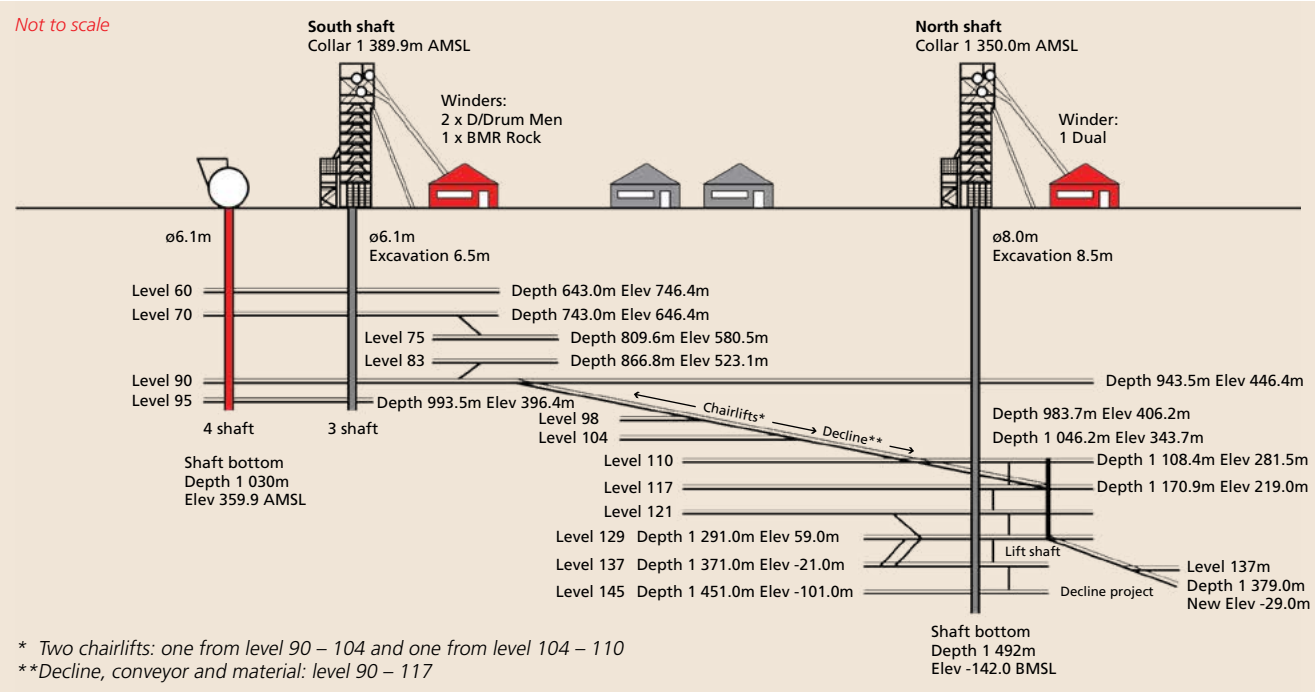
SOUTH AFRICA – FREE STATE **JOEL** continued

OPERATIONAL PERFORMANCE

Joel: Key operating statistics

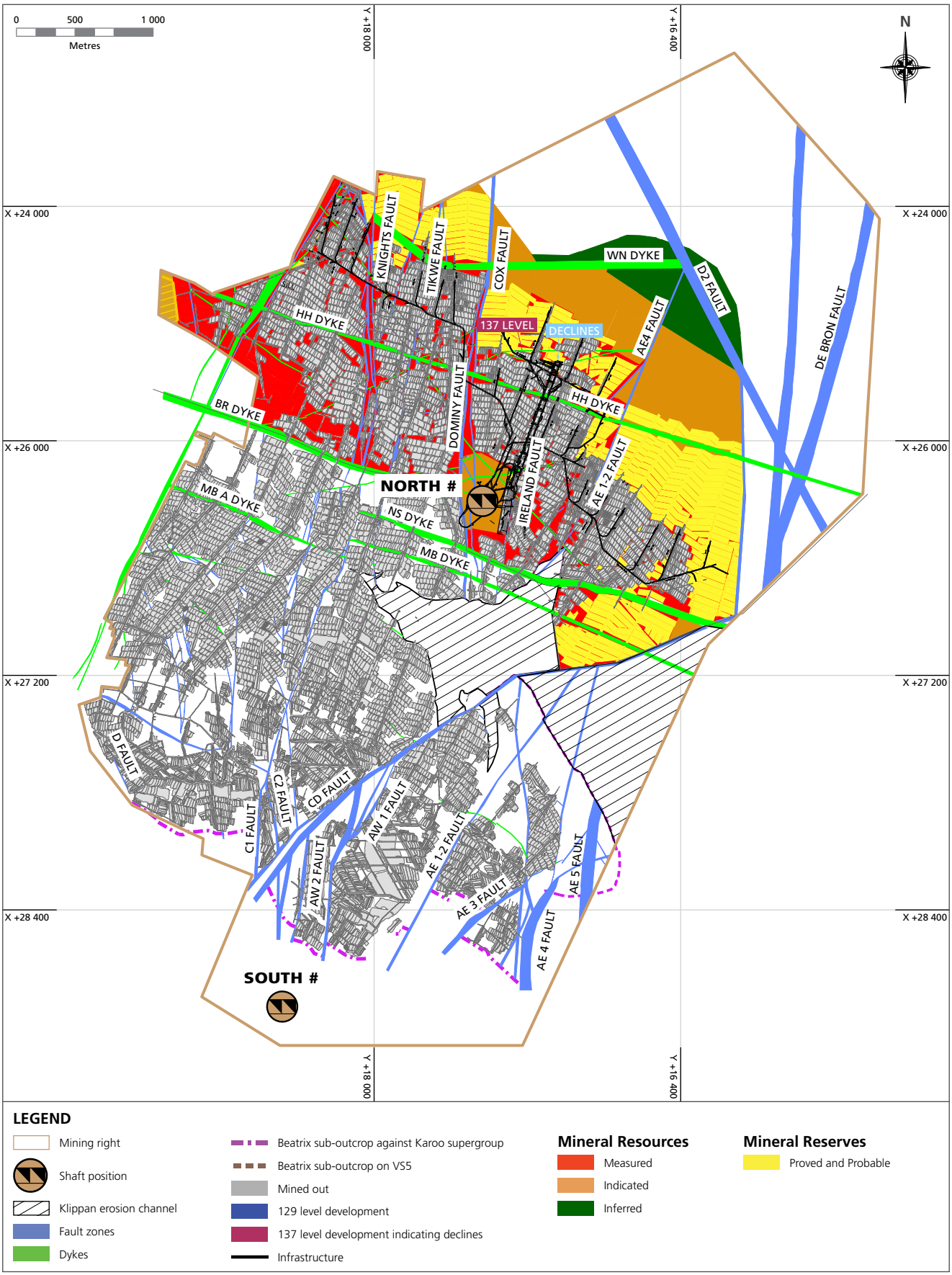
	Unit	FY21	FY20	FY19	FY18	FY17
Operation						
Volumes milled	000t (metric)	**359**	349	429	454	514
	000t (imperial)	**396**	384	473	501	567
Gold produced	kg	**1 424**	1 391	1 567	1 635	2 246
	oz	**45 783**	44 722	50 379	52 566	72 211
Grade	g/t	**3.97**	3.99	3.65	3.60	4.37
	oz/t	**0.116**	0.116	0.107	0.105	0.127
Development						
Total metres (excluding capital metres)		**3 397**	2 734	3 378	3 331	3 477
Reef metres		**1 806**	832	1 288	431	1 596
Capital metres		**–**	–	–	620	532
Financial						
Average gold price received	R/kg	**848 131**	734 620	593 531	576 023	573 986
	US$/oz	**1 713**	1 459	1 302	1 394	1 313
Capital expenditure	Rm	**172**	151	187	250	243
	US$m	**11**	10	13	19	18
Cash operating cost	R/kg	**796 982**	718 024	617 116	556 468	413 088
	US$/oz	**1 610**	1 426	1 354	1 347	945
All-in sustaining cost	R/kg	**936 296**	826 970	701 644	661 921	477 484
	US$/oz	**1 891**	1 642	1 539	1 602	1 092

Joel: Schematic of shaft and mining layout



* *Two chairlifts: one from level 90 – 104 and one from level 104 – 110*
***Decline, conveyor and material: level 90 – 117*

Joel Mine – Beatrix Reef Mineral Resources and Mineral Reserves



MASIMONG

Masimong shaft.

Mineral Resources (inclusive)

0.8Moz

Mineral Reserves

0.1Moz

Detailed Mineral Resource and Mineral Reserve estimates are presented in this section.

History

Masimong was originally known as Erfdeel when it was sunk by Anglo American's Gold and Uranium Division in 1985. Harmony purchased Saaiplaas 3 from Anglo American in March 1997 and the two Erfdeel shafts in September 1998, which were renamed Saaiplaas 4 and 5. After the closure of Saaiplaas 3 in early 1998, following the collapse of the gold price, an opportunity arose to re-open the entire shaft complex, comprising the Saaiplaas 4 and 5 shafts, in September 1998 when it was renamed Masimong.

Masimong 5 shaft (formerly Saaiplaas 5), the youngest of the shafts, was sunk in 1985. Reef and waste ore was transported via a twin haulage system to Masimong 4 (Saaiplaas 4) until September 2001, when equipping of the reef and waste-hoisting infrastructure was completed at 5 shaft. Mining operations at Masimong 4 and Saaiplaas 3, which had been sunk in 1981 and 1976 respectively, subsequently ceased as they were no longer economically viable. When hoisting operations began at Masimong 5 shaft, Masimong 4 was downscaled to a service and small-scale mining shaft in the quarter ended 30 June 2001.

By 30 June 2002, prevailing market conditions had improved and mining at Masimong 4 was once again economically viable. Additional personnel were redeployed to develop and access new areas of Masimong 4 to facilitate future production. Extraction of the Saaiplaas 3 shaft pillar was terminated due to technical difficulties. Subsequently, in June 2004, operations at Masimong 4 were also rationalised. The shaft is currently used solely for pumping.

During FY12, a bulkhead water plug was installed to seal off Saaiplaas 3 from the rest of the Masimong complex. The shaft was then abandoned due to flooding. Operations at Masimong 5 remain susceptible to changes in the gold price as it is one of the lowest average mining grade underground operations still in production on the Witwatersrand Basin.

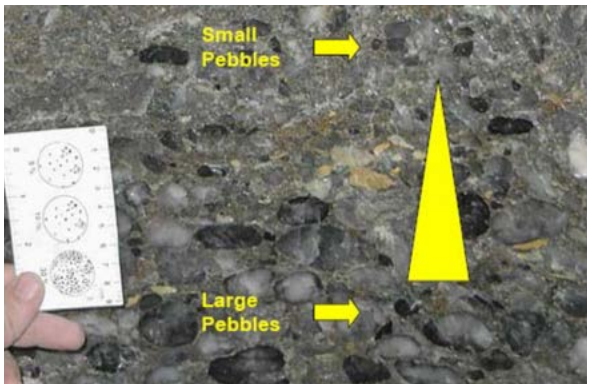
Nature of the operation

Masimong is a single-shaft operation, which exploits two reef horizons, the Basal and B reefs at 1 650m to 2 010m below surface. These two reefs narrow tabular bodies are mined by means of conventional open stoping.

Geology

Mining takes place in a structurally complex zone between two major north-south trending faults: the De Bron/Homestead fault in the west and the Saaiplaas fault in the east. The orebody has been subjected to severe deformation and contains numerous folds (anticlines and synclines) as well as an abundance of smaller faults. The dip of the reef bands is very variable – from 45 degrees to the east, adjacent to the western side of the lease, to less than two degrees in parts of the southern area.

Production is hosted within two quartz pebble conglomerate bodies, developed above unconformity surfaces, the Basal and the B reefs. Approximately 80% of the centares (1 centare = 1 square metre) are from the Basal Reef horizon and 20% from the Basal B Reef horizon.



B Reef: B3 conglomerate indicating the upward fining cycle.

B Reef: A polymictic B3 facies conglomerate with khaki coloured shale clasts matrix.

B Reef: A hand sample of B1 facies conglomerate form 1750 E14 Drive S3.

B Reef: An oligomictic, matrix-supported B1 facies conglomerate.

Mineral rights, legal aspects and tenure

The current mining right, encompassing an area of 22 582.99ha, was successfully converted, executed and registered as a new order mining right at the Mineral and Petroleum Resources Titles Office on 11 December 2007 (Reference FS30/5/1/2/2/82MR valid from 11 December 2007 to 10 December 2029).

Mining methods and mine planning

Masimong mines at moderate depths of between 1 650m and 2 010m below surface. The reef horizon is accessed by means of conventional grid development. The Basal Reef, which accounts for approximately 80% of the on-reef production profile, is mined as by the open and undercut method, depending on whether the reef is overlain by shale. The B Reef, making up the remaining 20% of the on-reef production profile, is located approximately 120m stratigraphically above the Basal Reef, which necessitates separate infrastructure (footwall development).

The presence of the upper shale marker, approximately 20m thick below the B Reef, strains the development rates of the B Reef, requiring drop raising for holing on all boxholes. In addition, all on-reef development must be conducted by means of wide raising. Despite the marginality of the orebody and the current economic environment, current mine reserves give a life expectancy of two years, mainly due to the successful opening of known value trend extensions.

Mineral processing
The ore mined is transported by rail for processing at the Harmony One carbon-in-pulp plant, situated some 12km from the shaft.

Infrastructure
Surface infrastructure includes a well-established network of paved roads and railway lines as well as a water pipeline and electrical lines to supply and deliver the materials required and transport the ore hoisted to the Harmony One plant for treatment.

The underground infrastructure is that of a mature, low-cost mining operation approaching the end of its economic life. The only undeveloped area of any economic significance lies to the south and south-east of the shaft in ground formerly located within the Masimong 4 shaft area.

Mineral Resource estimation
The estimation method used for local measured data on the shaft is ordinary kriging and, for local indicated and inferred estimates, simple macro kriging. Estimates are generally kriged into 30m x 30m blocks for measured resources from the point support data. Indicated resources are kriged into 60m x 60m blocks, using associated regularised variograms together with a macro kriging decluster. Similarly, Inferred Mineral Resources are estimated using the associated regularised variograms and kriging into 120m x 120m blocks. Geozones are based on grade and facies distribution to ensure correct grade estimates are calculated for each area. For details of the estimation process followed, see page 152.

Environmental impact
Masimong's environmental aspects and impacts are managed according to the environmental management programme approved by the Department of Mineral Resources and Energy in terms of the Mineral and Petroleum Resources Development Act. All environmental aspects and impacts emanating from mining activities are documented in the approved environmental management programme and the environmental aspect register, as required by the Act and ISO 14001:2004 standard.

Annual performance monitoring and audits are conducted by the Department of Mineral Resources and Energy to verify compliance with the following legislation:
- Mine Health and Safety Act
- National Water Act
- National Environmental Management Act
- Mineral and Petroleum Resources Development Act.

Environmental management programme and ISO 14001:2004 requirements
Environmental audits or performance assessments are conducted annually by independent environmental consultants to verify compliance with the approved environmental management programme, as required by Regulation 55 of the Mineral and Petroleum Resources Development Act, and the report is submitted to the Department of Mineral Resources and Energy. In addition, an internal environmental legal compliance audit is conducted to verify compliance. An online-based Masimong environmental legal register (at www.dreyer-legal.co.za) is used to monitor compliance, and to provide applicable and relevant environmental legal updates.

Bio-monitoring surveys are also conducted on surface water streams close to the operation, in compliance with the draft water use licence conditions and the National Water Act, in order to:
- Determine the condition of the biological communities in rivers through indices such as SASS5, IHAS (Version 2.2) and IHIA, and to determine the chemical water quality in streams during the wet seasons
- Provide baseline reference conditions for future studies in order to assist Masimong management in identifying environmental liabilities resulting from current mining activities in respect of the potential contamination of surface streams.

The operation is ISO 14001-accredited and conforms with the requirements of the ISO 14001:2004 standard. It is audited annually as per ISO 14001 requirements. The operation was initially accredited in 2012 and remains committed to eliminating or minimising the effects of mining activities on the environment and adjacent communities.

MATERIAL RISKS

Material risks that may impact Masimong's Mineral Resource and Reserve Statement.

Significant risks	Remedial action
• Adverse changes in the gold price • Unexpected geological features • Unexpected decline in value/grade.	• Open up the high-grade Basal Reef area, pillars and B Reef value zones as replacement ground • Extensive exploration drilling from underground platforms • Extensive exploration drilling to confirm grade trends ahead of extraction and to reduce external factors causing dilution.

COMPETENT PERSON

Evans Malaola
MSCC, NHD Mineral Resource Management, Plato PMS 0196
36 years' experience.

Ore Reserve manager

Lana Cousin-Forster
B.Sc (Hons) Geology
19 years' relevant experience.

MASIMONG

Gold – Mineral Resource estimates at 30 June 2021 (inclusive)

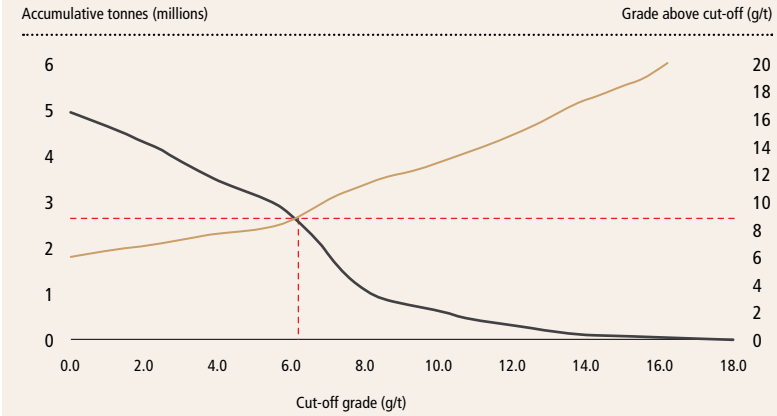
	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Masimong	2.5	8.98	22	710	0.2	7.35	1	42	0.02	6.48	0.2	5	2.7	8.85	24	757

Modifying factors

Masimong	MCF (%)	SW (cm)	MW (cm)	PRF (%)	Cut-off (cmg/t)
2020	61	144	161	95	1 021
2021	57	142	156	95	1 014

Gold – Mineral Reserve estimates at 30 June 2021

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Masimong	0.7	4.37	3	105	0.03	3.08	0.1	3	0.8	4.32	3	108



Masimong Mine: Basal Reef

Measured and Indicated Mineral Resource grade-tonnage curve

— Tonnage — Grade

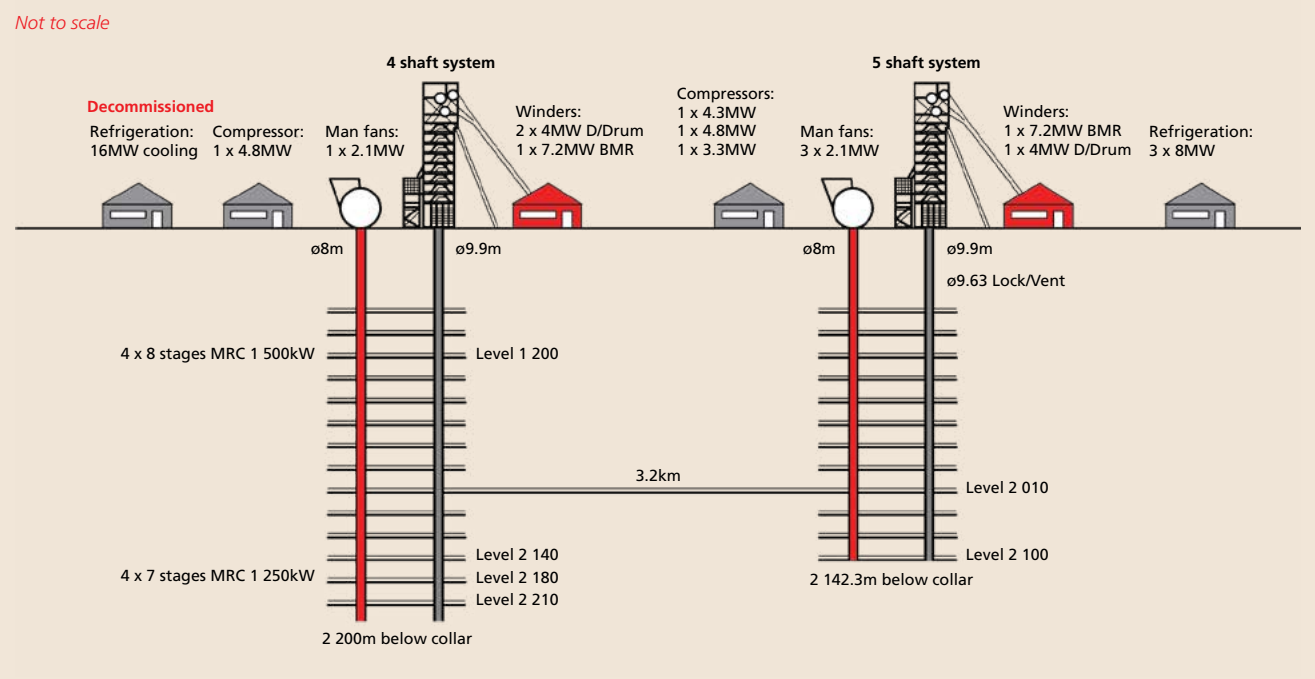
SOUTH AFRICA – FREE STATE **MASIMONG** continued

OPERATIONAL PERFORMANCE

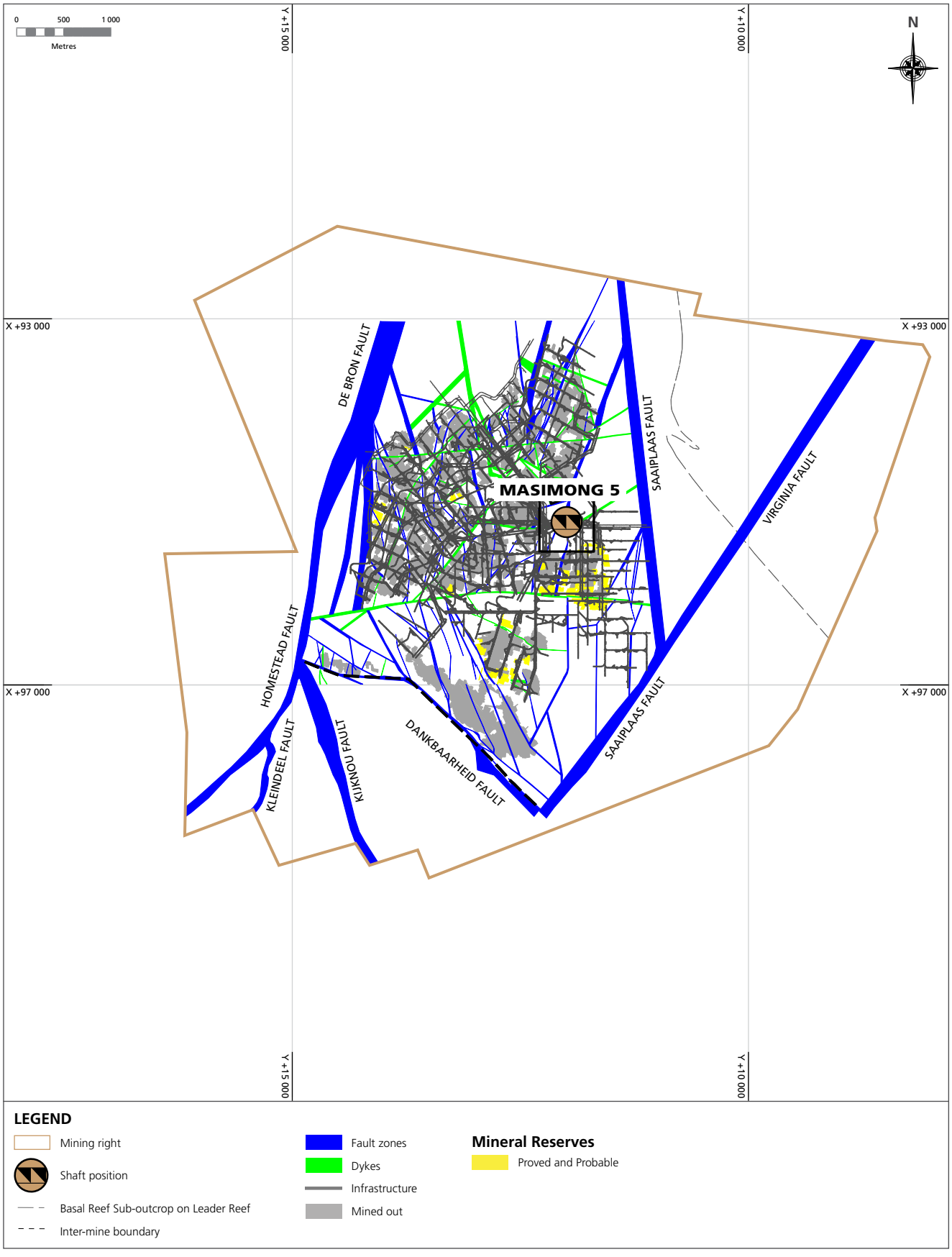
Masimong: Key operating statistics

	Unit	FY21	FY20	FY19	FY18	FY17
Operation						
Volumes milled	000t (metric)	**510**	489	602	647	640
	000t (imperial)	**563**	539	664	714	706
Gold produced	kg	**2 012**	1 999	2 309	2 623	2 538
	oz	**64 687**	64 269	74 237	84 332	81 599
Grade	g/t	**3.95**	4.09	3.84	4.05	3.97
	oz/t	**0.115**	0.119	0.112	0.118	0.116
Development						
Total metres (excluding capital metres)		**2 833**	2 246	3 167	5 287	4 754
Reef metres		**1 044**	759	765	2 067	1 054
Capital metres		**–**	–	–	–	–
Financial						
Average gold price received	R/kg	**820 780**	691 282	593 003	576 729	571 870
	US$/oz	**1 658**	1 373	1 301	1 396	1 308
Capital expenditure	Rm	**29**	24	109	129	119
	US$m	**2**	2	8	10	9
Cash operating cost	R/kg	**715 835**	620 804	525 703	442 586	439 457
	US$/oz	**1 446**	1 233	1 153	1 071	1 005
All-in sustaining cost	R/kg	**764 577**	655 888	593 408	513 197	500 938
	US$/oz	**1 544**	1 302	1 302	1 242	1 146

Masimong: Schematic of shaft and mining layout



Masimong 5 Mine – Basal Reef: Mineral Reserves



TARGET 1

Target 1 shaft.

Mineral Resources (inclusive)

5.1Moz

Mineral Reserves

0.6Moz

Detailed Mineral Resource and Mineral Reserve estimates are presented in this section.

History

Outcropping on the Target 1 property (originally Loraine) is an inlier of the Ventersdorp conglomerates (the Bothaville Formation). The similarity of these conglomerates to those of the Witwatersrand Sequence focused interest in this area and led to the discovery of the Free State goldfields. Prospecting on these conglomerates was first undertaken around 1890 via a vertical and incline shaft. Mining has been conducted in the Free State goldfields for well over 60 years.

The initial model for exploration north of the Loraine gold mine, which at the time was managed by Anglovaal Limited, was proposed by DW Boshoff (chief geologist) in 1978. The Loraine gold mine held the mineral rights immediately to the north of the mine. The Target Exploration Company Limited, a company formed by Anglovaal specifically for the purpose of exploration, later acquired this area. Options to mineral rights north of Target were acquired by Sun Mining and Prospecting Company Proprietary Limited. Feasibly studies centred on Sun Concept Mine South (CMS). The formation of Avgold Limited in 1996 was intended to further the gold mining and exploration interests of Anglovaal. Harmony acquired Target in 2002.

Nature of the operation

The Target 1 operation includes a single underground mine constructed as an extension to the Loraine gold mine and uses 1 shaft as access. Target 3 shaft is currently on care and maintenance and serves as a second escape way for Target 1 while Target 5 serves as a ventilation shaft for Target 1 and is situated on the outskirts of Nyakallong township.

The mine has decline systems off the Target 1 shaft, extending 6km to the mining areas, some 2 300m below surface. The mine is essentially a trackless bulk mining operation using conventional labour-intensive methods.

The Target orebody is located some 5km to the north of the original Loraine 1 shaft and is accessed via a 6km-long 12-degree decline developed from level 203 of the vertical shaft system. Initially, the decline was developed to provide a drilling platform for the exploration and evaluation of the orebody but it was later used as the main access for all services, logistics, personnel and the extraction of ore.

The orebody is composed of some 67 individual conglomerates in the Uitkyk (Elsburg) and Van der Heeversrust (Dreyerskuil), members of the upper Eldorado (Elsburg) formation. These reefs lend themselves to massive mining techniques where composited conglomerate units can be mined as one stope. These stopes are long-hole drilled and blasted, and tonnages are cleaned and transported by trackless machinery – some of which are operated remotely.

Massive mining is particularly relevant where the reefs become condensed and steeper in the western portion of the orebody. Mining of the massives contributes most of total tonnes stoped. Massive stopes have to be mined in a sequence, broadly from down-dip to up-dip. Mined stopes are backfilled for support, and to address environmental and safety concerns.

Conventional narrow-reef scattered mining makes up the remaining stope tonnes mined where individual reefs are extracted in places where massive mining is inappropriate or uneconomical. Mine planning allows for the mining of certain stopes in the stratigraphically highest gold-bearing units to provide over-stoping for massive stopes to be mined in the future.

Geology

Target is located on the western margin of the Achaean Witwatersrand Gold Basin, which is on the Kaapvaal Craton. The sediments of the Central Rand Group occur within an oval-shaped basin, which has a 160km-long axis through the Welkom area and Johannesburg, and a short axis of about 80km. The Central Rand Basin is superimposed on the West Rand Group or Lower Witwatersrand Basin, which has a much larger aerial extent at the centre of the Kaapvaal Craton.

A thrust fault system has resulted in the post-depositional folding of the strata into a synclinal shape. This "border feature" is the western limit of the graben structure, which is some 10km wide and hosts most of the Welkom gold mines. The eastern limit of this graben is the well-defined De Bron fault. The Target 1 gold prospect is a northward continuation of the Free State goldfields.

The full potential of the Basal Reef, which produces 85% of the gold from this area, has yet to be established in the Target area because, given time constraints, initial drilling focused on the shallower Elsburg and Kimberley reefs. The reefs in the Aandenk (Kimberley) formation include the B Reef at the base, the Big Pebble Reef and the A Reef.

The Eldorado (Elsburg) formation is developed as a sequence of oligomictic auriferous conglomerates referred to as the EA Reefs, which have been mined extensively at the Loraine gold mine. The Elsburg reefs are overlain by a remnant of the diamictite facies of the south, termed the boulder beds at Lorraine. The reefs and associated quartzites represent alluvial sediment influx from a source area to the west. The distribution of gold mineralisation is clearly related to the sedimentology and this primary sedimentological control of gold distribution is understood. However, research has shown that some remobilisation of gold has taken place over small distances. This is not extensive enough to mask the sedimentary controls.

Mineral rights, legal aspects and tenure

The current mining rights encompasses an area of 7 952.78ha. Harmony holds several mining rights for the Target Mine in the Free State goldfields which have been successfully converted and executed as new order mining rights. Certain of these rights are still to be registered at the Mineral and Petroleum Resources Titles Office (MPRTO).

Those mining rights that have been registered as new order mining rights are FS30/5/1/2/2/14MR, which is valid from 30 November 2007 to 29 December 2025 and covers 4 237.00ha, and FS30/5/1/2/2/225MR which is valid from 12 December 2013 to 11 December 2026, covering 3 715.78ha.

Mining methods and mine planning

The stoping methods employed at Target are as follows:

Long-hole stoping methods	
Massive open	Narrow-reef conventional
Wide open	

Development methods	
Drift and fill	Cut and fill
Drift and pillar	Narrow-reef

Massive open stoping

Massive open stoping is based on the mining of a large volume of ore at a low working cost. The proximity of the reefs in the sub-outcrop area allows for several reefs to be mined simultaneously using this method. The main fan massive open stopes are critical in the first three years of operation. The same principles and methodology are applied to areas where similar geology allows for mining of a massive stope.

Wide open stoping

The main focus area in the wide open stopes is the main fan block where two stoping areas are to be mined. This stoping method involves an extraction process that can be applied to any block of similar dimensions (that is with reef widths in excess of 10m and a dip in excess of 200m). The mining method has been designed to use the benefits of long-hole stoping methods and backfill.

Narrow-reef mining

The schedule indicates that 8% of the initial monthly tonnage is to be mined from the Dreyerskuil (DK1A, DK4 and DK9) reefs by means of conventional narrow-reef mining, which is essential as it must provide a destressed environment for mechanised stoping. There is no practical and safer alternative to this method. The rate of overstoping must liberate sufficient levels of destressed reserves to enable the planned 62 000tpm production rate.

Mineral processing

At Target, ore and development rock are hoisted together, and milled and processed at the Target plant adjacent to the mine. Target shares its plant with a Harmony waste rock dump that is monitored and managed by Surface Sources. The plant's design capacity exceeds the maximum planned production from these sources. Gold is recovered through gold cyanide leaching.

SOUTH AFRICA – FREE STATE **TARGET 1** continued

Infrastructure

The general area of Target 1 (mining right FS30/5/1/2/2/14MR) is well developed in terms of access and mining-related infrastructure. Access to all three Target shafts (1, 2 and 5) is via a well-maintained paved road. The area also has well-established rail links and an airfield.

The Target 1 shaft is used to transport men, material and rock from surface to 203 level. A single decline, equipped with a conveyor belt, connects 203 level to 255 level some 2 050m below surface. The decline splits at 255 level into a conveyor decline and a vehicle decline descending to the extent of development, currently at 291 level which is 2 300m below surface.

Mineral Resource estimation

Geological modelling, via wire frames of faults and lower surfaces of mineralised packages, is the primary control in the geostatistical evaluation. The estimation method used for local Measured, Indicated and Inferred estimates at Target is ordinary kriging. A total of 23 reef packages are estimated individually without data from adjacent reefs. Estimates are generally kriged into "parent cells" and then assigned to sub-cells, using associated variograms and estimation parameters.

Distinctions between the Mineral Resource categories, based on data density and spatial relationships of gold grades, are defined through variography. Where block grades are estimated by data and separated by distances greater than the maximum grade continuity ranges, they have been classified as an Inferred Mineral Resource. Blocks are therefore not informed by the first kriging run (where the search ellipse was matched to grade continuity ranges) and entirely Inferred. Each reef model is then restored to its original wire-frame position and combined into a single 3D model. Geozones are based on the structure while the Mineral Resource classification is based on the slope of regression.

The Datamine mining software system is currently in use on this shaft. A macro system has been generated, linked to a customised scripting menu that allows for professional and easy management of the data and the building of geostatistical models. For details of the estimation process followed, see page 152.

Environmental impact

Harmony has implemented a water management standard, which applies during the entire mining lifecycle and covers prospecting, project design and commissioning, operation and closure. This standard has led to several positive outcomes and long-term targets include reducing the volume of water used for primary activities by 4.5% annually.

Target strives to prevent pollution or to otherwise minimise, mitigate and/or remediate the harmful effects of our operation on the environment and hence maintain its ISO 14001 certification.

A detailed environmental impact register has been developed to identify all potential environmental impacts of the operations. The main impacts are rated and mitigation measures proposed to minimise the environmental impact.

Target is situated in the Free State goldfields, a semi-arid region with an annual rainfall of between 400mm and 600mm. Local thunderstorms and showers are responsible for most of the precipitation during summer – from October to March with a peak in January. Hail is sometimes associated with thunderstorms and occurs mainly in early summer from October to January with its highest frequency in December.

The mine lease area is flat with an average height above sea level of around 1 320m. There is a gentle decrease in elevation to the west and north of Allanridge at a gradient of approximately 1:200. There are no prominent topographical landmarks in the area.

No significant topographical disturbances are expected. The topography has the potential to be affected where the slimes dams, waste rock dumps and solid waste disposal sites are situated. The area is very flat with an overall slope to the south-west.

MATERIAL RISKS

Material risks that may impact Target's Mineral Resource and Mineral Reserve statements:

Significant risks	Remedial action
• Grade dilution from waste/ backfill in the massive stopes • Trackless development production • Solo reserve drilling • Ventilation constraints.	• Reduce pillar mining between mined-out areas • Weekly monitoring and tracking • Optimise and schedule planned maintenance on solo machines • Optimise ventilation and cooling capability.

COMPETENT PERSON (Mineral Resources and Mineral Reserves)

Ore Reserve manager

Seabata Motlatla
BSc Hons (Geology), SACNASP, Graduate Diploma in Engineering, Project Management Certificate NQF Level 5
17 years' relevant experience.

TARGET 1 AND 3

Gold – Mineral Resource estimates at 30 June 2021 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Target 1	7.8	6.99	54	1 750	5.2	6.57	34	1 089	4.5	5.50	25	788	17.4	6.48	113	3 627
Target 3	0.6	9.19	6	178	2.9	10.17	30	965	1.2	8.66	11	340	4.8	9.66	46	1 483

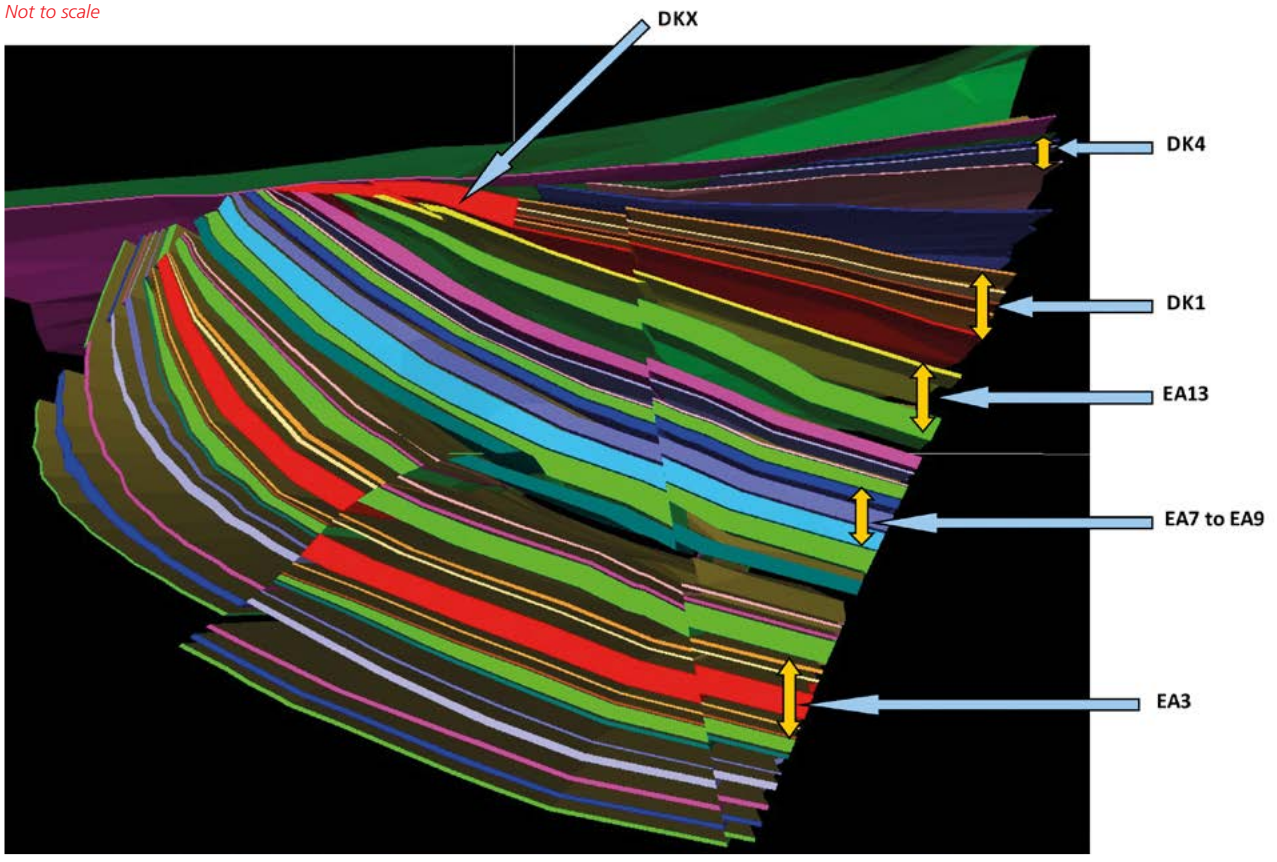
Modifying factors

Target 1	MCF (%)	SW (cm)	MW (cm)	PRF (%)	Cut-off (cmg/t)
2020	95	–	–	95	3.80
2021	95	–	–	95	3.49

Gold – Mineral Reserve estimates at 30 June 2021

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Target 1	2.9	4.46	13	416	1.8	3.89	7	231	4.7	4.24	20	647

Not to scale



Target – orebody looking north.

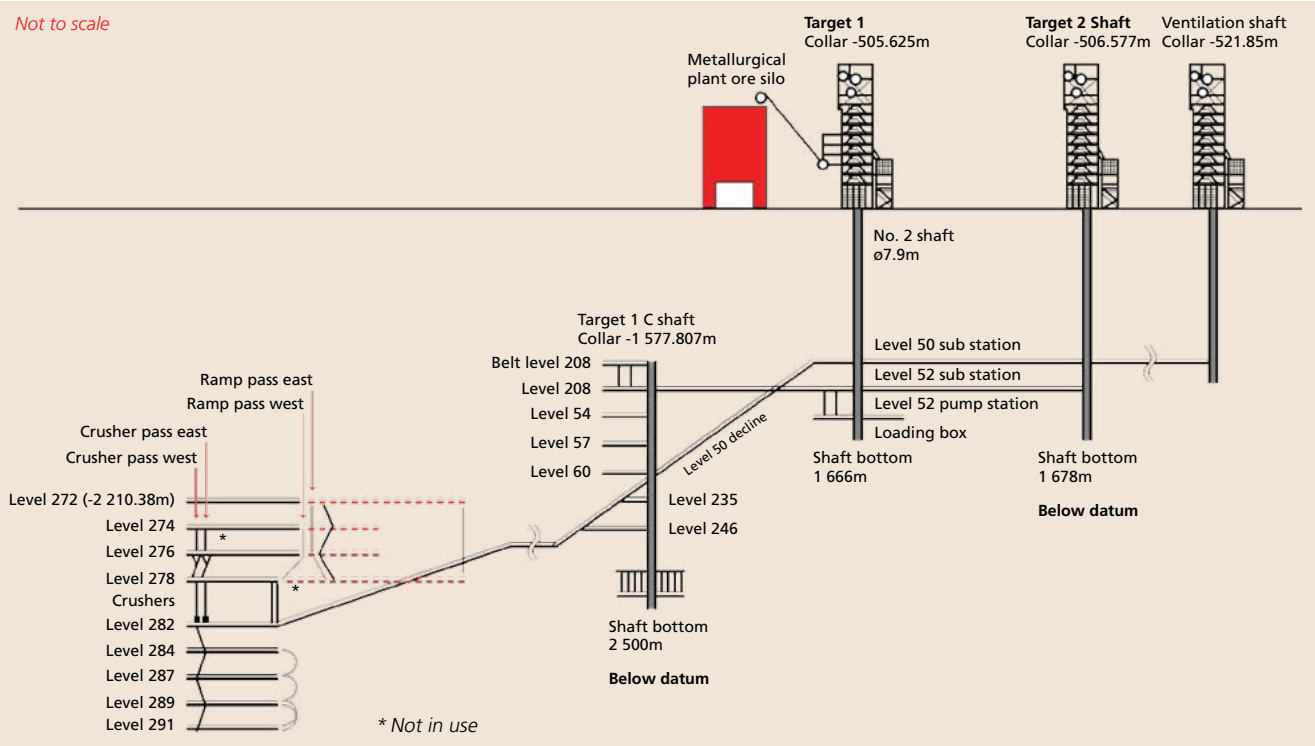
SOUTH AFRICA – FREE STATE **TARGET 1** continued

OPERATIONAL PERFORMANCE

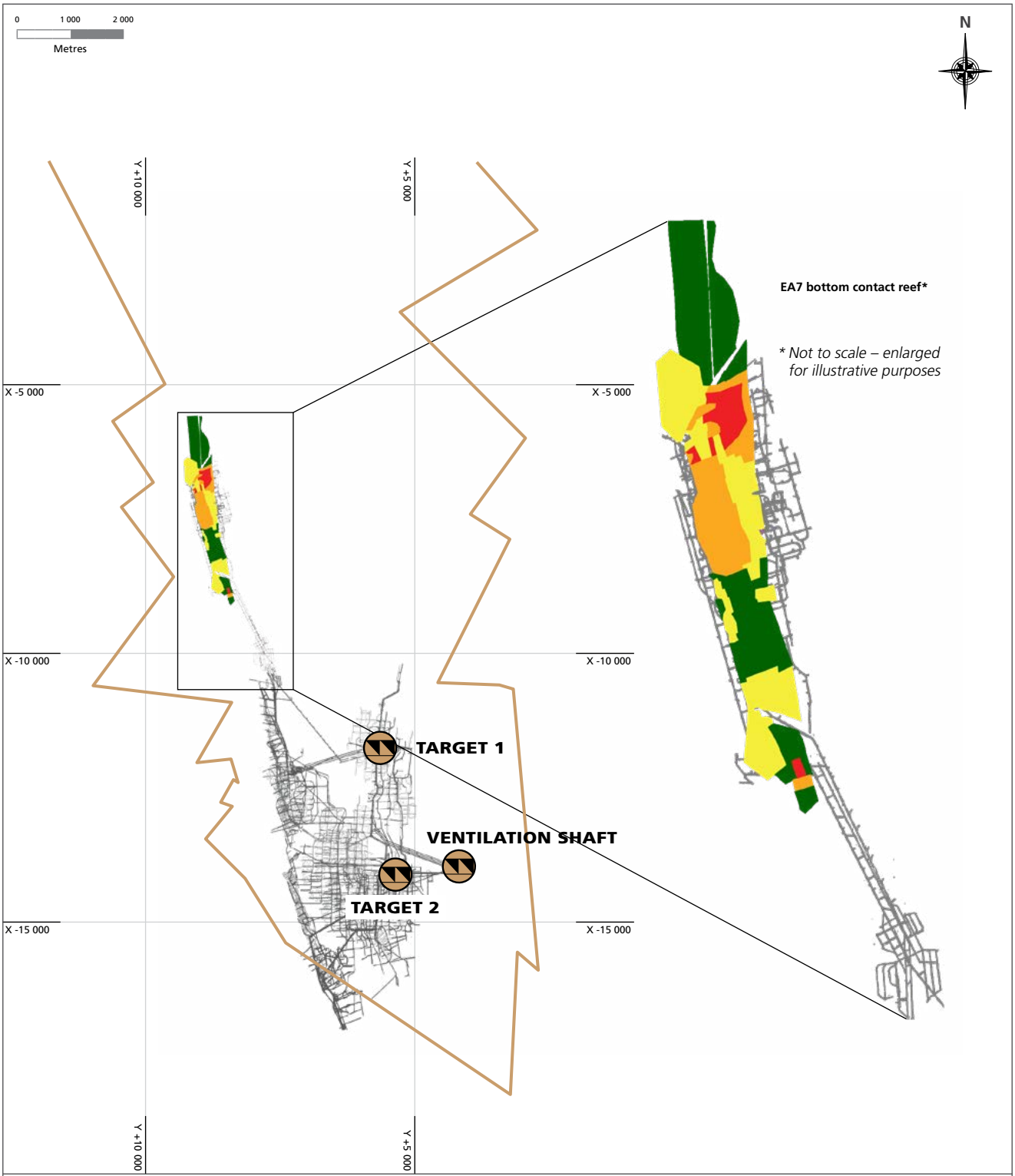
Target 1: Key operating statistics

	Unit	FY21	FY20	FY19	FY18	FY17
Operation						
Volumes milled	000t (metric)	**488**	543	588	680	745
	000t (imperial)	**537**	598	650	749	822
Gold produced	kg	**1 603**	2 244	2 653	2 854	2 669
	oz	**51 536**	72 146	85 296	91 758	85 809
Grade	g/t	**3.28**	4.13	4.51	4.20	3.58
	oz/t	**0.096**	0.121	0.131	0.123	0.104
Development						
Total metres (excluding capital metres)		**2 211**	2 152	3 378	3 883	3 656
Reef metres		**368**	96	118	431	104
Capital metres		**96**	191	179	620	–
Financial						
Average gold price received	R/kg	**870 640**	681 388	590 298	570 316	570 091
	US$/oz	**1 758**	1 353	1 295	1 395	1 304
Capital expenditure	Rm	**368**	347	297	309	324
	US$m	**24**	22	21	24	24
Cash operating cost	R/kg	**1 037 115**	670 647	557 264	467 271	508 082
	US$/oz	**2 095**	1 332	1 222	1 131	1 162
All-in sustaining cost	R/kg	**1 232 098**	817 066	662 816	582 200	651 833
	US$/oz	**2 488**	1 623	1 454	1 491	1 012

Target 1: Schematic of Target shafts and mining layout



Target 1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2 000
Metres
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Y +10 000
Y +5 000
X -5 000
X -10 000
X -15 000
EA7 bottom contact reef*
* Not to scale – enlarged for illustrative purposes
TARGET 1
VENTILATION SHAFT
TARGET 2
LEGEND
Mining right
Shaft position
Infrastructure
Mineral Resources
Measured
Indicated
Inferred
Mineral Reserves
Proved and Probable

MINERAL RESOURCES AND MINERAL RESERVES BY OPERATION

Surface sources	115 – 133
Kalgold	118
Tailings retreatment facilities – Free State	124
Surface sources – West Rand/Klerksdorp goldfields	128

SURFACE SOURCES

Harmony has one open pit mine and several surface retreatment facilities in South Africa. As at 30 June 2021, their combined estimated Mineral Resource (inclusive) was 16.0Moz and a combined estimated Mineral Reserve, 10.4Moz.

Harmony's surface sources in South Africa include:

- **Kalgold**, an open pit mine located in North West Province on the Kraaipan Greenstone Belt
- **Various surface sources in the Free State** including several tailings retreatment operations and waste rock dumps, located largely in the vicinity of Welkom
- **Marginal ore rock dumps and tailings** (Mispah and the Kop paydam) associated with Moab Khotsong that are available for retreatment
- **Mine Waste Solutions and Kopanang plant** are located approximately 160km from Johannesburg, near Klerksdorp in the North West province of South Africa. Savuka gold plant is situated near Carletonville in the province of Gauteng, approximately 70km, southwest of Johannesburg
- **West Wits** is located at Mponeng.

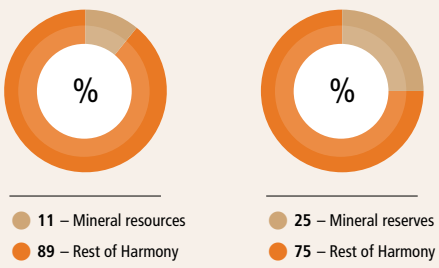
Mineral Resources (inclusive)

16.0Moz

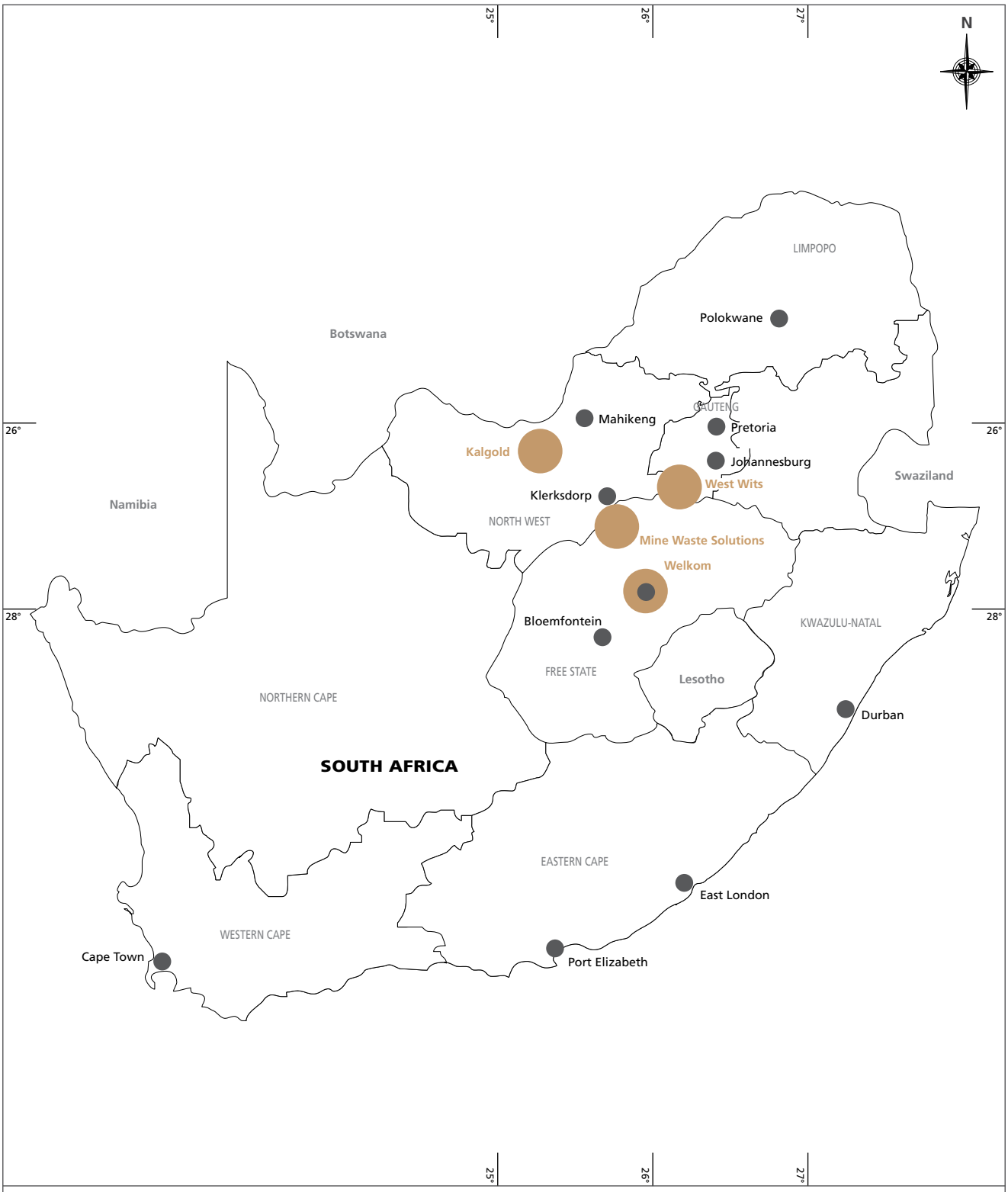
Mineral Reserves

10.4Moz

Gold and Gold equivalents
Contribution to Harmony



Location of Harmony's surface sources in South Africa



LEGEND

Surface operations

	Latitude	Longitude
Kalgold	26°10'12.85"S	25°14'02.70"E
Saaiplaas plant	28°3'37.68"S	26°53'14.59"E
Central plant	28°2'8.36"S	26°52'8.99"E
Mponeng	26°26'15.60"S	27°25'41.24"E

KALGOLD

Kalgold pit.

Mineral Resources (inclusive)

2.5Moz

Mineral Reserves

0.6Moz

Detailed Mineral Resource and Mineral Reserve estimates are presented in this section.

Location

Kalgold is located on the Kraaipan Greenstone Belt, 55km southwest of Mahikeng, between Mahikeng and Stella, along the Mahikeng-Vryburg road (N18) in North West Province, South Africa. The mine is surrounded by farm land. The closest community is at Kraaipan, approximately 15km to the south of the mine.

History

Exploration of the Kraaipan Greenstone belt, by Shell Minerals Division, began in 1980. The D-Zone one area was discovered in 1991 on the farm Goldridge. In 1994, West Rand Consolidated Exploration acquired the orebody and mining started in December 1995. Ore was treated by heap leaching until the installation of the first two mills in 1997. Harmony acquired the mine in 1999. In 2003, a third mill was added to increase treatment capacity. The D-Zone pit was mined out in 2009.

Nature of operation

Kalgold is an open-pit mining operation.

Geology

The Kraaipan Greenstone Belt forms part of the Kaapvaal Craton and is overlain by late Archaean Ventersdorp lavas and tertiary sediments. The Kraaipan Group consists of three formations: the Khunwana, Ferndale and Gold Ridge formations. The Gold Ridge Formation is the oldest and contains banded iron formations, which is the host rock of gold mined in the Kalahari Goldridge deposits.

The Kalgold operation is located within the geological terrain of the Archaean Kraaipan Greenstone Belt. This greenstone environment is exposed in discontinuous outcrops of steeply dipping rocks, which define three narrow, sub-parallel belts that strike approximately north-south. The Goldridge deposits occur within the central belt, which comprises banded iron formations, magnetite quartzite, chert, greywacke, shale and schist. The greenstones are surrounded by intrusive granites and gneisses. These rocks have a complex history of deformation, which includes folding, faulting and shearing.

Younger cover rocks include isolated patches of lavas of the Ventersdorp Supergroup with much of the area blanketed by Aeolian Kalahari sands. Sparse outcrops of quartz porphyry belonging to the Makwasie Formation occur in the region. Several large dykes with a predominant east-west trend have intruded the region.

The geology of the lease area and its immediate vicinity is characterised by ferruginous chemical and clastic sediments inter-bedded with meta-lavas and non-ferruginous meta-sedimentary rocks. Outcrops in the area are sparse and generally restricted to ferruginous rock types, which are more resistant to erosion. Magnetite quartzite and clastic sediments form a low ridge to the west of the lease area. Eastwards of this unit, the iron-rich rocks generally comprise chemical sediments represented by magnetite-rich banded iron formations, cherty banded iron formations and banded chert. These units are interbedded with mafic schist, greywacke and sparse black shale. The geology of the D-Zone is used as a benchmark at Kalgold. The new pits are well established at the A-Zone and Watertank areas, and the blast hole database is now significant. The geology consists of mafic schist, which forms the immediate footwall, a banded iron formation horizon as the main orebody and a succession of clastic sediments consisting of shale, greywacke and volcanic conglomerates as the hanging wall.

Gold mineralisation is hosted by steeply dipping banded iron formations interbedded with schist, shale and greywacke. Banded iron formations consist of rhythmically banded chemical sediments comprising alternating light and dark laminae, which vary from 10mm to 50mm in thickness.

The banded iron formations are oxidised to a depth of about 40m to 60m below surface. Near surface the material is red and porous, composed of quartz, hematite and goethite with minor magnetite. At depth, the unaltered banded iron formation consists of quartz, siderite, pyrite, pyrrhotite and magnetite with minor chlorite, calcite and stilpnomelane. In general, gold mineralisation has an erratic and localised distribution. Individual gold grains are on average less than 10µm in diameter and occur in clusters. Gold is generally associated with goethite in the weathered rocks and with pyrite and pyrrhotite in the fresh material.

Geological modelling has been completed using Datamine software. Drill holes and blast holes have been surveyed and used to construct a series of west-east sections from north to south through the various pit areas. The A-Zone and Watertank areas have been modelled as a single contiguous area as the geology and data is continuous and contiguous.

A wireframe geological model has been constructed by linking individual sections to form a continuous wireframe model.

The construction of the sections includes outlines for the mineralised zones and waste zones. The definition of the mineralised zones is based primarily on the lithological contacts between the banded iron formations and waste material (volcanic/sedimentary schists).

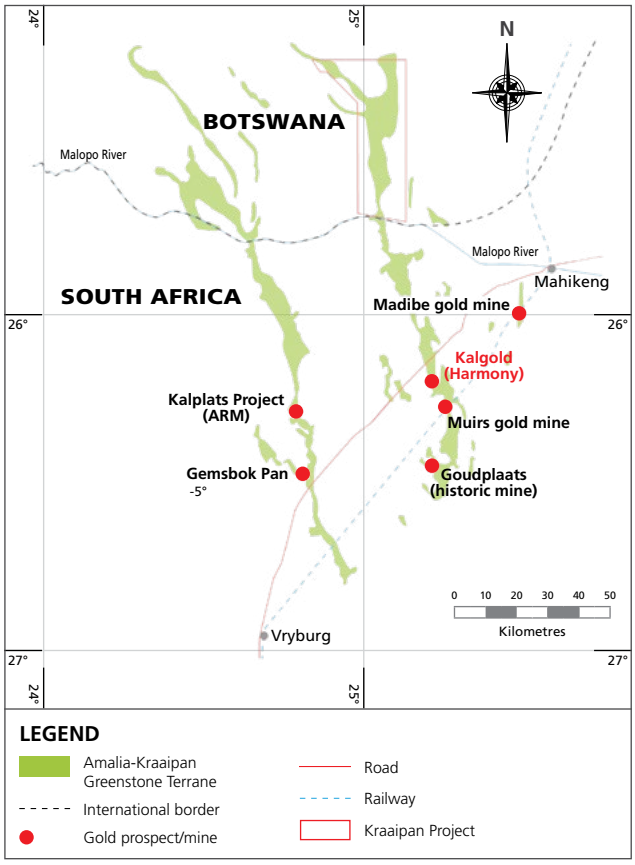
The geological model is constructed in the form of a wire frame from exploration borehole intersections, blast hole information and geological mapping within the pit.

Mining methods and mine planning

Kalgold is an open-pit mining operation, applying 10m benches mining strategy.

The A-Zone and the Watertank pits have merged to form one active pit situated to the north of the D-Zone at a similar stratigraphic position. The A-Zone-Watertank pit has an overall strike of ~2300m and comprises two zones of mineralisation, which dip steeply towards the east. Reef widths range between 15m to 120m.

Kraaipan Greenstone Belt – Locality



The latest pit optimisation and design has resulted in the addition of Henry's and Windmill pits to the current A Zone-Watertank pit mining operations. Windmill pit is separate towards the north of the mining right area, while Henry's pit forms southern extension of A Zone pit.

The variable nature of the grade distribution in the orebody, results in mining of multiple categories of rock, from waste to high grade, that occurs in one mining pass. The mining operation is performed by mining contractors and is managed by Harmony. Current mining capacity is limited to approximately 950 000 tonnes per month. The low grade and waste rock are transported to dedicated locations north of the N18 road, while the high grade ore is transported to the processing plant which is south of the N18 road.

Kalgold's current mining right encompasses an area of 4 595.3ha and was successfully converted, executed and registered as a new order mining right at the Mineral and Petroleum Titles Registration Office on 9 November 2010 under the Mining Right Protocol 574/2008. The DMR reference number NW30/5/1/2/2/77MR is valid for a period of 30 years (from 28 August 2008 to 27 August 2038).

Mineral processing

Ore reception

The Kalgold plant receives ore from the pit at a rate of approximately 129 000t a month. The ore has an average moisture content of approximately 1%.

Ore is transported from the pit by truck and tipped into the plant run-of-mine pad. It is then fed into the pre-primary crusher for the first stage of comminution. Pre-primary product reports to the primary crusher before going through the final stage in the secondary and tertiary crushers. Tertiary crusher product is temporarily stored in the dome prior to milling.

Milling

Ore is fed from the dome to the A, B and C ball mills. The identical A and B mills are generally fed at 55tph. The C mill is the biggest with throughput of 105tph to 110tph. The mill product ranges from 75% to 80% passing 75 micron. The A and B mill cluster cyclone overflow gravitates into a vibrating screen for trash removal while the C mill uses a conventional linear screen. The cyclone overflow, which has a relatively low density, is pumped out to the thickeners for dewatering prior to leaching. Pebble lime is introduced in the system via the C14 conveyor belt for pH control.

Thickening

Lime and flocculant are the two main components of the thickening process. During thickening, lime acts as a coagulant and the flocculant binds the particles together to increase the settling rate of the particles. Lime addition generally ranges between 700g/t to 1 000g/t whereas flocculant addition usually ranges between 8g/t to 10g/t. The lime also maintains a protective level of alkalinity in the leach section to prevent generation of poisonous cyanide gas in the process. The two thickeners are equipped with two variable-speed underflow pumps to control the density in the cyanidation process. The thickener overflow gravitates to the mill process tanks for reuse in the milling process.

Leaching

The thickener underflow, which normally ranges from 50% to 55%, reports into the pre-aeration tank for pre-condition prior addition of the cyanide. The pre-conditioning is performed in order to render cynocides less reactive to cyanide. Cyanide is automatically added to either Leach 2 or Leach 3, depending on the degree of the pre-aeration stage. Kalgold ore requires large amounts of cyanide in order to complete the leaching process. Addition of cyanide generally ranges from 0.6kg/t to 1.8kg/t. Oxygen is injected into the leach tanks to improve the gold dissolution process. The leaching retention time generally varies from 30 to 40 hours. Generally, 75% dissolution takes places in the two leaching tanks. The slurry then gravitates to the carbon-in-leach (CIL) tanks for further leaching and adsorption.

Carbon in leach (CIL)

The dissolved gold, still in pulp, is transferred to the CIL circuit where activated carbon is added to adsorb the gold in solution. The CIL tanks are fitted with rotary screens to allow movement of the carbon in a counter-current manner with the slurry. There are seven stages in the CIL process. The slurry, with 85% of the gold extracted, is pumped through a cyanide destruction circuit into D-Zone pit, which is currently the tailings storage facility. Once the carbon loading in the head tank reaches required gold loading, the carbon is pumped to the loaded make-up screen for the elution process.

Recovery process

The Kalgold plant employs the Zadra elution process for gold recovery. Carbon is treated with a hot caustic and cyanide solution. The pregnant solution is pumped into the electro-winning circuit for gold recovery. Eluted carbon then passes through the acid column to be treated with hydrochloric acid for the removal of inorganic material. Acid-treated carbon is rinsed with high-pH water to neutralise the acid. Acid-treated carbon is then transferred into the kiln for regeneration of the carbon. The regeneration process takes place at temperatures above 700 degrees in the absence of air in order to drive off the organic material.

The electro-winning cathodes are washed through the gold table and filtered through the press to retain the gold sludge, which is then dried, weighed and dispatched to Rand Refinery for the refinery process.

Mineral Resource estimation

Estimates are run using ordinary kriging. While the statistical analysis indicates that the estimate would benefit from a more local method such as macro indicated kriging, a lack of data prevents this. The grade distribution indicates that more advanced forms of estimation such as uniform conditioning or lognormal uniform conditioning would not be recommended for this deposit, leaving ordinary kriging as the only robust option. The statistical analysis does however indicate that the deposit is amenable to ordinary kriging and as this is the method that has been used in the past it is believed the same process should continue to be used until significantly more data has been obtained. For more details on the estimation process followed, see page 152.

Environmental impact

Kalgold's environmental aspects and impacts are managed in line with the amended 2014 environmental management programme (EMP) approved by the DMR in terms of Mineral and Petroleum Resources Development Act 28 of 2002 (MPRDA) and Department of Rural Environment and Agricultural Development in terms of (NEMA) National Environmental Management Act 107 of 1998. All environmental aspects and impacts emanating from mining activities are documented in the approved EMP and the environmental aspect register, as required by the MPRDA and the ISO 14001:2015 standard.

Annual environmental performance monitoring and compliance audits are conducted by the DMR and Department of Environmental Affairs to verify compliance with the following legislation:

- Mine Health and Safety Act 29 of 1996
- National Water Act 36 of 1998
- National Environmental Management Act 107 of 1998
- MPRDA Act 28 of 2002
- National Heritage Resources Act 25 of 1999
- National Forests Act 84 of 1998
- National Environmental Management: Air Quality Act 39 of 2004.

Environmental performance assessments are conducted annually as per the commitments stipulated in the approved EMP amended in 2014 and environmental authorisations in terms of Regulation 55 of the Mineral and Petroleum Resources Development Regulations and by an independent environmental consultant and the report is submitted to the DMR. Environmental legal compliance audits are also conducted every two years to verify compliance with all relevant legal requirements. An online-based Kalgold environmental legal register (at www.dreyer-legal.co.za) is updated to include changes in applicable and relevant environmental legislation and associated regulations.

Bio-monitoring surveys are conducted on an annual basis to determine the status of surrounding surface water streams close to the operation. The status quo of the water bodies is monitored for water quality in relation to guidelines within the water use licence conditions and in terms of the National Water Act.

In addition to the bio-monitoring surveys, a groundwater and dust monitoring programme is implemented monthly and quarterly to determine the status of groundwater quality and quantity, as well as levels of dust fallout in terms of the National Water Act and National Environmental Management: Air Quality Act, and to determine compliance with the conditions stipulated in the water use licence and provisional atmospheric emissions licence.

Kalgold is ISO 14001 accredited and has been recertified to conform to the requirements of the ISO 14001:2015 standard. The operation attained its accreditation in 2010 and remains accredited to eliminate or minimise the effects of mining activities on the environment and adjacent communities.

In September 2016, the mine received a water use licence from the Department of Water and Sanitation, and approval of the D-Zone open-pit closure plan from the DMR.

MATERIAL RISKS

Material risks which may impact Kalgold's resource and reserve statement are as follows.

Significant risks	Remedial action
• Slope failure	• Pre-split blasting to protect high walls

COMPETENT PERSON

Ore Reserve manager

Rebaone Francis Gaelejwe
BSc Hons (Geology), EMBA, SACNASP
20 years' experience in gold mining.

KALGOLD

Gold – Mineral Resource estimates at 30 June 2021 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Open pit	9.4	0.88	8	268	67.8	0.89	60	1 942	4.4	0.63	3	89	81.6	0.88	72	2 299
Tailings dam	–	–	–	–	–	–	–	–	23.8	0.26	6	201	23.8	0.26	6	201
Total	**9.4**	**0.88**	**8**	**268**	**67.8**	**0.89**	**60**	**1 942**	**28.2**	**0.32**	**9**	**290**	**105.4**	**0.74**	**78**	**2 501**

Modifying factors

Open pit	MCF (%)	Dilution (%)	PRF (%)	Cut-off (g/t)
2020	100	7	84	0.58
2021	100	8	84	0.58

Gold – Mineral Reserve estimates at 30 June 2021

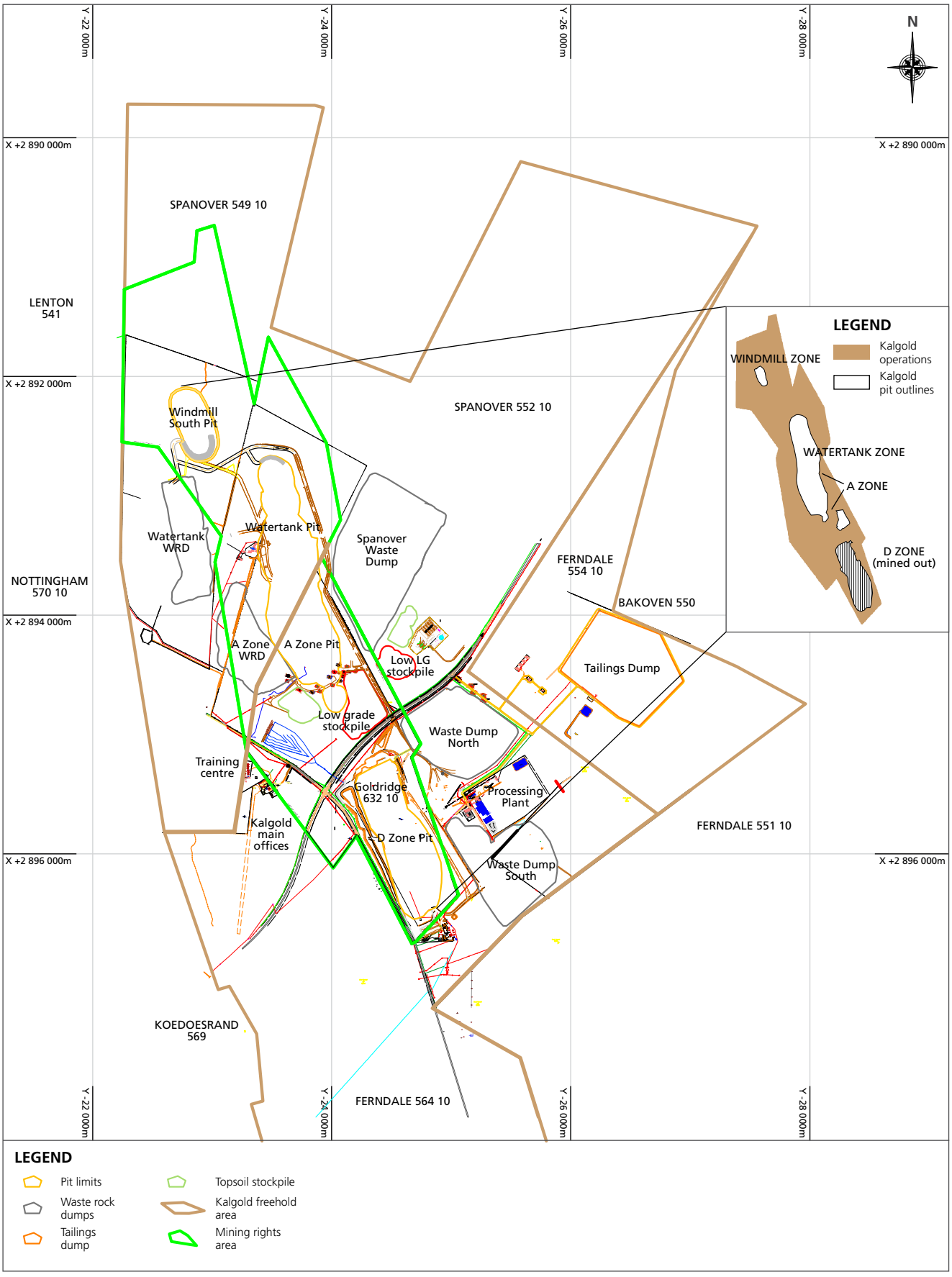
	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Open pit	6.1	0.93	6	182	12.5	1.12	14	449	18.5	1.06	20	631

OPERATIONAL PERFORMANCE

Kalgold: Key operating statistics

	Unit	FY21	FY20	FY19	FY18	FY17
Operation						
Volumes milled	000t (metric)	**1 507**	1 541	1 619	1 550	1 506
	000t (imperial)	**1 662**	1 700	1 785	1 709	1 660
Gold produced	kg	**1 109**	1 153	1 249	1 250	1 205
	oz	**35 655**	37 070	40 156	40 189	38 742
Grade	g/t	**0.74**	0.75	0.77	0.81	0.80
	oz/t	**0.021**	0.022	0.022	0.024	0.023
Financial						
Average gold price received	R/kg	**859 070**	742 533	593 482	576 630	573 010
	US$/oz	**1 735**	1 474	1 302	1 396	1 311
Capital expenditure	Rm	**208**	99	61	108	96
	US$m	**14**	6	4	8	7
Cash operating cost	R/kg	**699 546**	584 218	556 284	452 365	462 037
	US$/oz	**1 413**	1 160	1 220	1 095	1 057
All-in sustaining cost	R/kg	**905 253**	690 239	642 147	552 032	558 731
	US$/oz	**1 828**	1 371	1 369	1 336	1 278

Kalgold – Kraaipan Greenstone Belt Magisterial district of Vryburg



TAILINGS RETREATMENT FACILITIES

Mine Waste Solutions.

Mineral Resources (inclusive)

7.0Moz

Mineral Reserves

5.9Moz

Detailed Mineral Resource and Mineral Reserve estimates are presented in this section.

Free State

The Free State surface source operations comprise the following:

- **The Phoenix (Tswelopele beneficiation) operation** – located adjacent to Harmony's current and historical operations in the Free State, re-treats tailings from TSFs in the region to extract any residual gold. The Phoenix operation makes use of the Saaiplaas plant, located close to the historic Saaiplaas 2 shaft area and in close proximity to Masimong 4 shaft. Phoenix began operating in 2007
- **St Helena** – although the project had a positive net present value in the feasibility study that was concluded in 2009, it has not yet been implemented
- **Central plant retreatment project** – tailings reclaimed from the FSS5 tailings storage facility are processed at Central plant which was adapted for tailings retreatment. Plant commissioning began in June 2017 with ramp-up to a capacity of 300 000t a month achieved by the end of July 2017

- **Rock dumps** – around 3.9Mt of reserves are available in rock dumps in the vicinity of the Free State operations. A programme, run by Harmony's Metallurgical Services, to mill and process these dumps as and when there is spare plant capacity available, began in FY10
- **Tailings material** – 561.6Mt of tailings material contained in tailings storage facilities in the Free State are estimated to contain around 4Moz of gold
- **Moab Khotsong surface sources** – includes the Mispah tailings storage facilities, the Kop Paydam and the Moab MOD.

Phoenix

The Phoenix operation, or the Tswelopele beneficiation operation, is a low-cost, high-profit margin low-grade tailings reprocessing operation.

Phoenix uses Harmony's Saaiplaas gold plant, which was built in 1954. Most of the original structures and equipment were broken down around 1990 and removed with the exception of the thickeners and pachuca tanks, which are still in use. The plant was expanded in 1980 with the addition of a run-of-mine (RoM) milling section, additional pachucas and filters. While the old sections have been decommissioned and progressively demolished since the 1990s, the newer sections remain in operation. The plant, with a design capacity of 330 000tpm, initially formed part of Anglo American's Free State gold mining operations.

The Saaiplaas plant originally processed ore from Saaiplaas 1, 2 and 3 shafts. Saaiplaas 1 closed around 1980, Saaiplaas 2 around 1996, and Saaiplaas 3 around 2000. The Saaiplaas plant once also processed ore from the Erfdeel (now Masimong) shafts. With the decline of mining in the area, the plant was relegated to processing unmilled surface source material (waste) at a rate of 110 000tpm until July 2007. As all material currently processed by the plant is recovered by hydro-mining from old, desiccated slimes dams in the area, crushing or milling is not required. The ore-receiving silos were demolished in July 2007 when milling ceased.

The original design life of the Phoenix slimes retreatment project was five years (to end 2011). The short operating life was due to the restricted deposition capacity for the residues generated at the planned processing rate of 500 000tpm. Given the stability concerns of the TSFs being deposited at the time, this rate was reduced further to 424 000tpm from September 2011.

A major capital project was undertaken to build a replacement cyclone-deposition TSF at St Helena 1, 2 and 3 that would allow the deposition of 500 000tpm, again extending the operating life.

Nature of operations

Hydro-mining on two TSFs, Brand A and Dam 21, for the Phoenix operation and one TSF, FSS5 for the Central Plant retreatment project, is conducted under contract. Material is reclaimed using high-pressure water on the TSF, from where the material is pumped to the Saaiplaas plant in separate rubber-lined pipelines from Brand A and Dam 21, and to Central plant from FSS5.

Two additional carbon-in-leach (CIL) tanks have been installed in the Saaiplaas plant to increase leach residence time to improve dissolution and reduce soluble loss.

Location

The Saaiplaas plant is located in the heart of the Free State goldfields near Welkom in the Free State province of South Africa, at latitude 28°02'00"S and longitude 26°52'18"E.

Description of hydro-mining and mineral processing operations

Production plans

The current planned processing rate for the Phoenix operation is 500 000t a month with residue disposal at the St Helena 1, 2 and 3 cyclone TSF. The current life of the Phoenix operation has been extended to 2029.

Two surface sources are currently being mined:

- The Brand A TSF has had some 65% of its material removed already. It has a grade of 0.28g/t Au at 40% to 45% recovery
- The 21 TSF (which replaced the Harmony One TSF as a source from end-2011) has a grade of 0.27g/t Au at 40% to 45% recovery
- All the material from the Harmony One TSF has been reprocessed with only the clean-up remaining.

Residue deposition onto the FSS6, FSS4 and FSS1 TSFs replaced the old Saaiplaas deposition TSFs at the end 2011. Deposition onto these TSFs and the Brand D TSF stopped with the commissioning of the St Helena 1, 2 and 3 cyclone TSF which can accept the full monthly production of 500 000t from the Saaiplaas plant.

Saaiplaas plant began depositing material on the St Helena 1, 2 and 3 TSF in February/March 2013. This TSF is now the sole deposition site for the Saaiplaas plant. Commissioning of the St Helena 1, 2 and 3 TSF allowed the planned increase in plant throughput to the required 500 000t a month until 2029.

As the St Helena 1, 2 and 3 cyclone TSF was constructed on an existing deposition site, it did not require the environmental permitting that a new site would have needed.

Hydro-mining from the Brand A and Dam 21

TSFs currently reclaim slimes at an average in situ grade of 0.25g/t. The Saaiplaas plant recovers between 40% and 45% of the contained grade in the recovered pulped material received, yielding 65kg of gold a month (planned).

While the Central plant retreatment operation reclaims slimes at an average in situ grade of 0.255g/t with a recovery rate of around 55%, yielding 50kg a month. This represents around 1.5% of Harmony's total gold production.

The operating unit cost of the Phoenix operation is R60/t at 500 000t a month and for the Central plant retreatment operation it is R52/t at 300 000t a month. These reclamation projects are positioned as safe, low-risk, low-cost, profitable, low-grade tailings reprocessing operations.

SOUTH AFRICA – SURFACE SOURCES **TAILINGS RETREATMENT FACILITIES** continued

Hydro-mining

The hydro-mining (monitoring) process uses 100mm and 150mm diameter high-pressure water monitors (cannons) to re-pulp the consolidated slimes to a relative density of around 1.4. The re-pulped slime flows under gravity to an in-dam finger screen where large trash is removed and then to the sump from where a transfer pump delivers it to one of two vibrating screens for secondary screening to remove oversize and smaller trash material. The screen underflow falls into the transfer sump. A separate pump station at each reclamation TSF, pumps the reclaimed screened pulp via rubber lined pipelines to the plant.

The transfer pumping of slimes to Saaiplaas and Central plants is done by Envirotech D-frame with three to five pumps in series (depending upon the distance to be pumped).

Oxygen is injected into the transfer pipeline at the reclamation site to neutralise cyanide-consuming components which improves gold dissolution and reduces cyanide consumption in the plant.

The reclaimed tailings pulp is delivered to the thickener distribution tower at both the Saaiplaas and Central plants where hydrated lime is added to raise the pH to 10.5. The pulp is distributed to the thickeners where the relative density is increased to 1.45 prior to the addition of cyanide for the leaching process.

The thickened pulp is pumped to linear screens with 800µm apertures where any residual trash is removed prior to the addition of cyanide for the leach and adsorption stages in both plants.

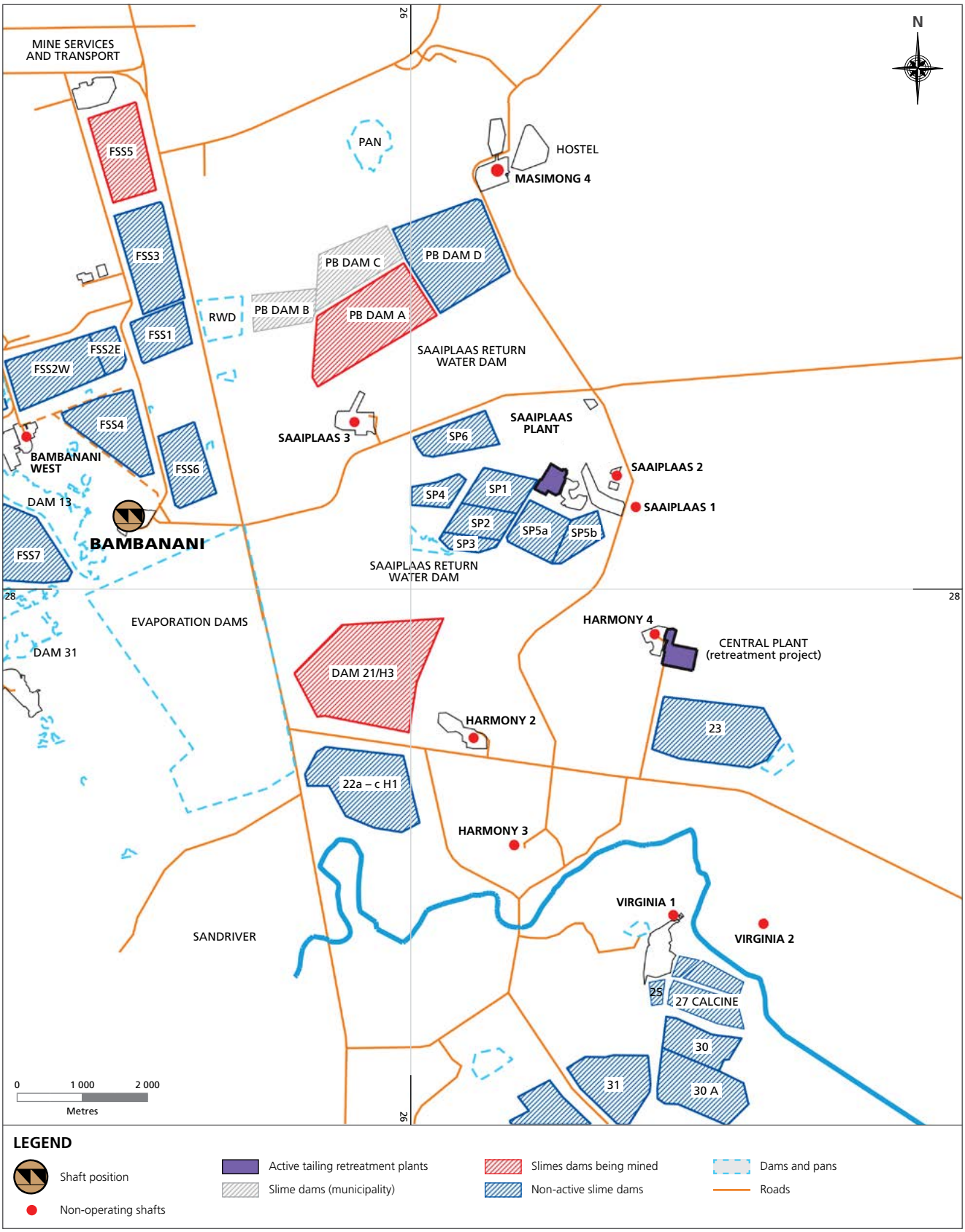
Central plant uses six mechanically agitated leach tanks and eight mechanically agitated carbon-in-pulp tanks with cascade flow between the tanks, while the Saaiplaas plant has two parallel circuits with six air agitated pachuca tanks operated in carousel mode. Two tanks in each circuit are used for leaching and four for the carbon-in-leach process.

The final product of both the Saaiplaas and Central plants is loaded carbon.

Carbon elution for the recovery of gold is carried out at Central plant for both the Central plant retreatment and the Phoenix operations.

Pumping station.

Location of Harmony's Free State Surface Operations



SOUTH AFRICA – SURFACE SOURCES

Mine Waste Solutions Kareerand Dam.

Mineral Resources (inclusive)

6.5Moz

Mineral Reserves

3.9Moz

Detailed Mineral Resource and Mineral Reserve estimates are presented in this section.

WEST RAND/KLERKSDORP GOLDFIELDS

History

Harmony Gold acquired the remaining AngloGold Ashanti South African assets, Mponeng and surface operations, in October 2020. The acquisition for surface operations in the Vaal River region in Klerksdorp includes the Mine Waste Solutions and Kopanang plant operations. The West Wits operation near Carletonville includes the Savuka plant.

The MWS operation uses the Chemwes plant, which commenced production in 1952 for the Stilfontein Gold Mine. Following the rise in the uranium price in the 1970s, the operation investigated the uranium recovery from the Stilfontein gold tailings dams and later commissioned the uranium plant in mid-1979. The plant operated until 1989 processing 29.4Mt of tailings and recovery 4.560t of U_3O_8. In 2003, the plant was later converted into a gold tailings treatment operation and no uranium was produced. In 2007, after First Uranium Proprietary Limited (South Africa) acquired MWS with the purpose of treating the tailings dams for both gold and uranium. The operation commissioned the second and third plant between

2007 and 2012 treating tailings. Changes were made in the configuration of the flotation and uranium processes after which the float plant was recommissioned in July 2016 and the uranium plant in October 2016. As part of the optimisation, the uranium and flotation plants were discontinued in 2017 resulting in MWS producing gold only.

Savuka gold plant was commissioned in 1961 and originally designed to treat ore material from Savuka and Tau Tona shafts. Upon closure of the afore-mentioned shafts, the plant was then subjected to treating tailings material, Savuka and Mponeng waste rock dumps in 2015.

Kopanang plant is a twin stream process which exploits waste rock dumps and environmental cleanups in the Vaal river area. Originally the plant was commissioned in 1984 to process reef ore from Kopanang shaft. Harmony Gold acquired the plant together with the rest of AGA South African assets in October 2020. The plant will however be placed on care and maintenance from August/ September 2021.

Nature of the operation

Surface operations are reprocessing low grade material from tailing storage facilities and waste rock dump scattered across the Vaal River, Stilfontein and West Wits area into one area, in efforts to reduce the tailings and waste rock dumps footprint. In the Klerksdorp region, the company utilises the Kareerand dam to redeposit retreated residues and the West Compartment 4 and West Extension for waste rock dumps residue. In the Carletonville area, the company utilises the Savuka TSF for both the retreated residue material and waste rock dumps residue.

MWS operation consists of three plants namely Stream 1, Stream 2 and Stream 3 processing five sources. The plants' capacities were considered when the plan was done and planned accordingly.

Mineral Resource

The material contained in the tailing storage facilities (TSF) and waste rock dumps (WRD) originates from the historic ore-bearing reefs mined by the Vaal River, Buffelsfontein, Hartebeestfontein, Stilfontein and Carletonville gold mines. These gold mines are deep level gold mines, which predominantly extract the tabular, oligomictic pebbly conglomerate. In the Vaal River the predominant reef is the Vaal Reef (VR) ore situated within the Krugersdorp Formation of the Central Rand Group, in the upper unit of the Witwatersrand Supergroup. The VR has been predominantly mined for gold in the past although the reef also contains uranium oxide. The dominant reef residue deposited on the Carletonville TSF, is from the Oligomictic conglomerate from the Ventersdorp Contact Reef (VCR) found at the bottom of the Ventersdorp Supergroup and Carbon Leader Reef (CLR) of the lower Johannesburg subgroup of the Central Rand Group.

The marginal ore dumps consist of waste rock mined from underground workings, hoisted, transported to surface and deposited via conveyor belts. The gold contained within these dumps was sourced from minor reef intersected while accessing the primary reef, gold-bearing reef contained within small fault blocks that were exposed by off-reef development, and from cross-tramming of gold-bearing reef material to the waste tips.

The TSFs consist of fine-grained residue material which originates from the processing of the underground ore from the various operations.

Mineral rights, legal aspects and tenure

After the sales of the AngloGold Ashanti Vaal River mining operations, MWS is no longer under the VR mining right (16MR). The application for amendment of the MWS environmental authorisation was submitted to the Department of Environmental Affairs (DEA) in 2018. The DEA declined the application because the DEA is of the opinion that the DMR is the competent authority. Awaiting feedback following consultation with senior officials from DEA and the DMR to obtain clarification to confirm the competent authority.

The current mining rights for the South African operations cover multiple horizons, ie both underground and surface for West Wits (West Mining Right (01MR) and Magnum Farm (248MR). The TSFs falling outside the mining right are accommodated in the approved EMP and financial provision for rehabilitation for the West Wits Mining Rights, as well as under historic surface rights permits for West Wits, which are still valid.

Mining methods and mine planning

The tailings are reclaimed using several hydraulic (high pressure water) monitoring guns to deliver water at pressure, typically 27-30 bar, to the face. The tailings material is reclaimed by blasting the TSF face with the high-pressure water, resulting in the slurry gravitating towards pumping stations. These monitoring guns can be positioned to selectively reclaim required areas from the TSFs. Bench heights are constrained by the force delivered from the monitoring gun nozzle and safety constraints. With enough pressure, face advance of up to 25m can be reclaimed per cut. Typical bench heights are between 10 and 15 metres. The pump stations are located at the lowest point of the dams to ensure that the slurry from the dams will gravitate towards the pump station from where the slurry will be pumped to the processing plants.

For marginal ore dumps, bulldozers are used to create safe loading faces. The material is then loaded from the face onto trucks by means of front-end loaders and transported to the relevant gold plants for processing. Some of the material is transported from the face to stockpile pads next to the rail and from the pads onto hoppers and railed to the Kopanang plant.

Mineral processing

Mine Waste Solutions gold plant processes hydraulically re-mined slurry from several tailings storage facilities. The ore is reclaimed by means of high-pressure monitor guns into a pump station that feeds the plant. In the plant, the ore gets processed through a Carbon-In -Leach (CIL) circuit for the dissolution of gold and adsorption of the aurocyanide complex onto the activated carbon using cyanide, oxygen and lime as the principal reagents for the dissolution reaction and activated carbon as the adsorbent. Once loaded with gold, the carbon proceeds to the elution circuit to strip the adsorbed gold into a more concentrated solution that proceeds to the electrowinning step for electrolytic gold recovery and smelting.

The Savuka plant is a hydrometallurgical plant. The mineral process is dependent on the source material: tailings material is pumped directly from the re-mining site to the leach circuit while hard rock material will go through comminution first, then dewatering process to improve the density required for leach circuit. At leach, lime is added for pH adjustment and sodium cyanide for the gold dissolution. The leach product goes to Carbon-In-Pulp (CIP) section for dissolved gold recovery by use of activated granular carbon.

SOUTH AFRICA – SURFACE SOURCES continued

Infrastructure

Marginal ore dumps in the Vaal River area are processed through the Kopanang gold plant which is a dedicated surface sources metallurgical plant while all tailings material in the Vaal River and MWS areas are processed through the three metallurgical streams at the MWS metallurgical operations, with the fourth stream planned to be added in 2024. In the Carletonville area, the tailing material and waste rock dumps are currently processed through the Savuka plant. In future, Savuka plant is planned to solely be dedicated to tailings reclamation and Kusasalethu plant used for waste rock dumps.

Adequate deposition capacity for the surface operations exists in all areas. Operational infrastructure road, rail, offices, security service, water and power supply are adequate, and is shared with the operations in the relevant areas.

Mineral Resource estimation

Prior to 2011 for the Vaal River operations, the grade estimations for the TSFs were based on the residue grades obtained from the different process plants, as well as various ad hoc sampling projects in selected areas. Post 2011, the majority of the Vaal River and MWS TSFs have since been re-sampled by means of an extensive drilling exercise which commenced in 2011. The auger drilling typically took place on a 150m x 150m grid (Mineral Resource model) as well as a minimum of 50m x 50m grid (grade control model). The vertical sampling interval of 1.5m was implemented and where possible all holes were drilled into the underlying strata to allow the estimation of the base of the TSF.

The drill hole sampling information was then utilised to generate 3-dimensional grade models (block model) using the ordinary kriging estimation method. The variograms used for the grade estimation consist of both horizontal and downhole variograms. The methodology used for the construction of the grade model constitutes well defined 3D wireframes which are constructed using the drill holes and the results from monthly surveys on currently reclaimed TSFs and aerial surveys carried out on an annual basis for TSFs which are planned to be reclaimed. These models are regularly updated during the grade control process. A stringent QA/QC process was applied to the sampling and assay processes to ensure a high level of confidence in the results.

Location map of West Wits area.

Environmental impact

Mine Waste Solutions manages its environmental impacts through an accredited ISO 14001:2014 Environmental Management System. The operation first obtained its environmental certification in 2015 under the ISO 14001:2004 standard. In 2018 it got recertified under the ISO 14001:2015 standard. In conformance to the standard requirements Mine Waste Solutions has identified, and risk ranked the significant aspects and impacts of its activities and determined measures to minimise its aspects and associated impacts. This is documented in the relevant ISO 14001:2015 documents and managed accordingly. The operations are audited by an external certification body on an annual basis, and the operation has managed to maintain its certification since it got recertified in 2018.

The following environmental authorisations have been issued to Mine Waste Solutions by the relevant regulators.

- Atmospheric emissions licence – Issued 29/10/2020
- Water Use Licence – Issued 30/11/2018
- Environmental authorisation – Issued 29/11/ 2009.

The local authorities have also issued the operations with a permit to store hazardous and flammable material as required by the local by-laws.

Internal audits are conducted as part of the ISO 14001:2015 management standard and depending on the conditions of the authorisations. Periodically, depending on the frequency stipulated in the authorisations external audits are conducted by independent auditors. The regulators also do periodic assessments on the operations based on their jurisdiction.

Legal environmental audits are also conducted on a regularly basis to determine the level of compliance to South African environmental legislation applicable to the operations.

MATERIAL RISKS

Material risks that may impact Mineral Resource and Reserve Statements.

Significant risks	Remedial action
• If the Kareerand project is not approved	• Alternative redeposition strategy for MWS and Vaal River dams.

COMPETENT PERSON

Ore Reserve manager

Bareng Joseph Selebogo
Plato: MS 0151
MSCC: 1900
Years of experience

- In industry – 35 years
- Reporting of reserves – 11 years

Mine Waste Solutions Hydro Mining SE dam.

SOUTH AFRICA – SURFACE SOURCES continued

OPERATIONAL PERFORMANCE

Surface Operations: Key operating statistics

	Unit	FY21	FY20	FY19	FY18	FY17
Operation						
Volumes milled	000t (metric)	**10 107**	4 476	4 307	2 821	2 810
	000t (imperial)	**11 145**	4 936	4 749	3 110	3 099
Gold produced	kg	**3 580**	1 753	1 515	1 081	1 055
	oz	**115 099**	56 630	48 708	34 755	33 918
Grade	g/t	**0.354**	0.392	0.352	0.383	0.375
	oz/t	**0.010**	0.011	0.010	0.011	0.011
Financial						
Average gold price received	R/kg	**872 960**	779 835	587 483	576 737	572 172
	US$/oz	**1 763**	1 549	1 289	1 374	1 309
Capital expenditure	Rm	**39**	2	8	3	7
	US$m	**3**	0	1	0	1
Cash operating cost	R/kg	**594 033**	486 792	456 473	415 993	434 715
	US$/oz	**1 200**	967	1 001	1 007	995
All-in sustaining cost	R/kg	**619 692**	484 507	462 178	417 462	445 451
	US$/oz	**1 252**	962	1 014	1 010	1 019

SURFACE SOURCES

Gold – Mineral Resource estimates at 30 June 2021 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Phoenix	42.6	0.28	12	385	–	–	–	–	–	–	–	–	42.6	0.28	12	385
St Helena	191.3	0.27	52	1 656	–	–	–	–	–	–	–	–	191.3	0.27	52	1 656
Central Plant	–	–	–	–	52.0	0.27	14	450	–	–	–	–	52.0	0.27	14	450
Other:																
– Waste rock dumps	–	–	–	–	2.3	0.48	1	36	16.7	0.43	7	231	19.0	0.44	8	267
– Tailings	–	–	–	–	571.7	0.22	128	4 106	15.5	0.19	3	94	587.1	0.22	131	4 200
Mispah	–	–	–	–	74.8	0.30	22	719	–	–	–	–	74.8	0.30	22	719
Kop Paydam	–	–	–	–	11.0	0.20	2	72	–	–	–	–	11.0	0.20	2	72
Moab MOD	–	–	–	–	3.4	0.41	1	45	–	–	–	–	3.4	0.41	1	45
Vaal River tailings	10.8	0.20	2	70	369.7	0.26	95	3 070	–	–	–	–	380.6	0.26	98	3 140
Mine Waste Solutions	82.9	0.22	18	588	164.9	0.26	42	1 358	–	–	–	–	247.8	0.24	61	1 946
West Wits tailings	–	–	–	–	45.5	0.34	16	503	–	–	–	–	45.5	0.34	16	503
Vaal River WRD	–	–	–	–	3.3	0.31	1	33	2.9	0.28	1	26	6.2	0.30	2	60
West Wits WRD	–	–	–	–	2.2	0.40	1	29	–	–	–	–	2.2	0.40	1	29
Grand total	**327.7**	**0.26**	**84**	**2 699**	**1 300.8**	**0.25**	**324**	**10 419**	**35.1**	**0.31**	**11**	**352**	**1 663.6**	**0.25**	**419**	**13 471**

Modifying factors

Surface Sources		MCF (%)	PRF (%)	Cut-off (cmg/t)
Phoenix	2020	100	45	0.28
	2021	100	45	0.28
St Helena	2020	100	45	0.27
	2021	100	45	0.27
Central Plant	2020	100	50	0.27
	2021	100	50	0.27
Other Tailings	2020	100	51	0.27
	2021	100	51	0.22
Vaal River tailings	2021	100	47	0.20
Mine Waste Solutions	2021	100	47	0.25
West Wits tailings	2021	100	47	0.27

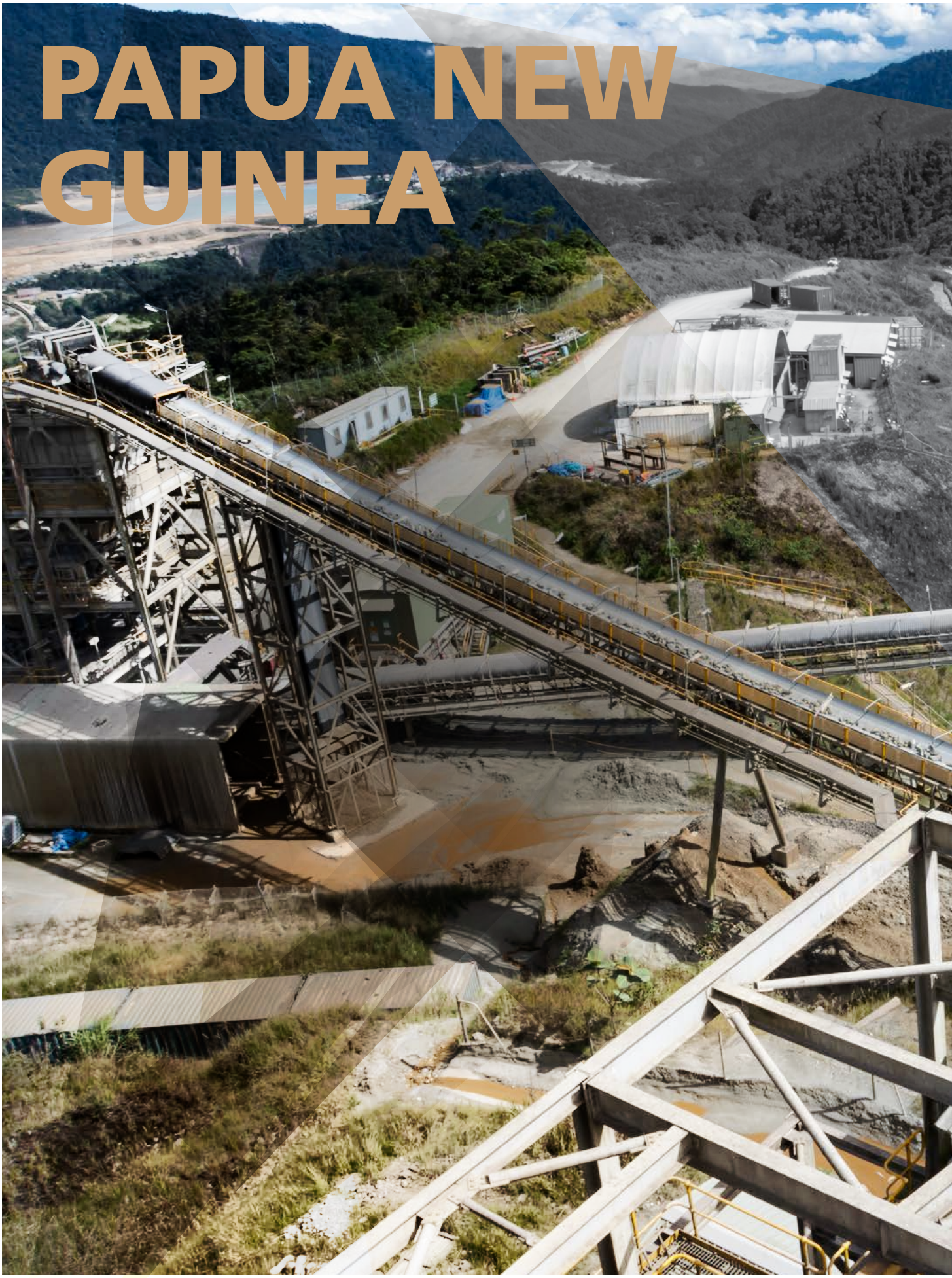
Gold – Mineral Reserve estimates at 30 June 2021

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Phoenix	42.6	0.28	12	385	–	–	–	–	42.6	0.28	12	385
St Helena	108.6	0.27	29	933	–	–	–	–	108.6	0.27	29	933
Central Plant	–	–	–	–	52.0	0.27	14	450	52.0	0.27	14	450
Vaal River tailings	–	–	–	–	190.3	0.29	56	1 789	190.3	0.29	56	1 789
Mine Waste Solutions	50.0	0.24	12	390	164.9	0.26	42	1 358	214.9	0.25	54	1 749
West Wits tailings	–	–	–	–	38.2	0.32	12	398	38.2	0.32	12	398
Other:												
– Tailings	–	–	–	–	571.7	0.22	128	4 106	571.7	0.22	128	4 106
Total	**201.1**	**0.26**	**53**	**1 708**	**1 017.0**	**0.25**	**252**	**8 101**	**1 218.1**	**0.25**	**305**	**9 809**

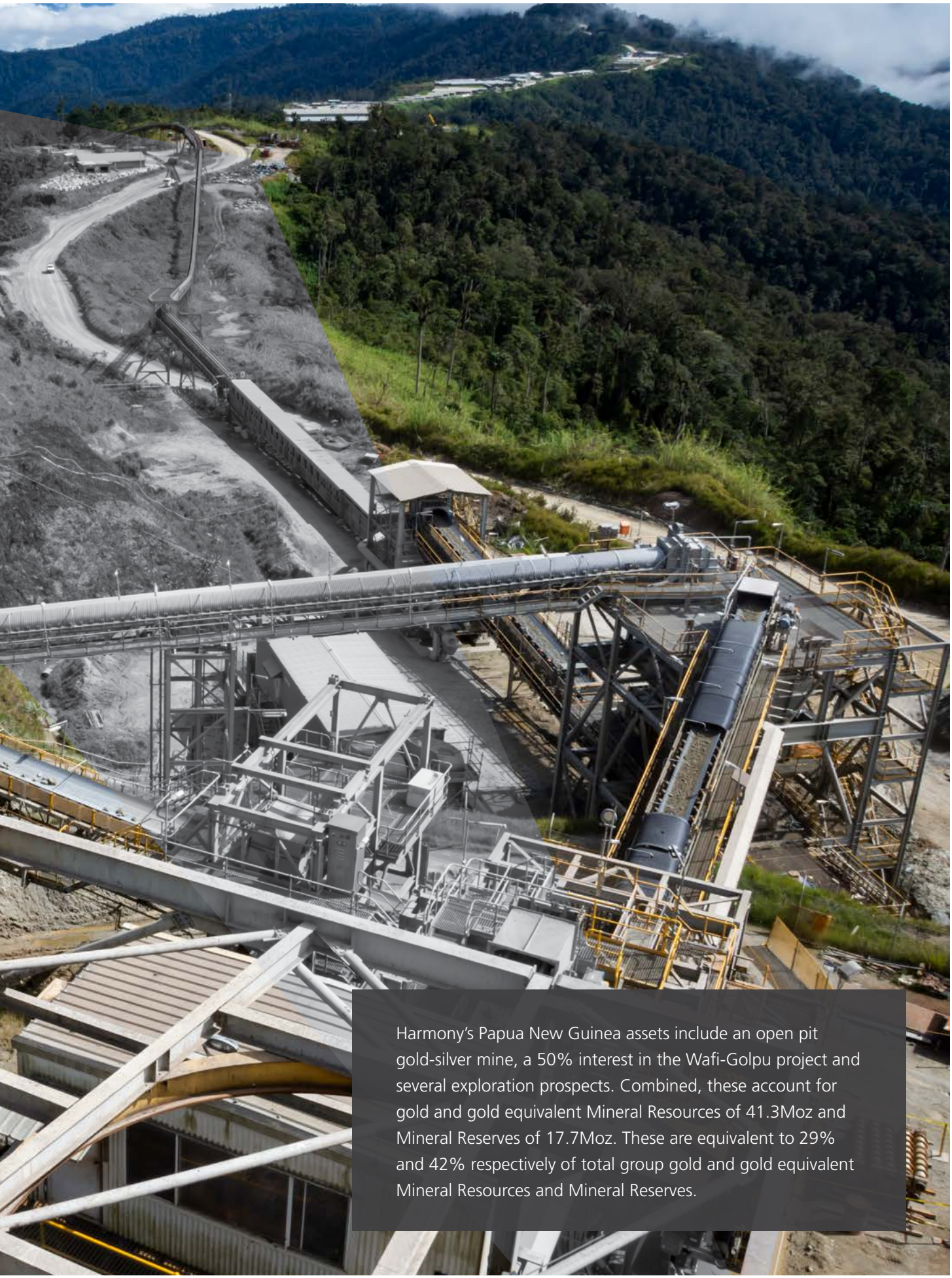
Uranium – Mineral Resource estimates at 30 June 2021 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		U_3O_8		Tonnes		U_3O_8		Tonnes		U_3O_8		Tonnes		U_3O_8	
	(Mt)	(kg/t)	(Mkg)	(Mlb)	(Mt)	(kg/t)	(Mkg)	(Mlb)	(Mt)	(kg/t)	(Mkg)	(Mlb)	(Mt)	(kg/t)	(Mkg)	(Mlb)
Free State																
Surface Sources	–	–	–	–	135.7	0.11	14	32	–	–	–	–	135.7	0.11	14	32
Klerksdorp Goldfield																
Surface Sources	82.9	0.07	6	12	631.2	0.09	56	124	–	–	–	–	714.1	0.09	62	137
Total	**82.9**	**0.07**	**6**	**12**	**766.9**	**0.09**	**71**	**156**	**–**	**–**	**–**	**–**	**849.8**	**0.09**	**76**	**168**

PAPUA NEW GUINEA



Hidden Valley.



Harmony's Papua New Guinea assets include an open pit gold-silver mine, a 50% interest in the Wafi-Golpu project and several exploration prospects. Combined, these account for gold and gold equivalent Mineral Resources of 41.3Moz and Mineral Reserves of 17.7Moz. These are equivalent to 29% and 42% respectively of total group gold and gold equivalent Mineral Resources and Mineral Reserves.

PAPUA NEW GUINEA

In Papua New Guinea, Harmony has one wholly-owned open-pit, gold and silver mine – Hidden Valley – and a 50% interest in the Wafi-Golpu project, which encompasses the Golpu, Wafi and Nambonga deposits. Both the Hidden Valley mine and the Wafi-Golpu project are located in the Morobe Province. Kili Teke, an advanced stage exploration prospect that is on care and maintenance, lies further west in the Hela Province. As at 30 June 2021, our combined estimated gold and gold equivalent Mineral Resource (inclusive) in Papua New Guinea was 41.3Moz and the combined estimated Mineral Reserve, 17.7Moz.

MINERAL RESOURCES AND MINERAL RESERVES BY OPERATION

Papua New Guinea	134 – 151
Hidden Valley	**138**
Wafi-Golpu project	**143**
Kili Teke	**149**

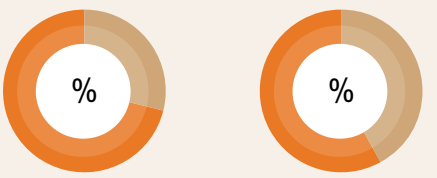
Mineral Resources (inclusive)

41.3Moz

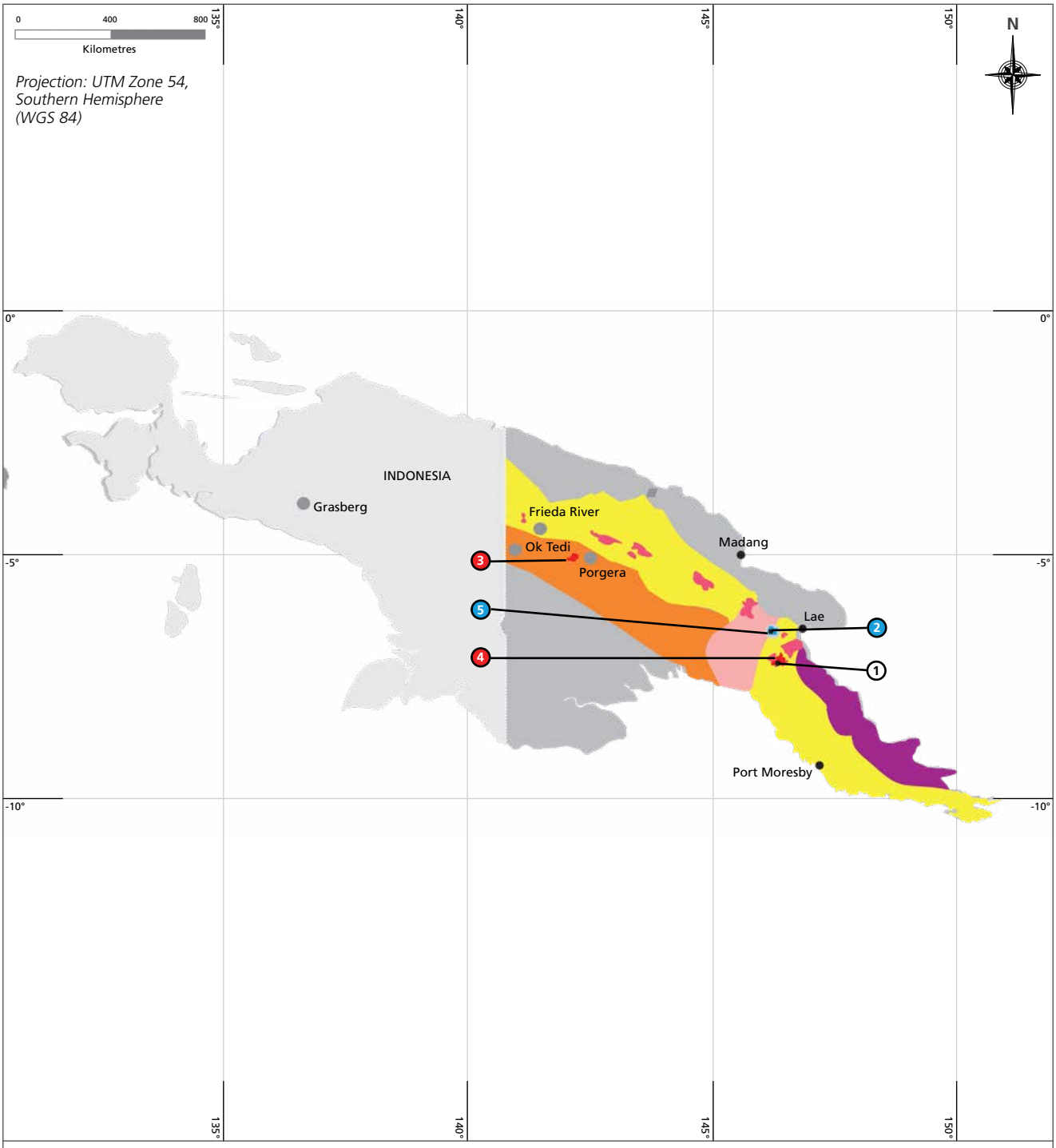
Mineral Reserves

17.7Moz

Gold and Gold equivalents
Contribution to Harmony



Harmony – Papua New Guinea



LEGEND

- New Guinea Mobile Belt / Papuan Fold Belt } Niugini Mobile Belt
- Papuan Ultramafic Belt
- Aure Trough
- Other mining operations
- Towns/Cities

Operations and projects

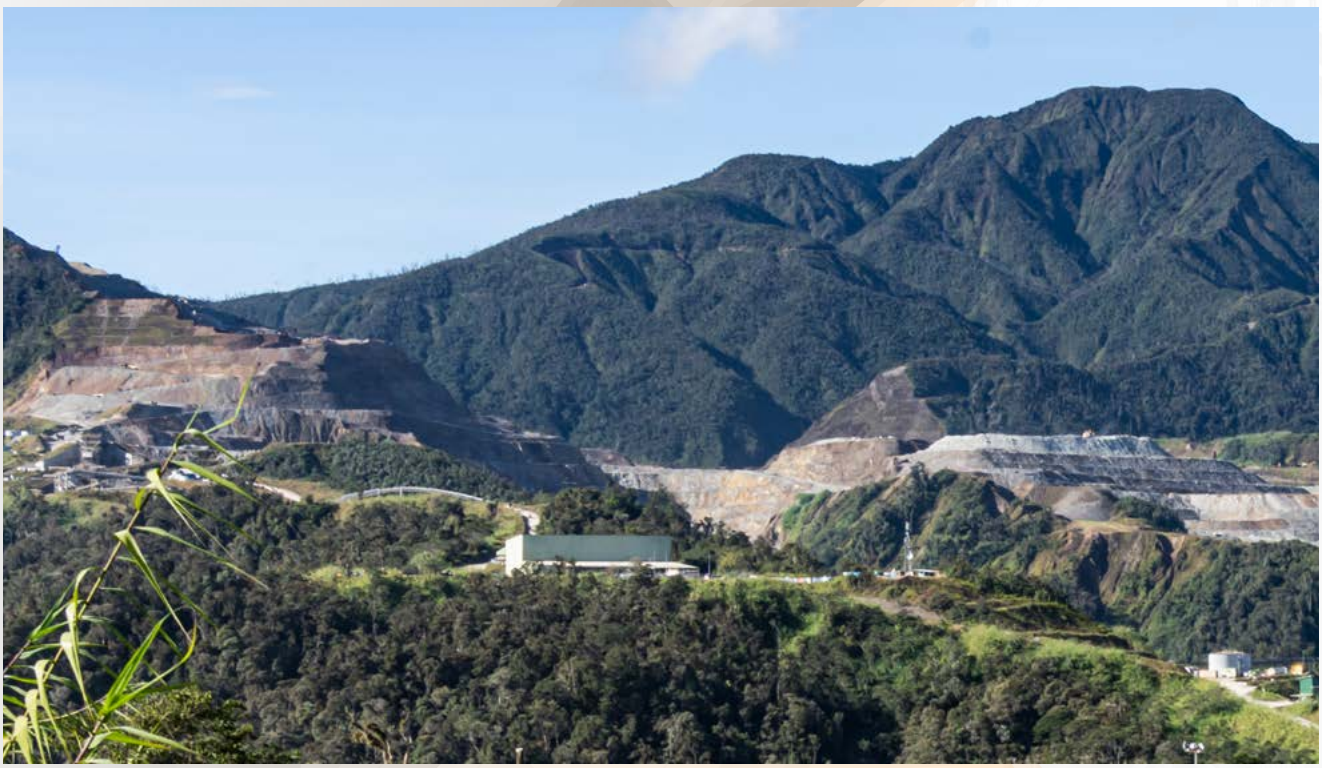
1. Hidden Valley mine
2. Wafi-Golpu project (Harmony 50%)

Exploration projects

3. Kili Teki
4. Hidden Valley district
5. Exploration Portfolio Joint Venture (Harmony 50%)

Harmony equity interest 100% unless otherwise indicated

HIDDEN VALLEY



Hidden Valley.

Mineral Resources (inclusive)

3.3Moz

Mineral Reserves

1.4Moz

Detailed Mineral Resource and Mineral Reserve estimates are presented in this section.

Description and location

The Hidden Valley Mine is located at latitude 7°22"S and longitude 146°39"E, approximately 15km south-southeast of the township of Wau and approximately 90km south-southwest from Lae, the capital of Morobe Province in Papua New Guinea. The closest major towns to the project are Wau and Bulolo. Lae, the nearest maritime port in the region, is connected to Bulolo by a two-lane main road.

The mine is located at elevations between 1700m and 2800m above sea level within steep mountainous and forested terrain that experiences approximately 3m of rainfall per year.

History

The Hidden Valley deposits were discovered by CRA in the1980s. Ownership of the deposits was held by various exploration companies before being acquired by Harmony.

Mine construction commenced in 2007 with the 40km road access from Bulolo to the mine site. First gold was poured in May 2009 with the mine being officially opened in September 2010.

Nature of operations

The Hidden Valley Mine is an operating open-pit gold and silver mine. Two separate open-pit mines feed a 4.0Mtpa processing plant. Silver and gold doré bars are produced. An extension to the mine life has been approved taking the end of mine out to 2027 with further opportunities for extension.

Geology

The deposit is a structurally controlled vein-stockwork gold-silver deposit located in the Morobe Granodiorite of the Wau Graben. Gold-silver mineralisation is contained in carbonate-adularia-quartz-sulphide vein-stockworks and in a few instances in hydrothermal breccias. Discrete zones of intense stockwork fracture and mineralised veining comprise individual lodes. At the Hidden Valley deposit gold and silver are related to steeply to moderately dipping sheeted vein swarms associated with an underlying shallow thrust.

Mineral rights/legal aspects and tenure

The deposits lie on mining lease ML151 which was granted in 2005. The mining lease has a tenure of 20 years taking its expiry to 2025 with an option for extension. An application for extension was lodged on 23 June 2020 and approved by the Mining minister on 25 May 2021. The lease now expires in March 2030. The extension has allowed for an increase in the Mineral Reserve.

A minor amendment to the environment permit was approved to allow for the second tailings storage facility and increase waste dump space required for the extension.

The mine is 100%-owned and managed by Harmony through Morobe Consolidated Goldfields.

Mining methods and mine planning

Mining operations occur in two open-pits 6km apart, Hidden Valley-Kaveroi and Hamata of which Hidden Valley-Kaveroi is the largest. Both mines employ conventional open-pit mining techniques with back-hoe excavators and rigid dump trucks as the primary load and haul equipment. Front-end loaders are used for crusher feed and stockpile reclaim. A number of articulated smaller dump trucks are used for construction and to a lesser extent mining in Hamata.

Mining bench configuration generally consists of 18m inter-berm heights, blasted in 2 x 9m benches with 3m mining flitches.

Waste is disposed of in engineered valley fill waste dumps, with toes keyed in and buttressed using competent non-acid forming rock. Waste from the Hidden Valley-Kaveroi open-pit is currently placed in the valley fill Western Sector, Niekywe and Kaveroi Creek waste dumps. These dumps provide enough capacity for life of mine.

Mineral processing

A crushing facility is located near the Hidden Valley pit with the crushed ore conveyed via a 3.8km long overland pipe conveyor. Ore from the Hamata pit is trucked to the Hamata crushing station, located next to the ore processing plant.

The Hidden Valley process treats 4.0Mtpa of gold-silver bearing ore. The process uses a two-stage crushing circuit followed by a SAG mill, gravity, CCD/Merril Crowe circuit for silver and carbon in leach circuit for the gold. A silver-gold ore bar is produced and flown off site for refining and sale.

Tailings are disposed of in a terrestrial tailings storage facility located to the south-west of the process plant. The facility is designed, built and operated to the Australian National Committee on Large Dams (ANCOLD) guidelines. Dam-wall construction of the tailings storage facility is ongoing and largely constitutes placement of suitable oxide and fresh competent material sourced from mining in the Hamata pit and nearby quarry. The processing inventory in this Mineral Reserve estimate is constrained by the remaining storage capacity in TSF1 and TSF2.

Infrastructure

Hidden Valley is a well-established mine serviced from the port of Lae by partially sealed 100km road to Bulolo and then a well maintained gravel road for the remaining 40km to site. All goods are transported to site via this route with some emergency goods flown to Bulolo.

There is an airstrip at Bulolo from where the fly-in and fly-out workers commute. However, the bulk of employees are from the Morobe Province and are bussed to and from their towns and villages. The mining camp on-site houses all employees and provides messing, health and recreation facilities. Power is provided by the State-owned PNG Power which is generated in part by renewable (predominantly hydro-power). 100% contingency is provided by a bank of diesel generators.

Mineral resource estimation

Both the Hidden Valley and the Hamata models have been estimated using a localised multiple indicator Kriged method using a 12m x 12m x 3m standard mining units (SMU) and constrained within broad three-dimensional wireframe domains based on gold and silver grade, alteration and structure. This method accommodates the large panels required for a robust estimate using a long-standing well-known estimation method, but also allows the estimation of localised SMU-sized blocks for mine planning purposes. The model was updated in 2021 using additional high grade constraints in the form of restrictions on informing distances and harsher top cuts applied. Australian Mining Consultants (AMC) and Derisk reviewed the 2018 model and this new model does not deviate significantly from the 2018 procedure. Checks against historical production indicate that both these models are robust when appropriate modifying factors are applied.

Pit optimisations that inform designs are run on measured and indicated resource categories only. All Mineral Resource classifications are maintained and converted to Mineral Reserve classifications inside pit designs. There is no measured material classified in either pit. The measured resources reported comprise stockpile material only.

Environmental impact

In accordance with the Environment Act 2002, an environmental impact statement (EIS) was submitted to the Department of Environment and Conservation (DEC) (now the Conservation and Environment Protection Authority – CEPA) in February 2004. Waste discharge and water extraction permits were subsequently issued to Hidden Valley Services Limited which were amalgamated as Environment Permit EP-L3(578) in October 2017. The mine presently operates under EP-L3(578) which was amended in April 2021 to accommodate the construction of a second TSF and new waste rock landforms that will support the mine life extension.

Consistent with Conditions 4 and 5 of EP-L3(578), an environmental management plan (EMP) has been developed which identifies potential environmental impacts associated with the operation of the mine and management strategies to reduce these impacts. The EMP is updated every three years, with the current version (2021 – 2024) submitted to CEPA on 31 March 2021. Approval of this document is pending. The EMP describes Hidden Valley's approach to environmental management and outlines the standards, procedures and systems developed to meet the objectives set out in the mine's approvals and permits, as required under Papua New Guinea legislation. The EMP also details the environmental monitoring requirements and reporting commitments of Hidden Valley to CEPA.

PAPUA NEW GUINEA **HIDDEN VALLEY** continued

The environmental monitoring regime presented in the EMP includes surface water, groundwater, sediment and air quality monitoring, hydrological studies, land clearance assessment and aquatic biota studies. Water quality monitoring within the Watut River and its major tributaries forms a critical component of the programme in order to monitor the potential for impacts on the downstream environment as a result of the mining operation. Some components of the monitoring programme were modified and/or suspended in FY21 on account of the Covid-19 pandemic and MCG's protocols on personnel movements (aimed to safeguard the health and safety of employees and reduce the potential for transmission of Covid-19 within our host communities). This resulted in the intermittent suspension of surface water sampling at the compliance point specified in EP-L3(578). Modifications to the monitoring regime were communicated to and endorsed by CEPA.

MATERIAL RISKS

Material risks that may impact Hidden Valley's Mineral Resource and Mineral Reserve Statements.

Significant risks

- Over estimation of gold grade due to the nature of the orebody
- Pit wall stability
- Availability of critical fixed plant in the crusher, conveyor and process plant
- Covid-19 outbreak on-site or in surrounding communities.

Remedial action

- Application of 7.5% gold grade modifying factor
- Advanced drilling programme
- Softening of wall angles
- Proactive geotechnical monitoring programme
- Maintaining stocks on hand of critical spares
- Planned maintenance schedule
- Strict Covid-19 protocols in place include screening and PCR testing before personnel arrive on site.

COMPETENT PERSON

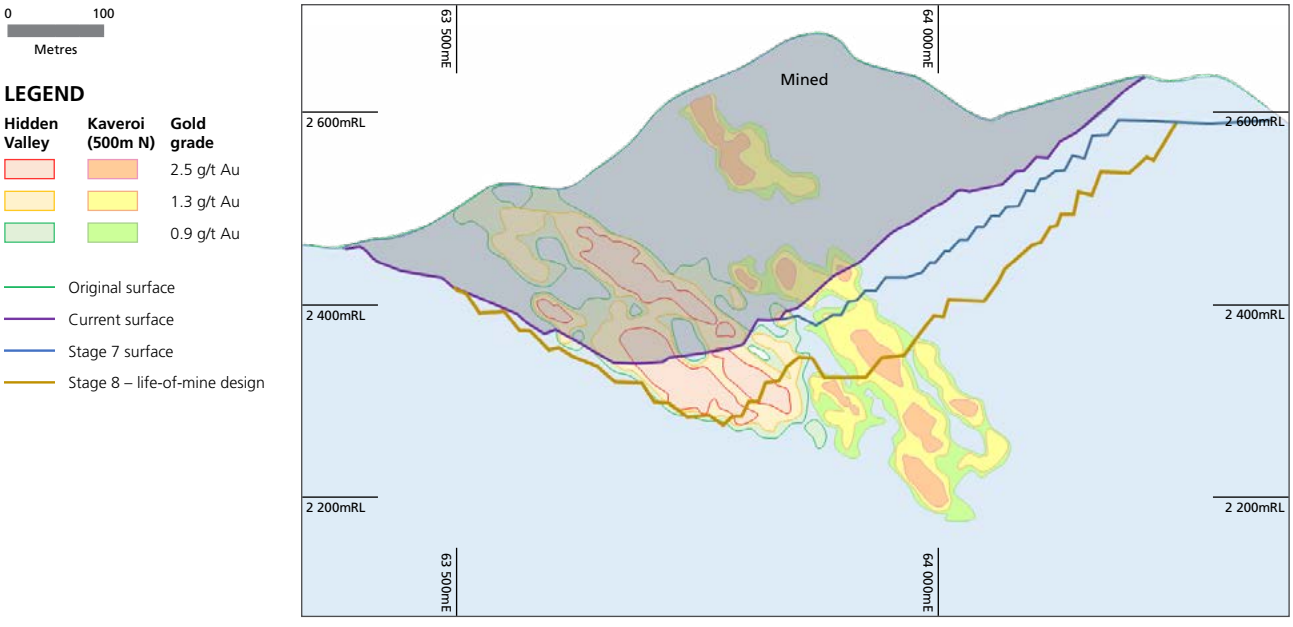
Mineral Resources – Group resource geologist, Harmony South-east Asia

Ronald Reid
Australian Institute of Geoscientists (AIG)
More than 25 years' experience.

Mineral Reserves – Executive general manager: New Business and Technical Services Harmony South-east Asia

Greg Job
AusIMM
More than 30 years' experience.

Hidden Valley – section 75 225mN



HIDDEN VALLEY AND HAMATA

Gold – Mineral Resource estimates at 30 June 2021 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Hidden Valley	3.4	0.95	3	103	54.1	1.42	77	2 471	1.4	1.06	1	48	58.9	1.39	82	2 622
Hamata	0.006	1.63	0.01	0.33	1.9	1.90	4	115	0.2	1.50	0.3	9	2.1	1.86	4	124
Total	**3.4**	**0.95**	**3**	**103**	**55.9**	**1.44**	**80**	**2 585**	**1.6**	**1.11**	**2**	**57**	**60.9**	**1.40**	**85**	**2 746**

Modifying factors

	MCF (%)	Dilution (%)	PRF (%)	Cut-off (g/t)
Hidden Valley				
2020	100	–	88	0.85
2021	95	–	88	0.65
Hamata				
2020	100	5	88	0.85
2021	100	5	88	0.65

Gold – Mineral Reserve estimates at 30 June 2021

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Hidden Valley	3.4	0.95	3	103	19.9	1.59	32	1 016	23.3	1.50	35	1 119
Hamata	0.006	1.63	0.01	0.3	0.2	1.82	0.4	14	0.2	1.82	0.5	15
Grand total	3.4	0.95	3	103	20.1	1.59	32	1 030	23.5	1.50	35	1 134

Silver – Mineral Resource estimates at 30 June 2021 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Ag		Tonnes		Ag		Tonnes		Ag		Tonnes		Ag	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Hidden Valley	3.4	17.31	59	1 886	54.1	22.26	1 203	38 682	1.4	20.63	29	941	58.9	21.93	1 291	41 508

Silver – Mineral Resources as gold equivalent estimates at 30 June 2021 (inclusive)

	Measured	Indicated	Inferred	Total
	(000oz)	(000oz)	(000oz)	(000oz)
Hidden Valley	26	534	13	573

Modifying factors

Hidden Valley	MCF (%)	Dilution (%)	PRF (%)	Cut-off (g/t)
2020	100	–	61	0.85
2021	100	–	61	0.85

Silver – Mineral Reserve estimates at 30 June 2021

	Proved				Probable				Total			
	Tonnes		Ag		Tonnes		Ag		Tonnes		Ag	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Hidden Valley	3.4	17.31	59	1 886	19.9	27.18	540	17 363	23.3	25.75	599	19 249

Silver – Mineral Reserves as gold equivalents estimates at 30 June 2021

	Proved	Probable	Total
	(000oz)	(000oz)	(000oz)
Hidden Valley	26	240	266

PAPUA NEW GUINEA **HIDDEN VALLEY** continued

OPERATIONAL PERFORMANCE

Hidden Valley: Key operating statistics

	Unit	FY21	FY20	FY19	FY18	FY17
Operation						
Volumes milled	000t (metric)	**3 420**	3 906	3 866	2 499	2 889
	000t (imperial)	**3 772**	4 307	4 285	2 757	3 186
Gold produced	kg	**4 689**	4 872	6 222	2 862	2 965
	oz	**150 755**	156 639	200 042	92 015	95 327
Grade	g/t	**1.37**	1.25	1.60	1.36	1.07
	oz/t	**0.040**	0.036	0.047	0.039	0.035
Financial						
Average gold price received	R/kg	**847 027**	757 348	579 902	550 956	544 442
	US$/oz	**1 711**	1 504	1 272	1 283	1 246
Capital expenditure	Rm	**1 260**	959	1 591	1 563	1 335
	US$m	**82**	61	112	122	98
Cash operating cost	R/kg	**356 233**	348 054	220 323	287 028	466 847
	US$/oz	**719**	691	483	669	1 068
All-in sustaining cost	R/kg	**677 659**	562 648	497 399	466 256	543 186
	US$/oz	**1 383**	1 120	1 090	1 094	1 241

TSF Early Warning System siren with TSF in background.

PAPUA NEW GUINEA **WAFI-GOLPU PROJECT**

INCLUDING THE GOLPU, WAFI AND NAMBONGA DEPOSITS

GOLPU, WAFI AND NAMBONGA

Wau drilling valley.

Mineral Resources (inclusive)

32.6Moz

Mineral Reserves

16.3Moz

Detailed Mineral Resource and Mineral Reserve estimates are presented in this section.

Property description and location

The Golpu, Wafi and Nambonga deposits are located in eastern Papua New Guinea (PNG), approximately 60km southwest of Lae in Morobe Province. Access to the Wafi-Golpu Project site from Lae is via a combination of tarred and untarred roads with a travel time of four hours.

History

The Wafi area mineralisation was first identified in 1979 by CRA Exploration with the discovery of the underlying Golpu Porphyry by Elders Resources Limited in 1990. Since then, several companies have completed exploration and resource-definition drilling programmes with associated mine development studies.

PAPUA NEW GUINEA **WAFI-GOLPU PROJECT** continued

INCLUDING THE GOLPU, WAFI AND NAMBONGA DEPOSITS

Nature of operations

The Wafi-Golpu Project has completed a feasibility study and is in the permitting phase, with mining tenement and environment permit applications submitted to the respective regulatory authorities commencing in 2016.

The Conservation and Environment Protection Agency has concluded its assessment of the environment permit application, and an environment permit was granted to the project in December 2020.

The assessment by the Minerals Resources Authority of the Wafi-Golpu project's proposal for development that underpins its application for Special Mining Lease 10 and associated tenements is ongoing, and negotiations with the State Negotiating Team will commence upon finalisation of that assessment. No mining has occurred in the project area.

Geology

The projects fall within the New Guinea Mobile Belt of Papua New Guinea which is one of the world's pre-eminent geological terrains for porphyry copper-gold and epithermal gold mineralisation.

Wafi-Golpu includes the Golpu copper-gold porphyry deposit (ranked as a world-class deposit in terms of its size and grade), the Nambonga copper-gold porphyry deposit, and the Wafi high sulphidation epithermal gold deposit. Knowledge of the Wafi-Golpu system is limited by the extent of drilling and surface mapping and the deposit remains open for future expansion.

Mineral rights/legal aspects and tenure

The Wafi-Golpu project is a 50:50 unincorporated joint venture between wholly owned PNG-registered subsidiaries of Harmony Gold Mining Company Limited (namely, Wafi Mining Limited) and Newcrest Mining Limited (namely, Newcrest PNG2 Limited).

The Golpu, Wafi and Nambonga deposits are located on exploration licence EL440, which is jointly owned in equal shares by Wafi Mining Limited and Newcrest PNG2 Limited.

GOLPU

Geology

The Golpu deposit is the largest of the deposits and found in a block of deformed Upper Mesozoic to Middle Miocene metasedimentary rocks cut by Miocene-Pliocene calc-alkaline dioritic intrusives. Copper and gold mineralisation results from a porphyry system with the upper portion overprinted by high sulphidation epithermal alteration. The deposit is also 60km north-northwest of the porphyry-related gold-silver-base metal Hidden Valley-Kaveroi mines and other related deposits in the Bulolo Graben (eg Edie Creek, Kerimenge, Upper Ridges).

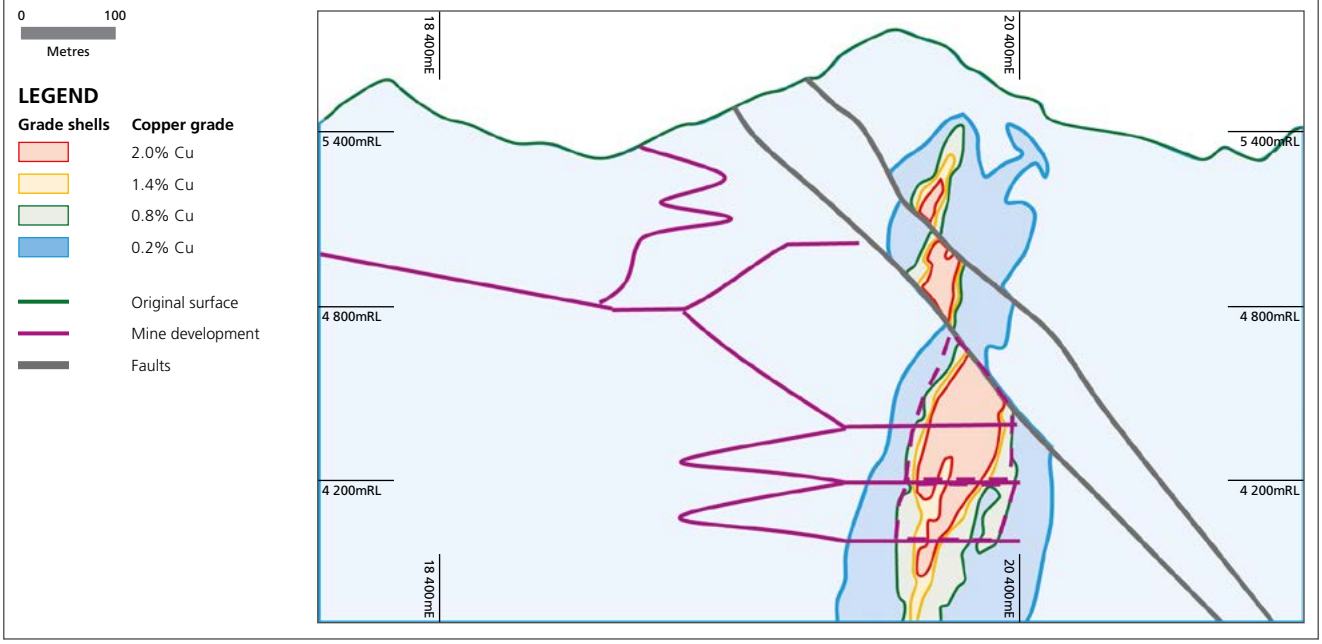
The Golpu Mineral Resource is approximately 800m by 400m elliptical in plan and extends from 200m below surface to a depth of more than 2 000m. The deposit remains open at depth.

The system consists of multiple, hornblende-bearing diorite porphyries intruded into host sediments. Intrusives range from small dykes to small stocks and apopheses. Hydrothermal alteration related to the porphyry copper-gold mineralisation forms a predictable zonal arrangement grading from potassic core to propylitic margins. A high sulphidation epithermal system is "telescoped" over the upper portion of the porphyry system forming a central alunite-quartz (advanced argillic) core grading out to dickite-kaolinite (argillic) with an outer margin of sericite alteration. This results in either epithermal-dominant, interaction (mixed) or porphyry-only zones.

Drilling update

Drill evaluation of the Golpu deposit was completed in 2014 with only limited and select drilling progressed in 2015 through to 2020 associated with decline access, site geotechnical investigations and near-term geotechnical interpretation. The underlying geology and the grade model remain essentially unchanged from that used in the December 2014 Mineral Resource. The Golpu resource is constrained within a marginal breakeven shell using Wafi-Golpu joint venture 2015 gold and copper revenues and the estimated long-term cost structure developed in the 2016 Golpu stage 2 prefeasibility study.

Golpu – section 721 060mN



Golpu feasibility study update

The Golpu Mineral Reserve was updated following the release of the feasibility study update in March 2018. The feasibility study update informed the finalisation of the environment impact statement submitted to the Conservation and Environment Protection Agency in July 2018. The feasibility study update also informed the proposal for development in support a Special Mining Lease application submitted to the Mineral Resource Authority in March 2018.

Mining methods and mine planning

In March 2018 the feasibility study update proposed the following mining approach:

- Secondary/initial underground access via the Nambonga decline to provide earlier and quicker access to underground drill platforms, a second means of egress and ventilation
- Primary underground access is via the Watut portal and the twin Watut declines to the underground block cave mine. The Watut declines also form part of the primary ventilation circuit and materials handling system conveying ore to the Watut process plant
- A "cave engineering level" established above the Reid Fault at 4 870mRL for data gathering, further refinement of the rock mass, monitoring of the cave and potentially for dewatering
- Ore extracted via three block caves producing at a rate of 17Mtpa (design capacity).

Mineral processing

The proposed processing method has been based on known technology utilising testwork results gathered in the feasibility study update and previous studies. A copper and gold concentrate will be produced from a conventional crush, grind, float processing plant. Concentrate will be shipped from the port of Lae as a final product. Gold will also be produced as doré for delivery to a precious metal refinery.

Infrastructure

No major infrastructure is currently located at Golpu, besides the exploration camp and access roads. The feasibility study update completed in March of 2018 discusses:

- Access road
- Ventilation and refrigeration plant
- Processing plant (copper concentrator)
- Deep sea tailings placement system including tailings pipeline from site to the discharge point near Lae
- Concentrate export pipeline plus associated dewatering and loading facilities at the existing port of Lae
- Accommodation camp
- On-site power station.

The Golpu Mineral Resource is estimated by ordinary kriging within alteration and lithological domains for gold, copper, silver, molybdenum and sulphur elements. The Mineral Resource is reported within a breakeven value shell that applies the 2016 stage 2 prefeasibility study block-cave mining, treatment and general and administration costs with metallurgical recovery models and associated non-site realisation (TCRC) costs of the copper concentrate product. Revenue of gold and copper are the only economic elements included in the value estimate. The Mineral Resource reports contained metal content of silver and molybdenum but revenues are not included in the estimation of the reporting cut-off. The prefeasibility study assumes no silver and molybdenum payable recovery, however, both elements have been included in the Mineral Resource as there are reasonable prospects of eventual economic extraction with limited changes to the metallurgical flow-sheet and operational procedures.

WAFI

The Wafi deposit is centred on high sulphidation epithermal mineralisation within a larger epithermal and porphyry-related complex in granted exploration licence EL440, approximately 60km southwest of Lae, Papua New Guinea. The Wafi deposit outcrops less than 1km to the south of the top of the Golpu porphyry deposit.

The Wafi Mineral Resource is the 2019 estimate using an ordinary kriging method. Non-refractory gold (NRG) material is reported at a 0.4g/t cut-off where NRG is defined as greater than 70% cyanide soluble gold as gold-cyanide assays within the database. Refractory material below the NRG surface and within the spatial constraining pit shell is reported at a cut-off of 0.9g/t gold.

The Wafi mineralisation has been defined over a surface area of 1 100m x 800m and up to 600m below surface, with the majority of the material potentially exploitable by open-pit mining methods. No Mineral Reserve is declared and no mining has been undertaken in the project area to date.

NAMBONGA

The Nambonga deposit is located 700m east of Golpu and is hosted in a diorite porphyry stock, termed the Nambonga Porphyry. Chalcopyrite is the dominant copper mineral in the porphyry, which is associated with silicification, either pervasive or as veins. Gold is thought to be intergrown with the chalcopyrite or pyrite.

The approximate extents of the system are 500m x 400m x 1 000m vertically.

The Nambonga Mineral Resource is an ordinary kriged estimate based on a domained geological model and is reported within a 0.5g/t grade shell to provide a broad consistent mineralised zone.

The Nambonga Mineral Resource contains estimates for gold, silver, copper, lead, zinc and sulphur. Estimation domains are based on a combination of lithology, alteration and mineralisation. The Nambonga deposit is an advanced exploration target. No Mineral Reserve is declared and no mining has been undertaken in the project area to date.

Permitting

The process of permitting the Wafi-Golpu project commenced in 2016, with the lodgement with the Mineral Resources Authority of a Special Mining Lease and related tenements application, supported by a proposal for development and feasibility study.

A feasibility study update was submitted to the Mineral Resources Authority in March 2018, and an environmental impact study supporting the project's application for an environment permit was lodged with the Conservation and Environment Protection Agency (CEPA) in July 2018.

In December 2018, the Wafi-Golpu joint venture entered into a memorandum of understanding (MOU) with the State of PNG, establishing a framework for the parties to progress the permitting of the Wafi-Golpu project. In May 2019, the permitting process was injuncted pursuant to a stay order given in an action for judicial review of the MOU brought by the Governor of the Morobe Province, which injunction remained in place until May 2019 when the State withdrew from the MOU and the judicial review was dismissed on that basis.

In December 2020, the Conservation and Environment Protection Agency concluded its assessment of the Wafi-Golpu project's environment permit application and granted an environment permit

PAPUA NEW GUINEA **WAFI-GOLPU PROJECT** continued

INCLUDING THE GOLPU, WAFI AND NAMBONGA DEPOSITS

approving deep sea tailings placement as the project's tailings management method. In March 2021, the Governor of Morobe Province and the Morobe Provincial Government commenced legal proceedings seeking judicial review of the grant of the environment permit, and for interim orders to stay the environment permit and restrain the State of PNG from granting a special mining lease for the Wafi-Golpu project. The legal proceedings are continuing.

As a consequence of the above mentioned litigation and the requirement of the State Negotiating Committee that the National Executive Committee must first endorse its proposed negotiating position, there has been no engagement with the State Negotiating Team since July 2020.

Further, there is ongoing uncertainty with regard to the timing and content of a potential revision of the Mining Act 1992 (PNG) and/or the tabling of an "Organic Law on Papua New Guinea's Ownership and Development of Hydrocarbons and Minerals and the Commercialisation of State Businesses". Either of these legislative changes (if adopted) may potentially significantly adversely impact the economics of the Wafi-Golpu project.

The targeted grant of a Special Mining Lease for the Wafi-Golpu project by June 2021 has not been achieved, and the project permitting roadmap and timeline is presently uncertain.

Environmental impact

The Golpu, Wafi and Nambonga projects are in various stages of exploration, feasibility study and permitting, and as such have only minor environmental impacts. Environmental aspects are regulated by the Conservation and Environment Protection Agency (CEPA) and the Wafi-Golpu joint venture participants report regularly to this agency.

MATERIAL RISKS

Material risks that may impact the Wafi, Golpu and Nambonga Mineral Resource and Mineral Reserves statements:

Significant risks

- Permitting delays which could impact the project's capital, operational cost and economic assumptions
- Changes to legislation, in particular the Mining Act, and the introduction of the Organic Law on Minerals
- Geotechnical conditions impact production and/or total amount of ore recoverable
- Objection to the proposed tailings management solution (deep sea tailing placement).

Remedial action

- Negotiating team in place
- Secure agreement with the State for the project to be permitted and grandfathered under the current mining and fiscal regime
- Demonstrate to various stakeholders the economic benefits of project per current proposal for development. Detailed geotechnical studies and monitoring systems to be implemented including further drilling from underground drill platforms
- Ongoing data collection on deep sea tailings placement and related modelling, demonstrating quality of scientific work and confidence in modelled outcomes, and communication and engagement with relevant stakeholders.

COMPETENT PERSON

GOLPU – MINERAL RESOURCE

Senior Resource Geologist Exploration Targeting, Newcrest Mining Limited

David Finn
AusIMM
More than 15 years' experience.

GOLPU – MINERAL RESERVE

Group Manager Mining Projects, Newcrest Mining Limited

Pasqualino Manca
AusIMM
More than 30 years' experience.

WAFI AND NAMBONGA – MINERAL RESOURCE

Executive general manager: Growth and resource development, Harmony South-east Asia

Greg Job
AusIMM
More than 30 years' experience.

WAFI (Harmony 50% portion)

Gold – Mineral Resource estimates at 30 June 2021 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Wafi	–	–	–	–	54.0	1.66	89	2 800	20.0	1.37	26	800	74.0	1.58	114	3 600

GOLPU (Harmony 50% portion)

Gold – Mineral Resource estimates at 30 June 2021 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Golpu	–	–	–	–	340	0.71	245	8 000	70.0	0.63	44	1 400	410.0	0.70	289	9 300

Modifying factors

Golpu	MCF (%)	Dilution (%)	PRF (%)	Cut-off (% Cu)
2020	100	–	61	0.30
2021	100	–	61	0.30

Gold – Mineral Reserve estimates at 30 June 2021

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Golpu	–	–	–	–	200.0	0.86	171	5 500	200.0	0.86	171	5 500

Silver – Mineral Resource estimates at 30 June 2021 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Ag		Tonnes		Ag		Tonnes		Ag		Tonnes		Ag	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Golpu	–	–	–	–	340.0	1.30	449	14 000	70.0	1.10	77	2 300	410.0	1.30	526	17 000

Copper – Mineral Resource estimates at 30 June 2021 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Cu		Tonnes		Cu		Tonnes		Cu		Tonnes		Cu	
	(Mt)	(%)	(Mkg)	(Mlb)	(Mt)	(%)	(Mkg)	(Mlb)	(Mt)	(%)	(Mkg)	(Mlb)	(Mt)	(%)	(Mkg)	(Mlb)
Golpu	–	–	–	–	340	1.10	3 750	8 250	70.0	0.85	600	1 250	410.0	1.00	4 300	9 500

Copper – Mineral Resources as gold equivalents estimates at 30 June 2021 (inclusive)

	Measured	Indicated	Inferred	Total
	(000oz)	(000oz)	(000oz)	(000oz)
Golpu	–	16 482	2 548	19 030

Modifying factors

Golpu	MCF (%)	Dilution (%)	PRF (%)	Cut-off (% Cu)
2020	100	–	92	0.30
2021	100	–	92	0.30

PAPUA NEW GUINEA **WAFI-GOLPU PROJECT** continued

INCLUDING THE GOLPU, WAFI AND NAMBONGA DEPOSITS

Copper – Mineral Reserve estimates at 30 June 2021

	Proved				Probable				Total			
	Tonnes		Cu		Tonnes		Cu		Tonnes		Cu	
	(Mt)	(%)	(Mkg)	(Mlb)	(Mt)	(%)	(Mkg)	(Mlb)	(Mt)	(%)	(Mkg)	(Mlb)
Golpu	–	–	–	–	200.0	1.20	2 450	5 400	200.0	1.20	2 450	5 400

Copper – Mineral Reserves as gold equivalents estimates at 30 June 2021

	Proved	Probable	Total
	Au (000oz)	Au (000oz)	Au (000oz)
Golpu	–	10 814	10 814

Molybdenum – Mineral Resource estimates at 30 June 2021 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Mo		Tonnes		Mo		Tonnes		Mo		Tonnes		Mo	
	(Mt)	(ppm)	(Mkg)	(Mlb)	(Mt)	(ppm)	(Mkg)	(Mlb)	(Mt)	(ppm)	(Mkg)	(Mlb)	(Mt)	(ppm)	(Mkg)	(Mlb)
Golpu	–	–	–	–	340.0	94	32	70	70.0	72	5	11	410.0	90	37	81

NAMBONGA (Harmony 50% portion)

Gold – Mineral Resource estimates at 30 June 2021 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Nambonga	–	–	–	–	–	–	–	–	24.0	0.69	16	500	24.0	0.69	16	500

Copper – Mineral Resource estimates at 30 June 2021 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Copper		Tonnes		Copper		Tonnes		Copper		Tonnes		Copper	
	(Mt)	(%)	(Mkg)	(Mlb)	(Mt)	(%)	(Mkg)	(Mlb)	(Mt)	(%)	(Mkg)	(Mlb)	(Mt)	(%)	(Mkg)	(Mlb)
Nambonga	–	–	–	–	–	–	–	–	24.0	0.20	47	104	24.0	0.20	47	104

Copper – Mineral Resources as gold equivalents estimates at 30 June 2021 (inclusive)

	Measured	Indicated	Inferred	Total
	(000oz)	(000oz)	(000oz)	(000oz)
Nambonga	–	–	207	207

Rounding of figures may cause some slight computational discrepancies in totals.

PAPUA NEW GUINEA

KILI TEKE

Typical remote Heli rig set-up.

Mineral Resources

5.3Moz

Detailed Mineral Resource and Mineral Reserve estimates are presented in this section.

Location

Kili Teke is located some 50km north-northwest of the Tari Township (which is the provincial capital of the Hela Province in the Highlands of Papua New Guinea) and approximately 40km west-northwest of Porgera.

History

Outcropping mineralised breccia and copper gold skarn mineralisation at Kili Teke was initially identified in historic reconnaissance work undertaken in the early 1990s. An exploration licence application over the area was granted in May 2014 and field work programmes by Harmony defined a broad (kilometre scale), copper-gold anomaly at Kili Teke, indicative of the zonal geochemical distribution and alteration footprint associated with a major mineralised porphyry copper-gold system.

Nature of operation

Kili Teke is at an advanced exploration stage. The operation is currently on care and maintenance, and has been marked for divestment.

Geology

The Kili Teke deposit comprises porphyry style copper-gold mineralisation hosted in a multiphase calc-alkaline dioritic to monzonitic intrusive complex. Host rocks comprise interbedded siliciclastics and limestone of the Papuan Fold Belt. Overall the geometry of the deposit reflects a relatively steeply plunging,

pipe-like body, with mineralisation decreasing away from the central high grade stockwork zones of copper-gold mineralisation. Intense marbleisation and copper-gold skarn mineralisation is developed around the peripheral contact with the host sequence, and variably developed skarn mineralisation also occurs along internal structural and contact zones within the complex.

Legal aspects and tenure

The Kili Teke deposit is located on exploration licence EL2310, which is 100%-owned by Harmony Gold (PNG) Exploration Limited. The tenement encompasses an area of 252km^2.

The Papua New Guinea Government issues and administers mining tenements under the Mining Act 1992, through the offices of the Mineral Resources Authority. Exploration licences are issued for a term not exceeding two years, and are renewable for further two-year terms subject to compliance with expenditure and other conditions. Each licence contains a condition conferring on the Papua New Guinea Government the right to make a single purchase up to 30% equitable interest in any mineral discovery under the licence at a price pro rata to the accumulated exploration expenditure.

The tenement is current and expires on 23 May 2022, prior to which time a further extension may be applied for.

Mining methods and mine planning

Kili Teke is at the concept study level of work. This work has confirmed technically viable solutions exist for mining, processing, infrastructure and logistics at Kili Teke, and no fatal flaws were identified.

Mining options consider open-pit and bulk underground mining options.

Mineral processing

First pass rougher kinetic test work for metallurgical recovery shows that copper recovers extremely well (90%) and gold recovers well (65%) through standard copper flotation process.

Mineral resource estimation

The resource at Kili Teke is the same as reported in 2020 and has been generated from over 22 000m of drilling, along with detailed surface mapping, sampling and airborne geophysical survey data. Estimation has been constrained by a 0.125% copper shell, which represents the approximate natural break to mineralisation from the surrounding host sequence and unmineralised intrusive phases.

Modelling is based on estimation by ordinary kriging of 4m composites utilising a three-pass search ellipse into a regular block model comprising 60m x 60m x 60m parent blocks and 20m x 20m x 20m sub-blocks. An Inferred Mineral Resource has been reported from the resulting resource model and is based on a 0.2% Cu cut-off along with sample support criteria. The Mineral Resource estimate is constrained approximately 650m below surface at the 780mRL, although mineralisation remains open at depth.

Environmental impact

Kili Teke is in exploration and feasibility study stage, and as such has only minor environmental impacts. All environmental issues are regulated by CEPA (Conservation and Environment Protection Agency) and Harmony Gold (PNG) Exploration reports regularly to this agency.

COMPETENT PERSON

Mineral Resources – Group resource geologist, Harmony South-east Asia

Ronald Reid
Australian Institute of Geoscientists (AIG)
More than 20 years' experience.

Chalcopyrite rich mineralisation in drill core KTDD025.

KILI TEKE

Gold – Mineral Resource estimates at 30 June 2021

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Kili Teke	–	–	–	–	–	–	–	–	237.0	0.24	56	1 810	237.0	0.24	56	1 810

Copper – Mineral Resource estimates at 30 June 2021

	Measured				Indicated				Inferred				Total			
	Tonnes		Cu		Tonnes		Cu		Tonnes		Cu		Tonnes		Cu	
	(Mt)	(%)	(Mkg)	(Mlb)	(Mt)	(%)	(Mkg)	(Mlb)	(Mt)	(%)	(Mkg)	(Mlb)	(Mt)	(%)	(Mkg)	(Mlb)
Kili Teke	–	–	–	–	–	–	–	–	237.0	0.34	802	1 767	237.0	0.34	802	1 767

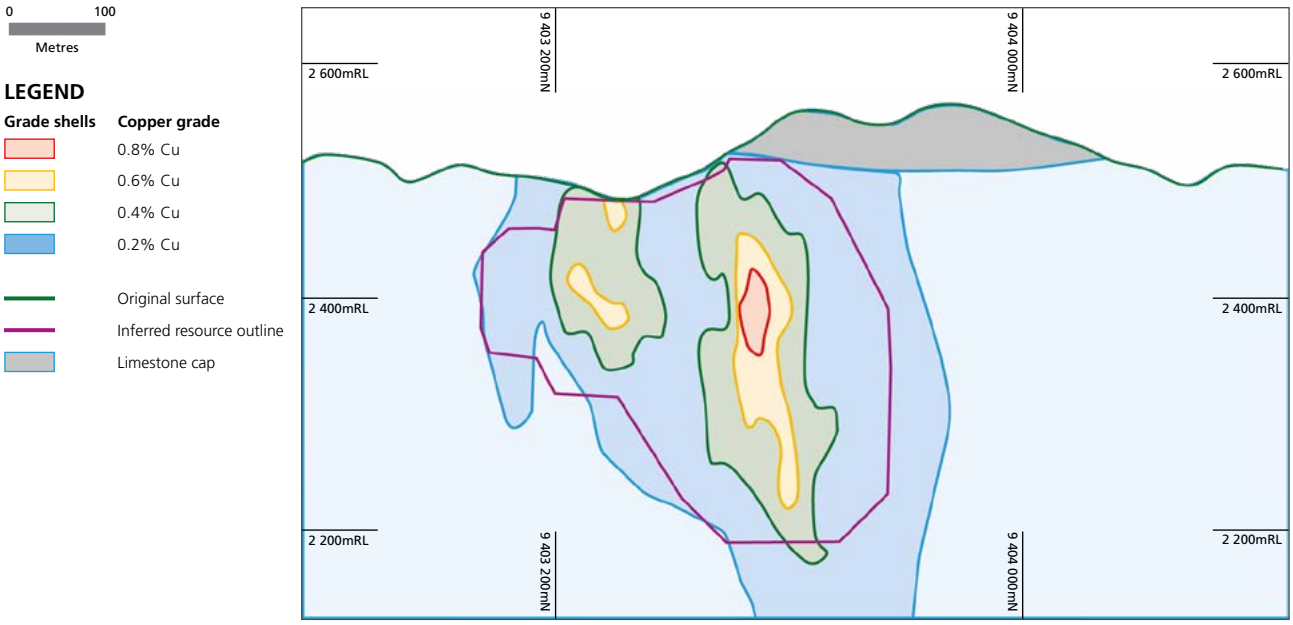
Copper – Mineral Resource estimates at 30 June 2021

	Measured	Indicated	Inferred	Total
As gold equivalents	(000oz)	(000oz)	(000oz)	(000oz)
Kili Teke	–	–	3 538	3 538

Molybdenum – Mineral Resource estimates at 30 June 2021

	Measured				Indicated				Inferred				Total			
	Tonnes		Mo		Tonnes		Mo		Tonnes		Mo		Tonnes		Mo	
	(Mt)	(ppm)	(Mkg)	(Mlb)	(Mt)	(ppm)	(Mkg)	(Mlb)	(Mt)	(ppm)	(Mkg)	(Mlb)	(Mt)	(ppm)	(Mkg)	(Mlb)
Kili Teke	–	–	–	–	–	–	–	–	237.0	168	40	88	237.0	168	40	88

Kili Teke – section 688 790mE



HARMONY STANDARD

FOR SAMREC COMPLIANCE REPORTING

Definitions as per the SAMREC Code 2016

Exploration results include data and information generated by mineral exploration programmes that might be of use to investors but which do not form part of a declaration of Mineral Resources or Mineral Reserves.

An exploration target is a statement or estimate of the exploration potential of a Mineral deposit in a defined geological setting where the statement or estimate, quoted as a range of tonnes and a range of grade or quality, relates to mineralisation for which there has been insufficient exploration to estimate Mineral Resources.

Mineral Resources

A **Mineral Resource** is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.

An **Inferred Mineral Resource** is that part of a Mineral Resource for which quantity and grade or quality are estimated based on limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An Inferred Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of an Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.

An **Indicated Mineral Resource** is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of modifying factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.

A **Measured Mineral Resource** is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of modifying factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation. A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated or an Inferred Mineral Resource. It may be converted to either a Proved Mineral Reserve or a Probable Mineral Reserve.

Mineral Reserves

Modifying factors are considerations used to convert Mineral Resources to Mineral Reserves. These include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors.

A **Mineral Reserve** is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at prefeasibility or feasibility level as appropriate that include application of modifying factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified. The reference point at which Mineral Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.

A **Probable Mineral Reserve** is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the modifying factors applying to a Probable Mineral Reserve is lower than that applying to a Proved Mineral Reserve.

A **Proved Mineral Reserve** is the economically mineable part of a Measured Mineral Resource. A Proved Mineral Reserve implies a high degree of confidence in the modifying factors.

A **Scoping Study** is an order of magnitude technical and economic study of the potential viability of Mineral Resources that includes appropriate assessments of realistically assumed modifying factors together with any other relevant operational factors that are necessary to demonstrate at the time of reporting that progress to a prefeasibility study can be reasonably justified.

A **prefeasibility study** is a comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open-pit, is established and an effective method of mineral processing is determined. It includes a financial analysis based on reasonable assumptions on the modifying factors and the evaluation of any other relevant factors which are sufficient for a competent person, acting reasonably, to determine if all or part of the Mineral Resource may be converted to a Mineral Reserve at the time of reporting. A prefeasibility study is at a lower confidence level than a feasibility study.

A **feasibility study** is a comprehensive technical and economic study of the selected development option for a mineral project that includes appropriately detailed assessments of applicable modifying factors together with any other relevant operational factors and detailed financial analysis that are necessary to demonstrate at the time of reporting that extraction is reasonably justified (economically mineable). The results of the study may reasonably serve as the basis for a final decision by a proponent or financial institution to proceed with, or finance, the development of the project. The confidence level of the study will be higher than that of a prefeasibility study.

Mineral Resource estimation

To meet SAMREC's requirements that this solid material reported as a Mineral Resource should have "reasonable and realistic prospects for eventual economic extraction", Harmony has determined an appropriate cut-off grade which has been applied to the quantified mineralised body according to a process incorporating a long-term view on future economic modifying factors. In applying this process, Harmony uses a gold price of R820 000/kg to derive a cut-off grade to determine the Mineral Resources at each of its South African underground operations.

The estimation of Mineral Resources is based on geoscientific knowledge and borehole and sampling data (obtained by means of chip sampling on the reef horizon in a shaft-specific grid), with input from the company's Ore Reserve managers, geologists and geostatistical staff. All sampling done is subject to quality assurance and quality control, as prescribed by SAMREC, to ensure data quality and accuracy. Each mine's Mineral Resource is categorised – based on similarities in geology, facies, grade and structure, the orebody is divided into geozones. It is then blocked-out and ascribed an estimated value. A computerised geostatistical estimation process is used at all our mines.

To define that portion of a Measured and Indicated Mineral Resource that can be converted to a Proved and Probable Mineral Reserve, Harmony applies the concept of a cut-off grade. At our underground South African mines, this is done by defining the optimal cut-off as the lowest grade at which an orebody can be mined such that the total profits, under a specified set of mining parameters, are maximised.

The cut-off grade is determined using the company's Optimiser software, which requires the following as input:

- The database of Measured and Indicated Resource blocks (per shaft section)
- An assumed gold price which, for this Mineral Reserve statement, was taken as R700 000/kg
- Planned production rates
- The mine recovery factor which is equivalent to the mine call factor multiplied by the plant recovery factor
- Planned cash operating costs (rand per tonne).

Rand per tonne cash operating costs are historically based but take cognisance of distinct changes in the cost environment such as restructuring, right-sizing, and other cost-reduction initiatives and, for below-infrastructure ounces, an estimate of capital expenditure.

In Papua New Guinea, the block cave reserve at Golpu uses proprietary block cave optimisation software to define the optimal mine plan and sequencing. The open-pit reserve at Hidden Valley is determined using the Whittle optimisation programme to guide the most efficient mine design given the commodity prices and cost inputs assumed.

Mineral Reserves represent that portion of the Measured and Indicated Mineral Resources above the cut-off grade in the life-of-mine plan and are estimated after consideration of the factors affecting extraction, including mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors.

At our underground mines, the reported Mineral Reserves are accessible from existing infrastructure and/or infrastructure that is in the process of being developed.

A range of disciplines, including geology, survey, planning, mining engineering, rock engineering, metallurgy, financial management, human resources management and environmental management, are involved at each mine in the life-of-mine planning process and the conversion of Mineral Resources into Mineral Reserves.

The modifying factors related to the ore flow that are used to convert Mineral Resources to Mineral Reserves through the life-of-mine planning process are stated for each shaft. For these factors, historical information is used, except if there is a valid reason to do otherwise. As a result of the depth at which mining occurs and the resulting rock engineering requirements at our South African underground mines, some shafts include stope support pillars into the design of their mining layouts which accounts for discounts of 7% to 10%. A further 15% discount is applied as a life-of-mine factor to provide for unpay and off-reef mining. In general, life-of-mine plan extraction factors do not exceed 85% and are reflected in Mineral Reserves.

For further detail on the sampling procedures used by Harmony, see pages 154 and 155.

APPENDIX

HARMONY SAMPLING STANDARD

FOR SAMREC COMPLIANCE REPORTING

The following standards, processes and procedures are followed and adhered to at all **underground mines in South Africa**.

Sampling standard

A standard procedure for the sampling of stopes and development ends is used to ensure quality of sampling information and safety in its collection. All samplers and sampling crews are trained based on the rules of the sampling standard. The standard specifies all the steps and rules involved in the preparation of the face and the collection of samples, as well as all safety aspects of sampling. Particular attention is given to quality of information captured, and planned task observations are routinely carried out to ensure adherence to the standard.

Quality assurance and quality control (QAQC)

Assessment of assaying accuracy and precision is carried out through the use of certified Standard Reference Materials, blanks and duplicates. Standard Reference Materials, blank samples and duplicate samples are added with the actual underground chip samples and drill-hole samples sent to the assay laboratory. For analysis of underground chip-samples, the total number of Standard Reference Materials, blank samples and duplicate samples to be added to the daily underground samples will equal approximately 5% of the total underground samples submitted for that day. Generally, this equates to approximately 2% of each type of QAQC sample. For analysis of underground/surface drill-holes, QAQC is required to be more stringent in terms of numbers of Standard Reference Materials, blank samples and duplicate samples submitted. One gold Standard Reference Materials, one uranium Standard Reference Materials, one duplicate and one blank is required for every 20 drill-hole samples assayed. In other words, QAQC material will equate to approximately 15% of the total drill-hole samples analysed. If the Standard Reference Materials or blank samples have been deemed to have failed, the entire batch of samples assayed with this failed QAQC sample must be identified. A request must then be sent to the laboratory requesting them to repeat the assay procedure on all samples within this batch. A second Standard Reference Materials or blank sample must be provided to the laboratory to be included with the batch of samples. Should the batch of samples fail the QAQC standards again, these samples will be excluded from the sampling database (not captured in the sampling system), and the sampling will be repeated if necessary.

Assay laboratory

Fire assay is the oldest and, in most circumstances, still the best method for determining the concentration of precious metals in ores and metallurgical products. Essentially, the method consists of two consecutive pyrochemical separations. The finely ground sample is fused with a suitable flux, under reducing conditions which promote the separation of the precious metals from the gangue, with simultaneous collection, normally as a lead alloy. Subsequently, the lead is removed by oxidising fusion (cupellation) and the precious metals, thus isolated, are available for measurement.

Harmony's assay laboratory performs various types of analysis, but the laboratory is only ISO 17025 accredited for the analysis of gold and uranium. Underground ore samples are received and prepared for fire assay gold, uranium and relative density analysis. Plant samples, eg residues, head samples, carbons, and solutions are also analysed for gold. Determination of gold fines is determined on bullion samples and sludge. The laboratory undertakes precious metal determinations on SAPS (exhibits) and securities recovered samples.

Water samples are also analysed to determine the quality. Tests are conducted for the presence of cyanide and trace metals tests, as is bacteriological testing.

The laboratory is accredited to ISO/IEC 17025 for all gold analysis. This means that it is competent in meeting international and national laboratory standards and provides reliable testing services. In terms of the ISO/IEC 17025 laboratory systems accreditation, feedback is provided to the laboratory on whether it is conducting its work in accordance with international criteria for technical competence. This feedback assists the laboratory in continually improving its performance in terms of data quality and laboratory effectiveness.

Société Générale de Surveillance (SGS) – Performance Laboratories Randfontein is a fully equipped laboratory providing analytical services using fire assay, instrumental and classical techniques for precious and base metal ores. The laboratory provides services to the major mining houses, including Harmony, in South Africa as well as exploration companies currently active in Africa.

The laboratory is ISO 17025:2005 accredited for the analysis of gold, uranium and the platinum group metals. This international standard confirms that the laboratory operates a quality system, is technically competent and is able to generate valid results. The quality system is applied across the entire laboratory, irrespective of the accreditation status of the method. This is critical in providing results on which major decisions regarding mining and plant operations are based.

Sample preparation plant

To determine the grade of the ore hoisted at the mines, we make use of go-belt sampling.

A belt sample of up to 1 000kg is received at the plant from the shaft. The sample is first put through a 300mm screen prior to drying with infra-red heaters. Primary crushing to <70mm is then followed by a secondary crushing to <25mm, after which the sample is reduced. At the primary splitter 7/8 of the sample is discarded via a conveyor belt and 1/8 of the sample progresses to final drying. Tertiary crushing to <6mm is then followed by secondary splitting. Again 7/8 of the sample is discarded and 1/8 of the sample is pulverised to 85% <106 micron. At the final splitting, all eight sub-samples are packaged and sent to the laboratory for analyses.

The sample ticket with the necessary information from the shaft, accompanies the sample throughout the process. Empty bins are hosed out, while cleaning continues as part of the procedure to avoid contamination. At regular intervals grading analyses are done at the assay laboratory. A quartz sample is done to monitor any possible contamination.

To ensure that a high standard of preparation is maintained at each step of the process, which includes the adherence to safety standards and is checked by a supervisor.

The following standards, processes and procedures are followed and adhered to at the **Kalgold open cast operation**.

Sampling standard

A standard procedure for open pits drill sampling is used to ensure quality of sampling information and safety in its collection. Drill sampling adheres to the Harmony logging and sampling procedures developed and amended over time to ensure consistency across the group. The sampling practice varies from drill type to drill type, however, the practice conforms to best practice at all times. All geologists and sampling assistants are trained to observe the standard sampling procedures. The standard specifies all the steps and rules involved in the collection and preparation of the samples for the reversed circulation percussion drilling and diamond drilling as well as the safety aspect of sampling. Particular attention is given to quality of information captured, and planned task observations are routinely carried out to ensure adherence to the standard.

Quality assurance and quality control (QAQC)

Assessment of assaying accuracy and precision is carried out through the use of Certified Standard Reference Materials, blanks and duplicates, Standard Reference Materials, blank samples and duplicates are added with the actual drill samples sent to the laboratory. For analysis of the drill samples, the total number of Standard Reference Materials, blank samples and duplicate samples to be added equals the 10% of the total samples sent for analysis. If the Standard Reference Materials or blank sample have been deemed to have failed, the range of the samples with the failed QAQC sample is identified and a repeat analysis is done of that range of samples. A second Standard Reference Material or blank sample is provided to the laboratory to be included with that batch of samples. Should the re-assayed batch of samples fail the QAQC standards again, these samples are not used in the resource estimate.

Assay laboratory

Fire assay is the oldest and, in most circumstances, still the best method for determining the concentrations of precious metals in ores and metallurgical products. Essentially the method consists of two consecutive pyrochemical separations. The finely ground sample is fused with a suitable flux, under reducing conditions, which promotes the separation of the precious metals from the gangue, with simultaneous collection, normally as lead alloy. Subsequently, the lead is removed by oxidising fusion (cupellation) and the precious metals, thus isolated, are available for measurement.

Assaying of all drill samples for the recent drilling programme at Kalgold (2017/2019) was completed at SGS Randfontein laboratory. This laboratory is accredited by the South African National Accreditation System (SANAS) and conforms to the requirements of ISO/IEC 17025 for specific tests. The facility accreditation number is T0265.The method used for gold assay is FAA303 (Au by lead fusion followed by AAS finish), it is an accredited method and conforms to ISO/IEC 17025. Feedback is provided to the laboratory on whether it is conducting its work in accordance with international criteria for technical competence. This feedback assists the laboratory in continually improving its performance in terms of data quality and laboratory effectiveness.

The following standards, processes and procedures are followed and adhered to at **Hidden Valley open cast operation**.

Sampling standard

A standard procedure for open pits drill sampling is used to ensure quality of sampling information and safety in its collection. Drill sampling adheres to the Harmony logging and sampling procedures developed and amended over time to ensure consistency across the group. The sampling practice varies from drill type to drill type, however, the practice conforms to best practice at all times. All geologists and sampling assistants are trained to observe the standard sampling procedures. The standard specifies all the steps and rules involved in the collection and preparation of the samples for the reversed circulation percussion drilling and diamond drilling as well as the safety aspect of sampling. Particular attention is given to quality of information captured, and planned task observations are routinely carried out to ensure adherence to the standard.

Quality assurance and quality control (QAQC)

Assessment of assaying accuracy and precision is carried out through the use of Certified Standard Reference Materials, blanks and duplicates, Standard Reference Materials, blank samples and duplicates are added with the actual drill samples, sent to the laboratory. For analysis of the drill samples the total number of Standard Reference Materials, blank samples and duplicate samples to be added equals the 8% of the total samples sent for analysis. If the Standard Reference Materials or blank sample have been deemed to have failed, the range of the samples with the failed QAQC sample is identified and a repeat analysis is done of that range of samples. A second Standard Reference Material or blank sample is provided to the laboratory to be included with that batch of samples. Should the re-assayed batch of samples fail the QAQC standards again, these samples are not used in the resource estimate.

Assay laboratory

Fire assay is the oldest and, in most circumstances, still the best method for determining the concentrations of precious metals in ores and metallurgical products. Essentially the method consists of two consecutive pyrochemical separations. The finely ground sample is fused with a suitable flux, under reducing conditions, which promotes the separation of the precious metals from the gangue, with simultaneous collection, normally as lead alloy. Subsequently, the lead is removed by oxidising fusion (cupellation) and the precious metals, thus isolated, are available for measurement.

Assaying of all drill samples for the recent drilling programme at Hidden Valley (2017/2020) was completed at the ITS Hidden Valley/ITS Lae laboratories. This laboratory is accredited by the PNG National Institute of Standards and Industrial Technology and conforms to the requirements of ISO/IEC 17025 (2005) for specific tests. The facility accreditation number is 46. The method used for gold assay is FA25_ AAS (Au by lead fusion followed by AAS finish) and the method used for silver assay is AR_AAS (Ag by Aqua Regia digest followed by AAS finish), these are accredited methods and conform to ISO/IEC 17025 (2005). Feedback is provided to the laboratory on whether it is conducting its work in accordance with international criteria for technical competence. This feedback assists the laboratory in continually improving its performance in terms of data quality and laboratory effectiveness.

GLOSSARY OF TERMS

Term	Definition
Acidic	Descriptor for silica rich igneous rocks (containing greater than 65% silica) such as rhyolite or granite.
AHIA	Association of Healthcare Internal Auditors
Alluvium	Relatively recent deposits of sedimentary material laid down in riverbeds, flood plains, lakes, or at the base of mountain slopes.
Alteration	Any physical or chemical change in a rock resulting from fluids moving through the rock.
Anticline	An arch or fold in layers of rock.
Assay	An analysis to determine the presence and concentration of one or more chemical components.
Basalt	An extrusive mafic volcanic rock.
Basic	Descriptor for silica poor igneous rocks such as basalt or gabbro.
Below infrastructure	That part of a company's Mineral Reserve that can only be accessed following certain capital expenditure which has yet to be approved.
BIF	Banded iron formation.
Block caving	A mining method suited for large low-grade orebodies that are unsuitable for open cut mining. In development a series of evenly spaced crosscuts are made at the bottom of the ore block from which raises are driven up into the ore. The ore block is then undercut so that it begins to collapse (or cave) into the raises. The weight of the material above provides the force to fracture and crush the underlying ore which is drawn from the drawpoints on the crosscuts. As ore is withdrawn the cave progresses up through the orebody.
Bornite	A copper iron sulphide that commonly defines the core of porphyry copper-gold deposits.
Breccia	Fractured and broken rock that results from structural, volcanic or sedimentary processes.
Bulk mining	Any large-scale mechanised method of mining involving significant volumes of material being extracted on a daily basis.
Caldera	A large, basin shaped volcanic depression, more or less circular in form, that results from the collapse of the earth's surface into an exhausted magma chamber.
Chalcocite	A copper sulphide mineral common in zones of secondary enrichment.
Chalcopyrite	A copper iron sulphide that comprises the bulk of ore in many copper mines.
Concentrate	The product of the milling process that contains a high percentage of the valuable metals. The concentrate is commonly the final product produced on-site and is sent to a third party for separation or smelting.
Conglomerate	A sedimentary rock consisting of rounded, water worn pebbles or boulders cemented into a solid mass.
Contact	A geological term used to describe the line or plane along which two different rock types meet.
Contact metamorphism	Metamorphism of country rocks adjacent to an intrusion caused by heat and fluids from the intrusion.
Craton	A part of the earth's crust that has attained stability and has been little deformed for a long period of geological time.
Crosscut	An opening underground that is cut at right angles from the main level drive or shaft that generally links to and cuts the orebody, may also refer to a link between different drives.
Country rocks	The surrounding "host" rocks into which an igneous intrusion or orebody is emplaced.
Cut-off grade	The lowest grade of copper or gold ore that is considered economic to mine.
Datamine™	Software.
Decline	A tunnel below the horizontal that allows access to the orebody.
Deposit	A concentration of mineral matter, sedimentary or volcanic material, commonly refers to an accumulation of mineralised material that need not be economic to extract.
Diamond drilling	A method of obtaining samples of rock that uses a diamond encrusted drill bit to cut long cylindrical sticks of core.
Diatreme	A long vertical pipe or plug filled with volcanic breccia formed by explosive release of energy from a gas-charged magma.

Dilution	Unmineralised rock that is by necessity removed along with ore during the mining process that effectively lowers the overall grade of the ore.
Diorite	Plutonic or intrusive rocks of intermediate composition between acidic and basic.
Dip	The angle at which a bed, stratum, or vein is inclined from the horizontal, measured perpendicular to the strike and in the vertical plane.
Disseminated ore	Ore carrying small distributed particles or valuable minerals distributed more or less uniformly through the rock.
Drawpoint	An underground opening at the bottom of the stope through which broken ore is extracted.
Dyke	A long and relatively thin body of igneous rock that, while in the molten state, intruded a fissure in older rocks.
Enrichment	The process of upgrading the concentrations of various elements into more concentrated deposits.
Epithermal deposit	A mineral deposit consisting of veins and replacement bodies containing precious metals or, more rarely, base metals; that form close to the earth's surface at high levels in the crust.
Exploration	Prospecting, sampling, mapping, drilling and other work involved in the search for ore.
Fault	A break in the continuity of a body of rock. It is accompanied by a movement on one side of the break relative to the other so that what were once parts of one continuous rock stratum or vein are now separated. The amount of displacement of the parts may range from a few inches to thousands of feet. Various descriptive names have been given to different kinds of faults, including but not limited to; closed fault, dip fault, dip-slip fault, distributive fault, flaw fault, gravity fault, heave fault, hinge fault, horizontal fault, longitudinal fault, normal fault, oblique fault, oblique slip fault, open fault, overthrust fault, parallel displacement fault, pivotal fault, reverse fault, rotary fault, step fault, strike fault, strike-slip fault, thrust fault, transcurrent fault, translatory fault, underthrust, vertical fault.
Felsic	An igneous rock having abundant light-coloured minerals and enriched in lighter elements such as silica and aluminium.
Flotation	A milling process in which valuable particles are induced to become attached to bubbles and float where they are more easily separated.
Fold	A curve or bend of a planar structure such as rock strata, bedding planes, foliation, or cleavage. A fold is usually a product of deformation, although its definition is descriptive and not genetic and may include primary sedimentary structures.
Gabbro	A dark, coarse-grained mafic igneous rock.
Gangue	The commercially worthless material that surrounds, or is closely mixed with, the ore.
Gold equivalent ounces	In instances where individual deposits may contain multiple valuable commodities with a reasonable expectation of being recovered; for example gold + copper in the one 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 ((gold ounces x gold price per ounce) + (copper pounds x copper price per pound))/gold price per ounce; this will return the gold equivalent of a gold and copper deposit. All calculations are done using metal prices as stipulated in attached documentation. Harmony assumes a 100% metallurgical recovery in its calculations unless otherwise stated.
Graben	A block of rock bound by faults that has moved downward to form a depression between adjacent fault blocks.
Granite	A light coarse-grained felsic intrusive rock.
Granodiorite	A light coarse-grained intermediate intrusive rock.
Greenstone	A field term for any compact dark green altered or metamorphosed basic igneous rock that owes its colour to chlorite.
Head grade	The average grade of ore fed into the mill.
Horst	An elongate, relatively uplifted crustal unit or block that is bounded by faults, the opposite of a graben. It is a structural form and may or may not be expressed geomorphologically.
Hydrothermal	Relating to hot fluids circulating in the earth's crust; generally the source of metals found in mineral deposits
Igneous rock	Rocks formed by the solidification of molten material below the earth's crust.
IHAS	Integrated Hazard Awareness System.
Intrusive	A body of igneous rock formed by the consolidation of magma intruded into country rock, in contrast to lava which is extruded onto the earth's surface.

GLOSSARY OF TERMS continued

Lava	A general name for the molten rock ejected by volcanoes.
Mafic	An igneous rock composed chiefly of dark, ferromagnesium minerals and enriched in heavier elements such as iron.
Magma	The molten material within the earth from which igneous rocks are formed.
Maramuni arc	A part of the New Guinea Mobile Belt, an arc across the island of Papua New Guinea within which a large portion of economic deposits are found.
Matrix	The finer-grained material between the larger particles of a rock or the material surrounding a fossil or mineral.
Metallurgy	The study of extracting metals from their ores.
Mesozoic	An era of geologic time, from the end of the Paleozoic to the beginning of the Cenozoic, or from about 225 million years to about 65 million years ago.
Mine call factor (MCF)	Is the ratio, expressed as a percentage, which the specific product accounted for in "recovery plus residue" bears to the corresponding product "called for" by the mine's measuring and valuation methods.
MW	Milling width is a calculated width expressing the relationship between the total reef area excavated and the total tonnes milled from underground sources.
Mobile belt	A belt of folded and mountainous terrain that defines the core of the island of Papua New Guinea, considered to define the leading edge of the Australian content where it is in collision with the pacific ocean plate.
Non-refractory	Gold or copper ore that is easily extracted using standard and well tested mill and plant technologies.
Ophiolite	A section of the earth's oceanic crust and the underlying mantle that has been uplifted and often emplaced (or obducted) onto the edge of a continental plate; commonly the product of subduction systems. The material comprises mafic and ultramafic rocks and minerals.
Ore	A mixture of minerals and gangue from which at least one of the minerals can be extracted at a profit.
Orogeny	A period of mountain building characterised by compression and folding within the earth's crust.
Oxidation	Generically refers to a chemical reaction of the rock when exposed to oxygen and surface water, resulting in oxide material in a mining environment.
Plunge	The inclination and orientation of a fold axis or other linear feature, measured in the vertical plane.
Porphyry	An igneous rock of any composition that contains conspicuous phenocrysts in a fine-grained groundmass that has intruded into the upper crust rapidly. A rock name descriptive of the groundmass composition usually precedes the term, eg diorite porphyry.
Porphyry copper	A specific deposit type associated with the intrusion of multiple phases of porphyry. The heat and associated fluids commonly carry and precipitate metals such as gold, copper, molybdenum and silver.
PRF	Plant recovery factor is the ratio, expressed as a percentage, of the mass of the specific mineral product actually recovered from ore treated at the plant to its total specific mineral content before treatment.
Pyrite	Iron sulphide that usually occurs in veins, as magmatic segregation, as an accessory in igneous rocks, and in metamorphic rocks, in sedimentary rocks including coal seams; It is commonly associated with gold.
Quartzite	A very hard metamorphosed sandstone, consisting chiefly of quartz grains that are so completely cemented with secondary silica that the rock breaks across or through the grains rather than around them.
Raise	Any tunnel having an inclination above the horizontal in the direction of workings.
Recovery	The percentage of valuable metal in the ore that can be recovered by metallurgical treatment.
Refractory	Ore type that contains gold or copper that is "locked up" and difficult to extract without specialised processing equipment.
Resource	The estimated amount of material in a mineral deposit, based on limited drilling but considered to be available for eventual economic extraction.
Rhyolite	A fine-grained extrusive igneous rock with the same chemical composition as granite.
SASS5	South African Scoring System Version 5
Schist	A foliated metamorphic rock that has undergone sufficient strain so as to align all the mineral components into a roughly parallel arrangement.

Shaft	A vertical or inclined excavation in rock for the purpose of accessing the orebody, usually equipped with a hoist and winder to move miners and materials between the surface and various levels underground.
Silica	Fine grained silicon dioxide (such as quartz).
Siliceous	An alteration type where a large portion of the original rock has been replaced by silica.
Skarn	Lime-bearing silicates of any geologic age derived from nearly pure limestone or dolomite with the introduction of large amounts of silica, aluminium, iron and magnesium.
Stockwork	A mineral deposit in the form of a network of veinlets diffused in the country rock.
Stope	An excavation in a mine from which ore is, or has been, removed.
Strike	The bearing from north of a geological structure such as a bed, fault or orebody, defined as a horizontal line measured across the surface perpendicular to the dip.
Strip	To remove the overburden and waste to reveal the ore underneath.
Stripping ratio	The ratio of tonne of waste removed to tonnes of ore recovered in an open pit mine.
Subduction	The process in plate tectonics whereby a portion of one of the earth's plates is drawn down below another.
Sub-level	A level in an underground mine between two main working levels.
Sub-outcrop	A rock stratum that unconformably underlies another rock stratum.
Syncline	Concave fold in stratified rock, in which strata dip down to meet in a trough.
Tailings	Material rejected from the milling process from which much of the economic material has been removed.
SW	Stoping width is the width of the excavation made during stoping operations.
TSF	Tailings storage facility (or tailings pond) – where the tailings are stored until the end of mining when the facility is capped and rehabilitated.
Unconformity	The structural relationship between rock strata in contact, characterised by a lack of continuity in deposition due to a period of non-deposition, weathering, or erosion prior to the deposition of the younger beds. An unconformity is often marked by absence of parallelism between the strata where the younger overlying stratum does not conform to the dip and strike of the older underlying rocks.
Volcanic	Derived from volcanoes.
Waste	Unmineralised or low-grade material that cannot be mined at a profit.
Winze	Any tunnel having an inclination below the horizontal in the direction of workings.

FORWARD-LOOKING STATEMENTS

This report contains forward-looking statements within the meaning of the safe harbour provided by section 21E of the Exchange Act and section 27A of the Securities Act of 1933, as amended (the Securities Act), 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 forward-looking statements, including among others, those relating to our business prospects, revenues, and the potential benefit of acquisitions (including statements on growth and cost savings) wherever they may occur in this report and the exhibits to this report, are necessarily estimates reflecting the best judgement 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 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, Papua New Guinea, Australia and elsewhere, and measures taken to address the Covid-19 pandemic, and other contagious diseases, such as HIV and tuberculosis
- Estimates of future earnings, and the sensitivity of earnings to gold and other metals prices
- Estimates of future gold and other metals production and sales
- Estimates of future cash costs
- Estimates of future cash flows, and the sensitivity of cash flows to gold and other metals prices
- Estimates of provision for silicosis settlement
- Estimates of future tax liabilities under the Carbon Tax Act (South Africa)
- Statements on future debt repayments
- Estimates of future capital expenditures
- The success of our business strategy, exploration and development activities and other initiatives
- Future financial position, plans, strategies, objectives, capital expenditures, projected costs and anticipated cost savings and financing plans
- Estimates of reserves statements regarding future exploration results and the replacement of reserves
- The ability to achieve anticipated efficiencies and other cost savings from past and future acquisitions, as well as at existing operations
- Fluctuations in the market price of gold
- The occurrence of hazards associated with underground and surface gold mining
- The occurrence of labour disruptions related to industrial action or health and safety incidents (both as a result of tariff increases from Eskom as well as possible future costs to introduce more sustainable decarbonised green power options)
- Power cost increases as well as power stoppages, fluctuations and usage constraints
- Supply chain shortages and increases in the prices of production imports and the availability, terms and deployment of capital
- Our ability to hire and retain senior management, sufficiently technically skilled employees, as well as our ability to achieve sufficient representation of historically disadvantaged persons in management positions
- Our ability to comply with requirements that we operate in a sustainable manner and provide benefits to affected communities
- Potential liabilities related to occupational health diseases and liabilities associated with safety incidents
- Changes in government regulation and the political environment, particularly tax and royalties, mining rights, health, safety, environmental regulation and business ownership including any interpretation thereof; court decisions affecting the mining industry, including the interpretation of mining rights
- Our ability to protect our information technology and communication systems and the personal data we retain
- Risks related to the failure of internal controls
- The outcome of pending or future litigation or regulatory proceedings
- Fluctuations in exchange rates and currency devaluations and other macro-economic monetary policies
- The adequacy of the group's insurance coverage
- Any further downgrade of South Africa's credit rating
- Socio-economic or political instability in South Africa, Papua New Guinea and other countries in which we operate.

For a more detailed discussion of such risks and other factors (such as availability of credit or other sources of financing), see the company's latest integrated annual report and Form 20-F which is on file with the Securities and Exchange Commission, as well as the company's other Securities and Exchange Commission filings. The company undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after the date of this report or to reflect the occurrence of unanticipated events, except as required by law. The foregoing factors and others described under "Risk Factors" should not be construed as exhaustive. The forward-looking financial information has not been reviewed and reported on by the company's auditors.

COMPETENT PERSON'S STATEMENT

The information in this report that relates to Mineral Resources or Ore Reserves has been extracted from our Reserves and Resources statement published on 31 August 2021. Harmony confirms that it is not aware of any new information or data that materially affects the information included in the statement, in the case of Mineral Resources or Mineral Reserves, that all material assumptions and technical parameters underpinning the estimates in the original release continue to apply and have not materially changed. Harmony confirms that the form and context in which the competent person's findings are presented have not been materially modified from the original release.

CONTACT DETAILS

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