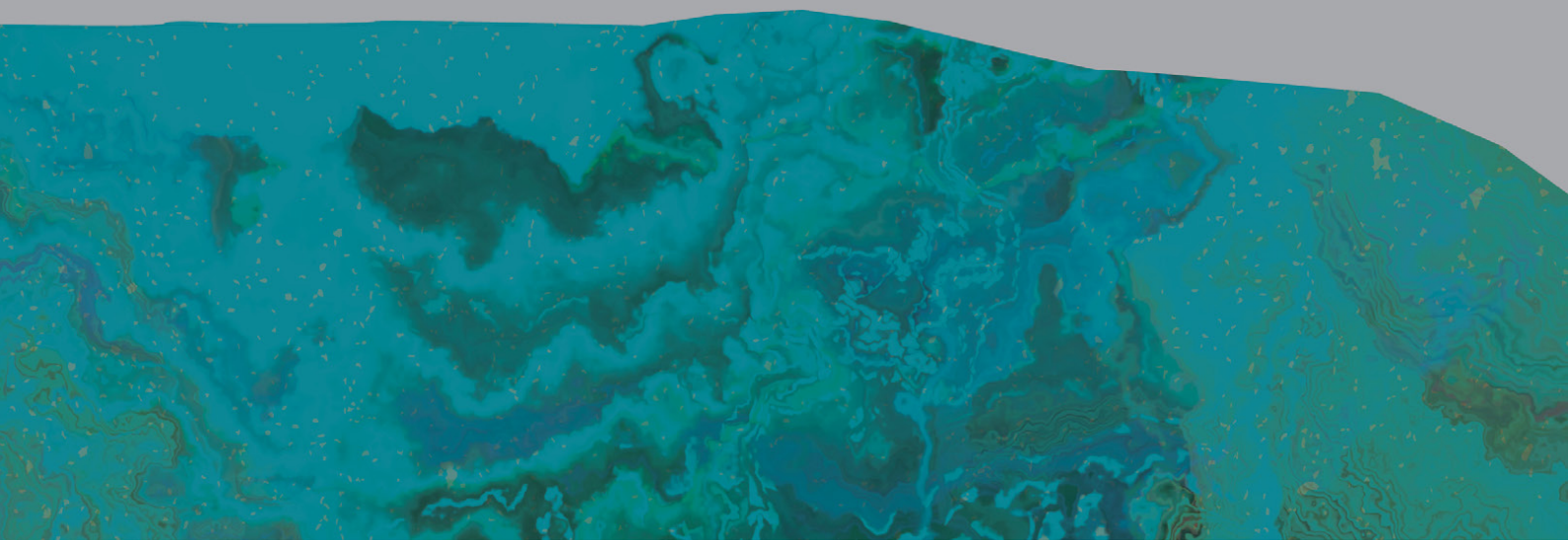


# 22

## MINERAL RESOURCES AND MINERAL RESERVES REPORT

for the year ended 2022



CELEBRATING 10 YEARS OF SHARED VALUE



INNOVATION



COMMITMENT



ACCOUNTABILITY



RESPECT



ENABLING



SAFETY

# ABOUT OUR FULL SUITE OF REPORTS

## 2022 OVERVIEW

### Lithium: 193.6kt LCE Mineral Reserves & 366.1kt LCE Mineral Resources

A maiden lithium (Li) Mineral Reserve following the completion of a positive Feasibility Study (FS) and the approval for construction at the Keliber Project in Finland, and a 248% increase in Li Mineral Resources driven by our increase in Keliber shareholding to 84.96% (2021: 26.6%), and successful exploration (+30.4kt LCE).

### US PGM: 26.3Moz 2E Mineral Reserves & 84.2Moz 2E Mineral Resources

The 2E PGM Mineral Reserves and life of mine (LoM) plans reflect the repositioning of the US PGM operations during 2022. The current Mineral Reserves support a 42 year LoM, based on a build up to 700koz of annual 2E production from 2026.

### SA PGM: 31.4Moz 4E Mineral Reserves & 177.3Moz Mineral Resources

Depletion of 1.9Moz during 2022, was partly off-set by the conclusion of a positive feasibility study at the 50% owned Mimosa North Hill Project (+1.5Moz), which is currently under Board consideration for construction.

The Mineral Reserves estimate at our SA PGM operations remain conservative, with significant study work in progress on the very large Mineral Resource base which can be leveraged under the right investment climate.

### SA Gold: 12.9Moz Mineral Reserves & 69.3Moz Mineral Resources

Stable Mineral Reserves at our SA gold operations with decreases at our managed operations off-set by increases at DRDGOLD.

### Uranium: 66.6Mlb U<sub>3</sub>O<sub>8</sub> Mineral Resources & Copper: 13,468.4 Mlb Mineral Resources

U<sub>3</sub>O<sub>8</sub> and copper Mineral Resources remained largely unchanged year on year, outside minor attributable interest changes.

### Zinc: 445.5Mlb Mineral Reserves & 798.5Mlb Mineral Resources

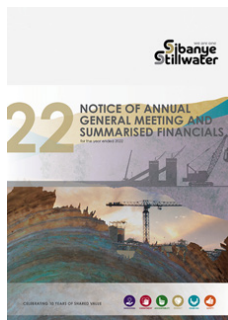
Attributable zinc Mineral Reserves and Mineral Resources at the non-managed New Century zinc tailings retreatment operation in Queensland, Australia.

## OUR 2022 REPORTS

These reports cover the financial year from 1 January to 31 December 2022\*



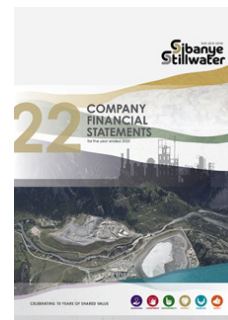
INTEGRATED  
REPORT



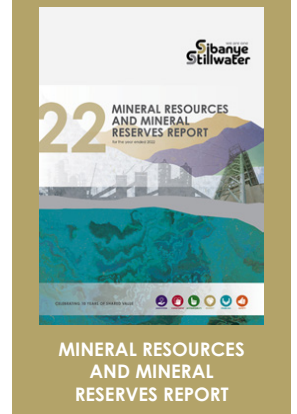
NOTICE OF ANNUAL  
GENERAL MEETING AND  
SUMMARISED FINANCIALS



GROUP ANNUAL  
FINANCIAL REPORT



COMPANY FINANCIAL  
STATEMENTS



MINERAL RESOURCES  
AND MINERAL  
RESERVES REPORT

**About our cover designs:** The artistic design of the covers speaks to the drive and potential of our people to innovate and find better ways to harness the value of our resource base, fulfilling our purpose to safeguard sustainability through our metals. The contrasting mesh of natural and industrial landscapes indicates how human progress and prosperity are made possible by the majesty of nature, which demands our respect.

All of our 2022 reports, together with supporting documents, are available on our website: [www.sibanyestillwater.com/newsinvestors/reports/annual](http://www.sibanyestillwater.com/newsinvestors/reports/annual)

\* This report contains information for the financial year ended 31 December 2022. Where relevant or otherwise required, additional information is included up to date 24 April 2023

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- Progressing the UN's SDGs
- Environmental incidents in 2022
- Biodiversity management
- Social and labour plans (SLPs): Summary of projects in South Africa
- Care for iMali: Taking care of personal finance
- Sustainability content index
- Tailings management
- Combating illegal mining
- Sibanye-Stillwater's ICMM self-assessment for 2022
- The Good Neighbor Agreement
- Definitions for sustainability/ESG indicators
- Application of King IV Principles in 2022
- Climate change related disclosure

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### We welcome your feedback

Your feedback and suggestions are welcome. Please direct them to **James Wellsted**, Head of Investor relations and Corporate affairs:

[ir@sibanyestillwater.com](mailto:ir@sibanyestillwater.com)

[www.sibanyestillwater.com](http://www.sibanyestillwater.com)





# OUR BUSINESS

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# INTRODUCTION

Sibanye-Stillwater is a multinational mining and metals processing group with a diverse portfolio of projects and investments across five continents. The Group is also one of the foremost global recyclers of PGM autocatalysts and has controlling interests in leading mine tailings retreatment operations.

Sibanye-Stillwater has established itself as one of the world's largest primary producers of platinum, palladium, and rhodium and is a top tier gold producer. It also produces and refines iridium and ruthenium, nickel, chrome, copper and cobalt. The Group has recently begun to build and diversify its asset portfolio into battery metals mining and processing and is increasing its presence in the circular economy by growing and diversifying its recycling and tailings reprocessing operations globally.

Our fundamental strategic goal is to ensure that we consistently deliver on our purpose to 'safeguard global sustainability through our metals and energy solutions' while strengthening our position as a leading international mining Group and ensuring we are true to our vision 'to be a leader in superior shared value for all stakeholders. Everything we do is driven by our iCARES values of innovation, commitment, accountability, respect, enabling and safety.



*Keliber development project exploration drilling*

# CORPORATE GOVERNANCE AND REGULATORY COMPLIANCE

**Sibanye-Stillwater is listed on the JSE and the NYSE and is required to comply with both Section 12.13 of the JSE Listings Requirements and the requirements of SK-1300.**

For the Southern Africa (SA) production (operations), development and exploration properties, including the non-managed properties (DRDGOLD and Mimoso), the Mineral Resources and Mineral Reserves, and the mineral asset valuations supporting the Mineral Reserve estimates, have been prepared in compliance with the South African Code for Reporting of the Exploration Results, Mineral Resources and Mineral Reserves (SAMREC 2016 edition, including Table 1 and Appendices) and the South African Code for the Reporting of Mineral Asset Valuation (SAMVAL 2016 edition), and all requirements thereof have been complied with. This disclosure is also compliant with JSE Listings Requirements Section 12.13.

For the international, non-managed Marathon, Altar and Rio Grande exploration properties (all non-material assets), the original estimates were prepared in compliance with the Canadian NI43-101; and for the New Century, Rhyolite Ridge and Keliber properties in compliance with the Australian JORC Code, which are both Committee for Mineral Reserves International Reporting Standards (CRIRSCO) sister codes of SAMREC and SAMVAL. The Company has verified them for alignment to SAMREC/SAMVAL and SK-1300, and believe that the final estimates would be similar (barring reporting methodology), and that the estimates can be considered current.

In complying with the requirements of SK-1300, this document serves to satisfy both the Summary disclosure requirements set out under Item 1303 of SK-1300 (Item 1303) and Individual Material Property disclosure requirements set out under Item 1304 of SK-1300 (Item 1304). Section 1 contains all Summary Disclosure related information set out under Item 1303, while Section 2, 3, 4 and 5 contains Individual Material Property Disclosure information required under Item 1304 of SK-1300 for material properties. To ensure alignment and continuity with past disclosures, the Group is also disclosing additional and relevant information on non-material properties in Sections 2-5, but in a less comprehensive format and sequenced last.

This report also complies with the internal controls disclosure requirements set out under Item 1305 of SK-1300 (Item 1305). Disclosure pursuant to Item 1305 can be found in Section 2, 3, 4 and 5.

## MATERIAL PROPERTIES

A comprehensive materiality assessment has been conducted on the Group's Mineral Properties, which led to the identification of seven (2021: six) material properties which are the key drivers to the Groups' Mineral Reserves, revenue, profits and strategy.

The properties considered material for the purpose of SK-1300 are listed below.

### PGM

- **Americas:** the US PGM operations consisting of the East Boulder and Stillwater mines
- **Southern Africa:** the Marikana, Rustenburg (SRPM), and Kroondal operations

### GOLD

- **Southern Africa:** the Kloof and Driefontein operations

### BATTERY METALS

- **Finland:** the Keliber lithium project

In support of the material property disclosure, compliant technical report summaries (TRS) have been prepared and filed for all material properties. The TRS's for US PGM (East Boulder and Stillwater), Marikana, Rustenburg, Kroondal, Kloof and Driefontein were filed with the United States Securities and Exchange Commission (SEC) on Form 6-K and incorporated by reference as exhibits to the 2021 annual report on Form 20-F filed with the SEC on 22 April 2022 and these TRS can be accessed via EDGAR. For the 2022 reporting period, the only additional TRS that is filed is for the Keliber Lithium Project, where the Group has increased its stake from 26.6% to 84.96% during the year, and have approved the construction of the Kokkola Lithium Hydroxide refinery. No material changes in Mineral Resources or Mineral Reserves have been identified year-on-year in the other six material properties that would warrant the filing of a new TRS.

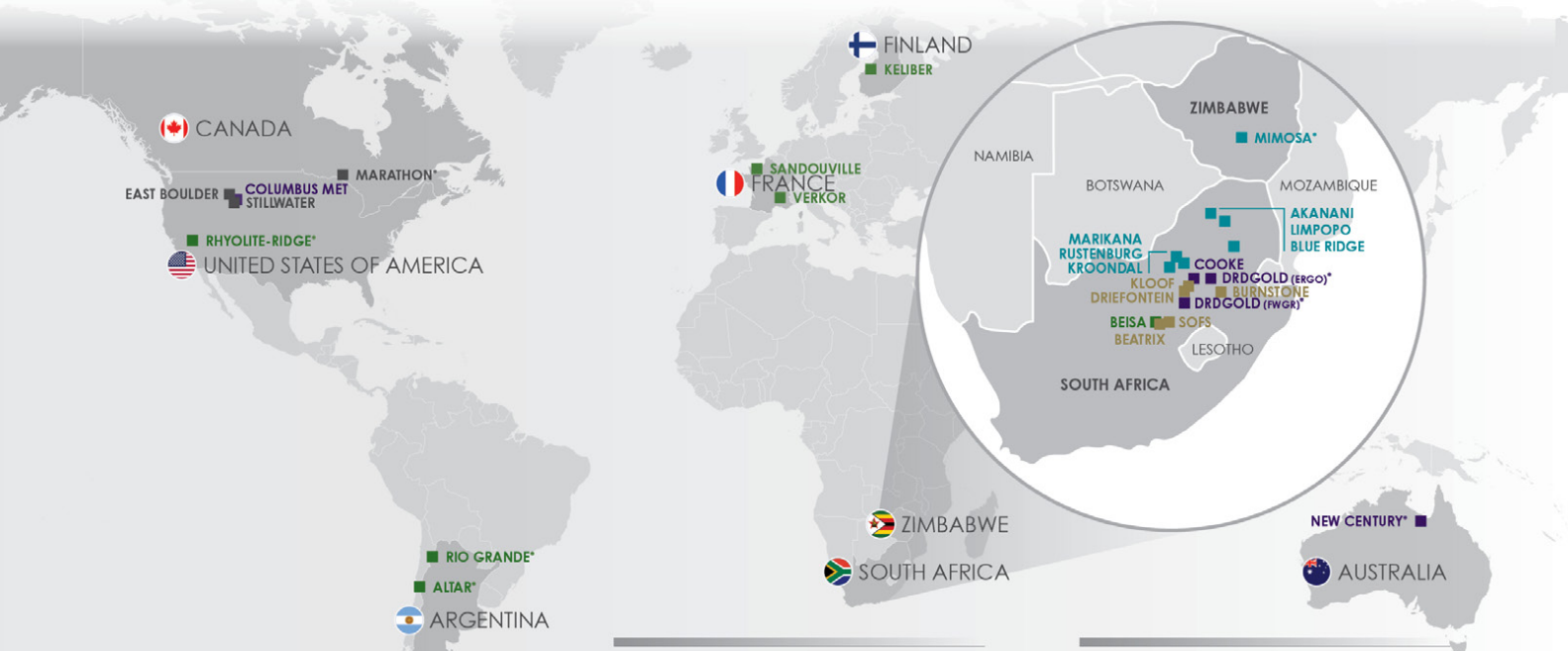
The estimates under SK-1300 align with the SAMREC-compliant estimates, and Mineral Resources are reported both inclusive and exclusive of Mineral Reserves to satisfy both reporting jurisdictions.





# LOCATION OF OUR OPERATIONS AND PROJECTS

A UNIQUE GLOBAL PORTFOLIO OF GEOGRAPHICALLY DIVERSIFIED ASSETS UNDERPINNED BY GREEN METALS



## AMERICAS ASSETS

### US PGM OPERATIONS

- Stillwater mine (100%)\*\***  
Mineral Reserves: 15.3Moz 2E
- East Boulder mine (100%)\*\***  
Mineral Reserves: 11.0Moz 2E

### PGM EXPLORATION

- Marathon project (18.19%)\***  
Mineral Resources: 1.0Moz 2E

### PGM RECYCLING

- Columbus Met complex (100%)**

### LITHIUM EXPLORATION

- Rhyolite-Ridge project (6.95%)\***  
Mineral Resources: 86.8kt LCE

### COPPER EXPLORATION

- Altar project (100%)\***  
Mineral Resources: 13,138.0Mlb Cu
- Rio Grande project (17.59%)\***  
Mineral Resources: 119.1Mlb Cu

\* Non-managed

\*\* Material property: under SK-1300

PGM = platinum group metals, Au = gold, Cu = copper, LCE = lithium carbonate equivalent, Zn = zinc, U<sub>3</sub>O<sub>8</sub> = uranium oxide

Verkor is a planned French gigafactory in which Sibanye-Stillwater participates through a convertible bond

### CIRCULAR ECONOMY OPERATIONS

These refer to our operations which produce commodities by recycling or re-processing waste in the form of mine tailings or automotive catalysts (autocats)

## SOUTHERN AFRICAN ASSETS

### SA PGM OPERATIONS

- Marikana (80.64%)\*\***  
Mineral Reserves: 17.4Moz 4E
- Rustenburg (74%)\*\***  
Mineral Reserves: 10.2Moz 4E
- Kroondal (50%)\*\***  
Mineral Reserves: 0.7Moz 4E
- Mimoso (50%)\***  
Mineral Reserves: 3.2Moz 4E

### SA PGM EXPLORATION

- Akanani (80.13%)**  
Mineral Resources: 31.6Moz 4E
- Limpopo: Voorspoed and Doornvlei (80.64%), and Dwaalkop (40.32%)** Mineral Resources: 19.9Moz 4E
- Blue Ridge (50%)**  
Mineral Resources: 1.6Moz 4E

### SA GOLD OPERATIONS

- Kloof (100%)\*\***  
Mineral Reserves: 3.4Moz Au
- Driefontein (100%)\*\***  
Mineral Reserves: 3.0Moz Au
- Beatrix (100%)**  
Mineral Reserves: 0.8Moz Au

- Cooke surface (76%)**  
Mineral Reserves: 0.1Moz Au
- DRDGOLD (50.33%)\***  
Mineral Reserves: 3.0Moz Au

### SA GOLD DEVELOPMENT

- Burnstone (100%)**  
Mineral Reserves: 2.7Moz Au

### SA GOLD EXPLORATION

- SOFS (Southern Free State project) (100%)**  
Mineral Resources: 6.9Moz Au

## EUROPEAN ASSETS

### LITHIUM DEVELOPMENT

- Keliber project (84.96%)\*\***  
Mineral Reserves: 193.6kt LCE

### NICKEL OPERATIONS

- Sandouville refinery (100%)**

## AUSTRALIAN ASSETS

### ZINC OPERATIONS

- New Century (31 Dec 2022: 19.89%)\* (as at 21 April 2023: 95.5%)**  
Mineral Reserves: 445.5Mlbs Zn

### SA URANIUM EXPLORATION

- Belsa (100%)**  
Mineral Resources: 27.0Mlb U<sub>3</sub>O<sub>8</sub>

- Cooke (76%)**  
Mineral Resources: 39.6Mlb U<sub>3</sub>O<sub>8</sub>

### BATTERY METALS

### GREEN METALS

## LOCATION OF OUR OPERATIONS AND PROJECTS continued

## AMERICAS

## PGMs

Sibanye-Stillwater wholly owns and operates PGM mining and processing operations and mining claims (together known as the US PGM operations) that are located in Montana, US. These assets include the Stillwater mine (inclusive of the Stillwater East mine), the East Boulder mine, two concentrator plants, and PGM mining claims located near the town of Nye. In addition, we own and operate a metallurgical smelter and base metals refinery complex situated in the town of Columbus, Montana, which also serves as the base for our PGM recycling business, which recovers PGMs from recycled catalytic converters.

The Group also has an 18.19% equity holding in Generation Mining, the owners and operator of the Marathon PGM project in Canada. During 2022, the Group sold Lonmin Canada Inc., including the Denison project, to Magna Mining Inc., resulting in the related attributable Mineral Resources being removed from our inventory.

## Battery Metals

The Group holds a 6.95% interest in Ioneer Limited, the owner and operator of the Rhyolite Ridge Lithium and Boron project in Nevada, with an option to enter into a 50:50 JV on the project.

The project aims to be the first new lithium producer in the USA in over 50 years. The project has entered the final permitting phase, with the a final record of decision (ROD) expected in Q1 2024.

The Group also holds non-managed interests in two copper-gold porphyry exploration projects in Argentina, namely Altar (100%, under management agreement) and Rio Grande (17.59%).

## SOUTHERN AFRICA

## PGMs

The SA PGM operations comprise of three managed PGM-producing underground operations (Marikana, Rustenburg and Kroondal), as well as an open-pit operation situated at Kroondal. In addition, the PGM segment has a 50% attributable, non-managed, underground operation (Mimosa) in Zimbabwe.

The Rustenburg (74% attributable) and Kroondal (50% attributable) operations produce concentrate which is processed in terms toll-treatment (Rustenburg) and purchase of concentrate (POC) agreements by Rustenburg Platinum Mines Ltd, a division of Anglo American Platinum.

The Marikana operation (80.64% attributable) processes its own as well as third party concentrate via a metallurgical smelter and base metals refinery situated at the operations, and a precious metals refinery complex located in Brakpan, to the east of Johannesburg.

Apart from the primary mining operations, significant tailings retreatment operations exist:

- The Platinum Mile tailings retreatment facility (100% owned and managed) recovers PGMs from the live tailings streams of the Rustenburg (Waterval and Retrofit) concentrator plants
- The Western Limb Tailings Retreatment (WLTR) plant recovers PGMs from historic TSF's at the Rustenburg operation
- The Bulk Tailings Treatment (BTT) facility recovers chrome and PGM's from the ETD1 TSF at the Marikana operation
- The Eastern Tailings Treatment Project (ETTP) facility recovers chrome and PGMs from live tailings material from the EPL concentrator at the Marikana operation
- At the Rustenburg, Kroondal and Marikana operations, chrome concentrate is recovered as a by-product from the UG2 tailings streams

The Akanani exploration project (80.13% attributable) is an exploration asset on the northern limb of the Bushveld Igneous Complex (BIC) near the town of Mokopane. The Limpopo exploration project, located approximately 50km southeast of Mokopane, consists of the care and maintenance Baobab operation (80.64% attributable), the Dwaalkop mining right (50:50 JV area with Northam, 40.32% attributable), and the Doornvlei mining right (80.64% attributable).

The Blue Ridge Platinum exploration project – a 50% attributable joint venture (JV) with Imbani Platinum (Pty) Ltd – has been on care and maintenance since 2011.

## Gold

The SA gold operations are made up of four managed, producing, underground and surface operations in South Africa, namely the Kloof (100% attributable), Driefontein (100% attributable) and Cooke (76% attributable) operations in the West Wits region, and Beatrix (100% attributable) operation in the Free State province.

Burnstone (100% attributable) is a development project in the Mpumalanga province. In addition to its gold mining activities, Sibanye-Stillwater owns and manages significant metallurgical processing facilities at all its operations where gold-bearing ore is processed, and gold extracted.

Wholly-owned and managed projects in study phase include Bloemhoek, De Bron Merriespruit and Beisa. Bloemhoek and De Bron Merriespruit form part of the Southern Free State (SOFs) exploration project. Beisa is a uranium and gold project located at the Beatrix operation.

The Group also reports Mineral Resources and Mineral Reserves on an attributable basis for DRDGOLD Limited (DRDGOLD) due to its 50.33% equity interest. DRDGOLD operates the Far West Gold Recoveries (FWGR) and the ERGO Gold Recoveries Operations.

## Green Metals

Significant quantities of uranium are present in the historic TSFs of the Cooke operation, as well as in the Beisa Reef at the Beatrix operation. These are considered exploration projects even though they occur within existing operational mining right areas.

## EUROPE

## Battery Metals

During 2022, Sibanye-Stillwater increased its shareholding in the Keliber lithium project in Finland to a controlling 84.96% (2021: 26.6%). On 28 November 2022, the Board approved the development of the Keliber Lithium Project, beginning with the construction of the lithium-hydroxide refinery. Significant exploration activities are also ongoing at the extensive mineral title holdings.

## AUSTRALIA

## Green Metals

The Group holds a 19.89% equity position in New Century Resources Limited (New Century), an Australian company focused on the economic re-treatment and rehabilitation of TSFs, which currently operates the largest tailings retreatment operation in Australia, the Century Zinc mine in Queensland.

In-line with its strategic intention to invest in a unique global portfolio of green metals and energy solutions that reverse climate change, in early 2023 the Group announced its intention to make a takeover bid to New Century shareholders to acquire up to 100% of New Century's share capital.

The offer to New Century shareholders has been well received with Sibanye-Stillwater's interest in New Century increasing to 92.5% as at 4 April 2023.



# GROUP MINERAL RESOURCES AND MINERAL RESERVES SUMMARY

## Group material mineral property summary

Commodity	Region	Stage	Property name	Area (ha)	Attributable ownership	Ownership type	Mine type	Operator	Mineralisation style
PGM	Americas	Production	Stillwater and East Boulder	9,775	100%	Fully owned private subsidiary	Underground	Sibanye Stillwater Ltd	Magmatic
PGM	Southern Africa	Production	Marikana	26,223	80.64%	Majority owned private subsidiary	Underground	Sibanye Stillwater Ltd	Magmatic
PGM	Southern Africa	Production	Rustenburg	15,898	74/86.35%	Majority owned private subsidiary	Underground	Sibanye Stillwater Ltd	Magmatic
PGM	Southern Africa	Production	Kroondal	8,122	50%	Joint venture (JV) via fully owned private subsidiary	Underground & open pit	Sibanye Stillwater Ltd	Magmatic
Gold	Southern Africa	Production	Kloof	20,087	100%	Fully owned private subsidiary	Underground	Sibanye Stillwater Ltd	Paleoplacer
Gold	Southern Africa	Production	Driefontein	8,561	100%	Fully owned private subsidiary	Underground	Sibanye Stillwater Ltd	Paleoplacer
Lithium	Europe	Development	Keliber	3,038	84.96%	Majority owned private subsidiary	Underground & open pit	Sibanye Stillwater Ltd	Magmatic

## Group non-material mineral property summary

Commodity	Region	Stage	Property name	Area (ha)	Attributable ownership	Ownership type	Mine type	Operator	Mineralisation style
PGM	Americas	Exploration	Marathon*	19,625	18.19%	Equity in listed entity	Open pit	Generation Mining	Magmatic
PGM	Southern Africa	Production	Mimosa*	6,594	50%	JV	Underground	Mimosa Mining Pty Ltd	Magmatic
PGM	Southern Africa	Exploration	Akanani	4,095	80.13%	Majority owned private subsidiary	Underground	Sibanye Stillwater Ltd	Magmatic
PGM	Southern Africa	Exploration	Limpopo	5,706	40.32/80.64%	Majority owned private subsidiary & JV via majority owned subsidiary	Underground	Sibanye Stillwater Ltd	Magmatic
PGM	Southern Africa	Exploration	Blue Ridge	1,889	50%	JV via fully owned private subsidiary	Underground	Sibanye Stillwater Ltd	Magmatic
Gold	Southern Africa	Production	Beatrix	16,821	100%	Sibanye Stillwater Ltd	Underground	Sibanye Stillwater Ltd	Paleoplacer
Gold	Southern Africa	Production	Cooke	14,724	76%	Majority owned private subsidiary	Re-treatment	Sibanye Stillwater Ltd	Tailings
Gold	Southern Africa	Production	DRDGOLD*	31,566	50%	Equity in listed entity	Re-treatment	DRDGOLD Ltd	Tailings
Gold	Southern Africa	Development	Burnstone	13,136	100%	Fully owned private subsidiary	Underground	Sibanye Stillwater Ltd	Paleoplacer
Gold	Southern Africa	Exploration	SOFS	17,022	100%	Fully owned private subsidiary	Underground	Sibanye Stillwater Ltd	Paleoplacer
Uranium	Southern Africa	Exploration	Beisa (Beatrix)	16,821	100%	Fully owned private subsidiary	Underground	Sibanye Stillwater Ltd	Paleoplacer
Uranium	Southern Africa	Exploration	Cooke (TSF's)	8,119	76%	Majority owned private subsidiary	Re-treatment	Sibanye Stillwater Ltd	Tailings
Lithium	Americas	Exploration	Rhyolite Ridge*	3,160	6.95%	Equity in listed entity	Open pit	ioneer Ltd	Sedimentary
Copper	Americas	Exploration	Altar*	8,440	100%	Fully owned private subsidiary	Underground & open pit	Aldebaran Resources Ltd	Magmatic
Copper	Americas	Exploration	Rio Grande*	16,953	17.59%	Equity in listed entity	Underground & open pit	Aldebaran Resources Ltd	Magmatic
Zinc	Australia	Production	Century*	75,784	19.89%	Equity in listed entity	Re-treatment	New Century Resource Ltd	Tailings

\* Non-Managed

## Group production summary

Region	Year ended 31 December								
	2022			2021			2020		
	Milled kt	Yield g/t	Produced 2E/4E/AU koz	Milled kt	Yield g/t	Produced 2E/4E/AU koz	Milled kt	Yield g/t	Produced 2E/4E/AU koz
US PGM	1,154	11.3	421	1,469	12.1	570	1,487	12.6	603
SA PGM	36,644	1.4	1,668	38,307	1.5	1,836	32,416	1.5	1,527
SA Gold	36,172	0.5	621	44,402	0.8	1,073	41,226	0.7	983

## Encumbrances

There are no Group significant or material encumbrances in the mineral properties licensing tenure that would restrict our planned mining activities.

## GROUP MINERAL RESOURCES AND MINERAL RESERVES SUMMARY continued

## MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES AT 31 DECEMBER 2022

## Mineral Resources Inclusive of Mineral Reserves

PGM OPERATIONS			31 Dec 2022				31 Dec 2021			
			Tonnes (Mt)	Grade (g/t)	PGM (Moz)	PGM 100% (Moz)	Tonnes (Mt)	Grade (g/t)	PGM (Moz)	PGM 100% (Moz)
Americas <sup>1</sup>	Stillwater and East Boulder**	Measured	42.6	13.7	18.7	18.7	39.9	14.7	18.9	18.9
		Indicated	50.4	12.8	20.7	20.7	59.1	13.8	26.1	26.1
		Measured + Indicated	93.0	13.2	39.4	39.4	99.0	14.1	45.0	45.0
		Inferred	114.0	12.2	44.8	44.8	113.6	12.2	44.6	44.6
Southern Africa <sup>2</sup>	Marikana**	Measured	73.1	4.2	9.9	12.2	73.3	4.2	9.9	12.3
		Indicated	513.4	4.1	67.8	84.1	513.4	4.1	68.1	84.4
		Measured + Indicated	586.5	4.1	77.7	96.3	586.6	4.1	78.0	96.8
		Inferred	179.4	4.4	25.1	31.2	178.9	4.4	25.2	31.2
	Rustenburg**	Measured	287.8	4.5	41.9	56.6	308.3	4.4	43.2	58.4
		Indicated	112.7	5.4	19.4	25.4	88.6	5.3	15.1	20.5
		Measured + Indicated	400.6	4.8	61.3	82.0	396.9	4.6	58.4	78.9
		Inferred	14.9	5.6	2.7	3.5	11.0	5.6	2.0	2.7
	Kroondal**	Measured	25.0	3.3	2.7	5.4	27.8	3.3	3.0	5.9
		Indicated	4.7	3.8	0.6	1.2	4.8	3.8	0.6	1.2
		Measured + Indicated	29.8	3.4	3.3	6.6	32.5	3.4	3.6	7.1
		Inferred	2.5	2.9	0.2	0.5	2.5	2.9	0.2	0.5
	Mimosa	Measured	33.7	3.5	3.8	7.6	31.0	3.5	3.5	7.0
		Indicated	13.1	3.5	1.5	3.0	17.7	3.5	2.0	4.0
		Measured + Indicated	46.9	3.5	5.3	10.6	48.7	3.5	5.5	11.0
		Inferred	15.5	3.4	1.7	3.4	17.2	3.4	1.9	3.7
OPERATIONS Total Measured + Indicated			1,156.7	5.0	186.9	234.9	1,163.8	5.1	190.5	238.7
OPERATIONS – Grand total			1,483.0	5.5	261.5	318.2	1,486.9	5.5	264.3	321.4
PGM EXPLORATION										
Americas	Marathon	Measured	18.8	0.8	0.5	2.8	23.4	0.8	0.6	2.8
		Indicated	21.5	0.6	0.4	2.3	26.7	0.6	0.5	2.3
		Measured + Indicated	40.3	0.7	0.9	5.1	50.1	0.7	1.1	5.1
		Inferred	5.0	0.5	0.1	0.4	6.2	0.5	0.1	0.4
	Denison	Measured	—	—	—	—	0.1	6.2	0.0	0.0
		Indicated	—	—	—	—	1.1	2.8	0.1	0.1
		Measured + Indicated	—	—	—	—	1.2	3.0	0.1	0.2
		Inferred	—	—	—	—	1.3	2.7	0.1	0.2
Southern Africa	Akanani	Measured	—	—	—	—	—	—	—	—
		Indicated	164.5	4.2	22.0	27.5	164.5	4.2	22.0	27.5
		Measured + Indicated	164.5	4.2	22.0	27.5	164.5	4.2	22.0	27.5
		Inferred	87.9	3.4	9.6	12.0	87.9	3.4	9.6	12.0
	Limpopo	Measured	1.8	4.2	0.2	0.3	1.8	4.2	0.2	0.3
		Indicated	80.0	4.1	10.5	17.6	73.6	4.3	10.3	17.2
		Measured + Indicated	81.7	4.1	10.7	17.9	75.4	4.3	10.5	17.5
		Inferred	70.9	4.0	9.2	14.2	67.9	4.2	9.1	14.0
	Blue Ridge	Measured	—	—	—	—	—	—	—	—
		Indicated	9.2	3.2	1.0	1.9	9.2	3.2	1.0	1.9
		Measured + Indicated	9.2	3.2	1.0	1.9	9.2	3.2	1.0	1.9
		Inferred	6.7	3.0	0.6	1.3	6.7	3.0	0.6	1.3
EXPLORATION Total Measured + Indicated			295.7	3.6	34.6	52.4	300.3	3.6	34.8	52.1
EXPLORATION – Grand Total			466.1	3.6	54.1	80.3	470.3	3.6	54.4	80.0
PGM TOTAL Measured + Indicated			1,452.4	4.7	221.5	287.3	1,464.1	4.8	225.2	290.9
PGM TOTAL			1,949.1	5.0	315.6	398.5	1,957.2	5.1	318.7	401.5

\*\* Material property under SK-1300



## GROUP MINERAL RESOURCES AND MINERAL RESERVES SUMMARY continued

## Mineral Resources Exclusive of Mineral Reserves

PGM OPERATIONS			31 Dec 2022				31 Dec 2021			
			Tonnes (Mt)	Grade (g/t)	PGM (Moz)	PGM 100% (Moz)	Tonnes (Mt)	Grade (g/t)	PGM (Moz)	PGM 100% (Moz)
Americas <sup>1</sup>	Stillwater and East Boulder**	Measured	19.3	10.4	6.4	6.4	15.1	14.3	6.9	6.9
		Indicated	19.1	7.9	4.8	4.8	19.9	13.7	8.8	8.8
		Measured + Indicated	38.3	9.1	11.3	11.3	35.0	14.0	15.7	15.7
		Inferred	114.0	12.2	44.8	44.8	113.6	12.2	44.6	44.6
Southern Africa <sup>2</sup>	Marikana**	Measured	53.0	4.0	6.8	8.4	47.7	3.9	6.0	7.5
		Indicated	379.4	3.9	47.3	58.7	392.6	3.9	49.6	61.5
		Measured + Indicated	432.5	3.9	54.1	67.1	440.3	3.9	55.6	69.0
		Inferred	172.4	4.4	24.2	30.0	178.6	4.4	25.1	31.2
	Rustenburg**	Measured	178.2	5.1	29.1	39.3	177.7	5.1	29.0	39.1
		Indicated	107.3	5.4	18.6	24.3	82.9	5.4	14.3	19.3
		Measured + Indicated	285.5	5.2	47.7	63.6	260.6	5.2	43.2	58.4
		Inferred	14.9	5.6	2.7	3.5	11.0	5.6	2.0	2.7
	Kroondal**	Measured	15.5	3.4	1.7	3.4	15.8	3.4	1.7	3.4
		Indicated	4.7	3.8	0.6	1.2	4.8	3.8	0.6	1.2
		Measured + Indicated	20.3	3.5	2.3	4.5	20.5	3.5	2.3	4.6
		Inferred	2.5	2.9	0.2	0.5	2.5	2.9	0.2	0.5
	Mimosa	Measured	16.0	3.4	1.8	3.5	16.0	3.4	1.8	3.5
		Indicated	8.4	3.5	1.0	1.9	8.4	3.5	1.0	1.9
		Measured + Indicated	24.4	3.5	2.7	5.4	24.4	3.5	2.7	5.4
		Inferred	15.5	3.4	1.7	3.4	17.2	3.4	1.9	3.7
OPERATIONS Total Measured + Indicated			801.0	4.6	118.0	151.9	780.9	4.8	119.6	153.2
OPERATIONS – Grand total			1,120.2	5.3	191.6	234.1	1,103.8	5.4	193.4	235.8
PGM EXPLORATION										
Americas	Marathon	Measured	18.8	0.8	0.5	2.8	23.4	0.8	0.6	2.8
		Indicated	21.5	0.6	0.4	2.3	26.7	0.6	0.5	2.3
		Measured + Indicated	40.3	0.7	0.9	5.1	50.1	0.7	1.1	5.1
		Inferred	5.0	0.5	0.1	0.4	6.2	0.5	0.1	0.4
	Denison	Measured	—	—	—	—	0.1	6.2	0.0	0.0
		Indicated	—	—	—	—	1.1	2.8	0.1	0.1
		Measured + Indicated	—	—	—	—	1.2	3.0	0.1	0.2
		Inferred	—	—	—	—	1.3	2.7	0.1	0.2
Southern Africa	Akanani	Measured	—	—	—	—	—	—	—	—
		Indicated	164.5	4.2	22.0	27.5	164.5	4.2	22.0	27.5
		Measured + Indicated	164.5	4.2	22.0	27.5	164.5	4.2	22.0	27.5
		Inferred	87.9	3.4	9.6	12.0	87.9	3.4	9.6	12.0
	Limpopo	Measured	1.8	4.2	0.2	0.3	1.8	4.2	0.2	0.3
		Indicated	80.0	4.1	10.5	17.6	73.6	4.3	10.3	17.2
		Measured + Indicated	81.7	4.1	10.7	17.9	75.4	4.3	10.5	17.5
		Inferred	70.9	4.0	9.2	14.2	67.9	4.2	9.1	14.0
	Blue Ridge	Measured	—	—	—	—	—	—	—	—
		Indicated	9.2	3.2	1.0	1.9	9.2	3.2	1.0	1.9
		Measured + Indicated	9.2	3.2	1.0	1.9	9.2	3.2	1.0	1.9
		Inferred	6.7	3.0	0.6	1.3	6.7	3.0	0.6	1.3
EXPLORATION Total Measured + Indicated			295.7	3.6	34.6	52.4	300.3	3.6	34.8	52.1
EXPLORATION – Grand Total			466.1	3.6	54.1	80.3	470.3	3.6	54.4	80.0
PGM TOTAL Measured + Indicated			1,096.7	4.3	152.6	204.3	1,081.3	4.4	154.4	205.3
PGM TOTAL			1,586.4	4.8	245.7	314.4	1,574.1	4.9	247.8	315.8

<sup>\*\*</sup> Material property under SK-1300

## GROUP MINERAL RESOURCES AND MINERAL RESERVES SUMMARY continued

## Mineral Reserves

			31 Dec 2022				31 Dec 2021			
PGM OPERATIONS			Tonnes (Mt)	Grade (g/t)	PGM (Moz)	PGM 100% (Moz)	Tonnes (Mt)	Grade (g/t)	PGM (Moz)	PGM 100% (Moz)
Americas <sup>1</sup>	Stillwater and East Boulder**	Proved	10.0	13.5	4.3	4.3	8.2	15.4	4.1	4.1
		Probable	50.3	13.6	22.0	22.0	60.1	12.0	23.2	23.2
		Proved + Probable	60.2	13.6	26.3	26.3	68.3	12.4	27.3	27.3
Southern Africa <sup>2</sup>	Marikana**	Proved	21.5	3.9	2.7	3.4	22.6	3.9	2.9	3.6
		Probable	117.9	3.9	14.7	18.2	121.6	3.9	15.1	18.8
		Proved + Probable	139.4	3.9	17.4	21.6	144.2	3.9	18.0	22.3
	Rustenburg**	Proved	79.3	3.5	9.0	12.2	83.4	3.5	9.5	12.9
		Probable	24.7	1.4	1.1	1.5	41.7	1.5	2.0	2.6
		Proved + Probable	103.9	3.0	10.2	13.7	125.1	2.9	11.5	15.5
	Kroondal**	Proved	8.0	2.6	0.7	1.3	10.4	2.6	0.9	1.7
		Probable	—	—	—	—	—	—	—	—
		Proved + Probable	8.0	2.6	0.7	1.3	10.4	2.6	0.9	1.7
	Mimosa	Proved	20.1	3.5	2.2	4.5	8.2	3.6	0.9	1.9
		Probable	8.6	3.4	1.0	1.9	7.7	3.5	0.9	1.7
		Proved + Probable	28.7	3.5	3.2	6.4	15.8	3.5	1.8	3.6
PGM TOTAL Proved + Probable			340.3	5.3	57.7	69.3	363.9	5.1	59.4	70.5

## Mineral Resources Inclusive of Mineral Reserves

			31 Dec 2022				31 Dec 2021			
			Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Gold 100% (Moz)	Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Gold 100% (Moz)
GOLD OPERATIONS										
Southern Africa	Kloof**	Measured	32.8	11.4	12.0	12.0	34.5	11.3	12.6	12.6
		Indicated	35.8	6.8	7.9	7.9	35.7	7.0	8.0	8.0
		Measured + Indicated	68.6	9.0	19.9	19.9	70.2	9.1	20.6	20.6
		Inferred	21.7	8.7	6.1	6.1	28.1	11.5	10.4	10.4
	Driefontein**	Measured	20.7	11.0	7.3	7.3	21.1	10.9	7.4	7.4
		Indicated	11.7	9.0	3.4	3.4	12.2	8.5	3.3	3.3
		Measured + Indicated	32.4	10.2	10.7	10.7	33.3	10.0	10.7	10.7
		Inferred	1.3	4.8	0.2	0.2	0.8	6.6	0.2	0.2
	Beatrix	Measured	25.7	6.5	5.4	5.4	26.5	6.4	5.4	5.4
		Indicated	25.2	5.3	4.3	4.3	25.6	5.2	4.3	4.3
		Measured + Indicated	50.9	5.9	9.6	9.6	52.1	5.8	9.7	9.7
		Inferred	1.6	4.4	0.2	0.2	1.7	4.2	0.2	0.2
	Cooke	Measured	159.6	0.3	1.3	1.7	159.6	0.3	1.3	1.7
		Indicated	43.3	0.3	0.4	0.6	45.6	0.3	0.5	0.6
		Measured + Indicated	202.9	0.3	1.7	2.3	205.2	0.3	1.8	2.3
		Inferred	—	—	—	—	—	—	—	—
	DRDGOLD	Measured	244.8	0.3	2.5	5.0	255.0	0.3	2.6	5.2
		Indicated	285.8	0.2	2.3	4.5	290.1	0.2	2.3	4.6
		Measured + Indicated	530.5	0.3	4.8	9.5	545.1	0.3	4.9	9.8
		Inferred	10.7	0.2	0.1	0.2	10.8	0.2	0.1	0.2
OPERATIONS Total Measured + Indicated			885.3	1.6	46.7	51.9	905.9	1.6	47.7	53.1
OPERATIONS - Grand total			920.7	1.8	53.3	58.6	947.2	1.9	58.6	64.1
GOLD DEVELOPMENT										
Southern Africa	Burnstone	Measured	1.1	6.2	0.2	0.2	1.1	6.2	0.2	0.2
		Indicated	25.5	5.6	4.6	4.6	25.5	5.6	4.6	4.6
		Measured + Indicated	26.6	5.7	4.8	4.8	26.6	5.7	4.8	4.8
		Inferred	31.5	4.2	4.3	4.3	31.5	4.2	4.3	4.3
DEVELOPMENT Total Measured + Indicated			26.6	5.7	4.8	4.8	26.6	5.7	4.8	4.8
DEVELOPMENT - Grand Total			58.1	4.9	9.1	9.1	58.1	4.9	9.1	9.1

<sup>\*\*</sup> Material property under SK-1300



## GROUP MINERAL RESOURCES AND MINERAL RESERVES SUMMARY continued

## Mineral Resources Inclusive of Mineral Reserves

			31 Dec 2022				31 Dec 2021			
GOLD OPERATIONS			Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Gold 100% (Moz)	Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Gold 100% (Moz)
GOLD EXPLORATION										
Southern Africa	SOFS	Measured	—	—	—	—	—	—	—	—
		Indicated	44.1	4.5	6.4	6.4	44.1	4.5	6.4	6.4
		Measured + Indicated	44.1	4.5	6.4	6.4	44.1	4.5	6.4	6.4
		Inferred	4.0	3.6	0.5	0.5	4.0	3.6	0.5	0.5
Americas	Altar	Measured	637.9	0.1	2.4	2.4	637.9	0.1	2.4	2.4
		Indicated	580.3	0.1	1.5	1.5	580.3	0.1	1.5	1.5
		Measured + Indicated	1,218.2	0.1	3.9	3.9	1,218.2	0.1	3.9	3.9
		Inferred	190.4	0.1	0.4	0.4	190.4	0.1	0.4	0.4
	Rio Grande	Measured	—	—	—	—	—	—	—	—
		Indicated	12.5	0.4	0.1	0.8	14.1	0.4	0.2	0.8
		Measured + Indicated	12.5	0.4	0.1	0.8	14.1	0.4	0.2	0.8
		Inferred	7.2	0.3	0.1	0.4	8.2	0.3	0.1	0.4
	Marathon	Measured	18.8	0.1	0.04	0.2	23.4	0.1	0.1	0.2
		Indicated	21.5	0.1	0.04	0.2	26.7	0.1	0.05	0.2
		Measured + Indicated	40.3	0.1	0.1	0.4	50.1	0.1	0.1	0.4
		Inferred	5.0	0.03	0.01	0.03	6.25	0.03	0.01	0.03
	Denison	Measured	—	—	—	—	0.1	1.4	0.004	0.01
		Indicated	—	—	—	—	1.1	0.4	0.01	0.02
		Measured + Indicated	—	—	—	—	1.2	0.5	0.02	0.03
		Inferred	—	—	—	—	1.3	0.4	0.02	0.03
EXPLORATION Total Measured + Indicated			1,315.0	0.2	10.6	11.6	1,327.7	0.2	10.6	11.6
EXPLORATION - Grand Total			1,521.7	0.2	11.5	12.9	1,537.8	0.2	11.6	12.9
GOLD TOTAL Measured + Indicated			2,226.9	0.9	62.1	68.4	2,260.2	0.9	63.2	69.6
GOLD TOTAL			2,500.5	0.9	73.9	80.6	2,543.1	1.0	79.3	86.1

## Mineral Resources Exclusive of Mineral Reserves

			31 Dec 2022				31 Dec 2021			
			Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Gold 100% (Moz)	Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Gold 100% (Moz)
GOLD OPERATIONS										
Southern Africa	Kloof**	Measured	24.9	11.2	9.0	9.0	26.7	11.1	9.5	9.5
		Indicated	33.3	6.6	7.1	7.1	32.0	6.7	6.9	6.9
		Measured + Indicated	58.2	8.6	16.1	16.1	58.7	8.7	16.4	16.4
		Inferred	21.7	8.7	6.1	6.1	28.1	11.5	10.4	10.4
	Driefontein**	Indicated	16.7	9.4	5.0	5.0	16.0	9.1	4.7	4.7
		Measured	9.9	8.2	2.6	2.6	10.0	7.9	2.5	2.5
		Measured + Indicated	26.6	8.9	7.7	7.7	26.0	8.7	7.2	7.2
		Inferred	1.3	4.8	0.2	0.2	0.8	6.6	0.2	0.2
	Beatrix	Measured	20.6	6.4	4.2	4.2	21.7	6.3	4.4	4.4
		Indicated	24.7	5.3	4.2	4.2	24.7	5.2	4.2	4.2
		Measured + Indicated	45.2	5.8	8.4	8.4	46.4	5.7	8.5	8.5
		Inferred	1.6	4.4	0.2	0.2	1.7	4.2	0.2	0.2
	Cooke	Measured	107.7	0.3	0.9	1.2	156.0	0.3	1.3	1.7
		Indicated	87.9	0.3	0.8	1.0	39.7	0.3	0.4	0.5
		Measured + Indicated	195.7	0.3	1.7	2.2	195.7	0.3	1.7	2.2
		Inferred	—	—	—	—	—	—	—	—
	DRDGOLD	Measured	33.2	0.3	0.3	0.6	—	—	—	—
		Indicated	188.7	0.2	1.5	3.0	290.1	0.2	2.3	4.6
		Measured + Indicated	222.0	0.3	1.8	3.6	290.1	0.2	2.3	4.6
		Inferred	10.7	0.2	0.1	0.2	10.8	0.2	0.1	0.2
OPERATIONS Total Measured + Indicated			547.7	2.0	35.6	37.9	617.0	1.8	36.2	39.0
OPERATIONS - Grand total			583.2	2.2	42.2	44.6	658.3	2.2	47.1	50.0

\*\* Material property under SK-1300

## GROUP MINERAL RESOURCES AND MINERAL RESERVES SUMMARY continued

## Mineral Resources Exclusive of Mineral Reserves

			31 Dec 2022				31 Dec 2021			
GOLD OPERATIONS			Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Gold 100% (Moz)	Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Gold 100% (Moz)
GOLD DEVELOPMENT										
Southern Africa	Burnstone	Measured	0.3	13.4	0.1	0.1	0.3	13.8	0.1	0.1
		Indicated	5.8	11.1	2.1	2.1	5.8	11.5	2.1	2.1
		Measured + Indicated	6.0	11.2	2.2	2.2	6.0	11.6	2.2	2.2
		Inferred	31.5	4.2	4.3	4.3	31.5	4.2	4.3	4.3
DEVELOPMENT Total Measured + Indicated			6.0	11.2	2.2	2.2	6.0	11.6	2.2	2.2
DEVELOPMENT - Grand Total			37.6	5.3	6.5	6.5	37.5	5.4	6.5	6.5
GOLD EXPLORATION										
Southern Africa	SOFS	Measured	—	—	—	—	—	—	—	—
		Indicated	44.1	4.5	6.4	6.4	44.1	4.5	6.4	6.4
		Measured + Indicated	44.1	4.5	6.4	6.4	44.1	4.5	6.4	6.4
		Inferred	4.0	3.6	0.5	0.5	4.0	3.6	0.5	0.5
Americas	Altair	Measured	637.9	0.1	2.4	2.4	637.9	0.1	2.4	2.4
		Indicated	580.3	0.1	1.5	1.5	580.3	0.1	1.5	1.5
		Measured + Indicated	1,218.2	0.1	3.9	3.9	1,218.2	0.1	3.9	3.9
		Inferred	190.4	0.1	0.4	0.4	190.4	0.1	0.4	0.4
	Rio Grande	Measured	—	—	—	—	—	—	—	—
		Indicated	12.5	0.4	0.1	0.8	14.1	0.4	0.2	0.8
		Measured + Indicated	12.5	0.4	0.1	0.8	14.1	0.4	0.2	0.8
		Inferred	7.2	0.3	0.1	0.4	8.2	0.3	0.1	0.4
	Denison	Measured	—	—	—	—	0.1	1.4	0.004	0.01
		Indicated	—	—	—	—	1.1	0.4	0.01	0.02
		Measured + Indicated	—	—	—	—	1.2	0.5	0.02	0.03
		Inferred	—	—	—	—	1.3	0.4	0.02	0.03
	Marathon	Measured	18.8	0.1	0.04	0.2	23.4	0.1	0.1	0.2
		Indicated	21.5	0.1	0.04	0.2	26.7	0.1	0.05	0.2
		Measured + Indicated	40.3	0.1	0.1	0.4	50.1	0.1	0.1	0.4
		Inferred	5.0	0.03	0.01	0.03	6.2	0.03	0.01	0.03
EXPLORATION Total Measured + Indicated			1,315.0	0.2	10.6	11.6	1,327.7	0.2	10.6	11.6
EXPLORATION - Grand Total			1,521.7	0.2	11.5	12.9	1,537.8	0.2	11.6	12.9
GOLD TOTAL Measured + Indicated			1,868.8	0.8	48.3	51.7	1,950.7	0.8	49.0	52.9
GOLD TOTAL			2,142.4	0.9	60.1	63.9	2,233.6	0.9	65.2	69.4

Note: Mineral Resources and Mineral Reserves are attributable, and metal content is additionally stated on a 100% basis

<sup>1</sup> For the US PGM operations, PGM is represented by the 2E (Pt and Pd)

<sup>2</sup> For the SA PGM operations, PGM is represented by the 4E (Pt, Pd, Rh and Au)

<sup>3</sup> For the Lithium Mineral Resources, LCE content was calculated by multiplying the Li (%) content by a factor of 5.323. Lithium Hydroxide Monohydrate (LiOH.H<sub>2</sub>O) can be derived from LCE by dividing by a factor of 0.88



Columbus metallurgical complex

## GROUP MINERAL RESOURCES AND MINERAL RESERVES SUMMARY continued

## Mineral Reserves

			31 Dec 2022				31 Dec 2021			
GOLD OPERATIONS			Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Gold 100% (Moz)	Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Gold 100% (Moz)
Southern Africa	Kloof**	Proved	11.0	6.1	2.1	2.1	12.7	6.2	2.5	2.5
		Probable	7.5	5.4	1.3	1.3	7.7	4.9	1.2	1.2
		Proved + Probable	18.6	5.8	3.4	3.4	20.3	5.7	3.8	3.8
	Driefontein**	Proved	5.8	8.4	1.6	1.6	7.7	8.4	2.1	2.1
		Probable	5.6	7.9	1.4	1.4	4.2	7.2	1.0	1.0
		Proved + Probable	11.4	8.1	3.0	3.0	11.9	8.0	3.0	3.0
	Beatrix	Proved	5.9	3.8	0.7	0.7	6.8	3.9	0.8	0.8
		Probable	0.7	3.1	0.1	0.1	0.9	2.7	0.1	0.1
		Proved + Probable	6.7	3.7	0.8	0.8	7.7	3.7	0.9	0.9
	Cooke	Proved	—	—	—	—	—	—	—	—
		Probable	7.3	0.3	0.1	0.1	9.5	0.3	0.1	0.1
		Proved + Probable	7.3	0.3	0.1	0.1	9.5	0.3	0.1	0.1
	DRDGOLD	Proved	205.0	0.3	2.2	4.3	122.5	0.3	1.3	2.6
		Probable	103.5	0.2	0.8	1.6	132.5	0.3	1.3	2.6
		Proved + Probable	308.5	0.3	3.0	5.9	255.0	0.3	2.6	5.2
OPERATIONS Total Proved + Probable			352.4	0.9	10.3	13.2	304.4	1.1	10.4	13.0
GOLD DEVELOPMENT										
Southern Africa	Burnstone	Proved	—	—	—	—	—	—	—	—
		Probable	20.5	4.0	2.7	2.7	20.6	3.9	2.6	2.6
		Proved + Probable	20.5	4.0	2.7	2.7	20.6	3.9	2.6	2.6
DEVELOPMENT Total Proved + Probable			20.5	4.0	2.7	2.7	20.6	3.9	2.6	2.6
GOLD TOTAL Proved + Probable			373.0	1.1	12.9	15.9	325.0	1.2	13.0	15.6

## Mineral Resources Inclusive of Mineral Reserves

			31 Dec 2022				31 Dec 2021			
LITHIUM DEVELOPMENT			Tonnes (Mt)	Li (%)	LCE (kt)	LCE 100% (kt)	Tonnes (Mt)	Li (%)	LCE (kt)	LCE 100% (kt)
Europe³	Keliber**	Measured	3.7	0.55	106.4	125.3	1.1	0.55	33.3	125.3
		Indicated	8.0	0.48	202.4	238.3	2.4	0.48	62.0	232.9
		Measured + Indicated	11.6	0.50	308.9	363.5	3.6	0.50	95.3	358.2
		Inferred	2.8	0.38	57.2	67.4	0.4	0.42	9.8	36.9
DEVELOPMENT – Grand Total			14.5	0.48	366.1	430.9	4.0	0.49	105.1	395.1
LITHIUM EXPLORATION										
Americas³	Rhyolite Ridge	Measured	2.7	0.17	24.8	356.8	2.8	0.17	25.4	356.8
		Indicated	6.1	0.16	50.4	725.2	6.3	0.16	51.6	725.2
		Measured + Indicated	8.8	0.16	75.2	1,082.0	9.0	0.16	77.0	1,082.0
		Inferred	1.4	0.16	11.6	166.8	1.4	0.16	11.9	166.8
EXPLORATION – Grand Total			10.2	0.16	86.8	1,248.8	10.4	0.16	88.9	1,248.8
LITHIUM TOTAL Measured + Indicated			20.4	0.35	384.1	1,445.5	12.6	0.26	172.3	1,440.2
LITHIUM TOTAL			24.6	0.35	452.9	1,679.7	14.4	0.25	194.0	1,643.9

\*\* Material property under SK-1300



## GROUP MINERAL RESOURCES AND MINERAL RESERVES SUMMARY continued

## Mineral Resources Exclusive of Mineral Reserves

			31 Dec 2022				31 Dec 2021			
LITHIUM DEVELOPMENT			Tonnes (Mt)	Li (%)	LCE (kt)	LCE 100% (kt)	Tonnes (Mt)	Li (%)	LCE (kt)	LCE 100% (kt)
Europe <sup>3</sup>	Keliber**	Measured	0.5	0.47	13.5	15.8	1.1	0.55	33.3	125.3
		Indicated	3.3	0.48	86.1	101.4	2.4	0.48	62.0	232.9
		Measured + Indicated	3.9	0.48	99.6	117.2	3.6	0.50	95.3	358.2
		Inferred	2.8	0.38	57.1	67.3	0.4	0.42	9.8	36.9
DEVELOPMENT – Grand Total			6.7	0.44	156.7	184.5	4.0	0.49	105.1	395.1
LITHIUM EXPLORATION										
Americas <sup>3</sup>	Rhyolite Ridge	Measured	2.7	0.17	24.8	356.8	2.8	0.17	25.4	356.8
		Indicated	6.1	0.16	50.4	725.2	6.3	0.16	51.6	725.2
		Measured + Indicated	8.8	0.16	75.2	1,082.0	9.0	0.16	77.0	1,082.0
		Inferred	1.4	0.16	11.6	166.8	1.4	0.16	11.9	166.8
EXPLORATION – Grand Total			10.2	0.16	86.8	1,248.8	10.4	0.16	88.9	1,248.8
LITHIUM TOTAL Measured + Indicated			12.7	0.26	174.8	1,199.2	12.6	0.26	172.3	1,440.2
LITHIUM TOTAL			16.9	0.27	243.5	1,433.3	14.4	0.25	194.0	1,643.9

## Mineral Reserves

			31 Dec 2022				31 Dec 2021			
LITHIUM DEVELOPMENT			Tonnes (Mt)	Li (%)	LCE (kt)	LCE 100% (kt)	Tonnes (Mt)	Li (%)	LCE (kt)	LCE 100% (kt)
Europe <sup>3</sup>	Keliber**	Proved	3.3	0.48	85.4	100.5	—	—	—	—
		Probable	4.9	0.42	108.2	127.3	—	—	—	—
LITHIUM TOTAL Proved + Probable			8.2	0.44	193.6	227.9	—	—	—	—

## Mineral Resources

			31 Dec 2022				31 Dec 2021			
			Tonnes (Mt)	Grade (%)	Copper (Mlb)	Copper 100% (Mlb)	Tonnes (Mt)	Grade (%)	Copper (Mlb)	Copper 100% (Mlb)
COPPER EXPLORATION										
Americas	Altar	Measured	637.9	0.4	6,095.0	6,095.0	637.9	0.4	6,095.0	6,095.0
		Indicated	580.3	0.4	5,293.0	5,293.0	580.3	0.4	5,293.0	5,293.0
		Measured + Indicated	1,218.2	0.4	11,388.0	11,388.0	1,218.2	0.4	11,388.0	11,388.0
		Inferred	190.4	0.4	1,750.0	1,750.0	190.4	0.4	1,750.0	1,750.0
	Rio Grande	Measured	—	—	—	—	—	—	—	—
		Indicated	12.5	0.3	82.4	468.5	14.1	0.3	93.2	468.5
		Measured + Indicated	12.5	0.3	82.4	468.5	14.1	0.3	93.2	468.5
		Inferred	7.2	0.2	36.7	208.4	8.2	0.2	41.5	208.4
	Marathon	Measured	18.8	0.2	84.2	463.0	23.4	0.2	104.9	463.0
		Indicated	21.5	0.2	101.7	559.0	26.7	0.2	126.6	559.0
		Measured + Indicated	40.3	0.2	185.9	1,022.0	50.1	0.2	231.5	1,022.0
		Inferred	5.0	0.2	25.5	140.0	6.2	0.2	31.7	140.0
	Denison	Measured	—	—	—	—	0.1	0.5	1.0	1.5
		Indicated	—	—	—	—	1.1	1.3	31.3	48.2
		Measured + Indicated	—	—	—	—	1.2	1.2	32.3	49.7
		Inferred	—	—	—	—	1.3	1.2	33.7	51.9
COPPER TOTAL Measured + Indicated			1,270.9	0.4	11,656.3	12,878.5	1,283.6	0.4	11,745.0	12,928.2
COPPER TOTAL			1,473.6	0.4	13,468.4	14,976.9	1,489.7	0.4	13,601.8	15,078.5

<sup>\*\*</sup> Material property under SK-1300

## GROUP MINERAL RESOURCES AND MINERAL RESERVES SUMMARY continued

## Mineral Resources

			31 Dec 2022				31 Dec 2021			
URANIUM EXPLORATION			Tonnes (Mt)	Grade (kg/t)	U <sub>3</sub> O <sub>8</sub> (Mlb)	U <sub>3</sub> O <sub>8</sub> 100% (Mlb)	Tonnes (Mt)	Grade (kg/t)	U <sub>3</sub> O <sub>8</sub> (Mlb)	U <sub>3</sub> O <sub>8</sub> 100% (Mlb)
Southern Africa	BEISA	Measured	3.6	1.1	8.5	8.5	3.6	1.1	8.5	8.5
		Indicated	7.8	1.1	18.3	18.3	7.8	1.1	18.3	18.3
		Measured + Indicated	11.4	1.1	26.9	26.9	11.4	1.1	26.9	26.9
		Inferred	0.04	1.1	0.1	0.1	0.04	1.1	0.1	0.1
	COOKE	Measured	154.4	0.1	31.9	42.0	156.0	0.1	31.9	42.0
		Indicated	41.3	0.1	7.8	10.2	39.7	0.1	7.6	9.9
		Measured + Indicated	195.7	0.1	39.6	52.2	195.7	0.1	39.5	52.0
		Inferred	—	—	—	—	—	—	—	—
URANIUM TOTAL Measured + Indicated			207.0	0.1	66.5	79.0	207.0	0.1	66.4	78.8
URANIUM TOTAL			207.1	0.1	66.6	79.1	207.1	0.1	66.5	78.9

## Mineral Resources Inclusive of Mineral Reserves

			31 Dec 2022				31 Dec 2021			
ZINC OPERATIONS			Tonnes (Mt)	Grade (%)	Zinc (Mlb)	Zinc 100% (Mlb)	Tonnes (Mt)	Grade (%)	Zinc (Mlb)	Zinc 100% (Mlb)
Australia	New Century	Measured	7.3	3.1	490.7	2,467.0	10.6	3.0	706.9	3,536.2
		Indicated	—	—	—	—	—	—	—	—
		Measured + Indicated	7.3	3.1	490.7	2,467.0	10.6	3.0	706.9	3,536.2
		Inferred	—	—	—	—	—	—	—	—
OPERATIONS – Grand Total			7.3	3.1	490.7	2,467.0	10.6	3.0	706.9	3,536.2
ZINC EXPLORATION										
Australia	New Century	Measured	0.2	4.8	21.0	105.8	0.2	4.8	21.2	105.8
		Indicated	1.8	5.7	221.0	1,111.1	1.8	5.7	222.1	1,111.1
		Measured + Indicated	2.0	5.6	242.1	1,217.0	2.0	5.6	243.3	1,217.0
		Inferred	0.5	6.5	65.8	330.7	0.5	6.5	66.1	330.7
EXPLORATION – Grand Total			2.4	5.8	307.8	1,547.6	2.4	5.8	309.4	1,547.6
ZINC TOTAL Measured + Indicated			9.2	3.6	732.7	3,683.9	12.6	3.4	950.2	4,753.2
ZINC TOTAL			9.7	3.7	798.5	4,014.6	13.0	3.5	1,016.3	5,083.9

## Mineral Resources Exclusive of Mineral Reserves

			31 Dec 2022				31 Dec 2021			
ZINC EXPLORATION			Tonnes (Mt)	Grade (%)	Zinc (Mlb)	Zinc 100% (Mlb)	Tonnes (Mt)	Grade (%)	Zinc (Mlb)	Zinc 100% (Mlb)
Australia	New Century	Measured	0.2	4.8	21.0	105.8	0.2	4.8	21.2	105.8
		Indicated	1.8	5.7	221.0	1,111.1	1.8	5.7	222.1	1,111.1
		Measured + Indicated	2.0	5.6	242.1	1,217.0	2.0	5.6	243.3	1,217.0
		Inferred	0.5	6.5	65.8	330.7	0.5	6.5	66.1	330.7
EXPLORATION – Grand Total			2.4	5.8	307.8	1,547.6	2.4	5.8	309.4	1,547.6

## Mineral Reserves

			31 Dec 2022				31 Dec 2021			
			Tonnes (Mt)	Grade (%)	Zinc (Mlb)	Zinc 100% (Mlb)	Tonnes (Mt)	Grade (%)	Zinc (Mlb)	Zinc 100% (Mlb)
ZINC PRODUCTION	New Century	Proved	6.8	3.0	445.5	2,239.9	9.9	3.0	649.2	3,247.4
		Probable	—	—	—	—	—	—	—	—
ZINC TOTAL Proved + Probable			6.8	3.0	445.5	2,239.9	9.9	3.0	649.2	3,247.4

Note: Mineral Resources and Mineral Reserves are attributable, and metal content is additionally stated on a 100% basis

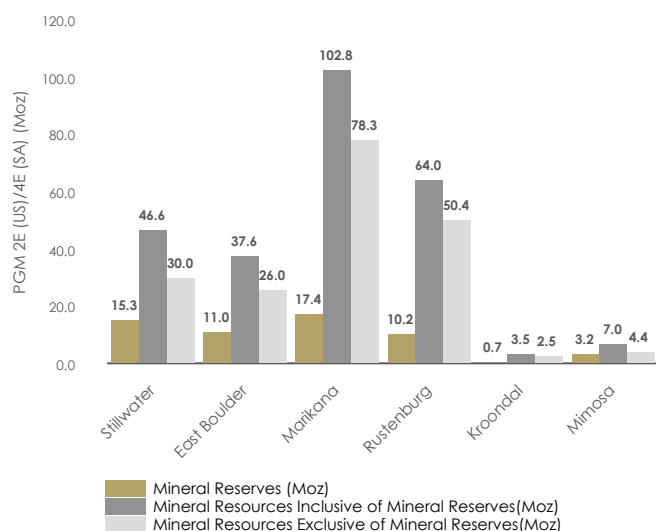
<sup>1</sup> For the US PGM operations, PGM is represented by the 2E (Pt and Pd)

<sup>2</sup> For the SA PGM operations, PGM is represented by the 4E (Pt, Pd, Rh and Au)

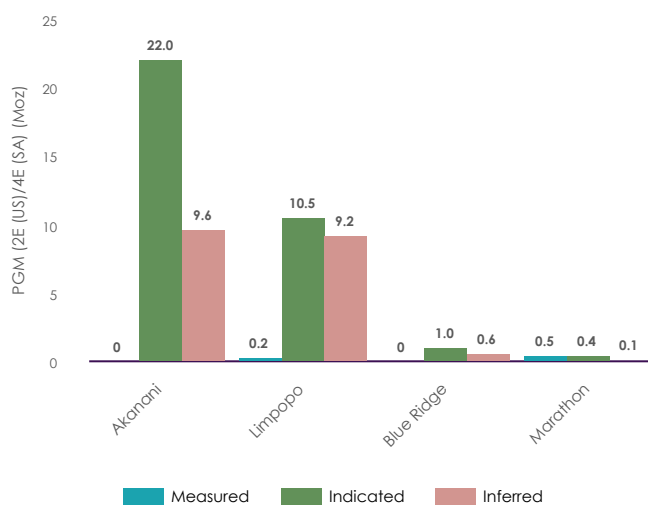
<sup>3</sup> For the Lithium Mineral Resources, LCE content was calculated by multiplying the Li (%) content by a factor of 5.323. Lithium Hydroxide Monohydrate (LiOH.H<sub>2</sub>O) can be derived from LCE by dividing by a factor of 0.88

## GROUP MINERAL RESOURCES AND MINERAL RESERVES SUMMARY continued

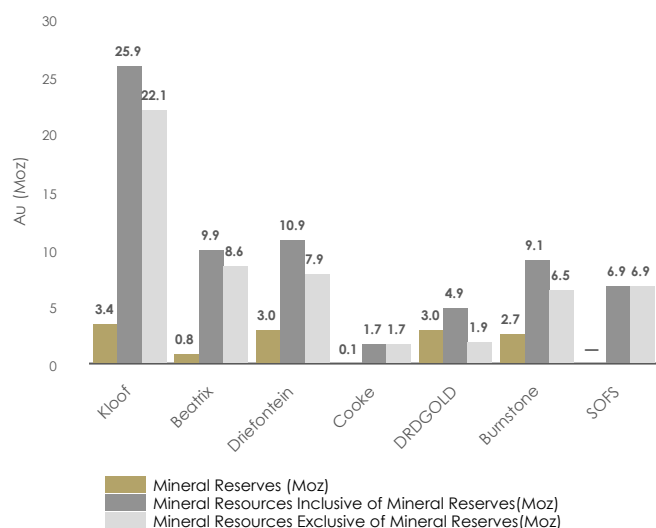
## PGM operations – Mineral Resources &amp; Mineral Reserves



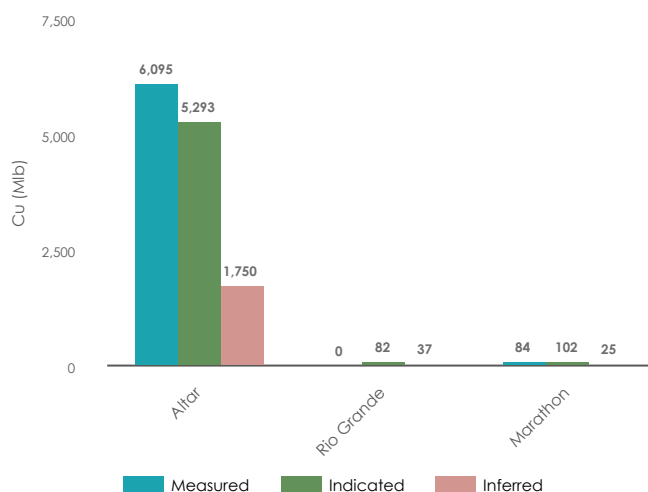
## PGM exploration properties – Mineral Resources



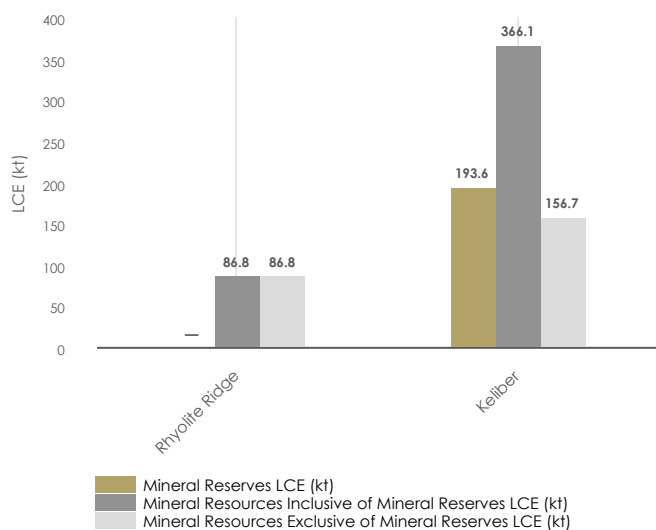
## Gold operations – Mineral Resources &amp; Mineral Reserves



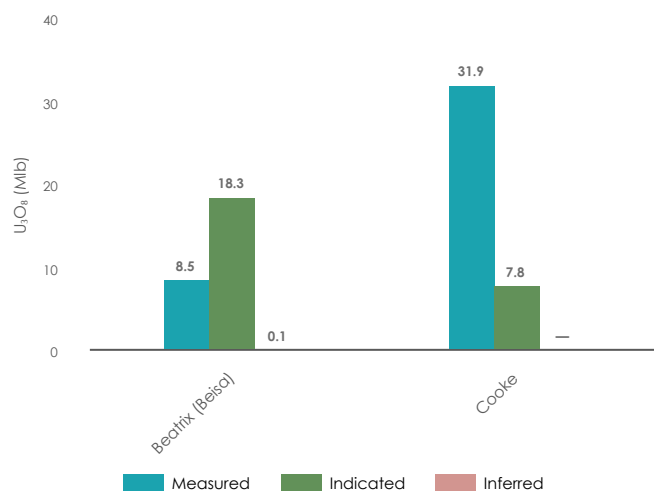
## Copper exploration properties – Mineral Resources



## Lithium properties – Mineral Resources &amp; Mineral Reserves



## Uranium exploration properties – Mineral Resources





# FUNDAMENTAL NOTES

1	This Mineral Resources and Mineral Reserves Report for Sibanye-Stillwater covers a full description of all of the Group's mineral property assets, as at 31 December 2022.
2	The Mineral Resource and Mineral Reserve estimates are reported effective as at 31 December 2022 and year-on-year comparisons may be impacted by variations in commodity prices, currency exchange rates, legislation, permitting changes, costs and operating performance.
3	All stated Mineral Resource and Mineral Reserve estimates are net of 12 month's production depletion since 31 December 2021. The depletion applied to the managed operations includes the actual measured depletion up until end of September 2022, while the remaining depletion is estimated up to 31 December 2022.
4	Mineral Resource and Mineral Reserve price assumptions for non-managed properties vary from those used for the managed operations. In those cases, the reader is directed to the notes provided below the estimation tables for detailed information.
5	South African PGM operations Mineral Resource and Mineral Reserve reporting accounts for four elements (4E) of the basket of PGMs and gold (platinum, palladium, rhodium and gold), while the US PGM operations Mineral Resource and Mineral Reserve reporting only accounts for two elements (2E) of PGMs (palladium and platinum). Other associated precious metals – such as iridium, ruthenium (SA PGM), gold and silver (US PGM) – occur in low concentrations and are generally not material to the estimations or calculations. The base metals (copper, nickel, cobalt and chromium) are also extracted as by-products in conjunction with these PGMs. These are not reported on individually, but their average concentrations in the various ores are provided as guidelines. Mineral Reserve and Mineral Resource economic calculations are based on a basket price taking into consideration all metals extracted and recovered.
6	In line with industry practice, Lithium (Li) Mineral Resources and Mineral Reserves total metal content is quoted in Lithium Carbonate ( $\text{Li}_2\text{CO}_3$ ) Equivalent (LCE), which is one of the final products produced in the lithium mining value chain. LCE is derived from in-situ Li content by multiplying by a factor of 5.323. Lithium Hydroxide Monohydrate ( $\text{LiOH}\cdot\text{H}_2\text{O}$ ) can be derived from LCE by dividing by a factor of 0.88
7	No Inferred Mineral Resources have been included in any of the economic studies for the reporting of Mineral Reserves.
8	Detailed financial models are used to estimate the Mineral Reserves. All modifying factors applied are all-inclusive from mine to mill. Mineral Reserves are reported as tonnes and contained metal reporting to the mill, with the exception of Lithium and Boron, where equivalent final produced product is included as well.
9	Attributable Mineral Resources and Mineral Reserves are reported on a legal, equity interest basis, considering both direct (project level) and indirect (holding entity level) interests, and also include indirect holdings via subsidiaries and treasury shares. In addition, the full (100% basis) Mineral Resources and Mineral Reserves for each property are also provided for full transparency.
10	Rounding-off of figures in this report may result in minor computational discrepancies. Where this occurs, it is not deemed significant and reflects the level of accuracy of the estimate.
11	All references to tonnes (t) are in metric units.

# AUDITING AND RISK

Sibanye-Stillwater manages risk effectively in order to protect the Group's assets, stakeholders, environment and reputation and to ensure achievement of the business objectives.

The Group maintains sound risk management practices and systems that are consistent with international best practice and in line with the following three risk management frameworks and guidelines:

1	<b>Committee of Sponsoring Organizations of the Treadway Commission (COSO)</b>
2	<b>ISO 31000:2009 Risk Management: Principles and Guidelines</b>
3	<b>The King IV Report on Corporate Governance™ for South Africa, 2016</b>

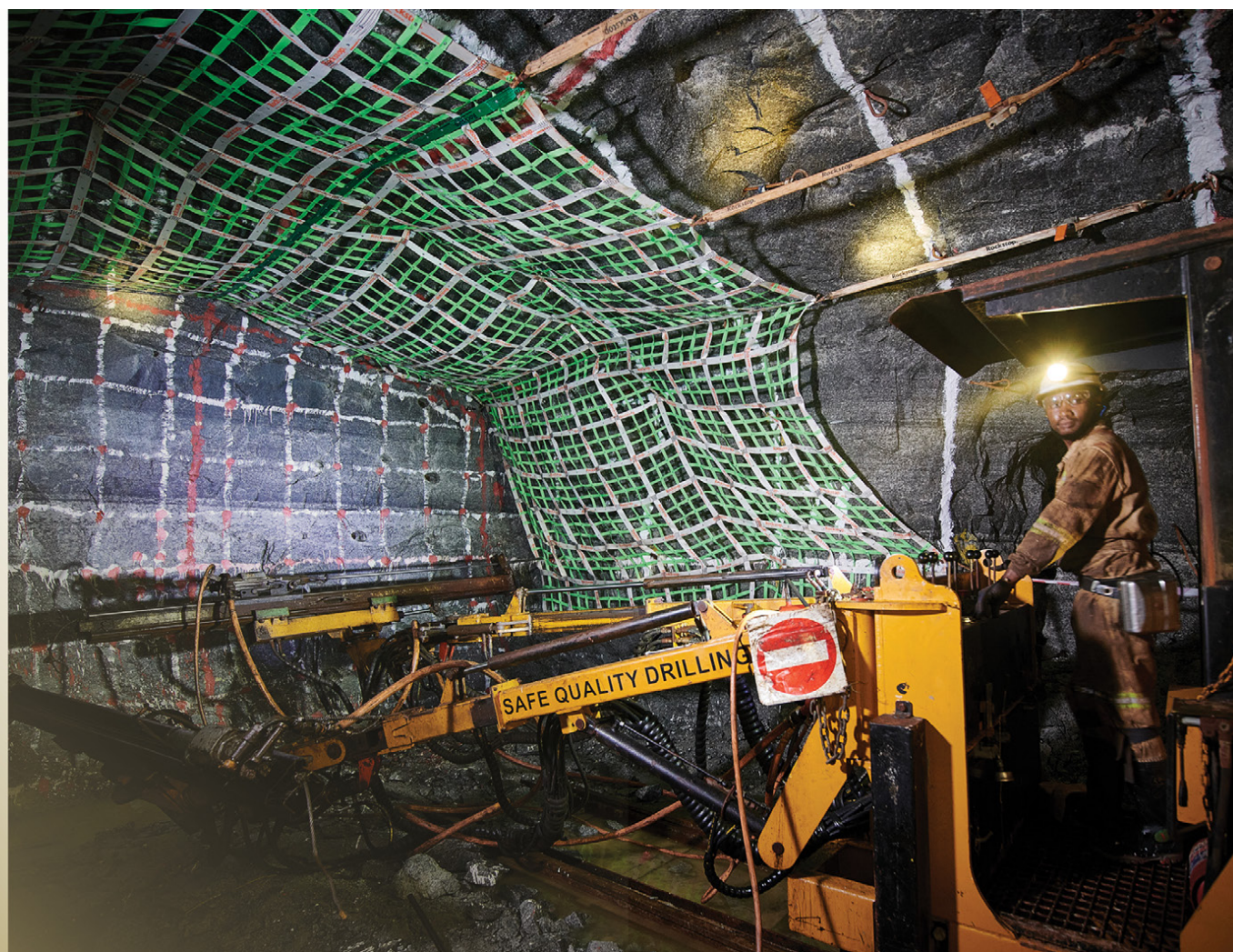
Group-wide risk is addressed in detail in the Integrated Annual Report 2022, the form 20-F and the Annual Financial Report 2022. These reports cover the remedial or preventative actions to mitigate or manage any identified risks. These documents can be accessed in the investor section of our corporate website:

[www.sibanyestillwater.com/news-investors/news/news-releases](http://www.sibanyestillwater.com/news-investors/news/news-releases)

In addition to this, the process followed in producing the Group's Mineral Resources and Mineral Reserves declaration is in alignment with the guiding principles of the Sarbanes-Oxley Act of 2002 (SOX); there are SOX controls in place that cover the entire Group's Mineral Resource management function.

This integrated compliance, governance and risk management framework is managed and overseen by the Group internal audit function. Both internal and external audits are regularly conducted to ensure that corporate governance best practices are being followed. For the 2022 reporting period, external verification of the Mineral Resources and Mineral Reserves for all our managed operations have been conducted, both in the form of a process audit, as well as verification of actual estimates; and a copy of the final certified sign-offs by the independent consultancy, verifying the published numbers, is provided as evidence.

Risk registers are kept for each operation, covering key risks pertaining to, but not limited to, technical, environmental, social, health, safety, economic and political aspects. Mitigation measures are put in place to address the material risks at each operation. Risks to the various properties's estimates are summarised and discussed within Section 2 of this document, which deals with the individual property disclosures.



Marikana K4 Shaft development drilling



## AUDIT LETTER



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March 2023

591648

Vice President: Commercial Geology  
Group Technical Department  
Sibanye Stillwater Limited  
South Africa

**Attention: Mr G.S. Stander**

Dear Sir

**Sign-off of the 2022 Mineral Resource and Mineral Reserve estimates of Sibanye Stillwater Limited's Mineral Assets**

Sibanye Stillwater Limited (SSW) commissioned SRK Consulting (South Africa) (Pty) Ltd (SRK) in October 2022 to conduct a review and sign-off of their BP2023 Mineral Resource and Mineral Reserve (MRR) estimates for the Johannesburg Stock Exchange Listing with respect to the following assets:

- United States PGM operations and Americas PGM and Copper-Gold exploration projects comprising the Stillwater and East Boulder underground operations and the Marathon, Altar and Rio Grande exploration projects;
- Southern Africa PGM operations comprising the Marikana, Rustenburg, Kroondal and Mimosa underground operations and projects;
- South Africa Gold operations and exploration projects comprising the Beatrice, Driefontein, Kloof and Burnstone underground operations, Cooke Surface operations, and the SOFS exploration project; and
- The Keliber Lithium project in Finland.

SRK was mandated to ascertain whether the process adopted for the Public Reporting of the various metals MRR statements (effective date 31 December 2022) is consistent with the Standard Operating Procedures of the respective Operations and Projects, and 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). The mandate also required of SRK to validate the MRR estimates and statements and sign-off on the respective statements. In addition to the above, SRK undertook a process audit which focussed on compliance with internal procedures, compliance with the SAMREC Code, and controls in place to demonstrate compliance. The results of the process audit were presented during February and March 2023 to Sibanye-Stillwater, for the business units included in the process audit: United States PGM Operations, South African PGM Operations, South African Gold Operations and the Keliber Lithium Hydroxide Project.

SRK reviewed the internal protocols, electronic data, technical reports, and grade models that underpin the MRR estimates and statements. Subsequently, SRK engaged with SSW's Competent Persons on the respective mines via a combination of virtual and physical meetings to confirm aspects of the documents and models and discuss the methodology and techniques adopted for the MRR estimation. The review of the documents and models and interactions with SSW's Competent Persons enabled SRK to arrive at an informed opinion on the reliability of the assay dataset for Mineral Resource estimation, the appropriateness of the estimation technique and associated parameters applied, the validity of the Mineral Resource estimates and classification and, ultimately, the appropriateness of the processes, parameters, and modifying factors in the conversion of Mineral Resources into Mineral Reserves.

SRK notes that the protocols governing the compilation of the MRR estimates are generally sound and in line with industry best practice. Based on interaction with the respective Competent Persons, SRK has established that the process adopted is consistent with the internal protocols of the respective mines. The Public Reporting of the MRR estimate is transparent and captures all issues of materiality and is, in SRK's opinion, compliant to the SAMREC Code.

SRK is of the opinion that there are no material flaws in the generation of the respective MRR estimates and statements and thus sign off on the MRR statement.

Yours faithfully,

**SRK Consulting (South Africa) (Pty) Ltd**

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## MINERAL TITLE

Sibanye-Stillwater has legal entitlement to all the properties and minerals being reported on. For a managed production properties, all the required operating permits have been obtained and are in good standing with the regulators. In certain cases, where licenses and permits have expired, but are the subject of renewal or conversion applications, there are reasonable grounds to believe that those will be granted, and hence the Mineral Resources and Mineral Reserves continue to be reported. For all non managed properties, the Group has confirmed that the mineral titles being reported on are in good standing. The directors of the Group confirm that there are no material legal proceedings or other material conditions that will impact on the Group's ability to continue its mining or exploration activities. More detailed information on the various properties mineral title can be found under the "license status and holdings" section of the individual property disclosures.

## EXPLORATION

The majority of the Group's managed exploration activities are aimed at the ongoing delineating of Mineral Resources at our existing operations, for ultimate conversion to Mineral Reserves. This is made up of a combination of drilling for ore-body extensions as underground development progresses, and infill drilling in known areas of mineralisation where additional ore-body definition is required to facilitate mining. The majority of this drilling is conducted from underground. Surface drilling activities for 2022 has been limited to our SA PGM operations, and the Keliber lithium development project in Finland. At Keliber, ongoing exploration success has added 30.4kt of attributable LCE to the Mineral Resource inventory, related to the maiden Mineral Resource estimates of the Tuoreetsaaret and Leviakangas deposits.

A high-level Group summary of all drilling conducted is provided below. Detail on quantities, annual spend and material results are provided within the individual property disclosures in Sections 2 and 3 of this report.

Group drilling summary			
Region	Area	Meters	Costs (Rm)
US PGM	Underground	267,601	239.7
SA PGM	Surface	15,896	23.4
SA PGM	Underground	19,557	27.0
SA Gold	Underground	28,345	38.4
Europe	Surface	12,898	25.3
<b>Grand Total</b>		<b>344,296</b>	<b>353.8</b>

## ANNUAL PLANNING PROCESS

For the managed mining operations (production properties), the reported Mineral Resources and Mineral Reserves are derived through a comprehensive annual operational planning process.

The annual planning process is cyclical in nature, starting in January and running through to December. It begins with a review of the previous LoM plans and the development of strategic plans based on that portion of the Mineral Resource for which technical and economic studies have demonstrated justified extraction at the time of disclosure, to a minimum pre-feasibility study (PFS) level.

Strategic plan directives, parameters and factors are issued to guide the operations. The analysis of historical performance is done to assist with the development of realistic productivity and cost parameters and modifying factors. All operations document the guidelines and then focus on producing a business plan.

All mine design and planning is based on the latest geological and Mineral Resource models, which are updated prior to the commencement of the process. Mineral Resource classification categories guide and constrain the mining layouts. Measured and Indicated Mineral Resources typically become Proved and Probable Mineral Reserves respectively, but additional mining risk can be factored in and used to downgrade Mineral Reserve confidence.

The operational plan is based on detailed monthly scheduling and zero-based costing. All underground mine design, sequencing, scheduling and evaluation is done in an appropriate 3D software package.

Estimates of tonnages and grades quoted as Mineral Reserves include allowances for modifying factors and consequently are reported as net tonnes and grades expected to be delivered to the mill.

Once detailed 12 month production profiles, operating and capital cost estimates, and the required stay-in-business capital estimates to sustain and the business have been prepared, these are extended to five-year and LoM production schedules.

Multi-disciplinary review processes are conducted at stage-gate intervals during the planning process. During these reviews all mining, support and technical departments are involved in the verification of the inputs and the modifying factors that are incorporated into the business plan. Ultimately, all business plans and LoM plans are approved and signed off by both the commodity segment management, appointed competent persons, as well as the Group executives.

Technical economic modelling is undertaken using the discounted cash-flow approach. The detailed one-year operating budget is used to determine cost drivers, down to shaft level, which are then applied to the remainder of the LoM plan. Sensitivities are calculated based on a range of commodity prices, and operating and capital costs to assess the robustness of the plan.

The financial and technical assumptions underlying the Mineral Resources and Mineral Reserves estimations contained in this report are current as at 31 December 2022. Such assumptions rely on various factors that may change after the reporting period, including as a result of operational reviews which Sibanye-Stillwater undertakes from time to time and when necessary.



# COMMODITY PRICE ASSUMPTIONS

The Group reports in accordance with both the JSE and the US Securities and Exchange Commission (SEC) guidelines on commodity prices used for the estimation of Mineral Resources and Mineral Reserves at all managed operations, development, and exploration properties. Mineral Resource price assumptions, which focus on longer timeframes, are based on marginally higher (+10-15%) prices than for Mineral Reserves. These assumptions facilitate long term planning but still consider reasonable prospect for economic extraction.

Sibanye-Stillwater uses forward looking prices that are expected to remain stable for at least three to five years, and will only change if there is a fundamental, perceived long-term shift in the market, as opposed to basing it only on short term analyst consensus forecasts. For the our latest estimates, the Group considered commodity price forecasts from fifteen international banking groups to derive a consensus market view. Sibanye-Stillwater has also in the process considered our general view of the market, the relative position of our operations on the industry cost curve; as well as our operational and company strategy.

## Forward looking price assumptions for 2022

	31 December 2022						31 December 2021		
	MINERAL RESOURCES			MINERAL RESERVES			MINERAL RESERVES		
Precious metals	US\$/oz	R/oz	R/kg	US\$/oz	R/oz	R/kg	US\$/oz	R/oz	R/kg
Gold	1,800	28,800	925,941	1,650	26,400	850,000	1,659	24,885	800,000
Platinum	1,500	24,000	771,617	1,250	20,000	643,014	1,250	18,750	602,826
Palladium	1,500	24,000	771,617	1,250	20,000	643,014	1,250	18,750	602,826
Rhodium	10,000	160,000	5,144,116	8,000	128,000	4,115,292	8,000	120,000	3,858,084
Iridium	3,000	48,000	1,543,235	2,500	40,000	1,286,029	2,500	37,500	1,205,651
Ruthenium	350	5,600	180,044	300	4,800	154,323	300	4,500	144,678
Base metals	US\$/lb	US\$/tonne	R/tonne	US\$/lb	US\$/tonne	R/tonne	US\$/lb	US\$/tonne	R/tonne
Nickel	7.94	17,500	280,000	7.35	16,200	259,200	7.35	16,200	243,000
Copper	4.54	10,000	160,000	4.06	8,950	143,200	4.06	8,950	134,250
Cobalt	25	55,116	881,848	22	48,502	776,026	22	48,502	727,525
Uranium oxide (U <sub>3</sub> O <sub>8</sub> ) <sup>1</sup>	55	121,254	1,940,066	50	110,231	1,763,696	40	88,185	1,322,772
Chromium oxide (Cr <sub>2</sub> O <sub>3</sub> ), (42% concentrate)	0.07	165	2,640	0.06	150	2,400	0.07	150	2,250

<sup>1</sup> Long-term contract prices



Rustenburg Bathopele mine

# COMPETENT PERSONS' DECLARATION AND CONSENT

The Mineral Resources and Mineral Reserves are estimated by teams of appointed Competent/Qualified Persons (CP's or QP's), who have sufficient experience relative to the type and style of the mineral deposits under consideration.

In addition, corporate governance on the overall compliance of the Group's figures and responsibility for the generation of a Group consolidated statement has been overseen by the Group lead Competent Persons, included in the list below. For non-managed properties, where the company holds a minority stake in a project or company and reports an attributable proportion of the assets Mineral Resources and Mineral Reserves, the Group has reviewed those estimates (or had them reviewed externally) and verified the estimates as compliant to the SAMREC code and SK-1300.

The Group has the written confirmation of the CP's listed below that the information disclosed in this report may be published in the form and context for which it was intended. The Group lead CP's also confirms that the information disclosed in this report is compliant with the relevant security exchanges' requirements (Section 12 of the JSE Listings requirements, SAMREC Table 1 and the US SEC regulation SK-1300),

The names, qualifications, job titles, relationship with the Group, professional registrations, work address, area of competency, and years of relevant experience, are defined in the table below.

Name	Relationship with Group	Professional registrations	Work address	Area of responsibility	Competency/specialisation	Years of relevant experience
<b>SIBANYE-STILLWATER GROUP</b>						
<b>Group Lead Competent Persons</b>						
<b>Stephan Stander</b> <i>B.Sc. Hons – Geochemistry, B.Com, MBL, GDE, Dipl.PM.</i> Senior Vice President – Mineral Resource Management	Full-time employee	SACNASP 400089/96	Constantia Office Park Bridgeview House, Building 11, Ground floor, Cnr 14th Avenue & Hendrik Potgieter Road Weltevreden Park 1709, RSA	Sibanye-Stillwater Group	Mineral Resources	30
<b>Tom Van Den Berg</b> <i>B.Tech (Mining Eng.), MBL, EDP.</i> Senior Vice President – Group Mining Technical Services	Full-time employee	SAIMM (Fellow) 70097	Constantia Office Park Bridgeview House, Building 11, Ground floor, Cnr 14th Avenue & Hendrik Potgieter Road Weltevreden Park 1709, RSA	Sibanye-Stillwater Group	Mineral Reserves	31
<b>AMERICAS PGM OPERATIONS</b>						
<b>Lead Competent Person</b>						
<b>Jeff Hughs</b> BSc (Geology) Technical Services Manager – Geology	Full-time employee	AIPG CPG 11792	Sibanye-Stillwater, US PGM operations 242 S Diamond St PO Box 1330, Columbus MT 59019, USA	US PGM operations	Mineral Resources	18
<b>Team of Competent Persons</b>						
<b>Justus Deen</b> MSc (Minerals Engineering), BSc (Geological Sciences) Technical Services Manager – Engineering	Full-time employee	SME 04227906RM	Sibanye-Stillwater, US PGM operations 242 S Diamond St PO Box 1330, Columbus MT 59019, USA	US PGM operations	Mineral Reserves	24
<b>Jennifer Evans</b> BSc (Geology) Senior Geologist	Full-time employee	AIPG CPG 11669	Sibanye-Stillwater, US PGM operations 242 S Diamond St PO Box 1330, Columbus MT 59019, USA	East Boulder mine Geology	Mineral Resources	18
<b>Matt Ladvala</b> BSc (Geology) Senior Geologist	Full-time employee	AIPG CPG 11941	Sibanye-Stillwater, US PGM operations 242 S Diamond St PO Box 1330, Columbus MT 59019, USA	Stillwater mine Geology	Mineral Resources	15
<b>Kevin Butak</b> MSc (Geology) Senior Geologist	Full-time employee	AIPG CPG 12012	Sibanye-Stillwater, US PGM operations 242 S Diamond St PO Box 1330, Columbus MT 59019, USA	Stillwater mine Geology	Mineral Resources	15
<b>AMERICAS PGM EXPLORATION</b>						
<b>Competent Persons</b>						
<b>Rodney Thomas</b> <i>M.A.Sc</i> Vice President: Exploration – Generation Mining	External – Full time employee and of Generation Mining	PGO 31	First Canadian Place Suite 7010 – 100 King Street West PO Box 70, Toronto, ON, Canada M5X 1B1	Marathon	Mineral Resources	41



## COMPETENT PERSONS' DECLARATION AND CONSENT continued

Name	Relationship with Group	Professional registrations	Work address	Area of responsibility	Competency/specialisation	Years of relevant experience
<b>AMERICAS BATTERY METALS EXPLORATION</b>						
<b>Competent Persons</b>						
<b>Antonio Umpire</b> P. Engineer BSc (Hon) Geology (Hon) Internation MBA BA (Hon) Professional IT GDE (Conditional Simulation) Unit Manager Group Resource Estimation & Reporting	Full-time employee	SACNASP 400372/12 GASA 12104 GSSA 967709 CIP 91856	Constantia Office Park Bridgeview House, Building 11, Ground floor, Cnr 14th Avenue & Hendrik Potgieter Road Weltevreden Park 1709, RSA	Rhyolite Ridge	Mineral Resources	27
<b>Stanford Foy</b> BSc (Geological Engineering) Vice President: Project Development – Aldebaran Resources	External – Full time employee of Aldebaran Resources	AIPG CPG-10946 SME 4140727	38 Bannock Cir 1449, Red Lodge, MT 59068 USA	Altar and Rio Grande	Mineral Resources	29
<b>SOUTHERN AFRICA PGM OPERATIONS &amp; EXPLORATION</b>						
<b>Lead Competent Person</b>						
<b>Andrew Brown</b> MSc (Mining Engineering) Vice President: Mine Technical Services	Full-time employee	SAIMM 705060	Sibanye-Stillwater Hex River Complex Old Mine Road, Rustenburg Bleskop, 0292	SA PGM operations	Mineral Resources and Mineral Reserves	37
<b>Team of Competent Persons</b>						
<b>Nicole Wansbury</b> MSc (Geology) Unit Manager: Geology	Full-time employee	SACNASP 400060/11	Sibanye-Stillwater Hex River Complex Old Mine Road, Rustenburg Bleskop, 0292	SA PGM operations	Mineral Resources	17
<b>Leon Koorsse</b> GDE (Mining Engineering) Unit Manager: Survey	Full-time employee	SAGC GPr MS 0134	Sibanye-Stillwater Hex River Complex Old Mine Road, Rustenburg Bleskop, 0292	SA PGM operations	Mineral Reserves	37
<b>Brian Smith</b> MEng MRM Unit Manager: Survey	Full-time employee	SAGC GPr MS 0218	Sibanye-Stillwater Hex River Complex Old Mine Road, Rustenburg Bleskop, 0292	SA PGM operations	Mineral Reserves	35
<b>Leonard Changara</b> MSc (Geology); MBA Unit Manager: Geology	Full-time employee	SACNASP 400089/08	Sibanye-Stillwater Hex River Complex Old Mine Road, Rustenburg Bleskop, 0292	SA PGM operations	Geology and exploration	23
<b>SOUTHERN AFRICA GOLD OPERATIONS, DEVELOPMENT &amp; EXPLORATION</b>						
<b>Lead Competent Person</b>						
<b>Charl Labuschagne</b> BSc (Hon) Geology, MSc Environmental Management, GDE Mining Engineering Acting Vice President: Mine Technical Services	Full-time employee	SACNASP 400237/08	Constantia Office Park Bridgeview House, Building 11, Ground floor, Cnr 14th Avenue & Hendrik Potgieter Road Weltevreden Park 1709, RSA	SA Gold operations	Mineral Resources and Reserves	21
<b>Team of Competent Persons</b>						
<b>Lindelani Mudimeli</b> BSc (Hons) GDE Mining Engineering Unit Manager Geology	Full-time employee	SACNASP 013678	Constantia Office Park Bridgeview House, Building 11, Ground floor, Cnr 14th Avenue & Hendrik Potgieter Road Weltevreden Park 1709, RSA	SA Gold operations	Geology and exploration	16
<b>Janine Fleming</b> BSc (Hons) Geology, GDE Mining Engineering Unit Manager Mineral Resources	Full-time employee	SACNASP 400051/05	Constantia Office Park Bridgeview House, Building 11, Ground floor, Cnr 14th Avenue & Hendrik Potgieter Road Weltevreden Park 1709, RSA	SA Gold operations	Mineral Resources	27
<b>Steven Wild</b> GDE Mining Engineering, NHD MRM Unit Manager Mine Planning	Full-time employee	SAIMM 706556	Constantia Office Park Bridgeview House, Building 11, Ground floor, Cnr 14th Avenue & Hendrik Potgieter Road Weltevreden Park 1709, RSA	SA Gold operations	Mineral Reserves	27
<b>Mpfariseni Mudau</b> MSc Eng. Director/Resource Geology Manager – RVN Group	External – Independent consultant to DRDGOLD	SACNASP 400305/12	21 Willowbrook Villas, Willowbrook, Roodepoort, 1724, Gauteng, South Africa	DRD – Ergo Mining Proprietary Limited	Mineral Resources	15
<b>Prof. Steven Rupprecht</b> PhD (Mech. Eng.) Independent Mining Engineer: RVN Group	External – Independent consultant to DRDGOLD	SAIMM 701013	21 Willowbrook Villas, Willowbrook, Roodepoort, 1724, Gauteng, South Africa	DRD – Ergo Mining Proprietary Limited	Mineral Reserves	23
<b>Vaughn Duke</b> BSc Mining Engineering Partner: Sound Mining	External – Independent consultant to DRDGOLD	SAIMM 37179 ECSA 940314	2A Fifth avenue, Rivonia, 2128, Johannesburg, Gauteng, South Africa	Far West Gold Recoveries Proprietary Limited	Mineral Reserves and Mineral Resources	37

## COMPETENT PERSONS' DECLARATION AND CONSENT continued

Name	Relationship with Group	Professional registrations	Work address	Area of responsibility	Competency/specialisation	Years of relevant experience
EUROPE BATTERY METALS DEVELOPMENT						
Competent Persons						
<b>Paul Payne</b> BAppSc (Geology), Grad Dip (Min Ec), Grad Cert (Geostatistics) Principal Geologist at Payne Geological Services	External – Full-time employee of Payne Geological Services Pty Ltd.	FAusIMM 105622	PO Box 480 Cowaramup 6884 Western Australia	Keliber – Syvajarvi & Rapasaaris deposits	Mineral Resources	26
<b>Pekka Lovén</b> M.Sc. (Mining) Principal Mining Engineer at PL Mineral Reserve Services	External – Full-time employee of PL Mineral Reserve Services	AusIMM 301822	Alkutie 10 A 1 FI-00660 Helsinki Finland	Keliber – Lantta, Outovesi and Emmes	Mineral Resources	31
AUSTRALIA GREEN METALS OPERATIONS						
Competent Persons						
<b>Damian O'Donohue</b> BSc Geology Geology Manager	Full-time employee of NCR	AusIMM 308436	L4, 360 Collins St, Melbourne, VIC 3000 AUSTRALIA	New Century	Mineral Resources and Reserves	15



Geologist Inspecting a UG2 ore sample





# 2 AMERICAS

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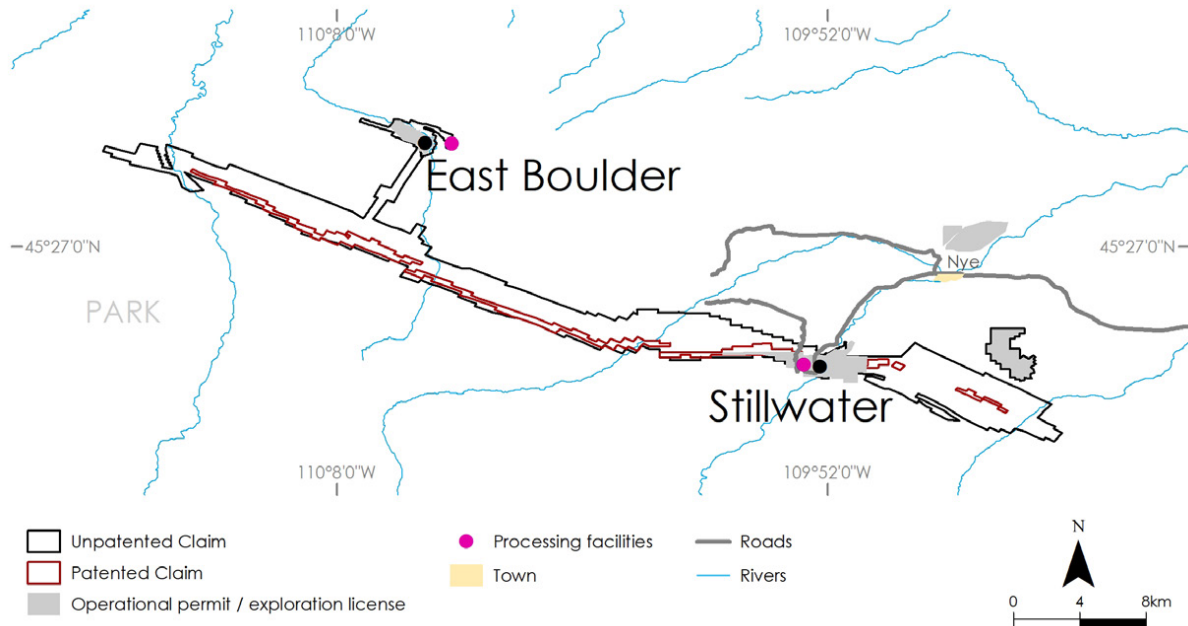
# LOCATION





# US PGM OPERATIONS

## STILLWATER AND EAST BOULDER MINES



### PROPERTY DESCRIPTION

The Stillwater (including Stillwater east) and East Boulder mines are underground mining operations, located near the towns of Nye and McLeod in Montana, US. The mining assets are located on the front range of the Beartooth Mountains with elevations exceeding 2,700m amsl. The two operations are located within the Custer and Gallatin national forests. The mines both target the J-M Reef zone, predominantly via selective mechanised ramp and fill mining methods. As discussed in Section 1, the Group considers the Stillwater and East Boulder mines, (together, the US PGM operations) material for the purpose of SK-1300.

Ore from the operations is milled and treated at integrated concentrator complexes located at each operation. Concentrate smelting and refining takes place at the Columbus smelter complex, situated in the town of Columbus, Montana.

The Stillwater mine has two principal mining sections: the Western section, which has been in operation since 1986, produces approximately 250-300koz 2E per annum of platinum and palladium in concentrate; and the Stillwater East section, which is still in a build-up phase. The Western section of the operation is accessed by a 580m deep shaft and five surface portals, while Stillwater East is accessed via three portal drives.

The East Boulder mine has been in operation since 2002, and currently produces approximately 220 koz 2E per annum of platinum and palladium in concentrate. The East Boulder mine is accessed via twin 5,800m long tunnel bored portal drives.

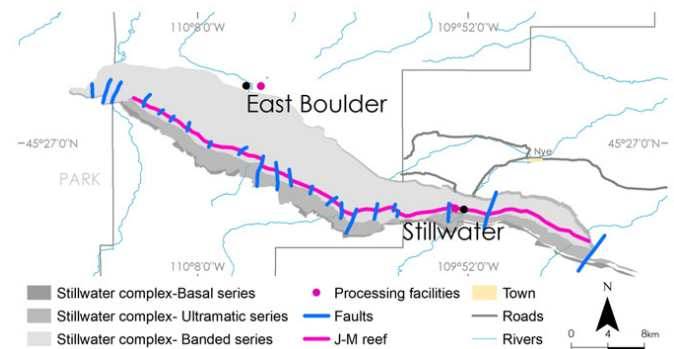
### MINERAL TITLE

Sibanye-Stillwater holds or leases 1,704 patented and unpatented lode, placer, tunnel or mill site claims in the Stillwater, Sweet Grass and Park counties of south-central Montana, encompassing 97.75km<sup>2</sup>.

The 1,704 claims are in good standing and have no expiration date. Of the 1,704 claims, 1,498 unpatented claims must be renewed annually with the Bureau of Land Management (BLM) and county offices, and an annual maintenance fee per claim is paid to the BLM to keep these claims valid.

For operations involving more than 5 acres (~0.2km<sup>2</sup>), a detailed plan of operations must be filed with the appropriate BLM field office. Sibanye-Stillwater has a plan of operations for Stillwater and East Boulder mines approved by the US Forest Service and the Montana Department of Environmental Quality. The 13.96km<sup>2</sup> of permitted operating areas are in good standing.

### Stillwater and East Boulder mines surface geological map

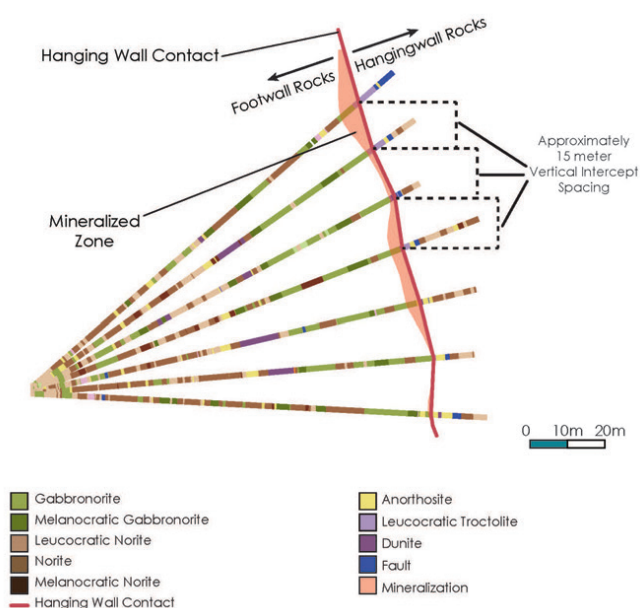


## US PGM OPERATIONS STILLWATER AND EAST BOULDER continued

## MINERALISATION CHARACTERISTICS

- The J-M Reef is a magmatic reef type PGM bearing deposit defined as the palladium-platinum rich stratigraphic interval, mainly occurring within a troctolite (OB-I zone) of the Lower Banded Series
- Palladium and platinum are the main PGMs exploited/present, together constituting between 7g/t to 40g/t over a variable economic mineralised thickness ranging from 0.9m – 2.7m and averaging 1.8m
- Ratios of palladium to platinum in metallurgical concentrate are known to range from 3.4:1 (in situ 3.5:1) at Stillwater to 3.5:1 (in situ 3.6:1) at East Boulder

## Stillwater and East Boulder operations typical drilling section looking west



## MINERAL RESOURCE ESTIMATION

Diamond drilling data combined with geological mapping and underground face mapping are used to derive the Mineral Resource estimates. The drilling data is a combination of widely spaced surface drilling and underground definition drilling (typically at a 15m x 15m spacing), drilled from levels spaced vertically between 91m to 122m. Zones of continuous ore-grade mineralisation are identified in drilling, flagged, and composited with respect to their length to yield single values for platinum and palladium for each reef intersection. The composited grade is then multiplied by the width of the composite to get a grade thickness value for each reef intersection to be used in Mineral Resource estimation.

Based on the distribution of each geostatistical domain, grade thickness is capped at the ninety-eighth percentile to keep high-grade composites from unduly influencing the estimation. Wireframe models are constructed implicitly using Leapfrog™ software for all Mineral Resource categories and are separated by individual domains. Block models are constructed based on the wireframes for the individual domains. A minimum mining width, and a 3.8g/t grade cut-off at Stillwater or a 1.7g/t grade cut-off at East

Boulder, is applied to all categories. Mineral Resource estimations are divided into three confidence categories: Measured, Indicated, and Inferred. The criteria that separate these three categories is predominantly the density of drilling and range of the grade continuity from the variograms. Definition drilling at 15-meter spacing is used to define the metal distribution with adequate geological certainty for estimating the Measured Resources.

The Measured Resources also include the area outside the definition drilled area, but within a range of 91m from the edge of the definition drilling. The Indicated Mineral Resources are found in the area outside the Measured Mineral Resources, but within 305m of the definition drilling boundary. Inferred Mineral Resources are limited by faults and geological continuity of the J-M Reef where it can be reasonably expected to occur based on surface drilling, geological mapping, and regional and local geological structure. The 2E (Pt and Pd) metal within the Mineral Resources is reasonably constant, as illustrated in the table below.

## 2E PGM prill split

Metal	Unit	Stillwater	East Boulder	Average
Platinum	%	22.2	21.7	22
Palladium	%	77.8	78.3	78

## INTERNAL CONTROLS (QA/QC)

Diamond drilling is proposed by an experienced geologist, and drilling locations are assigned and surveyed. The proposal is entered into a tracking database (OREQMS™). After drilling, the final angles and setup are measured and recorded underground. Geologists log the core, which is then reviewed by a more senior geologist.

Waste blanks, as well as selected pulp repeats, are submitted to the internal laboratory. Selected pulps for re-assay are submitted to an outside laboratory to assure data integrity. 2.5% of the pulps are sent back for re-assay in the areas with mature production, and 5% are sent from areas of newer production (Stillwater East and East Boulder).

The mines utilise their own internal assay laboratory. Samples are received into a Laboratory Information Management System (LIMS), crushed, split and pulverised. XRF and fire assay with acid digestion and dilution is used for final inductively coupled plasma mass spectrometry (ICP) analysis. Each set of geology samples is fire assayed with two reference standards. Balances used for charging fire assay samples are tested for accuracy at each shift, using certified check weights. A third party performs preventative maintenance and calibration on the scales on an annual basis.

Samples are recorded and bar coded into the OREQMS database, which is linked to an internal Laboratory Information Management System (LIMS). Final assay results are reviewed and approved by an experienced geologist. The geologist compares visual sulphides occurrence to the assay results and also checks platinum/palladium ratios for reasonableness. Assays are only checked into the OREQMS database once approved. As key data is received into the database, a timestamp is applied, whereafter data is exported to Vulcan™.

A density of 0.353m<sup>3</sup>/t is used to calculate tonnage. Since the start of 2018, density has been measured on reef samples on 20% of all production holes. This data led to a change in density from 0.362m<sup>3</sup>/t to 0.353m<sup>3</sup>/t in 2020.

US PGM OPERATIONS STILLWATER AND EAST BOULDER continued

**Grade control and Mineral Resource definition drilling summary**

Operation	Planned 2023		Actual 2022		Actual 2021	
	Drilled (m)	Expenditure (Rm)	Drilled (m)	Expenditure (Rm)	Drilled (m)	Expenditure (Rm)
Stillwater	288,949	240.9	<b>231,930</b>	<b>216.3</b>	229,415	190.8
East Boulder	49,704	27.2	<b>35,670</b>	<b>23.4</b>	35,615	20.1

**2PGE Mineral Resource estimate at 31 December 2022**

Mineral Resources Inclusive of Mineral Reserves

PGM Americas Stillwater and East Boulder				31 Dec 2022			31 Dec 2021		
				Tonnes (Mt)	Grade (g/t)	PGM (Moz)	Tonnes (Mt)	Grade (g/t)	PGM (Moz)
Operations	Stillwater	Underground	Measured	25.8	15.0	12.4	21.7	15.6	10.9
			Indicated	24.0	14.5	11.2	31.3	14.2	14.3
			Measured + Indicated	49.9	14.8	23.7	53.0	14.8	25.2
			Inferred	57.9	12.3	22.9	61.5	12.1	24.0
	East Boulder	Underground	Measured	16.7	11.6	6.2	18.1	13.6	7.9
			Indicated	26.4	11.1	9.5	27.8	13.3	11.8
			Measured + Indicated	43.1	11.3	15.7	45.9	13.4	19.8
			Inferred	56.1	12.1	21.9	52.2	12.3	20.6
Total Measured + Indicated				93.0	13.2	39.4	99.0	14.1	45.0
Grand total				207.0	12.6	84.2	212.6	13.1	89.6

Mineral Resources Exclusive of Mineral Reserves

				31 Dec 2022			31 Dec 2021		
PGM	Americas			Tonnes (Mt)	Grade (g/t)	PGM (Moz)	Tonnes (Mt)	Grade (g/t)	PGM (Moz)
Stillwater and East Boulder									
Operations	Stillwater	Underground	Measured	13.2	10.6	4.5	7.9	15.0	3.8
			Indicated	10.8	7.7	2.7	9.0	14.6	4.2
			Measured + Indicated	24.0	9.3	7.2	16.9	14.8	8.0
			Inferred	57.9	12.3	22.9	61.5	12.1	24.0
	East Boulder	Underground	Measured	6.1	10.0	1.9	7.2	13.6	3.1
			Indicated	8.3	8.1	2.2	10.9	13.0	4.6
			Measured + Indicated	14.3	8.9	4.1	18.2	13.2	7.7
			Inferred	56.1	12.1	21.9	52.2	12.3	20.6
Total Measured + Indicated				38.3	9.1	11.3	35.0	14.0	15.7
Grand total				152.3	11.4	56.0	148.6	12.6	60.3

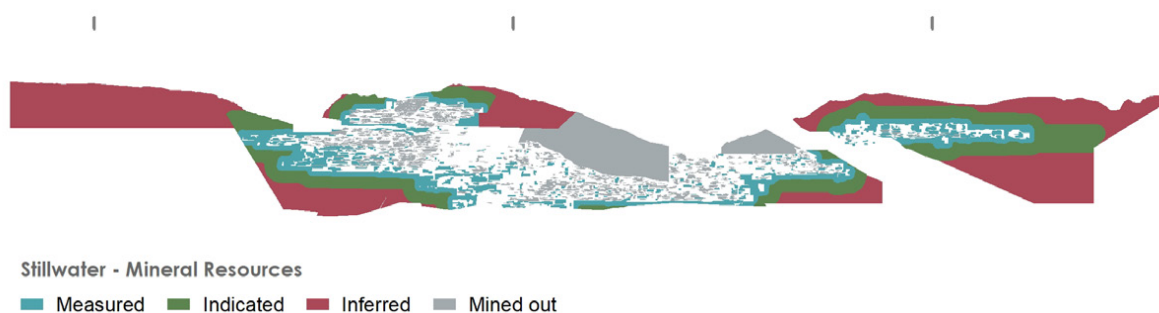


Stillwater Mine

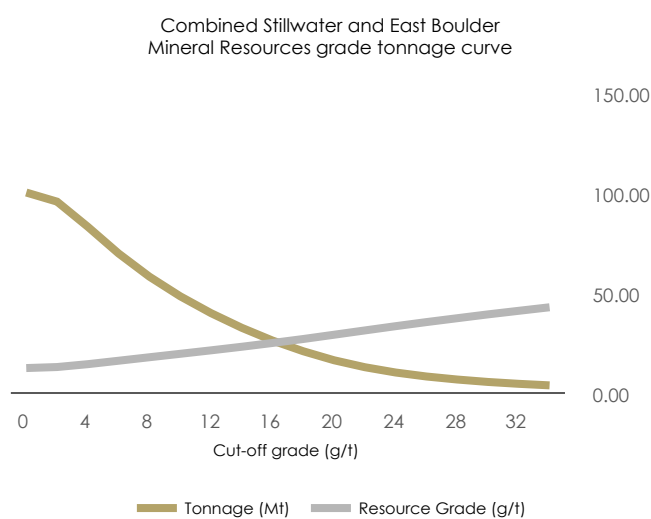
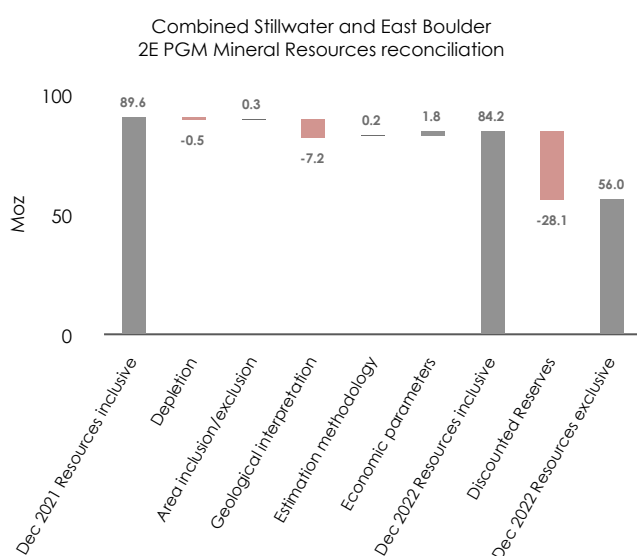
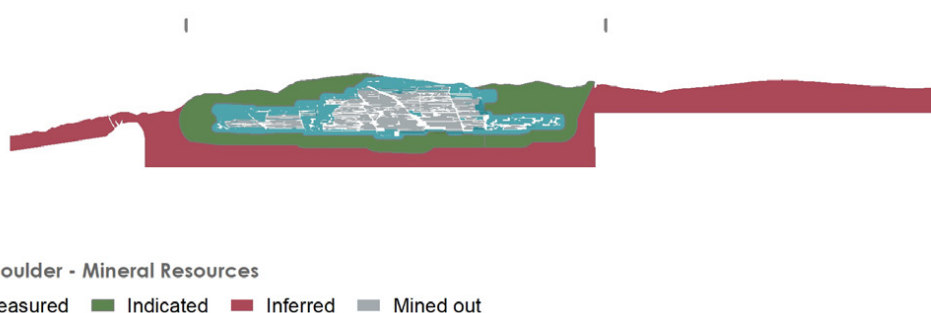


US PGM OPERATIONS STILLWATER AND EAST BOULDER continued

### Stillwater mine Mineral Resource classification section looking north



### East Boulder mine Mineral Resource classification section looking north



**Notes:** The -6% change year-on-year in the stated Mineral Resources (Inclusive of Mineral Reserves) is mainly attributed to continued improvement and refinement of the Mineral Resource estimation methodology,, which led to:

- an increase of 0.3Moz due to a correction in the Brass Monkey east Inferred Resource area
- a decrease of 7.2Moz due to a more conservative approach to the Indicated and a portion of the Measured Mineral Resource
- an increase of 0.2Moz due to a change in factorization
- an increase of 1.8Moz due to lowering the Mineral Resource cut-off grade at Stillwater mine

On a Mineral Resources exclusive of Mineral Reserves basis, the year-on-year change is -7.1%, also mainly attributed to the continued improvement and refinement of the Mineral Resource estimation methodology.



## US PGM OPERATIONS STILLWATER AND EAST BOULDER continued

**MINERAL RESERVE ESTIMATION**

Mineral Reserves are derived from detailed operational planning exercises.

Annual operation design, production and development schedules are completed utilising various software programmes including Deswik™, MS Excel™, Xeras™, AutoCAD™ and Vulcan™. Mine planning utilises and takes into consideration historical technical parameters achieved. In addition, Mineral Resource to Mineral Reserve modifying factors – such as dilution, ore loss (deletion) and minimum mining widths associated with different mining methods – are employed during planning and scheduling.

Initially, the design and scheduling includes all secondary development to access the potential stope (ore) blocks identified in the detailed drilled-out portion of the Measured Resource category. This informs the Proved Mineral Reserves.

Probable Mineral Reserves are derived from the area outside the definition-drilled area but within the Measured and Indicated Mineral Resources envelope. Within each domain, blocks are

estimated using simple kriging which uses the available drilling data but relies heavily on the global mean for the areas further from drilling data. A mining mix is applied to the Probable Reserves to account for the percentages of different mining methods to be used. A domain specific mineability block factor, the grades from the mineability calculations, and modifying factors are then applied to reach the final Probable Mineral Reserves estimate. Mineability is defined as the proportion of mineable ore in stope blocks to total ore within each domain's definition drilled area at current economic conditions.

Each stope block is subjected to an economic test, which results in the determination of a net profit and, a net present value (NPV) of the planned stope and a payback period. An economic viability test is completed for the LoM plans of both the mines.

The two principal mining methods are:

- mechanised ramp and fill (both overhead and underhand) (80% – 90%)
- sub-level extraction by long hole, open stoping with hydraulic backfilling (10% – 20%)

**Annual development results**

Category	Financial year totals		
	Unit	2022	2021
<b>Stillwater</b>			
Primary off-reef development (declines, inclines, haulage, crosscuts)	m	5,738	4,366
Footwall lateral	m	5,136	7,690
Secondary off reef development (stope access and stope ramps)	m	7,689	9,100
<b>Total</b>	m	18,563	21,155
<b>East Boulder</b>			
Primary off-reef development (declines, inclines, haulage, crosscuts)	m	1,373	1,512
Footwall lateral	m	1,441	1,702
Secondary off reef development (stope access and stope ramps)	m	3,925	3,792
<b>Total</b>	m	6,739	7,006

**Modifying factors applied in converting Mineral Resources to Mineral Reserves**

Parameter	Unit	2022	2021
<b>Stillwater</b>			
Mineral Reserve cut-off	g/t	6.8	6.8
Mineability factor	%	57	68
Sub-level extraction loss factor	%	25	25
Ramp and fill stoping	%	93	93
Sub-level stoping	%	7	7
Dilution factor in model	%	20	20
Additional dilution (average)	%	15	13
Deletion factor	%	9	6
Minimum mining width	cm	229	229
Diluted mining width	cm	274	274
Concentrator recovery	%	92	92
Smelter/base metal refinery recovery	%	99	99
<b>East Boulder</b>			
Mineral Reserve cut-off	g/t	1.7	1.7
Mineability factor	%	72	60
Sub-level extraction loss factor	%	25	25
Ramp and fill stoping	%	80	80
Sub-level stoping	%	20	20
Dilution factor in model	%	20	20
Additional dilution (average)	%	—	3
Deletion factor	%	3	8.5
Minimum mining width	cm	229	229
Diluted mining width	cm	274	274
Concentrator recovery	%	91	91
Smelter/base metal refinery recovery	%	99	99

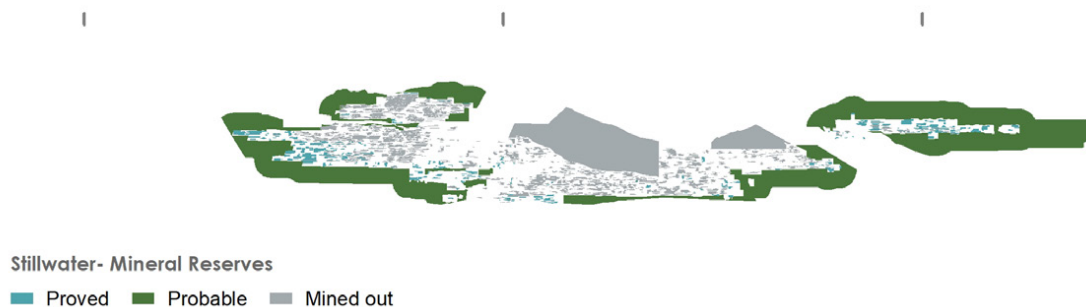
US PGM OPERATIONS STILLWATER AND EAST BOULDER continued

## 2PGE Mineral Reserve estimate at 31 December 2022

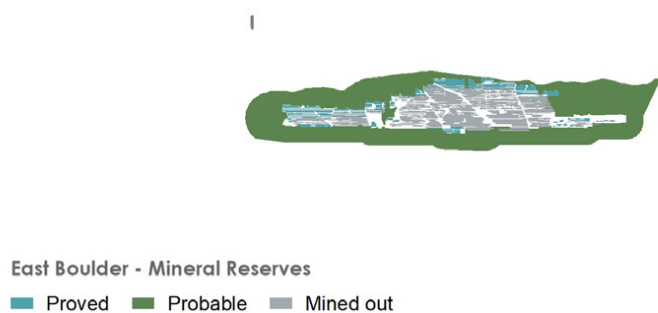
### Mineral Reserves

				31 Dec 2022			31 Dec 2021		
PGM	Americas			Tonnes (Mt)	Grade (g/t)	PGM (Moz)	Tonnes (Mt)	Grade (g/t)	PGM (Moz)
Stillwater and East Boulder									
Operations	Stillwater	Underground	Proved	6.0	14.6	2.8	4.6	17.2	2.6
			Probable	26.0	14.8	12.4	35.8	11.9	13.7
			Proved + Probable	32.1	14.8	15.3	40.4	12.5	16.2
	East Boulder	Underground	Proved	4.0	11.9	1.5	3.5	13.0	1.5
			Probable	24.2	12.2	9.5	24.3	12.3	9.6
			Proved + Probable	28.2	12.2	11.0	27.9	12.4	11.1
Grand total Proved + Probable				60.2	13.6	26.3	68.3	12.4	27.3

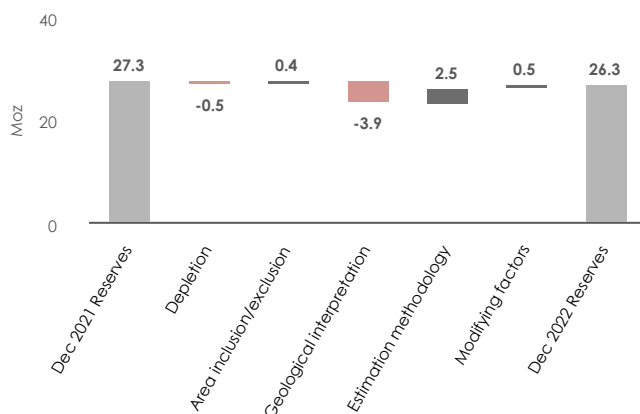
### Stillwater mine Mineral Reserve category section looking north



### East Boulder mine Mineral Reserve category section looking north



Combined Stillwater and East Boulder  
2E PGM Mineral Reserves reconciliation

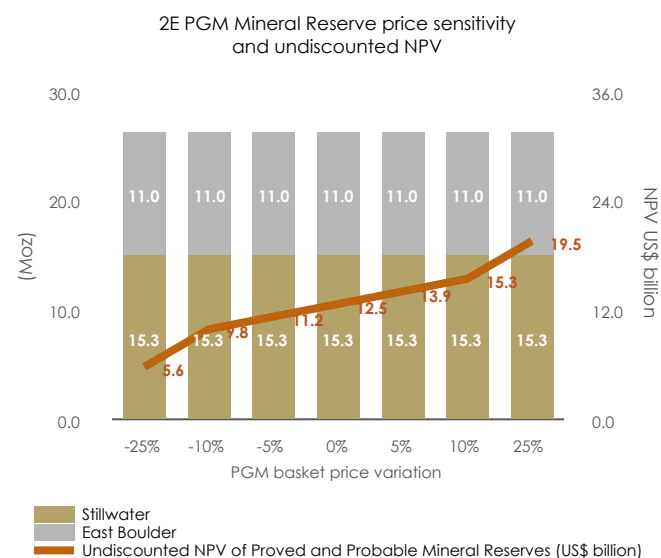


#### Notes:

The -3.6% change year-on-year in the stated Mineral Reserves are principally attributed to the improvement and refinement in Mineral Resource estimation methodology, and changes to the Mineral Reserve estimation to more closely align with actual results. This led to the following changes:

- a decrease of 3.9Moz due to a recalculation of the mineability factors
- an increase of 2.5Moz, due a change in the calculation methodology of the Probable Reserves
- an increase of 0.5Moz attributed to an adjustment of the modifying factors

## US PGM OPERATIONS STILLWATER AND EAST BOULDER continued



## LIFE OF MINE

## The Stillwater Mine

It is estimated that current Mineral Reserves will sustain the Stillwater mine until 2053 and the Stillwater East section has the potential to significantly expand Mineral Reserves beyond 2053.

## East Boulder

It is estimated that the current Mineral Reserves will sustain East Boulder until 2065.



Development support drilling

## ESTIMATION RISKS

**Geological:** The grade distribution is generally variable, and in areas where drilling density is low, localised estimation might be inaccurate. Globally though, the consistency of mineralised areas is more consistent, decreasing the risk over the LoM.

**Geohydrological:** Although mining operations at Stillwater and East Boulder have not experienced material interruptions due to groundwater problems, a significant amount of groundwater was encountered at the Stillwater east project during the development of the main access adits and the Benbow decline. The Stillwater mine has initiated a multi-pronged approach to mitigating this risk.

**Geotechnical:** Areas of poor ground conditions can impact mining productivity. Both mines have accumulated an extensive geotechnical database and developed ground classifications and support measures that are suited to the rock mass. The support systems and standards in place at both mines are sufficient to minimise the potential impact of any geotechnical risk.

**Execution gap on LoM plans:** Slower than planned production build-ups, underestimating manpower requirements, regulatory changes, grade and tonnage underestimation and unknown geological conditions can all contribute to a gap between planned and achieved production rates, which could impact the execution of LoM plans. Short interval controls are in place to enable the implementation of timeous interventions and, therefore, correction of deviations to the plans.

**Skilled labour shortages:** The operations have experienced a shortage of skilled miners and maintenance personnel due to recent high attrition rates and industry wide labour scarcity. This could contribute to lower than planned production rates which could impact the execution of LoM plans. Contracted services are currently filling the gaps while the operations implement recruitment and retention initiatives, as well as expanding training programs that focus on hiring local people to fill these roles.

**Cost escalation:** Since 2020 and coinciding with the COVID-19 pandemic, the operations have experienced cost pressures and COVID-19 related production disruptions. Continuous improvement initiatives adopted to contain cost escalation are in place to mitigate this risk.

**Inadequate tailings storage capacity:** Tailings storage facilities at Stillwater and East Boulder mines have adequate storage capacity for the medium term (seven to ten-year period). Permitting for the construction of a new tailings storage facility may require a period of up to five years, and is in process. It is unlikely that the operations will run out of tailings storage facility capacity before approvals for the construction of new tailings storage facilities or the upgrading of the existing tailings storage facilities are received.

## INFRASTRUCTURE AND EQUIPMENT

## The Stillwater Mine

Key infrastructure includes the mining operations and ancillary buildings that contain the concentrator, surface workshop, warehouse, changing facilities, headframe, hoist house, sand, paste plants, water treatment, storage facilities, and offices. Underground development represents 68% of the Stillwater mine property, plant and equipment book value of US\$1.15 billion

The original concentrator plant was built in 1986. A new concentrate handling system was added in 2021 as part of a new plant construction. The balance of the new processing facility will be commissioned in 2023. Currently, the plant and adjoining properties comprise 18% of the asset value. The underground mining

## US PGM OPERATIONS STILLWATER AND EAST BOULDER continued

fleet ranges in age from 24 years to one year, with the average age of eight years, and contributes 13% of the property's book value. Overall the physical condition of the asset is improving with the addition of the new concentrator, as well as underground equipment purchases.

**The East Boulder Mine**

Key infrastructure includes the mining operations and ancillary buildings that contain the concentrator, workshop, warehouse, changing facilities, twin tunnels to access mine, sand plant, water treatment, storage facilities and offices. Underground development represents 80% of the East Boulder mine property, plant and equipment book value of US\$1.48 billion. The concentrator plant was built in the early 2000's. Currently, the plant with adjoining properties comprise 16% of the East Boulder book value. The underground mining fleet ranges in age from 22 years to one year, with an average age of 16 years, and represents 4% of the property's book value. An aggressive underground equipment replacement program is slated for the next few years.

**The Columbus Metallurgical Complex**

Key infrastructure includes the smelting, base metal refining, laboratory and recycling facilities. The plants were constructed in the early to mid-1990s with improvements made as recently as the past two years. The property, plant and equipment book value of the metallurgical complex and associated recycling infrastructure is US\$77.5 million.

**HOISTING AND PRODUCTION CAPACITIES**

Operating shaft	Operating hoisting or rail capacity (ktpm)	5-year planned production (ktpm)*
Stillwater shaft	135	118
Stillwater east rail	144	87
East Boulder rail	137	87

\* Planned production is five-year hoisted average from 2023 onwards

**MINERAL PROCESSING AND CAPACITY**

Plant name	Type	Design capacity (ktpm)	Operational capacity (ktpm)	Average recovery factor (%)
Stillwater	Flotation	83	77	92.2
East Boulder	Flotation	69	64	90.8

**TAILINGS DEPOSITION AND CAPACITY****Stillwater**

Currently 56% (2022) of all concentrator tailings are returned underground for backfill. The remaining 44% is sent via pipeline to the Hertzler TSF, situated 11km north of Stillwater.

The current storage facility has 4,740kt of storage remaining with expansion planned to add an additional 10,200kt of storage in 2029. The Hertzler storage facility, with the planned expansion, will have adequate storage for current Proved and Probable Mineral Reserves.

**East Boulder**

Currently 46% (2022) of all concentrator tailings are returned underground for backfill, with the remaining 54% sent via pipeline to a TSF adjacent to the mine site.

The current storage facility has 4,060kt of storage remaining in Stages 4-6. In addition, an expansion is planned to add an additional 5,500kt of storage in 2030 at the Lewis Gulch facility. This facility, including another planned expansion, will accommodate the current Proved and Probable Mineral Reserves.

Site teams are currently evaluating dry stacked tails for the Lewis Gulch facility which could double the life of that facility.

**KEY DEVELOPMENTS AND BROWNFIELDS PROJECTS**

During 2022 the US PGM operations were repositioned for sustainability and profitability. This was a consequence of a series of disruptions including the Benbow flooding (2018), COVID-19 restrictions (2020), skill and labour shortages (2021/22) and the extreme weather event in mid 2022 which caused regional flooding around the Stillwater mine, all of which impacted operational flexibility and performance. Along with the deteriorating macro environment and outlook for palladium, a review was conducted resulting in a repositioning of the operations including the suspension of further expansion at Stillwater east. To protect margins and to ensure long-term value, a slower build-up in production has been planned to allow for time to improve the mine's developed state and to focus on a range of interventions underpinning productivity improvements. The repositioned plan incorporates a build-up to +700koz 2E PGM per annum by 2027.

**HISTORY AND OPERATIONAL STATISTICS**

- The JM reef was discovered in 1974 by Johns-Manville Corporation, and was developed by Manville, Chevron and LAC Minerals Ltd. with production commencing in 1986
- By 1990 the smelter was commissioned and in 1994 the Stillwater Mining Company (SMC) was listed
- In 1996, the vertical shaft at the Stillwater mine was completed
- In 2000, the Hertzler tailings impoundment was constructed
- The East Boulder mine was established in 2002
- On 23 June 2003, SMC completed a stock purchase transaction with MMC Norilsk Nickel (Norilsk Nickel), whereby a subsidiary of Norilsk Nickel became a majority stockholder of the company. In December 2010, Norilsk Nickel disposed of its entire ownership interest in SMC through a secondary offering of the SMC shares in the public market
- From 2010, SMC operated as a NYSE listed company until May 2017 when it was delisted following its acquisition by Sibanye Gold Limited
- The PGM recycling business was established in 2010
- Sibanye-Stillwater acquired the Stillwater Mining Company in 2017, the year which also saw the first production from the Stillwater East project

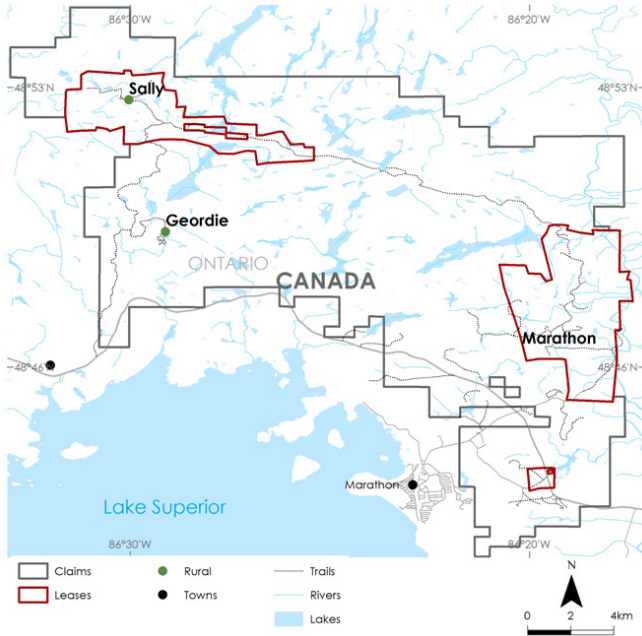
Operational statistics	2020	2021	2022
Underground tonnes milled (kt)	1,487	1,469	1,154
Underground yield (g/t)	12.51	11.96	11.31
Annual 2E PGM production - Underground (koz)	603	570	421
<b>Total Annual 2E production (koz)</b>	<b>603</b>	<b>570</b>	<b>421</b>
Operating cost underground (R/t)	5,203	5,174	6,811
Total capital expenditure (Rm)	4,419	4,556	5,416
AISC (R/oz)	14,385	14,851	25,951
AISC (US\$/oz)	874	1,004	1,586

**Note:** AISC calculated based on produced Oz



# PGM EXPLORATION STAGE

## MARATHON



### PROPERTY DESCRIPTION

The Marathon project is an advanced stage PGM-gold-copper exploration project, located approximately 10km north of the town of Marathon, Ontario, Canada, situated adjacent to the Trans-Canada Highway No 17 on the north-east shore of Lake Superior. The project is at FS level.

Exploration for copper and nickel deposits in the greater Marathon area started in the 1920s and continued until the 1940s with the discovery of several titaniferous magnetite and disseminated chalcopyrite occurrences. During the past four decades, the Marathon PGM-copper project has undergone several phases of exploration and economic evaluation, including geophysical surveys, prospecting, trenching, a diamond drilling programme, geological studies, resource estimates, metallurgical studies, mining studies and economic analyses.

The project is managed and operated by Generation Mining Ltd. In quarter one of 2022, the JV parties reached an agreement whereby Sibanye-Stillwater exchanged its project level ownership for a combined corporate level equity interest. As at 31 December 2022, Sibanye-Stillwater owned an effective attributable share of 18.19%, via its equity interest in Generation Mining Ltd.

### MINERAL TITLE

Generation Mining's land position includes 46 leases covering 66.03 km<sup>2</sup>, and 924 mining claims covering 196.25km<sup>2</sup>. The expiry dates of the leases vary between 2031 and 2041, while the mining claims expires between 2023 and 2025.

The claims are registered in the name of Generation PGM Inc, a subsidiary of Generation Mining. All exploration activities are required to follow Schedule 1 of Ontario Regulations 308/12 and applicable Provincial Standards for Early Exploration. All claims have been renewed to their respective anniversary dates. Assessment reporting and transfer of work credits are required for claims to keep them in good standing. To renew leases is via an application, along with a fee and a written report of past activities justifying the need for renewal. This is required to be completed three months before the respective expiry dates.

### GEOLOGY AND MINERALISATION CHARACTERISTICS

The Marathon deposit consists of several large, thick and continuous zones of disseminated sulphide mineralisation hosted within the Two Duck Lake Gabbro. The mineralised zones occur as shallow dipping sub-parallel lenses that follow the basal gabbro contact and are labelled as footwall, main, hanging wall zones and the W-horizon. The main zone is the thickest and most continuous zone. For 516 drill hole intersections, with intervals greater than 4m thick, the average thickness is 35m and the maximum is 183m.

Sulphides in the Two Duck Lake Gabbro consist predominantly of chalcopyrite, pyrrhotite and minor amounts of bornite, pentlandite, cobaltite and pyrite. The proportions of sulphide minerals as determined in a QEMSCAN survey of a bulk sample are 3% pyrrhotite, 1% copper-iron sulphides (chalcopyrite and bornite), 0.1% pentlandite and trace amounts of pyrite, galena and sphalerite.

The Marathon PGM-copper deposit formed by sulphide accumulation in basins and troughs of the magma conduit underwent significant upgrading of copper and PGM content by the process of multistage dissolution upgrading that was described for similar disseminated mineralisation in the Norilsk region by Kerr and Leitch (2005).

The Georgie deposit is hosted by the Georgie Lake Gabbro which has a north trending strike length of 2.5km and varies in thickness from 50m to 600m. Mineralisation consists primarily of disseminated chalcopyrite and bornite and occurs within a thick continuous basal zone that dips 45° to 60° west and can be traced over a strike length of 1.7km.

The Sally deposit is situated on the north-eastern margin of the complex, and strikes east-southeast, dips 45° to 50° south, and extends over a 1.2km strike length and is open in all directions. Drilling has identified four main mineralised zones at Sally. The second and third mineralised zones are typically 40m to 50m thick, and are hosted by the Two Duck Lake Gabbro, which is the same host rock as at the Marathon deposit.

## PGM EXPLORATION MARATHON continued

## KEY DEVELOPMENTS

A March 2021 feasibility study, based on open-pit mining of the principle Marathon deposit, has indicated the project could have a robust rate of return at forecast palladium prices, and could produce an average of 245,000 ounces of palladium equivalent (PdEq) annually over a minimum 13-year mine life.

Approximately 58% of the revenue will come from palladium, and a further 26% from copper, based on prices of US\$1725/oz for palladium and US\$3.20 for copper.

During 2022, Generation Mining continued the environmental approval process, while advancing the detailed engineering on the project as well as arranging the project financing. The Environmental Assessment approvals from the Federal Minister of Environment and Climate Change, and the Ontario Minister of Environment was received on November 30, 2022.

Generation Mining has published Mineral Reserves for the project on the back of the FS. Sibanye-Stillwater is only publishing attributable Mineral Resources until such stage as the project has been fully permitted, funded and approved for construction.

## Marathon Mineral Resource estimate at 31 December 2022

## Mineral Resources

PGM Americas		31 Dec 2022								
		Tonnes (Mt)	PGM (g/t)	PGM (Moz)	Copper (%)	Copper (Mlb)	Silver (g/t)	Silver (Moz)	Gold (g/t)	Gold (Moz)
Exploration										
Marathon	Measured	18.8	0.8	0.5	0.2	84.2	1.5	0.9	0.1	0.04
	Indicated	21.5	0.6	0.4	0.2	101.7	1.7	1.1	0.1	0.04
	Measured + Indicated	40.3	0.7	0.9	0.2	185.9	1.6	2.0	0.1	0.1
	Inferred	5.0	0.5	0.1	0.2	25.5	1.5	0.2	0.03	0.01
Grand total		45.3	0.7	1.0	0.2	211.4	1.6	2.3	0.1	0.1

## Marathon Mineral Resource estimate at 31 December 2021

## Mineral Resources

		31 Dec 2021								
PGM	Americas	Tonnes	PGM	PGM	Copper	Copper	Silver	Silver	Gold	Gold
Exploration		(Mt)	(g/t)	(Moz)	(%)	(Mlb)	(g/t)	(Moz)	(g/t)	(Moz)
Marathon	Measured	23.4	0.8	0.6	0.2	104.9	1.5	1.1	0.1	0.1
	Indicated	26.7	0.6	0.5	0.2	126.6	1.7	1.4	0.1	0.1
	Measured + Indicated	50.1	0.7	1.1	0.2	231.5	1.6	2.5	0.1	0.1
	Inferred	6.2	0.5	0.1	0.2	31.7	1.5	0.3	0.1	0.1
Grand total		56.4	0.7	1.2	0.2	263.2	1.6	2.8	0.1	0.1

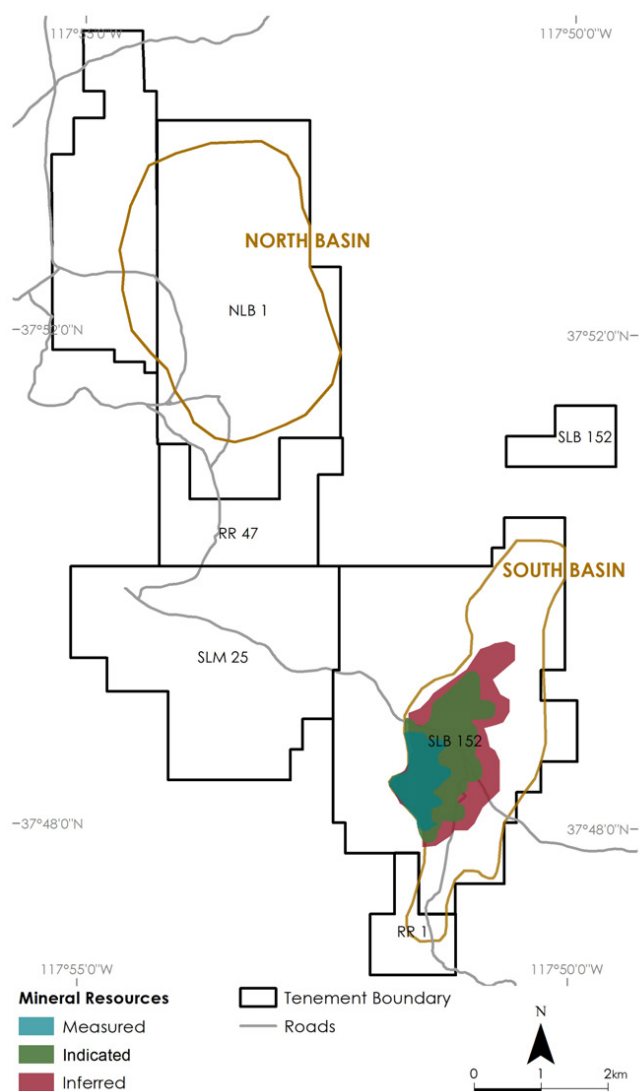
## Notes:

- PGM = Pt+Pd
- The attributable Marathon Mineral Resources changed (-19.7%) from 2021 to 2022 due to a change in attributable interest to 18.19% (2021: 22.65%)
- The estimate includes the main Marathon and the satellite Geordie and Sally deposits
- The Marathon deposit Mineral Resources are reported within an optimised pit shell at a cut-off NSR value of C\$13/t, and Geordie and Sally at C\$15/t
- The Mineral Resource estimate was based on US\$ metal prices of US\$1,100/oz for palladium, US\$900/oz for platinum, US\$3/lb for copper, US\$1,300/oz for gold and US\$16/oz for silver and the US\$:C\$ exchange rate used was 0.77
- The Net Smelter Royalties (NSR) estimates for the project use flotation recoveries of 93% for copper, 82% for palladium, 80% for platinum, 80% for gold, 75% for silver and smelter payables of 96% for copper, 93% for palladium, 88% for platinum, 90% for gold and 90% for silver
- The open pit optimisation used a mining cost of C\$2/t, combined processing, general and administration and off-site concentrate costs of C\$15/t and pit slopes of 50°

# BATTERY METALS EXPLORATION STAGE

## LITHIUM

### RHYOLITE RIDGE



#### PROPERTY DESCRIPTION

Rhyolite Ridge is an advanced stage exploration project located in Esmeralda County, Nevada, US.

Rhyolite Ridge aims to extract a large, shallow lithium-boron deposit, located close to existing infrastructure, and located between Las Vegas and Reno, Nevada. It is expected to be one of the first large scale US lithium projects to enter production.

The future 50:50 JV agreement between Sibanye-Stillwater and Ioneer Limited, whereby Ioneer would maintain the operational management responsibility, is subject to the satisfaction of certain conditions precedent before Sibanye-Stillwater will commit funding to the project. Until such time as the conditions are met, the attributable disclosure is based on Sibanye-Stillwater's current 6.95% equity stake in Ioneer Limited.

#### MINERAL TITLE

In relation to their Mine Plan of Operations (MPO) Ioneer holds 386 unpatented relevant mining claims, located on US federal land administered by the Bureau of Land Management (BLM), totalling 31.6 km<sup>2</sup>.

For the permitting of the mining operation, Ioneer has acquired two of the four major/critical permits and authorisations

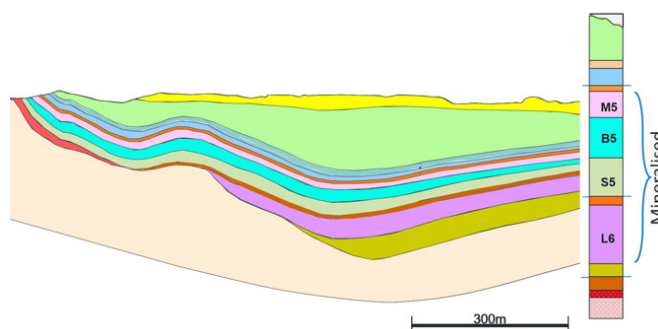
1. The Nevada Division of Environmental Protection (NDEP) – Bureau of Mining Regulation and Reclamation (NDEP-BMRR) Water Pollution Control Permit (WPCP), was issued on July 1, 2021
2. The NDEP – Bureau of Air Pollution Control (BAPC) Class II Air Quality Operating Permit, was issued on June 14, 2021

During 2022, Ioneer submitted a revised MPO application for Stage 1 mining, for review by the BLM. The BLM published a Notice of Intent in the Federal Register during November 2022, which marked the commencement of work on the environmental impact statement (EIS) and public engagement process in accordance with the requirements of the National Environmental Policy Act (NEPA). The NEPA process culminates in the BLM's Record of Decision (ROD), which will allow the company to commence construction of the Rhyolite Ridge Project. The BLM has indicated its intention to issue a ROD in Q1 2024.

The NEPA document is based on the MPO, which is a joint application between the BLM and the NDEP-BMRR (the Nevada Reclamation Permit Application). Once the NEPA Process nears completion, the bond amount is finalised between the BLM, BMRR, and Ioneer. The ROD is then issued by the BLM, and the BMRR issues the Nevada Reclamation Permit, which are the final major Project permits.

#### GEOLOGY AND MINERALISATION CHARACTERISTICS

Rhyolite Ridge is a sediment hosted lithium-boron deposit. The mineralisation is hosted within carbonate-rich, fine-grained sediments (marl) of Tertiary age, that were deposited in a shallow lake environment. The tenements cover two sedimentary basins (north and south) containing thick, shallow, flat-lying zones of lithium-boron-potassium mineralisation.



Geological cross-section, looking NNE, through the Rhyolite Ridge South Basin, showing the various stratigraphic units, including the B5 unit, which is the main mineralised horizon targeted for mining.



## BATTERY METALS EXPLORATION LITHIUM: RHYOLITE RIDGE continued

The lithium occurs within mixed illite-smectite layers, while the boron occurs in the mineral searlesite. The mineralised layers vary in thickness from 13 to 40m, outcrops towards the west, is relatively flat dipping, and is typically overlain by ~21 meters thick overburden. The current defined Mineral Resource is restricted to the South Basin, where the majority of Ioneer's work has focused due to higher lithium and boron grades present. The north basin is considered highly prospective due to the sheer size of the deposit and the thick (>100m) and consistent grades present from surface. Historic wide spaced drilling by US Borax (part of Rio Tinto) during the 1980's and 1990's show very thick (100-260m) zones of lithium-boron mineralisation at very shallow depths (<30m) over an area of >5 km<sup>2</sup> with individual 3m intervals up to 3890ppm Li. In September 2016, Ioneer calculated an Exploration Target for the north basin of 1 to 1.5 billion tonnes of 1000ppm to 2000ppm lithium, 0.5% to 1.0% boron. It should be noted that the potential quantity and grade of the exploration target is conceptual in nature and there has been insufficient exploration to estimate a Mineral Resource. In 2017, Ioneer completed two vertical core holes spaced 750m apart to confirm thickness and grades reported by US Borax. Both holes intersected thick lithium mineralisation from near to surface

- 110m at 1339ppm Li from 3m
- 110m at 1200ppm Li from 18m

## KEY DEVELOPMENTS

A FS study was completed by Fluor in April 2020. The study was based on a mining rate of 2.5Mtpa mined, over a 26y LoM,

producing more than 20ktpa of Li<sub>2</sub>CO<sub>3</sub> (y1-3) or LiOH.H<sub>2</sub>O (y4 onwards), and Boric Acid of 174,400 Tonnes (y1-26).

Since the completion of the FS, the proposed MPO has undergone revision and adjustment to take into consideration the protection of the population of Thiem's Buckwheat (which the U.S. Fish and Wildlife Service (FWS) has declared as an endangered species under the Endangered Species Act (ESA) and designate critical habitat) that grows on the property. The latest revised MPO that was submitted for assessment via the NEPA process takes full cognisance of the protection of the Buckwheat, but in the process has deviated from the original FS, which now requires amendment of certain mining components. To optimize the revised MPO and allow for mining to commence at the southern limit of the deposit, Ioneer will conduct drilling in the southern extension area of the ore body as soon as a positive ROD is received. Ioneer intends to complete the drilling, amend the open-pit design and update the FS before making a Final Investment Decision (FID). Further ongoing work relates to up-front engineering procurement and progressing debt funding for the balance of the project, where during January 2023, Ioneer received conditional commitment from the U.S. Department of Energy for a proposed loan of up to US\$700 million to develop the project. The proposed loan is to be made under the DOE Loan Programs Office's Advanced Technology Vehicles Manufacturing program. Financial closure of the loan is conditional on several achievements including a positive ROD. Sibanye-Stillwater is reporting the attributable Mineral Resources, based on its 6.95% equity interest in Ioneer, as verified by its QP's, but will only consider publishing attributable Mineral Reserves subject to the completion and acceptance of an amended FS, and a final investment decision.

## Rhyolite Ridge Mineral Resource estimate at 31 December 2022

## Lithium Mineral Resources

LITHIUM	Americas		31 Dec 2022					31 Dec 2021				
			Tonnes (Mt)	Li (%)	LCE (kt)	H <sub>3</sub> BO <sub>3</sub> (%)	H <sub>3</sub> BO <sub>3</sub> (kt)	Tonnes (Mt)	Li (%)	LCE (kt)	H <sub>3</sub> BO <sub>3</sub> (%)	H <sub>3</sub> BO <sub>3</sub> (kt)
Exploration	Rhyolite Ridge	Measured	2.7	0.17	24.8	8.3	225.2	2.8	0.17	25.4	8.3	230.7
		Indicated	6.1	0.16	50.4	8.1	494.4	6.3	0.16	51.6	8.1	506.5
		Measured + Indicated	8.8	0.16	75.2	8.2	719.6	9.0	0.16	77.0	8.2	737.2
		Inferred	1.4	0.16	11.6	7.9	106.5	1.4	0.16	11.9	7.9	109.1
Grand total			10.2	0.16	86.8	8.1	826.1	10.4	0.16	88.9	8.1	846.3

## Notes:

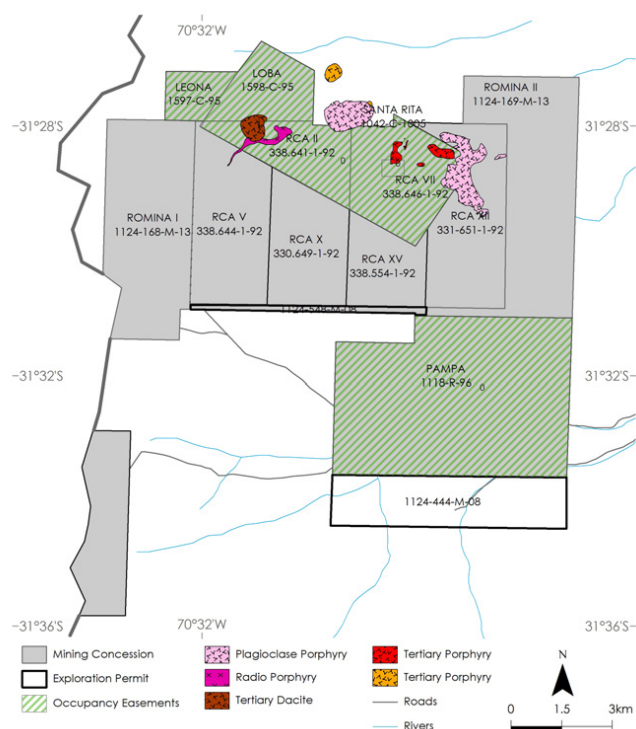
- The reported Mineral Resources has been adjusted to reflect Sibanye-Stillwater's 6.95% interest in Ioneer Ltd.
- Mineral Resources are constrained to an optimised open-pit shell making use of a co-product cut-off grade of 5000ppm Boron
- For the lithium Mineral Resources, LCE content was calculated by multiplying the Li (%) content by a factor of 5.323. Lithium Hydroxide Monohydrate (LiOH.H<sub>2</sub>O) can be derived from LCE by dividing by a factor of 0.88
- Li price assumption for the overall project ranged between US\$10,443/t and US\$14,334/t Li<sub>2</sub>CO<sub>3</sub>



Outcrop of Li-bearing searlesite mineralisation

# COPPER

## ALTAR



### PROPERTY DESCRIPTION

The Altar project is a shallow to intermediate depth, copper-gold porphyry deposit located in San Juan province, Argentina, approximately 10km from the Argentine-Chile border and 180km west of the city of San Juan.

The Altar deposit was discovered in the mid-1990s and early-phase exploration continued until 1999. Project evaluation work to date has primarily focused on assessing the feasibility of an open-pit and/or underground operation.

Sibanye-Stillwater acquired the Altar project in 2017 as part of the Stillwater acquisition. Aldebaran Resources Ltd. (Aldebaran) entered into a JV Agreement with Sibanye-Stillwater in 2018 to acquire a 60%, and eventually 80%, interest in the Altar project, subject to funding certain exploration expenditures. Aldebaran also assumed management of the JV. As at 31 December 2022, Aldebaran may have spent the required expenditure for the initial 60% earn-in purposes, however, the legal process of reporting, assessing and confirming this is only expected to be finalised later in 2023. Therefore, legally the earn-in has not been confirmed or implemented.

### MINERAL TITLE

The property and mineral concessions are held by Peregrine Metals Ltd., which includes the Argentine subsidiary Minera Peregrine Argentina.

The Altar project consists of nine mining concessions and nine land easements comprising rights of way or occupancy.

It also includes an option on the five adjacent Rio Cenicero concessions, four of which are adjacent to the Altar property and one located to the south-west. The Altar concessions and exploration permits collectively cover about 84.4km<sup>2</sup> and the Rio Cenicero concessions cover an additional 37.2ha. In addition, permits to open and service the camp, as well as access water for exploration purposes, are maintained annually. All legal aspects and tenure are in order.

### GEOLOGY AND MINERALISATION CHARACTERISTICS

The two main ore zones within the Altar area of the deposit are the Altar Central and the Altar East zones. The Quebrada de la Mina (QDM) Mineral Resource (inclusive of the Altar project) is located 3km west of the main Altar deposit and is a near-surface gold Mineral Resource hosted in pyrite within a dacite porphyry.

The Altar porphyry was deposited in an environment that transitions from the basal roots of a high sulfidation epithermal lithocap to a sub-volcanic porphyry copper environment at depth. The deposit is described as telescoped because of the close spatial distance between the porphyry and the high sulfidation alteration systems.

Mineralisation at the Altar deposits is closely associated with the different porphyry stocks and related hydrothermal breccias, but is also found in rhyolites, andesites and volcanic breccias. The well-developed copper mineralisation shows a strong relationship to the distribution and intensity of sericitic and potassic alteration.

The copper mineralisation associated with the potassic alteration, mainly porphyry style chalcopyrite-bornite mineralisation, was reconstituted as hypogene assemblages of pyrite, chalcocite and bornite within the sericitic alteration zone.

### KEY DEVELOPMENTS AND INTENTIONS

The historical Mineral Resource estimate at Altar (2018) used a low cut-off grade and was aimed at a large volume, low-grade operation. As such, the mineralisation model was geostatistically constrained and did not make use of a geological model to constrain and define zones of higher-grade mineralisation.

During March 2021, an update Mineral Resource estimate was completed, making use of geological constraints, aimed at highlighting the location, geometry and volume of the higher-grade copper-gold zones. This has resulted in a reduction in tonnage and contained metal (-26.7%), but at a higher grade, allowing for improved exploration targeting and would facilitate a more targeted, higher-grade mining approach, delivering superior economics. This estimate has been independently reviewed and confirmed to be reasonable and representative of the data by SRK South Africa.



## BATTERY METALS EXPLORATION COPPER: ALTAR continued

## KEY DEVELOPMENTS

During the 2021/2022 field season a diamond drilling campaign was completed at Altar which included 14,454 meters in 17 holes. Further work completed includes: An underground water monitoring drilling campaign, the completion of a large systematic soil sampling program which started in 2018, the completion of a 3D MT IP geophysical survey, and the completion and progress of some key annual based work related to environmental base line studies, government, infrastructure, and social matters.

Drilling resumed in early November 2022 to follow up on the results of the 3D geophysical survey. The first hole drilled into the northern edge of an identified geophysical anomaly, which provided a proof of concept, returning over 1 km of mineralisation (Aldebaran (2023)). The entire hole is outside of the current Mineral Resource estimate for the property.

## Altar Mineral Resource estimate as at 31 December 2022

## Mineral Resources

COPPER Exploration	Americas	31 Dec 2022					31 Dec 2021				
		Tonnes (Mt)	Copper (%)	Copper (Mlb)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Copper (%)	Copper (Mlb)	Gold (g/t)	Gold (Moz)
Altar	Measured	637.9	0.4	6,095.0	0.1	2.4	637.9	0.4	6,095.0	0.1	2.4
	Indicated	580.3	0.4	5,293.0	0.1	1.5	580.3	0.4	5,293.0	0.1	1.5
	<b>Measured + Indicated</b>	<b>1,218.2</b>	<b>0.4</b>	<b>11,388.0</b>	<b>0.1</b>	<b>3.9</b>	<b>1,218.2</b>	<b>0.4</b>	<b>11,388.0</b>	<b>0.1</b>	<b>3.9</b>
	Inferred	190.4	0.4	1,750.0	0.1	0.4	190.4	0.4	1,750.0	0.1	0.4
<b>Grand total</b>		<b>1,408.6</b>	<b>0.4</b>	<b>13,138.0</b>	<b>0.1</b>	<b>4.3</b>	<b>1,408.6</b>	<b>0.4</b>	<b>13,138.0</b>	<b>0.1</b>	<b>4.3</b>

## Notes:

- Combined estimate for the deposits of Altar Central, Altar east and QDM
- Copper reflects the estimated grade of copper that could be processed by sulphide flotation
- The Mineral Resources for Altar Central, east, and QDM were based on the application of the floating cone algorithm to the block models to establish the component of the deposit that has "reasonable prospects of economic extraction". The Mineral Resources are therefore contained within computer-generated open-pit geometries where economic value has been assigned to Measured, Indicated, and Inferred material
- The parameters used to determine the Mineral Resource cut-off grade results in calculated values for internal or breakeven cut-off grades in the range of 0.11% to 0.18% equivalent copper (EqCu). Considering the remote location of Altar and the capital burden that would be required for a project of this scale, the Mineral Resource cut-off grade was effectively doubled to 0.30% EqCu = \$13.99 NSR
- The 2021 Mineral Resource Metal Price assumptions were: copper US\$3.00/lb, gold US\$1,500.00/troy ounce and silver US\$20.00/troy ounce

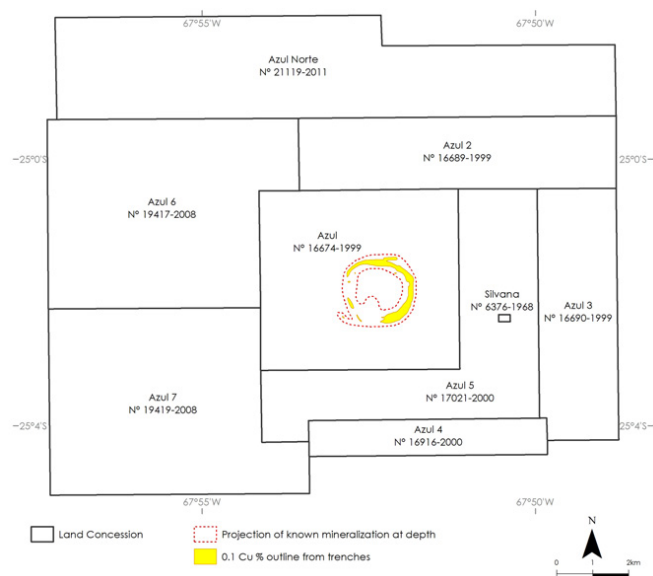


Exploration drilling at Altar



## BATTERY METALS EXPLORATION COPPER continued

## RIO GRANDE



## PROPERTY DESCRIPTION

The Rio Grande exploration project is located in north-western Argentina, approximately 250km west of the provincial capital of Salta and approximately 1,400km north-west of Buenos Aires.

The project has been explored by various operators since 1999, including Mansfield Minerals Inc, Teck-Cominco Ltd., Antares Mining Ltd. and Regulus Resources Inc. from 2011 to June 2018. Exploration activities have included prospecting, mapping, trenching geophysics, geochemistry and drilling. From 2001 to 2012, 130 drill holes totalling 74,210m were completed on the property. The most recent drilling was conducted in 2013 when Regulus Resources drilled four holes of 1,200m at Cerro Cori, located east of Rio Grande. Sibanye-Stillwater owes its interest in the project to the transaction in 2018 through which it acquired a 19.9% interest in Aldebaran, the owner of the Rio Grande Project.

## MINERAL TITLE

The project consists of one contiguous block comprised of nine individual mining concessions, totalling 180 claims, and covering an area of approximately 169,53km<sup>2</sup>. All the claims are current and valid, and in good legal standing.

## GEOLOGY AND MINERALISATION CHARACTERISTICS

The Rio Grande area consists of two overlapping andesitic volcanic centres, as well as numerous flanking shallow intrusive plugs, dykes and sills. Both are constructed of dacitic to andesitic flows, sills and dykes, intruding and flanked by volcanoclastic rocks, including breccias, agglomerates, and lahars, generally dipping away from the volcanic centres.

Alteration is roughly concentrically zoned and is strongly influenced by rock type. The occurrence of veining and mineralisation in Rio Grande is associated with the development of several distinctive hypogene events during the evolution of the deposit. In addition, supergene types of mineralisation in Rio Grande were developed during the uplift and erosion of the deposit in younger stages and up to the present day.

The Rio Grande deposit has been the subject of much debate concerning the origin of the mineralisation and deposit type. Different styles of copper-gold mineralisation with associated alteration have been recognised. There is an early mineralised system with affinities to IOCG type deposits and a later mineralised system with affinities to porphyry style copper-gold deposits.

## KEY DEVELOPMENTS

Roscoe Postle Associates Inc prepared an independent technical report on the Rio Grande project in 2018, which forms the basis for Mineral Resource disclosure. The reported Mineral Resources are based on a potential open-pit scenario, with a combination of heap leaching and flotation envisaged for the processing of oxide, transition and sulphide material types. Sibanye-Stillwater had the estimate independently verified by SRK in 2022. No current exploration activities are being conducted or planned by Aldebaran on this property.

## Rio Grande Mineral Resource estimate at 31 December 2022

## Mineral Resources

COPPER	Americas	31 Dec 2022					31 Dec 2021				
		Tonnes (Mt)	Copper (%)	Copper (Mlb)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Copper (%)	Copper (Mlb)	Gold (g/t)	Gold (Moz)
Exploration											
Rio Grande	Measured	—	—	—	—	—	—	—	—	—	—
	Indicated	12.5	0.3	82.4	0.4	0.1	14.1	0.3	93.2	0.4	0.2
	<b>Measured + Indicated</b>	<b>12.5</b>	<b>0.3</b>	<b>82.4</b>	<b>0.4</b>	<b>0.1</b>	<b>14.1</b>	<b>0.3</b>	<b>93.2</b>	<b>0.4</b>	<b>0.2</b>
	Inferred	7.2	0.2	36.7	0.3	0.1	8.2	0.2	41.5	0.3	0.1
<b>Grand total</b>		<b>19.7</b>	<b>0.3</b>	<b>119.1</b>	<b>0.3</b>	<b>0.2</b>	<b>22.3</b>	<b>0.3</b>	<b>134.7</b>	<b>0.3</b>	<b>0.2</b>

## Notes:

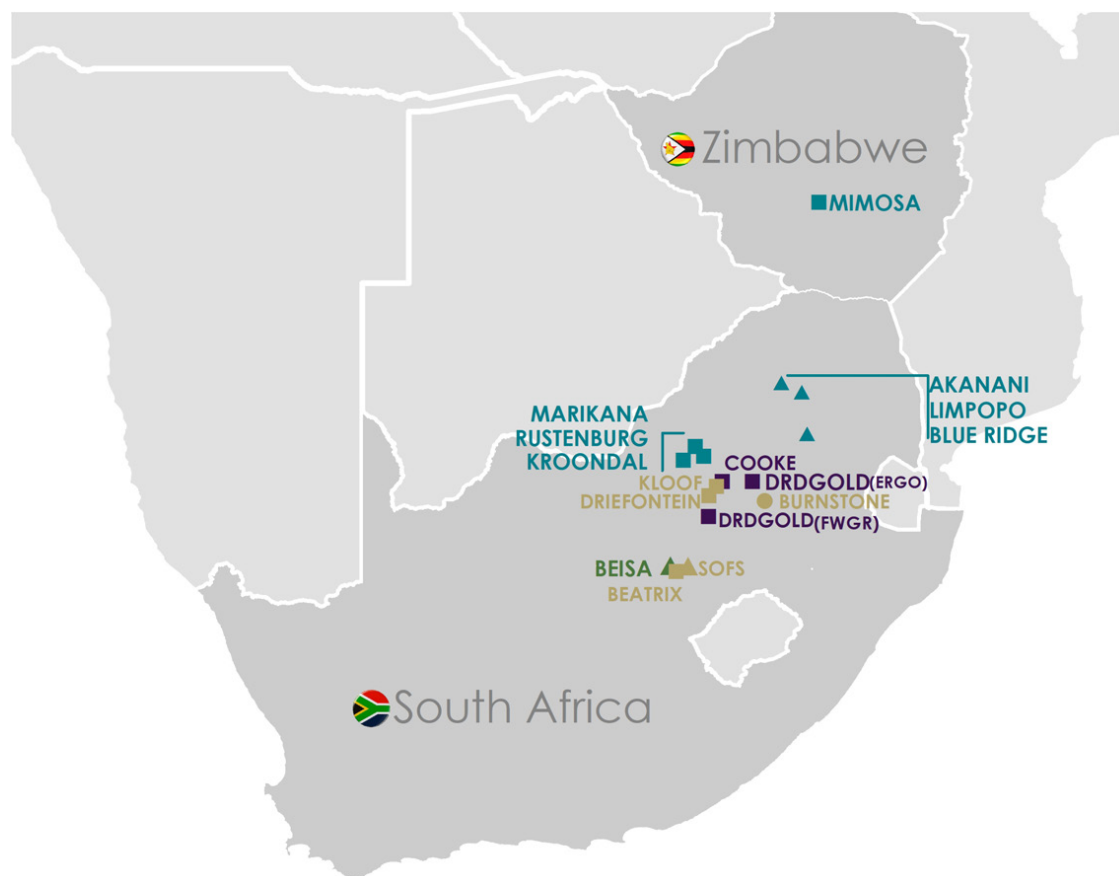
- Attributable portion to Sibanye-Stillwater based on a 19.9% equity interest in Aldebaran Resources Ltd
- Mineral Resources are estimated at a NSR cut-off grade of US\$8.00/t for oxide, US\$12.00/t for transition and US\$7.50/t for sulphide ore. No sulphide material was captured in the Mineral Resource shell
- The Mineral Resource statement is included within a floating cone defined with the following metal prices: gold price of US\$1,400/oz, copper price of US\$3.50/lb



# 3 SOUTHERN AFRICA

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# LOCATION



- PGM operation
- ▲ PGM exploration

- Gold operation
- ▲ Gold exploration

- Gold development
- ▲ Uranium exploration



Remotely operated battery-electric LHD at the Bathopele operation at SA PGM



# PGM OPERATIONS

## Geological setting

### SOUTH AFRICAN OPERATIONS

The Bushveld Igneous Complex (BIC) is the world's largest known mafic igneous layered intrusion and contains more than 85% of the world's known Mineral Resources of PGMs.

The mineralised Merensky and UG2 reefs are host to the PGMs at the Rustenburg, Kroondal and Marikana operations and are contained within the Rustenburg layered suite (RLS) of ultramafic to mafic rocks. These reefs are laterally continuous and extensive.

The BIC occurs geographically as discrete compartments categorised as limbs. Sibanye-Stillwater's PGM operations (Marikana, Rustenburg and Kroondal) are located on the Western Limb, south-east of the Pilanesberg Complex, while the PGM exploration projects are located on the Eastern and Northern Limbs of the BIC.

The Merensky Reef typically consists of a pegmatoidal feldspathic pyroxenite layer, bounded on the top and bottom by thin chromitite layers (stringers) dipping approximately 9° to 12° in a north-easterly direction. The Merensky Reef transitions across the Sibanye-Stillwater operations, from a thin pegmatoidal reef to a thick non-pegmatoidal reef, with a major transition at the Marikana operation. The Merensky Reef contains economically significant base metal sulphide and PGM mineralisation.

The UG2 Reef is rich in chromitite, but with lower gold, copper and nickel values, as compared to that of the Merensky Reef. The main UG2 layer (Main Seam) has an average thickness varying between 55cm and 75cm. The top of the UG2 Reef consists of a thin layer of chromitite averaging 20cm in thickness generally referred to as the Leader Seam, separated from the Main Seam by a non-mineralised pyroxenite layer of variable thickness of 5cm to 6m.

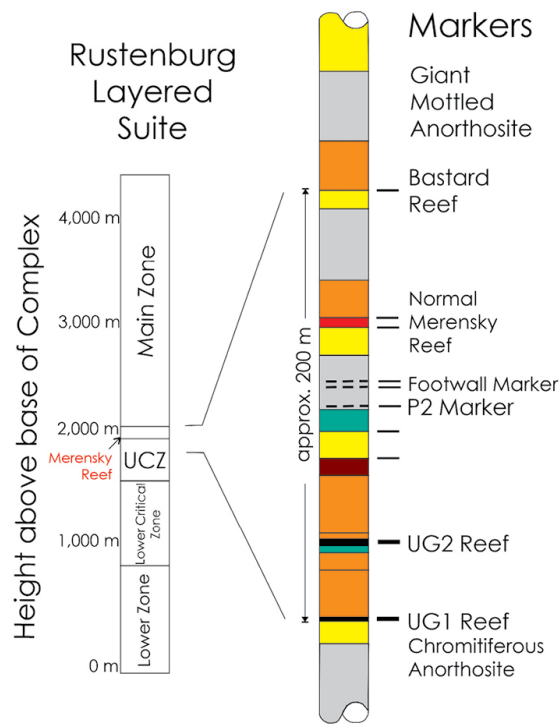
Across the PGM operations, the UG2 Reef occurs vertically between 90m and 180m below the Merensky Reef. The Merensky and the UG2 Reefs are affected by structural and other geological features, including potholes and iron-rich ultramafic pegmatoids (IRUPs), which result in geological losses and have an impact on mining.

### ZIMBABWEAN OPERATION

The Mimosa mine is located on the Wedza sub-chamber of the southern portion of the Great Dyke in Zimbabwe, approximately 32km from the town of Zvishavane. The Great Dyke is divided vertically into a lower ultramafic sequence, and an upper mafic unit.

Economic PGM mineralisation occurs within the main sulphide zone (MSZ). The MSZ is typically 2m to 3m thick, but can reach up to 20m thick locally, resulting in a marked decrease in grade with thickening of the zone. Although mineralisation is very consistent, localised disruption to the reef due to pegmatoids and washout channels have been encountered in some areas of the operation. Unlike the BIC, the reef is not in contact with or within chromitite seams. The MSZ has definitive metal profiles that are consistent.

### Simplified stratigraphy of the Rustenburg layered suite (after Smith et al. 2004)



#### Legend:

- |  |   |
|--|---|
| <span style="display:inline-block; width:15px; height:15px; background-color:yellow; border:1px solid black;"></span> mottled anorthosite              | <span style="display:inline-block; width:15px; height:15px; background-color:darkred; border:1px solid black;"></span> pegmatitic harzburgite |
| <span style="display:inline-block; width:15px; height:15px; background-color:lightgrey; border:1px solid black;"></span> leuconorite/norite/melanorite | <span style="display:inline-block; width:15px; height:15px; background-color:teal; border:1px solid black;"></span> feldspathic dunite        |
| <span style="display:inline-block; width:15px; height:15px; background-color:orange; border:1px solid black;"></span> pyroxenite                       | <span style="display:inline-block; width:15px; height:15px; background-color:black; border:1px solid black;"></span> chromitite               |
| <span style="display:inline-block; width:15px; height:15px; background-color:red; border:1px solid black;"></span> pegmatite pyroxenite                | <span style="display:inline-block; width:15px; height:15px; border-top:2px dashed black;"></span> anorthosite layer                           |

### MINERAL RESOURCE ESTIMATION (Managed operations)

The Mineral Resource estimates are based on data generated from underground and surface diamond drilling, underground channel sampling, geological mapping, 3D surface seismic surveys and aerial magnetic surveys. Sampling data is captured in the MineRP™ MRM digital database and drilling data is captured in Sable™ Data Management digital database. Mineral Resource estimation is carried out using Datamine™ geological software.

The Merensky and UG2 reefs are subdivided into a number of geozones, which relate primarily to reef width, differences in reef elevation within the stratigraphic succession, and mineralisation alignment. These are used as separate geostatistical domains for estimation. This geostatistical domaining is also a function of the structural models, where no interpolation takes place across significant geological structures.

## PGM OPERATIONS continued

Detailed exploratory data analysis – including sample verification, histogram and cumulative frequency plots for distributional analysis, additive constant estimates, outlier checks, trend analysis and declustering, are carried out on individual domains.

The optimum estimation parameters are determined using a kriging neighbourhood analysis in combination with the variogram models defined for the Merensky and UG2 domains. The kriging neighbourhood analysis tests the impact of different estimation parameters on the estimate by interpreting changes in the kriging efficiency and kriging variance. Variography studies are carried out on different domains, with traditional variograms used for kriging purposes.

The main interpolation methodology utilised is ordinary kriging. Modelling is done on platinum, palladium, rhodium, gold, ruthenium, iridium, density and true width using ordinary kriging; and inverse distance for copper, nickel and chromium oxide (Cr<sub>2</sub>O<sub>3</sub>) for both the Merensky and UG2 Reefs. Where insufficient data exists for an element, inverse distance, to the power of two, estimates are done. At Marikana, for the UG2 Reef and some of the Merensky Reef domains where the thickness of the resource cut was variable, the final 4E grade is a back calculated value from accumulation and thickness estimates. This method of estimation using accumulation is done to appropriately weight the grade based on thickness. All of the above elements are estimated at Marikana using ordinary kriging.

Modelling at Rustenburg, Kroondal and Marikana is completed using 2D Block models, except for a small section of the Kroondal operations, where a historical 3D block model was created using Surpac™ geological software.

Detailed checks are carried out on the estimates by compiling kriging efficiencies and slopes of regression on an individual kriged block basis. The validated data files are regressed and then composited over the different reef elements.

The block widths in the Mineral Resources are compiled over a minimum practical mining cut for both Merensky and UG2 Reefs. It includes additional varying thickness overbreak material to a minimum mining width. The minimum mining widths are influenced by a number of parameters, namely: reef width, mineralisation of the hanging wall and footwall, mining method, rock quality, location of weak parting planes, support systems, and associated equipment required for support installation.

At the Rustenburg operation, for both the Merensky and UG2 reef, a minimum 105cm mining width was adopted. At the Kroondal operation, a minimum 200cm mining width was modelled for all areas where a trackless mining method is applied. At the Marikana operation, for both the Merensky and UG2 reef, a minimum 110cm mining width was modelled based on a combination of the reef width and rock engineering considerations.

Geological losses are split into known and unknown (anticipated) losses and determined for each structural domain and per shaft. All Mineral Resources reported are exclusive of geological losses.

The final Mineral Resource quantities are determined by projecting the 2D estimated parameters onto the 3D structural polygons, exclusive of the geological losses, and reporting them on a 4E and 6E composite grade basis. Due to the persistent grade distribution across the operations and no mining selectivity, typical cut-off grades are not applied. On a regional scale, more than 99.9% of Mineral Resource blocks meets reasonable prospect for eventual economic extraction (RPEEE) criteria; those blocks that don't meet this prospect would have to be extracted to reach the balance. Areas that are deemed unmineable due to aspects such as IRUP, structural complexity and facies, are excluded.

Resource classifications are based on the scoring and rating of five statistical parameters (kriging variance, kriging efficiency, slopes of regression, search volume, and number of samples) and seven non-statistical parameters (aeromagnetic survey, seismic interpretation, structural model, facies interpretation, geological loss estimates, historical data (mining history), and quality assurance/quality control (QA/QC) reports).

## PRILL SPLITS

The 4E PGMs (platinum, palladium, rhodium and gold) at the SA PGM operations occur together with other PGMs including ruthenium and iridium and metals such as copper, nickel, cobalt and chromium.

The table below provides details the ratio of occurrence of the elements in the various ore types, also called the "prill split", on a 4E and 6E basis.

### 4E PGM prill split

4E Prill split (SA PGM operations)	Unit	Marikana		Rustenburg		Kroondal	Mimosa
		MER	UG2	MER	UG2	UG2	MSZ
Platinum	%	61.8	59.4	63.7	54.0	58.1	49.4
Palladium	%	27.8	28.9	27.3	34.0	31.1	38.2
Rhodium	%	3.3	11.2	4.0	11.2	10.1	4.0
Gold	%	7.1	0.6	4.9	0.8	0.7	8.4

PGM OPERATIONS continued

**6E PGM prill split and base metal concentrations**

		Marikana		Rustenburg		Kroondal	Mimosa
Metal	Unit	MER	UG2	MER	UG2	UG2	MSZ
Prill Split							
Platinum	%	57.10	47.90	58.18	45.40	48.35	45.71
Palladium	%	25.74	23.31	24.94	28.60	25.87	35.59
Rhodium	%	3.06	9.03	3.66	9.37	8.43	3.81
Gold	%	6.54	0.46	4.49	0.68	0.61	7.74
Iridium	%	1.12	3.77	1.95	3.27	3.40	3.07
Ruthenium	%	6.44	15.53	6.79	12.66	13.34	4.08
Base metal concentrations							
Copper	%	0.09	0.01	0.10	0.01	0.01	0.12
Nickel	%	0.16	0.03	0.21	0.11	0.09	0.16
Cobalt	%	—	—	—	0.06	0.07	0.05
Chromium oxide (Cr2O3)	%	—	16.93	1.04	23.56	14.54	—

**INTERNAL CONTROLS (QAQC) (Managed operations)**

Quality assurance/quality control (QA/QC) is a key component of the Mineral Resource estimation process, spanning from data sources to the final assay data accepted for modelling. All data is acquired through standard acceptable procedures with built-in QA/QC protocols.

Certified reference material (CRM) and blanks are inserted into each batch sent to the laboratory, and makes up 5% of total sample numbers. The standards used have been prepared specifically for UG2 and Merensky reefs with different PGM grade ranges. In depth QA/QC analysis is performed in preparation for Mineral Resource modelling using customised software (Sable™) for the evaluation of assay results. Extensive data audits and QA/QC reporting is undertaken and documented for all operations centrally, prior to Mineral Resource estimation.

All current samples from both the Rustenburg and Kroondal operations are analysed at Quality Laboratory Services (Pty) Ltd (Rustenburg), Reg No. 2008/004664/07), which is fully accredited with the South African National Accreditation System (SANAS), Ref No T0487 for Chemical and Microbiological Analysis, reference ISO/IEC 17025:2005. All underground channel samples at the Marikana operation are analysed at the on-site laboratory, which received full accreditation in March 2021 with the South African National Accreditation System (SANAS), Ref No T0930 for Chemical Analysis, reference ISO/IEC 17025:2017. All surface drilling samples are sent to appropriately accredited external laboratories.

**MINERAL RESERVE ESTIMATION (Managed operations)**

Mineral Reserves are estimated via the detailed operational planning process explained in Section 1.

Due to the high level of continuity and consistent grade distribution of the two ore-bodies across the operations, with moderate grade changes typically only occurring regionally, typical cut-off grades are not applicable. Mineral Reserves are assessed for economic feasibility on a shaft by shaft basis, based on total volumes planned, and ore is not mined selectively.

Normal Mineral Resource to Mineral Reserve modifying factors are applied based on the type of mining method which varies from shaft to shaft. Typically, the shallow UG2 operations are accessed via decline shafts and mined using the low profile mechanised bord-and-pillar method, while deeper ore, both Merensky and UG2, is accessed via vertical shafts and conventionally mined using breast and down-dip methods.

Mineral Resource to Mineral Reserve modifying factors applied include provision for off-reef mining due to geological disturbances, dilution to mining widths to cater for historical realistically achievable , widths, waste scalping in the case of mechanised mining, and a mine call factor to make provision for unaccounted for but realised metal losses.

**ESTIMATION RISKS (Managed operations)**

There are no deemed material risks to the Mineral Resource Estimation. The key operational risks that could impact the Mineral Reserves are listed below.

**Commodity prices and exchange rate assumptions:** Sibanye-Stillwater has adopted forward-looking price assumptions. Any material deviations from these assumptions could impact the Mineral Reserves, especially at marginal operations. The Group is of the view that the prices applied to the LoM valuations are realistic.

**Eskom electricity supply:** Loadshedding and load curtailment due to unreliable and erratic electricity supply from the national service provider has started to impact productivity at the operations. Even though the Sibanye-Stillwater is actively working towards becoming less reliant on Eskom, it will still be exposed to this risk in the short to medium term.



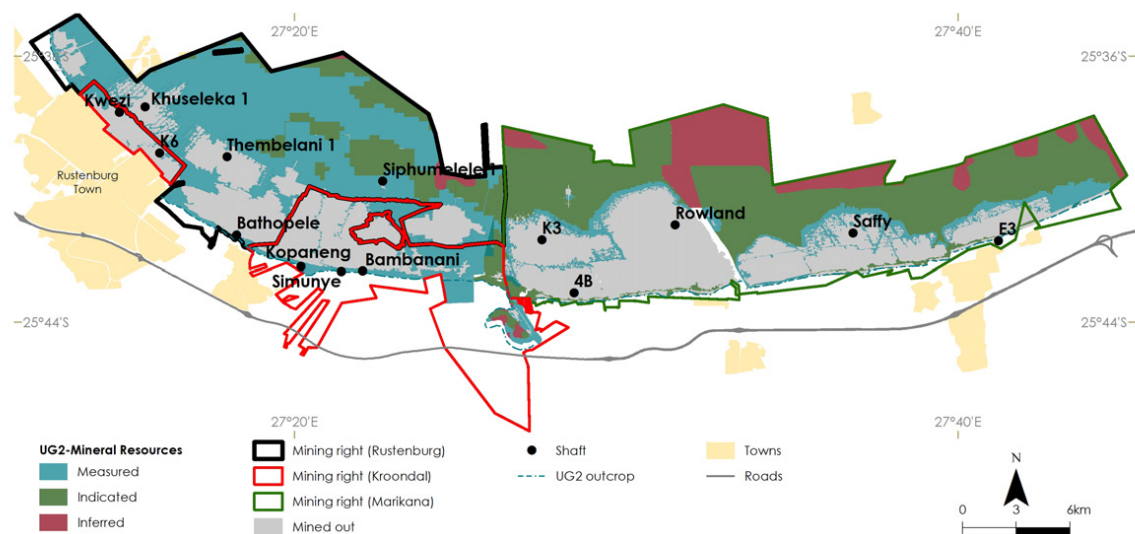
## PGM OPERATIONS continued

**ESG and social unrest:** The SA PGM operations are situated in close proximity to large communities with high unemployment rates. As such, it is continually exposed to social unrest events. From a social and governance perspective, Sibanye-Stillwater has implemented appropriate actions to address this risk. From an environmental perspective, the area experiences significant pressure on potable and fresh water supply. The adoption of the PGM water stewardship, and the GHG and footprint reduction strategy during 2022, will enable these operations to meet the requirements defined by the ESG commitments made.

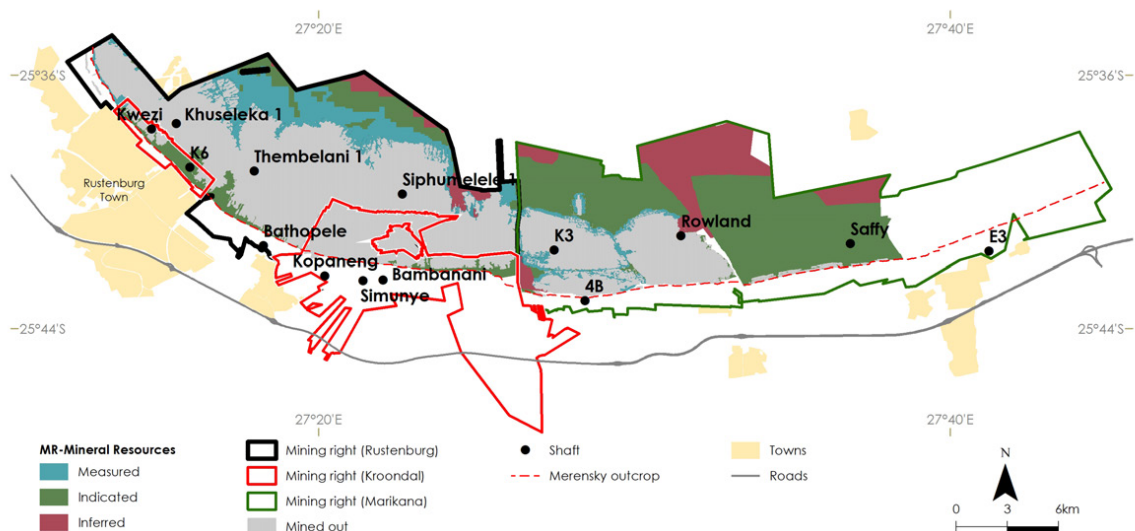
**Cost escalation:** Cost escalation assumptions relating to factors such as wages, utilities (including electricity) and other operational consumables are aligned with Group estimates. Continuous improvement initiatives adopted to contain cost escalation are in place to mitigate this risk.

**Operational Risk:** Operational underperformance and slower than planned production build-up at projects may result in variations between planned and achieved production rates. Short interval controls are in place to enable the implementation of timeous interventions and, therefore, correction of deviations to plans.

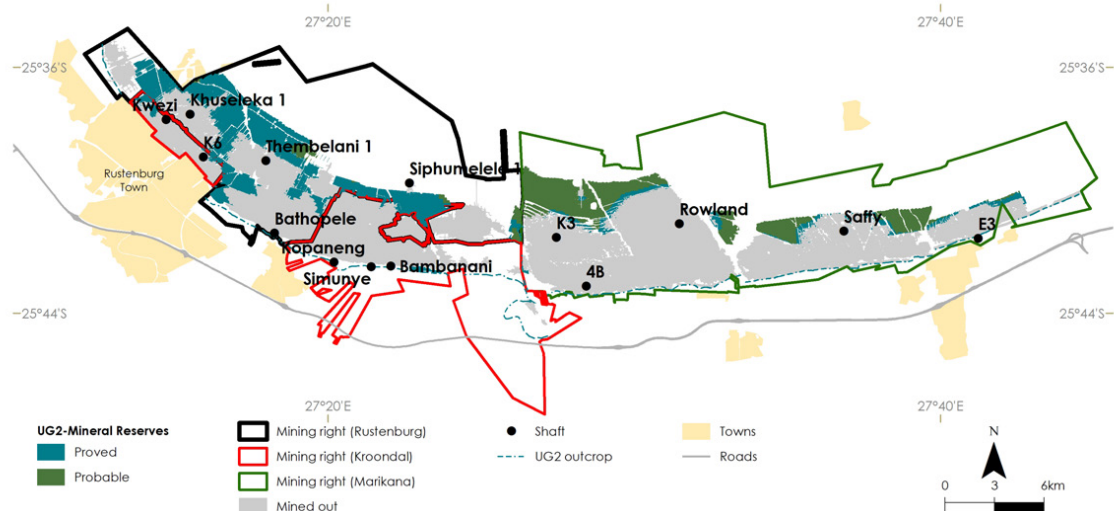
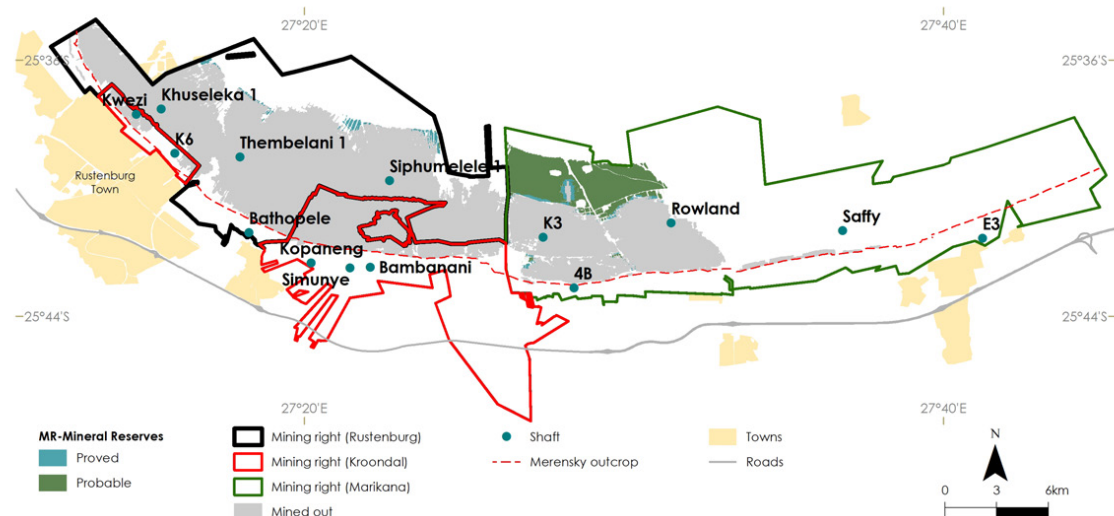
## UG2 Mineral Resource classification map for the combined South African PGM operations (Inclusive of Mineral Reserves)



## Merensky Mineral Resource classification map for the combined South African PGM operations (Inclusive of Mineral Reserves)

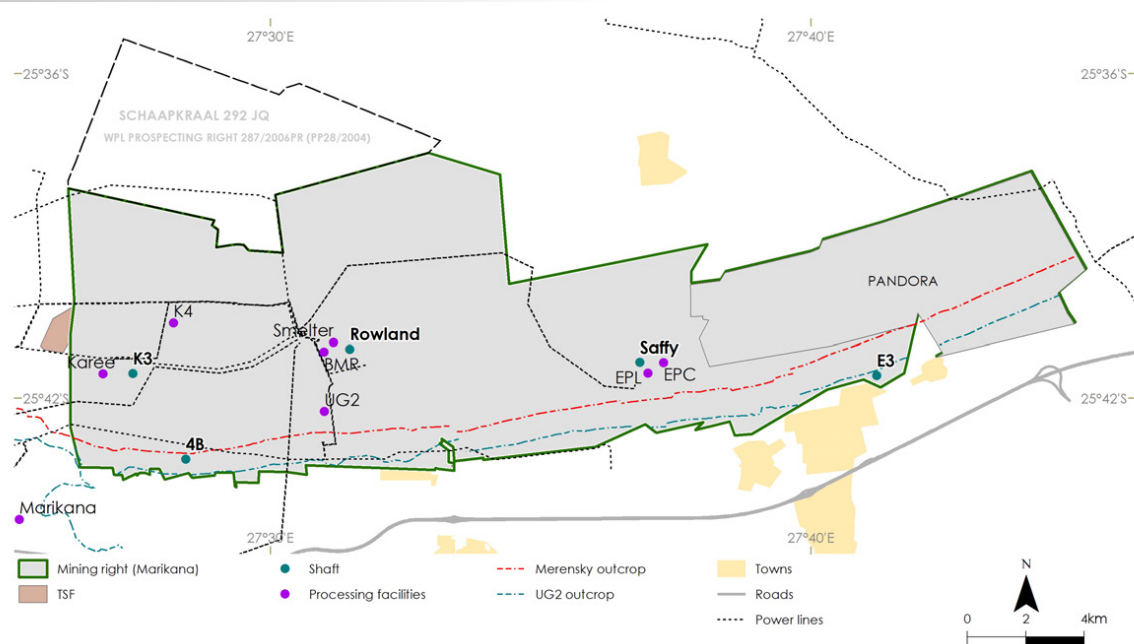


PGM OPERATIONS continued

**UG2 Mineral Reserve classification map for the combined South African PGM operations****Merensky Mineral Reserve classification map for the combined South African PGM operations****An intersection at Rustenburg operation**

## PGM OPERATIONS continued

## MARIKANA



## PROPERTY DESCRIPTION

The Marikana operations (Western Platinum Limited and Eastern Platinum Limited) are located in the Marikana district, 40km to the east of the town of Rustenburg in the North West province of South Africa. The lease area covers approximately 214km<sup>2</sup> and extends in excess of 30km from east to west and 15km from north to south. As discussed in Section 1, the Group considers the Marikana operation as material for the purpose of SK-1300.

Marikana currently has six operating shafts: 4 Belt (4B), K3, K4, Rowland, Saffy, and E3. The Merensky and the UG2 reefs are mined simultaneously at an average depth of 500m and are accessed via infrastructure consisting of shallow incline and deeper vertical shafts. The 4B shallow incline, and the K3, K4 and Rowland vertical shafts target both the Merensky Reef and UG2 reef horizons, while the E3 shallow incline and the Saffy vertical shaft target only the UG2 reef. The vertical shaft complexes account for the largest portion of the Mineral Reserves.

The Mineral Reserves are mined using conventional underground mining methods. The 4B and E3 shallow incline shafts extend to depths of approximately 400m below surface; the K3, Rowland and Saffy vertical shafts extend to approximately 900m below surface and the K4 vertical shaft to 1130m. 45% or 46.3Moz of the total Mineral Resources are above infrastructure (AI) and 55% or 56.5Moz are below shaft bottom infrastructure (BI). The main contributing factor to this being the large Mineral Resource base in the Merensky Reef that has not yet been mined.

The fresh ore mined at the Marikana operations is processed through four of the eight concentrators on site (of which two are on care and maintenance and two treating tailings material), with a combined fresh ore milling capacity of approximately 600,000t per month. The concentrate is dispatched to the smelter where a sulphide-rich matte is produced for further processing at the Base Metal Refinery (BMR). At the BMR, base metals (nickel and copper) are extracted and the resulting PGM-rich product is sent to the Precious Metal Refinery (PMR) in Brakpan for final treatment. The PMR produces the final refined precious metal products.

In addition to the underground operations, there are also two tailings retreatment operations:

- The re-mining of eastern tailings dam 1 (ETD1) occurs by hydraulic mining with high pressure water guns and the tailings are retreated at the Bulk Tailings Treatment (BTT) plant
- Tailings from the EPL concentrator, post the chrome recovery unit, are pumped to the ETPP plant where a portion of the remaining PGMs are recovered

## MINERAL TITLE

The mineral rights for the Marikana operations comprise several mining rights, and are divided between WPL and EPL.

There are four mining rights within WPL, which have been converted to new order mining rights NW30/5/1/2/2/107MR (29.3 km<sup>2</sup>, expires 03 September 2037), NW30/5/1/2/2/106MR (101.7 km<sup>2</sup>, expires 03 September 2037), NW30/5/1/2/2/161MR (1.8 km<sup>2</sup>, expires 20 December 2036) and NW30/5/1/2/2/190MR (0.3 km<sup>2</sup>, expires 20 December 2036).

There are five mining rights within EPL which have been converted to new order mining rights NW30/5/1/2/2/109MR (38.2 km<sup>2</sup>, expires 03 September 2037), NW30/5/1/2/2/110MR (0.6 km<sup>2</sup>, expires 03 September 2037) and NW30/5/1/2/2/111MR (1.7 km<sup>2</sup>, expires 03 September 2037). The mining rights NW30/5/1/2/2/292MR (46.2km<sup>2</sup>, expires 22 January 2044) and NW30/5/1/2/2/433MR (42.9 km<sup>2</sup>, expires 22 January 2044) cover the eastern half of EPL (the Pandora area).

The ETD1 is located within the area covered by new order mining right NW30/5/1/2/2/109 MR on the farm Turffontein 462JQ.

The renewal of the Schaapkraal prospecting right (NW30/5/1/1/2/12331PR, 41.74km<sup>2</sup>), which covers the western down-dip extension at Marikana, expired in August 2022. A prospecting right renewal was submitted timeously and the outcome is awaited. No Mineral Resources are declared for Schaapkraal at this stage.



## PGM OPERATIONS MARIKANA continued

## INFRASTRUCTURE AND EQUIPMENT

The Marikana operation is a large, established shallow to moderate depth PGM mining complex that is accessed from surface through numerous incline and vertical shaft systems. All facilities are in good condition. All the permanent infrastructure required to access and mine the LoM plan is already established and in use.

Major infrastructure consists of

- Five vertical shafts, of which four are in production and one on care and maintenance
- Five incline shafts of which two are in operation and the remainder are on care and maintenance
- Eight PGM concentrator plants
- A smelter plant with five furnaces, a base metal refinery plant, and a precious metal refinery plant
- Three hospitals/ medical centres
- Workshops, office blocks, a laboratory, and equipment stores
- Accommodation quarters and hostels
- Water treatment plants

The mining complex has been in operation since 1987 and the age and modernisation of these assets varies greatly. In line with the Group's ESG and enhanced efficiency requirements, several projects were completed during 2022 on the smelter and the PMR and BMR.

The equipment used is extensive. The vertical and incline shafts make use of conventional handheld mining equipment, combined with rail-bound equipment for logistical movement of ore, men and material.

The smelter has five furnaces. The two larger furnaces (Furnace 1 and 2) are usually in operation, with the three smaller Pyromet furnaces being utilised as back-up or spare capacity.

The BMR, which was commissioned in 1985, extracts base metals (nickel and copper) and the resulting PGM-rich product is refined at

the PMR in Brakpan. The PMR produces the final precious metal products.

The equipment at all operations, including the plants, are subject to a detailed planned maintenance programmes and SIB capital provisions are made on an annual basis to cater for both repairs and replacements as needed.

The property, plant and equipment book value (100%) of all the mine's assets as at 31 December 2022, was R6.59 billion.

## HOISTING AND PRODUCTION CAPACITIES

Operating shaft	Operating hoisting capacity (ktpm)	Five-year planned production (ktpm)
K4	225	92
K3	235	155
4B	50	38
Rowland	164	127
Saffy	183	154
E3	62	52

Planned production is five-year hoisted average from 2023 onwards.

## MINING METHOD

- Vertical shafts: conventional up-dip and down-dip mining with a limited amount of conventional breast mining
- Shallow inclines: conventional breast mining with a limited amount of conventional up-dip and down-dip mining
- TSF: Hydraulic (Hydrojet)

## LIFE OF MINE

- It is estimated that the current Mineral Reserves will sustain the individual operations for periods varying up to 2025 (TSF material), 2025 (4B), 2030 (K3), 2033 (Rowland), 2035 (E3), 2041 (Saffy) and 2071 (K4)

## MINERAL PROCESSING AND CAPACITY

Concentrator plant	Design capacity (ktpm)	Current operational capacity (ktpm)	Average recovery factor (%)	Material treated
Karee A	140	147	88.44	MER underground
Karee B	120	128	87.3	UG2 underground
K4	125	126	86.58	MER and UG2 underground
EPL	180	230	80.48	UG2 underground
1 Shaft BTT	300	300	25.65	Historic tailings
ETTP	274	227	30.67	Current arising tailings

## Chrome processing

Concentrator plant	Design capacity (ktpm)	Current operational capacity (ktpm)	Average recovery factor (%)	Material treated
Glencore (EPL)	300	227.47	51	EP UG2 tailings
Arxo (K3 B)	120	126.464	35	WP UG2 tailings
Glencore (K4)	130	124.362	24	WP UG2 tailings
Chrometech (BTT)	300	300	12	EP UG2 tailings

## PGM OPERATIONS MARIKANA continued

## PGM and Base Metal processing

Refinery	Planned feed capacity (t/m)	Achieved operational capacity (t/m)	Average three-year recovery factor (%)	Material treated
Smelter	11,729	11,014	101.57	Concentrate and filter cake from various internal and external plants
BMR	427	405	98.45	Smelter converter matte
PMR	4.10	3.20	100.46	BMR PGM concentrate

<sup>1</sup> Smelter recovery over 100% is due to historical material processed

## TAILINGS DEPOSITION AND CAPACITY

Tailings deposition is managed in an integrated manner across the Tailings Storage Facilities detailed below

- Karee Tailings Dam 2 – Fed from K3 UG2 plant at 101ktpm (life of TSF until 2025 at current deposition rate)
- Karee Tailings Dam 3 – Fed from K3 Mix plant at 147ktpm (life of TSF until 2024 at current deposition rate)
- Karee Tailings Dam 4 – Fed from K4 plant at 116ktpm (life of TSF until 2044 at current deposition rate)
- Eastern Tailings Dam 2 – Fed from EPL and ETP plants at 160ktpm (life of TSF until 2028 at current deposition rate)
- Western Platinum Tailings Dam 6 – Fed from BTT plant at 270ktpm (life of TSF until 2030 at current deposition rate)

The Marikana TSF's have a remaining capacity of 70Mt. The LoM requires 172.9Mt TSF capacity, resulting in a shortfall of 102.9Mt. The current capacity constraints will be mitigated through the integrated consolidated surface operations strategy which addresses tailings deposition at the SA PGM segment, across all three operations. Due to the synergistic nature of the operations, the short to medium term approach will therefore be to divert tailings to other existing Group facilities within the SA PGM operations.

## KEY DEVELOPMENTS AND BROWNFIELD PROJECTS

The K4 project, is currently in build-up phase with a focus on infrastructure completion and primary development. Production commenced during 2022. At steady state, mining production is planned at 2.3Mtpa, yielding approximately 250Koz 4E PGMs per annum.

The E3 UG2 inclined shaft deepening and extension project is a brownfields expansion of the current E3 mine, down-dip to current workings and will serve as replacement ore for E3. The target is for the implementation of a mechanised mining section as an extension of the existing conventional mine. Further geo-technical drilling in the area is planned during 2023, after which a feasibility study will commence. Similarly, the E4 area (also historically called Pandora) requires further geo-technical drilling prior to the commencement of a feasibility study.

Other brownfields studies that will be advanced during 2023 are the Saffy Deeps (UG2) project and the Newman (MER) project. The possibility of increasing the re-treating rate of tailings at Marikana will also be investigated during 2023.



Marikana K4 Shaft

## PGM OPERATIONS MARIKANA continued

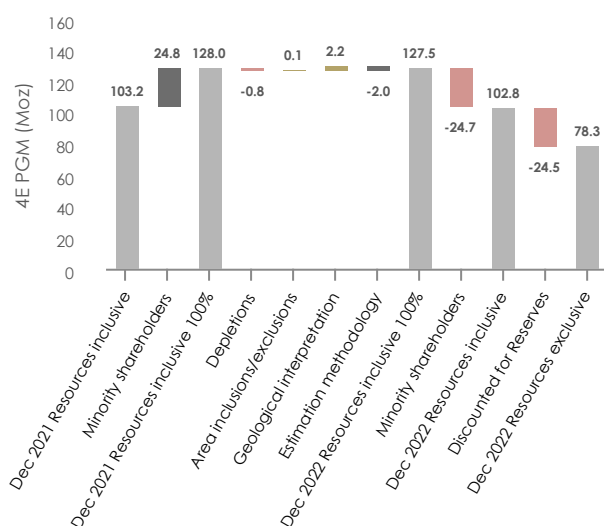
## 4E PGM Mineral Resource estimate at 31 December 2022

## Mineral Resources Inclusive of Mineral Reserves

			31 Dec 2022			31 Dec 2021		
PGM	Southern Africa		Tonnes (Mt)	Grade (g/t)	PGM (Moz)	Tonnes (Mt)	Grade (g/t)	PGM (Moz)
Marikana								
Operations	Underground	Measured	73.1	4.2	9.9	73.3	4.2	9.9
		Indicated	505.5	4.2	67.5	504.9	4.2	67.8
		Measured + Indicated	578.6	4.2	77.4	578.2	4.2	77.7
		Inferred	179.4	4.4	25.1	178.9	4.4	25.2
	TSF Surface	Measured	—	—	—	—	—	—
		Indicated	7.9	1.2	0.3	8.4	1.2	0.3
		Measured + Indicated	7.9	1.2	0.3	8.4	1.2	0.3
		Inferred	—	—	—	—	—	—
Total Measured + Indicated			586.5	4.1	77.7	586.6	4.1	78.0
Grand total			765.9	4.2	102.8	765.5	4.2	103.2

## Mineral Resources Exclusive of Mineral Reserves

			31 Dec 2022			31 Dec 2021		
PGM	Southern Africa		Tonnes	Grade	PGM	Tonnes	Grade	PGM
Marikana			(Mt)	(g/t)	(Moz)	(Mt)	(g/t)	(Moz)
Operations	Underground	Measured	53.0	4.0	6.8	47.7	3.9	6.0
		Indicated	379.4	3.9	47.3	392.6	3.9	49.6
		Measured + Indicated	432.5	3.9	54.1	440.3	3.9	55.6
		Inferred	172.4	4.4	24.2	178.6	4.4	25.1
Grand total			604.9	4.0	78.3	618.9	4.1	80.8

Marikana operation 4E PGM  
Mineral Resources reconciliation**Notes:**

The -0.6% change year-on-year in the stated Mineral Resources (Inclusive of Mineral Reserves) is attributed to:

- -0.8Moz in depletions
- -0.1Moz in area inclusions (remnants included from operating shafts)
- +2.2Moz due to changes in geological losses and interpretation
- -2.0Moz due to the addition of new data and subsequent change to the Mineral Resource models

On a Mineral Resources exclusive of Mineral Reserves basis, the year-on-year change is -3.0%.



PGM OPERATIONS MARIKANA continued

**Grade control and Mineral Resource definition drilling summary**

	Planned 2023		Actual 2022		Actual 2021	
	Drilled (m)	Expenditure (Rm)	Drilled (m)	Expenditure (Rm)	Drilled (m)	Expenditure (Rm)
Marikana <sup>1</sup>	26,207	49.92	6,933	9.64	2,392	1.99

<sup>1</sup> Includes surface and underground holes

Exploration drilling at Marikana operation

**Annual development results**

Category	Unit	2022	2021
Primary waste development (capital, declines, haulages, crosscuts, ore passes, travelling ways)	m	27,284	21,552
Primary reef development (raise, winzes, wide raises)	m	50,461	58,169

**Modifying factors (underground) in converting Mineral Resources to Mineral Reserves**

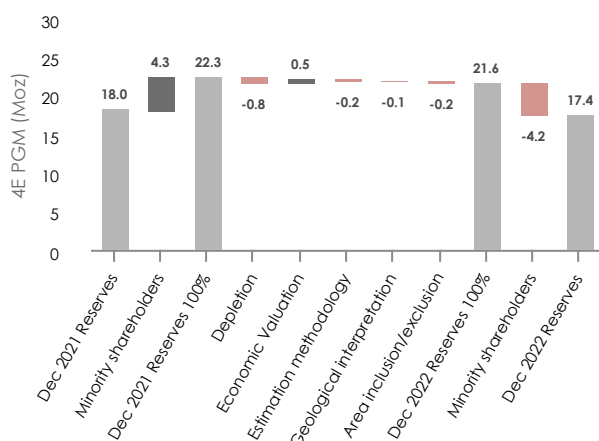
Parameter	Unit	2022	2021
Off-reef	%	1.1	1.4
Dilution	cm	41	15
Stoping width	cm	138	133
Mine call factor	%	96	98

## PGM OPERATIONS MARIKANA continued

## 4E PGM Mineral Reserves estimate as at 31 December 2022

## Mineral Reserves

			31 Dec 2022			31 Dec 2021		
PGM	Southern Africa		Tonnes (Mt)	Grade (g/t)	PGM (Moz)	Tonnes (Mt)	Grade (g/t)	PGM (Moz)
Marikana								
Operations	Underground	Proved	21.5	3.9	2.7	22.6	3.9	2.9
		Probable	110.0	4.1	14.4	113.2	4.1	14.9
		Proved + Probable	131.5	4.1	17.2	135.8	4.1	17.8
	TSF Surface	Proved	—	—	—	—	—	—
		Probable	7.9	0.9	0.2	8.4	0.9	0.2
		Proved + Probable	7.9	0.9	0.2	8.4	0.9	0.2
Grand total Proved + Probable			139.4	3.9	17.4	144.2	3.9	18.0

Marikana operation 4E PGM  
Mineral Reserves reconciliation

## Notes:

The +0.5% change year-on-year in the stated Mineral Reserves is attributed to:

- 0.8Moz in depletions
- +0.5Moz due to LoM gains associated with tail end optimisation
- 0.2Moz associated with a change in geostatistical evaluation
- 0.3Moz associated with geological and boundary changes

## HISTORY AND OPERATIONAL STATISTICS

- In 1987, the London and Rhodesian Mining and Land Company Limited (Lonhro) commissioned the sinking of the Rowland Shaft
- By 1989 the Karee mine shafts were operational
- In 1998, Lonhro PLC split and Lonhro Africa PLC was formed
- In 1999, Lonhro PLC was renamed to Lonmin PLC
- In 2000, Lonmin PLC sold off all non-PGM assets and became a primary PGM producer
- In 2001, the eastern declines were sunk, Saffy shaft was commissioned and Lonmin entered into a JV with Anglo American Platinum for the Pandora property
- By 2003, the Hossy Shaft was commissioned with the K4 Shaft commissioned in 2006
- In 2011, the K3 Shaft decline was sunk
- In 2012, the K4 Shaft was placed on care and maintenance
- In 2016, Saffy Shaft began to produce at full capacity
- In 2018, Lonmin acquired 100% of the Pandora JV from Anglo American Platinum
- In 2019, Sibanye-Stillwater acquired Lonmin Plc
- In 2021, the resumption of the K4 Project was approved

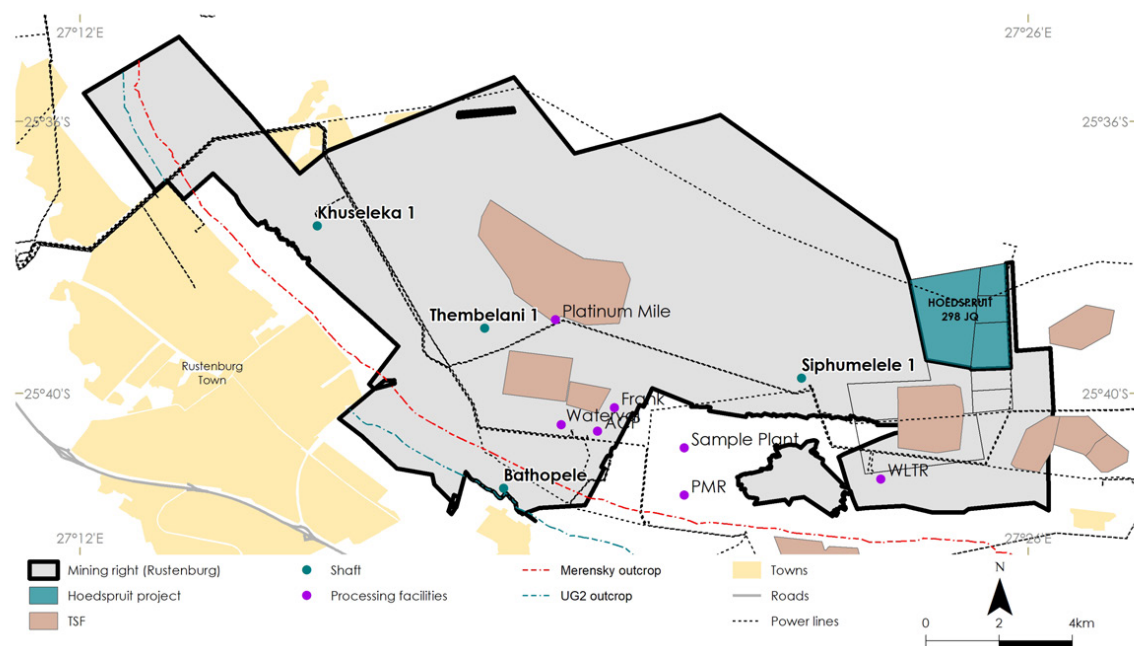
Operational statistics	2020	2021	2022
Underground tonnes milled (kt)	5,609	6,802	6,315
Underground yield (g/t)	3.23	3.37	3.19
Surface tonnes milled (kt)	3,447	3,869	3,698
Surface yield (g/t)	0.22	0.23	0.22
Annual 4E PGM production - Underground (koz)	582	737	647
Annual 4E PGM production - surface (koz)	24	28	26
<b>Total Annual 4E PGM production (koz)</b>	<b>606</b>	<b>765</b>	<b>673</b>
Operating cost underground (R/t)	1,569	1,571	1,642
Total capital expenditure (Rm)	1,223	2,254	2,432
AISC (R/oz)	19,836	19,664	22,076
AISC (US\$/oz)	1,205	1,330	1,349
Operating cost (R/t) excluding 3rd party purchase of concentrate (PoC)	1,384	1,273	1,369
AISC (R/oz) excluding (PoC)	18,834	17,394	20,500
AISC (US\$/oz) excluding (PoC)	1,144	1,176	1,253

## Notes:

AISC calculated based on produced Oz

PGM OPERATIONS continued

## RUSTENBURG



### PROPERTY DESCRIPTION

The Rustenburg operation is located in the North West province, north-east of the towns of Rustenburg and Kroondal, 123km west of Pretoria and 126km north-west of Johannesburg. The lease area covers approximately 130km<sup>2</sup> and is in excess of 20km from east to west and 15km from north to south. As discussed in Section 1, the Group considers the Rustenburg operation as material for the purpose of SK-1300.

The Rustenburg operation consists of three intermediate depth vertical shafts that utilise a conventional mining method – Siphumelele 1, Khuseleka 1, and Thembelani 1 – and the Bathopele inclined shafts, which utilises a shallow inclined bord and pillar mining method.

The Mineral Resource is accessed to 34 Level (the lowest working level) at Siphumelele 1 Shaft, approximately 1,350m below surface, to 28 Level (the lowest working level) at Khuseleka 1 Shaft, approximately 950m below surface, and 29 Level (the lowest working level) at Thembelani 1 Shaft, approximately 1,030m below surface. The Mineral Resource at Bathopele shaft is accessed via two decline clusters to a depth of approximately 500m below surface. 67% or 42.4Moz of the total Mineral Resources are above infrastructure and 33% or 20.9Moz are below infrastructure.

The vertical shafts mine both the Merensky Reef and UG2 Reef horizons, while the shallow, mechanised Bathopele shaft only mines the UG2 Reef. The underground ore is treated at the Waterval UG2 and Waterval Retrofit concentrators, with the concentrate processed in terms of a toll agreement by Anglo American Platinum. The Waterval UG2 concentrator has an integrated chrome recovery circuit, which recovers a chrome concentrate from the ore.

In addition to the underground operations, there are also two tailings retreatment operations

- Western Limb Tailings Retreatment Plant (WLTRP) treats tailings from the old Waterval TSF, which is hydro mined

- Tailings from the Waterval TSFs and live tailings from Waterval UG2 and Retrofit concentrators are retreated at the Platinum Mile plant

Also included into the Rustenburg operation is the Hoedspruit Prospecting Right area, which forms a natural north east extension to the Siphumelele 1 shaft Mineral Resource.

### MINERAL TITLE

Sibanye Rustenburg Platinum Mines (Pty) Ltd (SRPM) is the holder of a converted mining right under the DMRE Ref No NW30/5/1/2/2/82MR (SRPM MR) measuring 153 km<sup>2</sup> in extent and valid from 29 July 2010 to 28 July 2040.

The SRPM mining right was registered in the Mineral and Petroleum Titles Registration Office (MPTRO) on 3 October 2011 under Ref No 67/2011.

### INFRASTRUCTURE AND EQUIPMENT

Key infrastructure consists of

- Eleven vertical shafts, of which three are in production and the rest on care and maintenance
- Two incline shafts (at Bathopele), mined on a bord-and-pillar system with mechanised equipment
- Four PGM concentrator plants, with two of the concentrators treating underground material and two of the concentrators treating surface or tailings material
- One hospital/ medical centre
- Workshops, office blocks and equipment stores
- Accommodation and hostels
- Water treatment plants

The Rustenburg mining complex has been in operation since the 1940s and the age and modernization of these assets are varied.



## PGM OPERATIONS RUSTENBURG continued

The vertical shafts make use of conventional handheld equipment, combined with rail-bound equipment for logistical movement of ore, men and material, while the inclined shaft operation makes use of tired, low-profile, mechanised equipment.

The equipment at all operations, including the plants, are subject to a detailed planned maintenance programs; stay in business (SIB) capital provisions are made on an annual basis to cater for both repairs and replacements as needed.

The property, plant and equipment book value (100%) for the assets of Rustenburg as at 31 December 2022 was R5.39 billion.

## LIFE OF MINE

- It is estimated that the current Mineral Reserves will sustain the individual operations for periods up to 2025 (TSF material), 2029 (Bathopele), 2030 (Siphumelele), 2045 (Khuseleka) and 2051 (Thembelani).

## HOISTING AND PRODUCTION CAPACITIES

Operating shaft	Operating hoisting capacity (ktpm)	Five-year planned production (ktpm)
Siphumelele	195	65
Khuseleka	225	140
Thembelani	220	140
Bathopele	280	260

Planned production is five-year hoisted average from 2023 onwards

## TAILINGS DEPOSITION AND CAPACITY

Tailings deposition is managed across the Tailings Storage Facilities detailed below

- Paardekraal TSF (PK4 & PK5) – Fed from Waterval UG2 and Waterval Retrofit plants after PGM extraction at Plat Mile, at 750ktpm (life of TSF until 2069 with activation of PK5 dormant area)
- Paardekraal TSF (PK Central) – Fed from Waterval UG2 and Waterval Retrofit plants after PGM extraction at Platinum Mile, at 250ktpm (life of TSF until 2026)
- Hoedspruit TSF – Fed from WLTRP plants at 480ktpm (life of TSF until 2044)

The Rustenburg TSF's have a remaining capacity of 225Mt. The LoM requires 120.7 Mt, resulting in a surplus of 104.3Mt. The current capacity can be increased further through the activation of the PK5 dormant area. This surplus feeds into the integrated SA PGM tailings management strategy and will alleviate and address shortages elsewhere.

## KEY DEVELOPMENTS AND BROWNFIELD PROJECTS

The feasibility study into the Siphumelele UG2 project is ongoing and is expected to be completed during 2023. The Merensky reef mining at Siphumelele 1 shaft is nearing completion and the study considers replacing Merensky production with UG2 while optimising the boundary between Siphumelele and the Kroondal shafts. In addition, the Thembelani Deeps (MER) project is currently in feasibility study phase, with the aim to enhance the Merensky tonnage output production beyond the current LoM estimates. As a natural extension of current mining operations, a UG2 Reef Ore Replacement Project is already being executed at Thembelani shaft and will target eight levels below the current mining operations.



TSF re-mining at Rustenburg operation

## PGM OPERATIONS RUSTENBURG continued

## Mineral processing and capacity

Concentrator plant	Design capacity (ktpm)	Current operational capacity (ktpm)	Average recovery factor (%)	Material treated
Waternat UG2 concentrator	450	469	86	UG2
Waternat retrofit concentrator	620	100	86	MER and UG2
CRP <sup>1</sup>	440	440	30-35	Fresh UG2 tailings
WLTR plant	450	454	32	Historic tailings
Platinum Mile	1000	900	16	Fresh and historic tailings

<sup>1</sup> Chrome retreatment plant (CRP) treats UG2 rougher middlings to recover a saleable chromite concentrate

## 4E PGM Mineral Resources estimate as at 31 December 2022

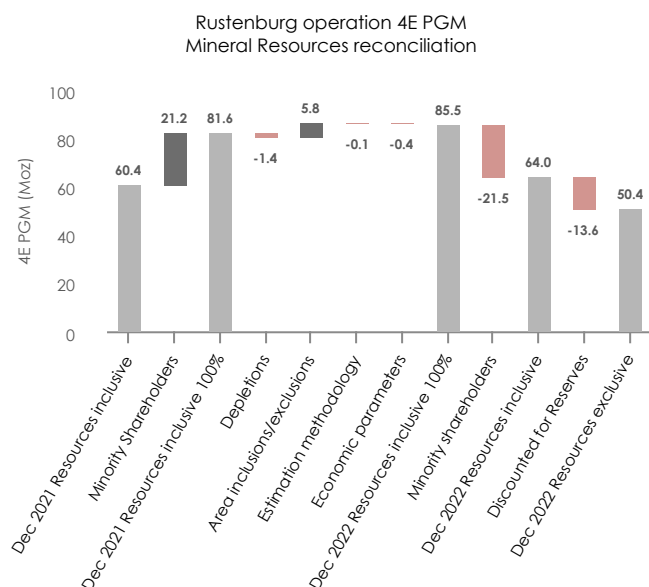
## Mineral Resources Inclusive of Mineral Reserves

				31 Dec 2022			31 Dec 2021		
PGM	Southern Africa			Tonnes (Mt)	Grade (g/t)	PGM (Moz)	Tonnes (Mt)	Grade (g/t)	PGM (Moz)
Rustenburg									
Operations	Rustenburg	Underground	Measured	266.6	4.8	41.2	272.4	4.8	41.9
			Indicated	88.5	5.3	15.1	88.6	5.3	15.1
			Measured + Indicated	355.1	4.9	56.3	361.0	4.9	57.1
			Inferred	11.0	5.6	2.0	11.0	5.6	2.0
		TSF Surface	Measured	21.2	1.0	0.7	35.9	1.1	1.3
			Indicated	—	—	—	—	—	—
			Measured + Indicated	21.2	1.0	0.7	35.9	1.1	1.3
			Inferred	—	—	—	—	—	—
	Hoedspruit	Underground	Measured	—	—	—	—	—	—
			Indicated	24.2	5.5	4.3	—	—	—
			Measured + Indicated	24.2	5.5	4.3	—	—	—
			Inferred	3.9	5.6	0.7	—	—	—
Total Measured + Indicated				400.6	4.8	61.3	396.9	4.6	58.4
Grand total				415.5	4.8	64.0	407.9	4.6	60.4

## Mineral Resources Exclusive of Mineral Reserves

				31 Dec 2022			31 Dec 2021		
PGM	Southern Africa			Tonnes	Grade	PGM	Tonnes	Grade	PGM
Rustenburg				(Mt)	(g/t)	(Moz)	(Mt)	(g/t)	(Moz)
Operations	Rustenburg	Underground	Measured	178.2	5.1	29.1	177.7	5.1	29.0
			Indicated	83.0	5.4	14.3	82.9	5.4	14.3
			Measured + Indicated	261.2	5.2	43.4	260.6	5.2	43.2
			Inferred	11.0	5.6	2.0	11.0	5.6	2.0
	Hoedspruit	Underground	Measured	—	—	—	—	—	—
			Indicated	24.2	5.5	4.3	—	—	—
			Measured + Indicated	24.2	5.5	4.3	—	—	—
			Inferred	3.9	5.6	0.7	—	—	—
Total Measured + Indicated				285.5	5.2	47.7	260.6	5.2	43.2
Grand total				300.4	5.2	50.4	271.7	5.2	45.2

## PGM OPERATIONS RUSTENBURG continued

**Notes:**

The +6.6% change year-on-year in the stated Mineral Resources (Inclusive of Mineral Reserves) is attributed to

- 1.4Moz in depletions
- 5.8Moz in area inclusions due to the re-incorporation of the Hoedspruit Mineral Resources
- 0.1Moz decrease due to changes in geological losses and interpretation
- 0.4Moz decrease due to the addition of new data and subsequent change to the Mineral Resource models

On a Mineral Resources exclusive of Mineral Reserves basis, the year-on-year change is 11.4%.

## Grade control and Mineral Resource definition drilling summary

	Planned 2023		Actual 2022		Actual 2021	
	Drilled (m)	Expenditure (Rm)	Drilled (m)	Expenditure (Rm)	Drilled (m)	Expenditure (Rm)
Rustenburg <sup>1</sup>	13,661	17.86	7,118	6.78	6,260	6.41

<sup>1</sup> Includes surface and underground holes

## Annual development results

Category	Unit	2022	2021
Primary waste development (capital, declines, haulages, crosscuts, ore passes, travelling ways)	m	12,146	12,445
Primary reef development (raise, winzes, wide raises)	m	10,019	10,481

## Modifying factors in converting Mineral Resources to Mineral Reserves

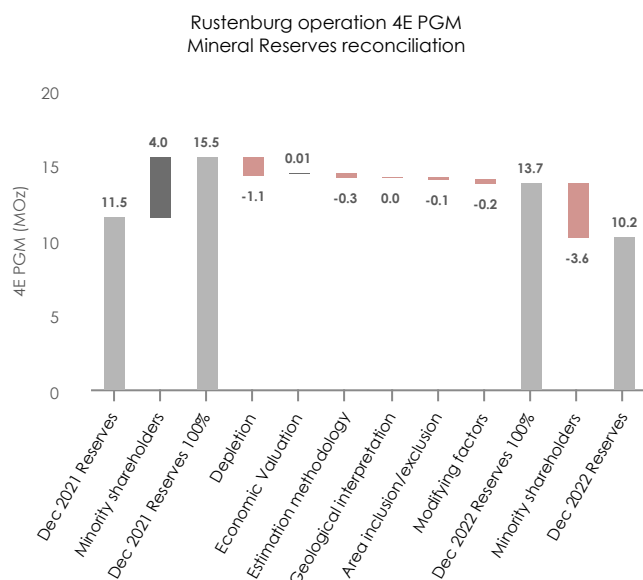
Parameter	Unit	2022	2021
Off-reef	%	—	2
Dilution	cm	12	9
Stoping width	cm	133	125
Scalping	%	1	1
Mine call factor	%	99	96

## 4E PGM Mineral Reserve estimate as at 31 December 2022

Mineral Reserves				31 Dec 2022			31 Dec 2021		
PGM	Southern Africa			Tonnes	Grade	PGM	Tonnes	Grade	PGM
Rustenburg				(Mt)	(g/t)	(Moz)	(Mt)	(g/t)	(Moz)
Operations	Underground	Proved		79.3	3.5	9.0	83.4	3.5	9.5
		Probable		3.4	4.0	0.4	6.0	4.2	0.8
		Proved + Probable		82.7	3.6	9.5	89.4	3.6	10.3
	TSF Surface	Proved		—	—	—	—	—	—
		Probable		21.2	1.0	0.7	35.8	1.0	1.2
		Proved + Probable		21.2	1.0	0.7	35.8	1.0	1.2
Grand total Proved + Probable				103.9	3.0	10.2	125.1	2.9	11.5



## PGM OPERATIONS RUSTENBURG continued

**Notes:**

The -4.9% change year-on-year in the stated Mineral Reserves is attributed to:

- 1.1Moz in depletions
- +0.01Moz due to LoM gains associated with tail end optimisation
- 0.1Moz due to boundary changes arising from the Kroondal PSA agreement with Anglo American, which allows Kroondal to mine further into the SRPM ground
- 0.5Moz due to geostatistical evaluation changes and adjustments in technical modifying factors

**HISTORY AND OPERATIONAL STATISTICS**

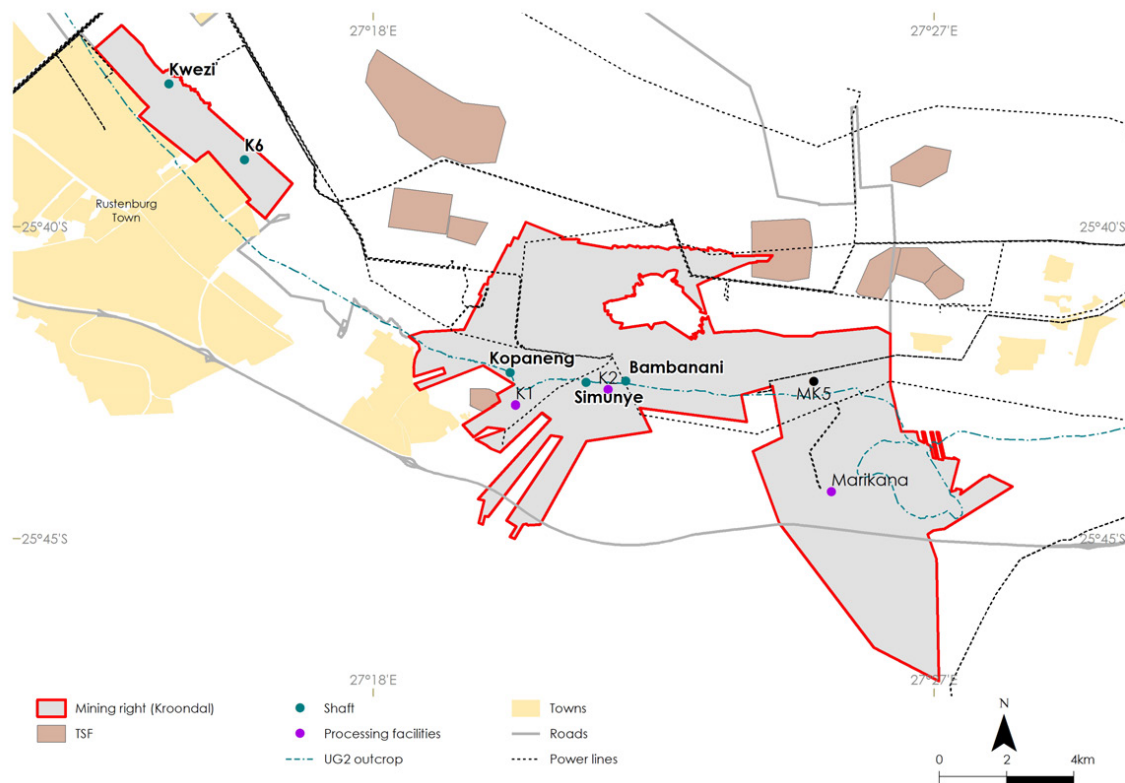
- In 1925, exploration on the eastern limb of the Bushveld Igneous Complex started
- In 1929, the first vertical shaft at Rustenburg section was sunk at what was to become Rustenburg Platinum Mines Ltd
- In 1935, the Waterfall Vertical Shaft was constructed, while the Central Deep Shaft and the Siphumelele 3 Shaft were constructed in 1951 and 1953, respectively
- Johannesburg Consolidated Investments (JCI) acquired a controlling interest in Rustenburg Platinum Mines and eventually the principal shareholder of JCI was Anglo American, which acquired a controlling interest in JCI in 1960
- The control ultimately passed on from JCI when Anglo American Platinum came into being in 1995 when JCI was unbundled
- In 2016, Sibanye-Stillwater acquired Rustenburg Platinum Operations from Anglo American Platinum

Operational statistics	2020	2021	2022
Underground tonnes milled (kt)	5,404	6,341	6,037
Underground yield (g/t)	2.9	2.96	2.85
Surface tonnes milled (kt)	5,056	5,712	5,610
Surface yield (g/t)	0.35	0.37	0.42
Annual 4E PGM production - Underground (koz)	504	604	554
Annual 4E PGM production - surface (koz)	58	68	75
<b>Total Annual 4E PGM production (koz)</b>	<b>562</b>	<b>672</b>	<b>629</b>
Operating cost underground (R/t)	1,599	1,643	1,869
Operating cost surface (R/t)	210	195	240
Total capital expenditure (Rm)	743	1,248	1,377
AISC (R/oz)	18,624	18,460	19,914
AISC (US\$/oz)	1,131	1,248	1,217

**Note:** AISC calculated based on produced Oz

PGM OPERATIONS continued

## KROONDAL



### PROPERTY DESCRIPTION

The Kroondal operation is situated in the magisterial district of Rustenburg, approximately 120km north-west of Johannesburg and about 120km west of Pretoria (Tshwane) in the North West province of South Africa. As discussed in Section 1, the Group considers the Kroondal operation as material for the purpose of SK-1300.

The Kroondal operation is a 50/50 pool and share arrangement (PSA) with Anglo American Platinum whereby the Kroondal infrastructure accesses defined Mineral Reserves agreed by the PSA partners. The JV is currently managed by Sibanye-Stillwater.

Kroondal consists of five operational shallow, mechanised shafts and an open-pit mine in the western limb of the BIC. The UG2 Reef is accessed from surface using decline systems and underground mining takes place at depths of between 250m and 550m below surface.

Ore is treated in two concentrator plants (K1 and K2). The concentrate is sold to a wholly-owned subsidiary of Anglo American Platinum, under a Purchase of Concentrate (PoC) off-take agreement.

In January 2022 the Group announced that it has entered into an agreement with Rustenburg Platinum Mines Ltd. (RPM) a subsidiary of Anglo American Platinum Limited (AAP), through its subsidiary, Sibanye Rustenburg Platinum Mines Limited ("Rustenburg operation"), to assume full ownership of Kroondal operation. As part of the agreement conditions, 1.35 million ounces of PGM concentrate from Kroondal must first be delivered to Anglo American Platinum Ltd.'s Rustenburg smelting operations, a condition which is expected to be fulfilled by Q1 2024.

### MINERAL TITLE

Apart from the principal mining right (NW30/5/1/2/2/80MR, 32.1 km², expiring 28 July 2040), which is being administered by Anglo American Platinum, Kroondal Operations (Pty) Ltd. is the holder of a converted mining right under DMRE Ref No NW30/5/1/2/2/104MR, (Kroondal MR), in respect of a mining area, totalling approximately 17.0 km², as well as NW30/5/1/2/2/113MR, in respect of a mining area totalling approximately 25.1 km², both valid from 17 October 2006 to 16 October 2022,

A renewal application for these rights, was submitted during 2022.

The Klipfontein open pit is situated on NW30/5/1/2/2/80MR, held by Anglo American Platinum's RPM. The open-pit Mineral Reserve forms part of the original PSA between Sibanye-Stillwater and AAP.

## PGM OPERATIONS KROONDAL continued

## INFRASTRUCTURE AND EQUIPMENT

All the permanent infrastructure required to access and mine the LoM plan is already established and in use.

Major infrastructure consists of

- Nine decline shafts, of which five are in production, mined on a bord-and-pillar system with mechanised equipment (The rest are on care and maintenance)
- Two PGM concentrator plants treating the underground and open-pit material
- Dense media separation plants at both concentrators that removes ±35% of total volume delivered, which is principally waste material (pyroxenite). This process enhances the feed grade of the ore received by the concentrators and also assists in minimising the tailings depositional requirements
- Workshops, office blocks, and equipment stores
- Water treatment plants

The mining complex has been in operation since early 2000 and the age and modernization of these assets vary.

The equipment used for mining consists predominantly of mechanised drilling equipment and loading and hauling equipment underground. The ore is transported to the surface via conveyor belt systems and trammed to the concentrators by rail and truck.

All the concentrate from Kroondal is treated through a PoC agreement with AAP.

The equipment at all operations, including the plants, are subject to a detailed planned maintenance programs; and SIB capital provisions are made on an annual basis to cater for both repairs and replacements as needed.

The property, plant and equipment book value (100% basis) for the assets of Kroondal, as at 31 December 2022 was R0.71 billion.

## HOISTING AND PRODUCTION CAPACITIES

Operating shaft	Operating hoisting capacity (ktpm)	Five-year planned production (ktpm)
Kwezi	65	57
K6	137	101
Kopaneng	126	113
Bambanani	100	102

Planned production is five-year hoisted average from 2023 onwards

## MINING METHOD

- Underground operations: Bord-and-pillar
- Klipfontein open-pit operation: Terraced, truck and shovel

## LIFE OF MINE

- It is estimated that the current Mineral Reserves will sustain the individual operations for periods up to 2025 (Klipfontein), 2026 (Kwezi), 2027 (K6), 2028 (Kopaneng) and 2037 (Bambanani). Ongoing optimisation work in the boundary areas between Kroondal and SRPM could lead to further improvements on selected shafts

## MINERAL PROCESSING AND CAPACITY

Concentrator Plant	Design capacity (ktpm)	Current operational capacity (ktpm)	Average recovery factor (%)	Material treated
K1 concentrator	290	187	82	UG2
K2 concentrator	300	290	80	UG2

• Ore from Kwezi, Bambanani and K6 shaft, including the open pit, is processed at the K2 plant

• Ore from K6, Kopaneng and Simunye shaft is processed at the K1 plant



Klipfontein UG2 open pit



## PGM OPERATIONS KROONDAL continued

## TAILINGS DEPOSITION AND CAPACITY

Tailings Storage Facilities are detailed below

- K1 TSF is fed from K1 plant at 28ktpm (life of TSF until 2026 at current deposition rate)
- K150 TSF is fed from K1 plant at 86ktpm (life of TSF until 2026 at current deposition rate)
- K2 TSF is fed from K1 (80%) and K2 (20%) plants at 86ktpm (life of TSF until 2026 at current deposition rate)
- Marikana TSF is fed from K2 plant at 200ktpm (life of TSF until 2030 at current deposition rate)

The Kroondal TSF's have a remaining capacity of 18.4Mt. The LoM requires 23.3Mt TSF capacity, resulting in a shortfall of 4.9Mt. Studies have been concluded that consider deposition in redundant, worked-out opencast pits, that mitigate the need to continue depositing on surface TSFs from 2025. This is currently in the permitting phase.

## 4E PGM Mineral Resources estimate at 31 December 2022

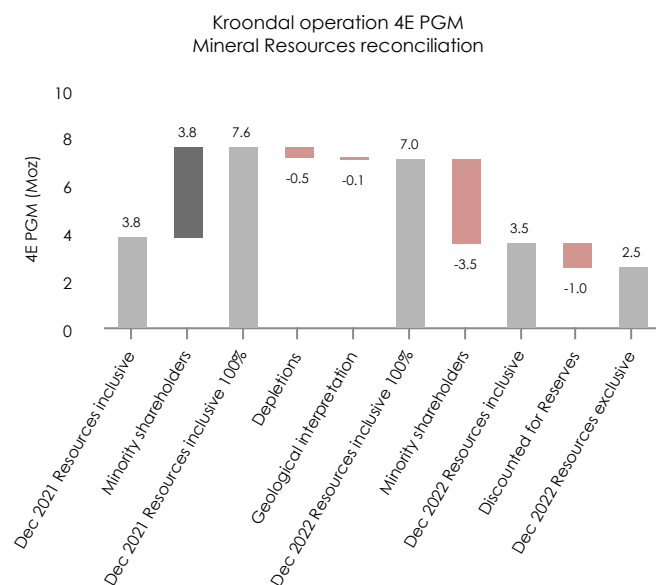
## Mineral Resources Inclusive of Mineral Reserves

				31 Dec 2022			31 Dec 2021		
PGM	Southern Africa			Tonnes (Mt)	Grade (g/t)	PGM (Moz)	Tonnes (Mt)	Grade (g/t)	PGM (Moz)
Kroondal									
Operations	Kroondal	Underground	Measured	24.2	3.3	2.6	26.8	3.3	2.8
			Indicated	4.7	3.8	0.6	4.8	3.8	0.6
			Measured + Indicated	29.0	3.4	3.2	31.6	3.4	3.4
			Inferred	2.5	2.9	0.2	2.5	2.9	0.2
	Klipfontein	Opencast Surface	Measured	0.8	4.4	0.1	1.0	4.3	0.1
			Indicated	—	—	—	—	—	—
			Measured + Indicated	0.8	4.4	0.1	1.0	4.3	0.1
			Inferred	—	—	—	—	—	—
Total Measured + Indicated				29.8	3.4	3.3	32.5	3.4	3.6
Grand total				32.2	3.4	3.5	35.0	3.4	3.8

## Mineral Resources Exclusive of Mineral Reserves

				31 Dec 2022			31 Dec 2021		
PGM	Southern Africa			Tonnes (Mt)	Grade (g/t)	PGM (Moz)	Tonnes (Mt)	Grade (g/t)	PGM (Moz)
Kroondal									
Operations	Kroondal	Underground	Measured	15.5	3.4	1.7	15.8	3.4	1.7
			Indicated	4.7	3.8	0.6	4.8	3.8	0.6
			Measured + Indicated	20.3	3.5	2.3	20.5	3.5	2.3
			Inferred	2.5	2.9	0.2	2.5	2.9	0.2
Grand total				22.7	3.4	2.5	23.0	3.4	2.5

## PGM OPERATIONS KROONDAL continued

**Notes:**

The -1.4% change year-on-year to the stated Mineral Resources (Inclusive of Mineral Reserves) is attributed to

- 0.5Moz in depletions
- +0.002Moz in area inclusions
- 0.1Moz decrease due to changes in geological losses and interpretation
- 0.05Moz due to the addition of new data and subsequent change to the Mineral Resource models

On a Mineral Resources exclusive of Mineral Reserves basis there is no change year-on-year.

## Grade control and ore definition drilling summary

	Planned 2023		Actual 2022		Actual 2021	
	Drilled (m)	Expenditure (Rm)	Drilled (m)	Expenditure (Rm)	Drilled (m)	Expenditure (Rm)
Kroondal <sup>1</sup>	12,313	12.89	18,242	22.21	7,308	5.89

<sup>1</sup> Includes surface drilling

## Annual development results

Category	Unit	2022	2021
Primary waste development (capital, declines, haulages, crosscuts, ore passes, travelling ways)	m	620	1,083
Primary reef development (raise, winzes, wide raises)	m	8,736	7,428

## Modifying factors (underground) in converting Mineral Resources to Mineral Reserves

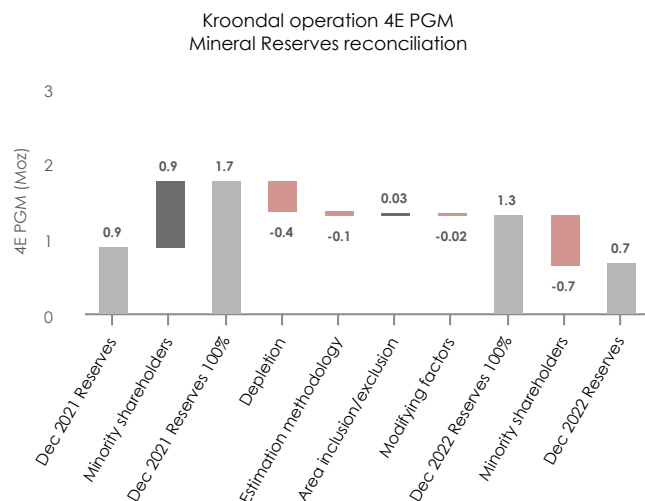
Parameter	Unit	2022	2021
Off-reef	%	11	6
Dilution planned	cm	—	5.1
Stoping width	cm	217	220
Scalping	%	2	2
Mine call factor	%	94	93

## 4E PGM Mineral Reserve estimate at 31 December 2022

## Mineral Reserves

				31 Dec 2022			31 Dec 2021		
PGM	Southern Africa			Tonnes (Mt)	Grade (g/t)	PGM (Moz)	Tonnes (Mt)	Grade (g/t)	PGM (Moz)
Kroondal									
Operations	Kroondal	Underground	Proved	7.4	2.5	0.6	9.6	2.5	0.8
			Probable	—	—	—	—	—	—
			Proved + Probable	7.4	2.5	0.6	9.6	2.5	0.8
	Klipfontein	Opencast Surface	Proved	0.5	3.4	0.1	0.8	3.3	0.1
			Probable	—	—	—	—	—	—
			Proved + Probable	0.5	3.4	0.1	0.8	3.3	0.1
Grand total Proved + Probable				8.0	2.6	0.7	10.4	2.6	0.9

## PGM OPERATIONS KROONDAL continued

**Notes:**

The -3.2% change year-on-year in the stated Mineral Reserves is principally attributed to depletion of -0.4Moz.

Operational statistics	2020	2021	2022
Underground tonnes milled (kt)	2,997	3,525	3,251
Underground yield (g/t)	2.04	2	1.93
Surface tonnes milled (kt)	—	—	573
Surface yield (g/t)	N/A	N/A	2.15
Annual 4E PGM production - underground (koz)	197	227	202
Annual 4E PGM production - surface (koz)	N/A	N/A	40
<b>Total Annual 4E PGM production (koz)</b>	<b>197</b>	<b>227</b>	<b>242</b>
Operating cost underground (R/t)	883	896	1,049
Operating cost surface (R/t)	N/A	N/A	682
Total capital expenditure (Rm)	188	268	273
AISC (R/oz)	13,512	12,943	15,514
AISC (US\$/oz)	821	875	948

**Note:** AISC calculated based on produced Oz

**HISTORY AND OPERATIONAL STATISTICS**

- In 1996, a PFS on the Kroondal platinum project, in which Aquarius Platinum Ltd (Aquarius) had a 45% stake, was completed
- Mine development began in 1998 and an initial off-take agreement was signed with Impala Platinum Ltd that continued until 2008
- Mining via two decline shafts began in March 1999
- In 2000, Aquarius increased its stake in Kroondal to 100%
- Between 2001 and 2003, Aquarius entered into JV (50:50) agreements with RPM, a subsidiary of Anglo American Platinum (AAP), to extract Mineral Reserves located on adjacent Anglo American Platinum mining rights. This included the construction of a second concentrator plant and enabled doubling of production. This agreement included a PoC off-take agreement with AAP.
- By 2005, the second concentrator plant was commissioned and by 2011, five decline shafts were in production
- In 2013, the extent of the Mineral Resource included in the PSA was extended, prolonging Kroondal's LoM
- Sibanye-Stillwater acquired a 50% stake in Kroondal in 2016, via the acquisition of Aquarius in 2016
- In 2021 agreements with AAP were concluded allowing Kroondal to mine into the Rustenburg (SRPM) mining right
- During 2022, the Group reached an agreement with AAP to take full ownership of Kroondal

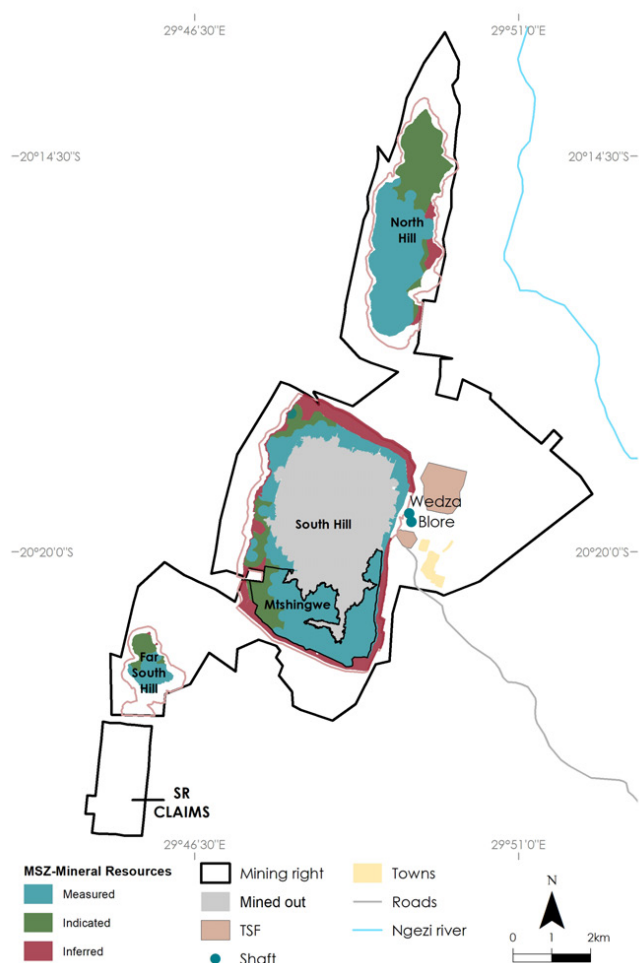


Mobile crusher



PGM OPERATIONS continued

## MIMOSA



### PROPERTY DESCRIPTION

Mimosa is a shallow, mechanised PGM and base metal mining operation located in the Wedza sub-chamber of the Great Dyke of Zimbabwe, some 32km west of Zvishavane, a major mining centre situated 340km south-west of Harare, the capital city of Zimbabwe.

Mimosa Mining Company is jointly owned by Impala Platinum and Sibanye-Stillwater in terms of a 50:50 JV shareholding.

The Mimosa property has four mineralised areas separated by major faults and erosional surfaces namely: North Hill, South Hill, Far South Hill and the Mtshingwe Block. The Mimosa mine is an underground operation on the South Hill ore deposit, consisting of two shafts, namely the Blore Shaft and the Wedza Shaft. At Mimosa, focus is on developing the Mtshingwe Shaft and further evaluating the Mtshingwe Block.

### MINERAL TITLE

The Mimosa mining right is covered by a mining lease covering an area of 65.94km<sup>2</sup>. The mining lease, Lease No 24, was granted to Mimosa Mines (Pvt) Ltd on 5 September 1996, giving it the exclusive mining rights for PGMs and base metals within the vertical limits of its boundary. As per Zimbabwean law, the mining right does not expire under the provisor that annual renewal fees are up to date.

Mimosa also holds the following valid claims ; Fifty (50) KV Platinum Claims (4.84km<sup>2</sup> - referred to as the Wedza West), Thirty-seven (37) SR Platinum Claims (3.70km<sup>2</sup>), Seven (7) Chrome Claims (1.75km<sup>2</sup>), and a 0.30km<sup>2</sup> block pegged in 2020 over the Mtshingwe Fault block.

### INFRASTRUCTURE AND EQUIPMENT

Mimosa is an established mechanised, bord and pillar mining operation, with all the facilities and equipment to mine and produce precious and base metals concentrate.

There are two decline shafts, and a small vertical shaft at 26 Level South which is equipped for hoisting people to surface in case of an emergency. Underground infrastructure includes an ore bunker, main and satellite workshops, pump stations, strike and dip conveyors as well as the main conveyor in Blore shaft. Blore shaft has an operational capacity of 280ktpm. A fleet of trackless mining machinery (TMM) to enable the mechanised bord-and-pillar operation.

The fleet of TMM equipment is serviced and repaired in the main underground workshop, which is adequately equipped for the purpose. Surface Infrastructure includes an ore stockpile, concentrator plant, garage, workshops, dirty water settling ponds, service and potable water storage tanks, a clinic and housing for selected essential staff.

The Mimosa concentrator has an operational capacity of ~233 ktpm. Concentrates are transported by road to South Africa for smelting and refining at the Impala Platinum facilities.

### TAILINGS DEPOSITION AND CAPACITY

The Tailings Storage Facilities in use are detailed below

- Mimosa TSF3 is fed from Mimosa plant at 229ktpm (life of TSF until 2024 at current deposition rate)
- Mimosa TSF4 is currently under construction (life of TSF until 2044 at 233ktpm deposition rate)

The Mimosa TSF3 has a remaining capacity of 3.4Mt. The LoM requires 28.2Mt TSF capacity, resulting in a shortfall of 24.7Mt. This will be mitigated through the elevating of penstocks to run TSF3 until decommissioning and TSF4 construction is complete. TSF4 will provide additional capacity of 55.0Mt, a surplus capacity of 31Mt.

### KEY DEVELOPMENTS AND BROWNFIELD PROJECTS

The North Hill FS has been completed and presented to the JV Board . North Hill is being considered as a life extension for Mimosa due to mining depletion risks at the South Hill from 2029 onwards. It is estimated that the current South Hill Mineral Reserves will sustain the operations until 2034. It targets an area with 6.65Moz 4E Mineral Resources, and will extend the LoM at current rates (+230kOz per year) to ~2044 (+ 8 years).

Surface exploration drilling is being carried out in Mtshingwe and Wedza West sections to convert Indicated to Measured Mineral Resources and eventually to proved Mineral Reserves.

PGM OPERATIONS MIMOSA continued

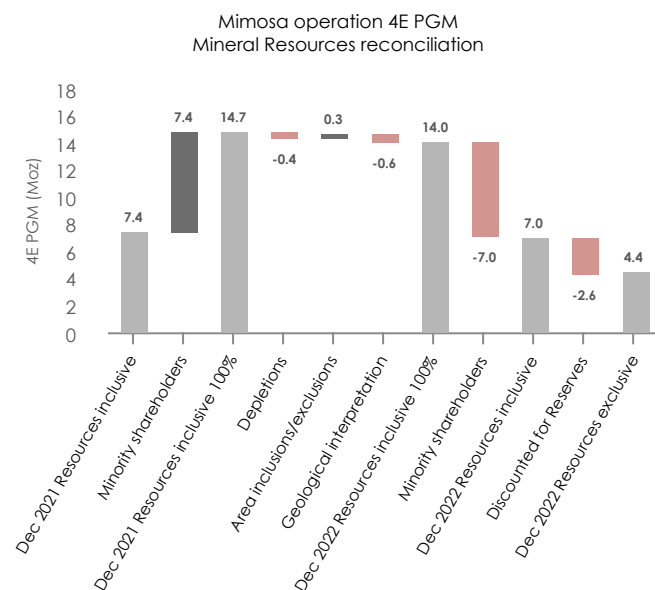
**4E PGM Mineral Resources estimate at 31 December 2022****Mineral Resources Inclusive of Mineral Reserves**

			31 Dec 2022			31 Dec 2021		
PGM	Southern Africa		Tonnes	Grade	PGM	Tonnes	Grade	PGM
Mimosa			(Mt)	(g/t)	(Moz)	(Mt)	(g/t)	(Moz)
Operations	Underground	Measured	33.7	3.5	3.8	31.0	3.5	3.5
		Indicated	13.1	3.5	1.5	17.7	3.5	2.0
		Measured + Indicated	46.9	3.5	5.3	48.7	3.5	5.5
		Inferred	15.5	3.4	1.7	17.2	3.4	1.9
Grand total			62.4	3.5	7.0	65.9	3.5	7.4

**Mineral Resources Exclusive of Mineral Reserves**

			31 Dec 2022			31 Dec 2021		
PGM	Southern Africa		Tonnes (Mt)	Grade (g/t)	PGM (Moz)	Tonnes (Mt)	Grade (g/t)	PGM (Moz)
Mimosa								
Operations	Underground	Measured	16.0	3.4	1.8	16.0	3.4	1.8
		Indicated	8.4	3.5	1.0	8.4	3.5	1.0
		Measured + Indicated	24.4	3.5	2.7	24.4	3.5	2.7
		Inferred	15.5	3.4	1.7	17.2	3.4	1.9
Grand total			39.9	3.4	4.4	41.6	3.4	4.6

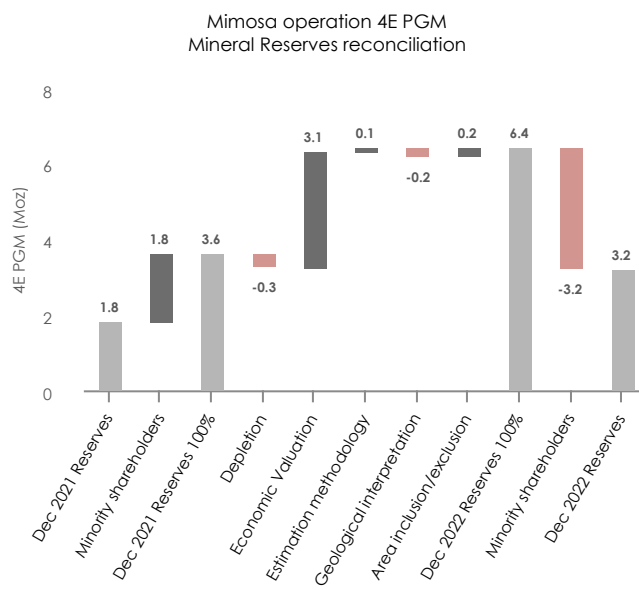
**Note:** Mining is non-selective on a regional scale, and cut off grades have not been applied, but mineralised cuts are optimised for economic metal extraction

**Notes:**

The -2.1% change year-on-year to the stated Mineral Resources (Inclusive of Mineral Reserves) is attributed to:

- 0.4Moz in depletions
- 0.3Moz in area inclusions
- 0.6Moz decrease due to changes in geological losses and interpretation
- 0.04Moz due to the addition of new data and subsequent change to the Mineral Resource models

On a Mineral Resources exclusive of Mineral Reserves basis, the year-on-year change is -4.5%.

**Notes:**

The +93.9% change year-on-year in the stated Mineral Reserves is attributed to:

- 0.3Moz in depletions
- +3.1Moz due to the addition of the North Hill Mineral Reserves
- +0.1Moz increase due to geological changes and technical factors

PGM OPERATIONS MIMOSA continued

## 4E PGM Mineral Reserves estimate at 31 December 2022

### Mineral Reserves

PGM	Southern Africa		31/Dec/2022			31/Dec/2021		
			Tonnes (Mt)	Grade (g/t)	PGM (Moz)	Tonnes (Mt)	Grade (g/t)	PGM (Moz)
Mimosa	Operations	Underground						
		Proved	20.1	3.5	2.2	8.2	3.6	0.9
		Probable	8.6	3.4	1.0	7.7	3.5	0.9
Grand total Proved + Probable			28.7	3.5	3.2	15.8	3.5	1.8

Notes: Based on a commodity price (US\$/oz) assumption of Platinum 920; Palladium 1,763; Rhodium 19,275; Ruthenium 278 and an exchange rate R/US\$ of 16.00

### Mineral Reserves classification map for Mimosa



Support installation

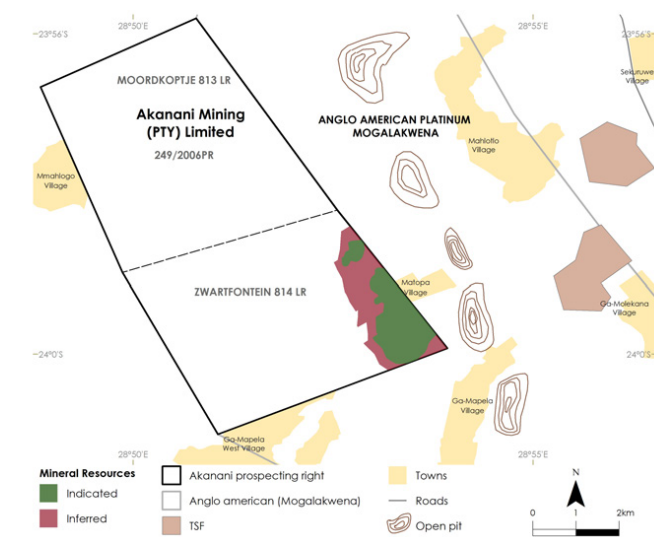
Operational statistics	2020	2021	2022
Underground tonnes milled (kt)	1,414	1,422	1,387
Underground yield (g/t)	2.7	2.61	2.59
Annual 4E PGM production - Underground (koz)	123	119	116
<b>Total Annual 4E PGM production (koz)</b>	<b>123</b>	<b>119</b>	<b>116</b>
Operating cost underground (R/t)	1,146	1,122	1,385
Total capital expenditure (Rm)	414	499	864
AISC (R/oz)	14,380	14,549	18,817
AISC (US\$/oz)	874	984	1,150

Note: AISC calculated based on produced Oz



# PGM EXPLORATION STAGE

## AKANANI



### PROPERTY DESCRIPTION

Akanani is an exploration project located on the northern limb of the BIC, in the Limpopo province of South Africa, 30km north-east of the town of Mokopane.

Extensive exploration drilling has been conducted on the south-eastern portion of the property, confirming significant Mineral Resources which offers the potential for a long-life, low-cost operation. The wide orebody (>20m thick for the P2 Unit) would enable a mechanised, long-hole, open-stope mining operation.

### MINERAL TITLE

Akanani Mining (Propriety) Limited ("Akanani") was the holder of a new order (converted) prospecting right MPT No. 249/2006 for platinum group metals, gold, silver, nickel, copper and cobalt on the Farms Moordkopje and Zwartfontein which covered 40.95km<sup>2</sup>. The right was registered in the Mining Titles Registration Office on 28 June 2006, which, following renewals, ultimately expired on 3 April 2021. An application for conversion to a mining right was submitted in March 2021.

### 4E PGM Mineral Resources estimate at 31 December 2022

#### Mineral Resources

			31 Dec 2022			31 Dec 2021		
PGM	Southern Africa		Tonnes (Mt)	Grade (g/t)	PGM (Moz)	Tonnes (Mt)	Grade (g/t)	PGM (Moz)
Akanani								
Exploration	Underground	Measured	—	—	—	—	—	—
		Indicated	164.5	4.2	22.0	164.5	4.2	22.0
		Measured + Indicated	164.5	4.2	22.0	164.5	4.2	22.0
		Inferred	87.9	3.4	9.6	87.9	3.4	9.6
Grand total			252.4	3.9	31.6	252.4	3.9	31.6

- The Mineral Resource estimates were completed for both the P2 and P1 Units using 3D modelling techniques and ordinary kriging
- 10% geological losses were applied to the P2 model and 20% geological losses were applied to the P1 model

The application has been rejected by the DMRE, related to an interpretation on the expiry date of the prospecting right. To secure its position, the Group has launched internal appeal proceedings in accordance with the Minerals and Petroleum Resources Development Act, 2002. The internal appeal process is progressing within the prescripts of the MPRDA. The Group will resort to court action in order to enforce its rights should the internal appeal not be successful, as it believes that it has complied to all the regulations for a successful transition to a mining right.

### GEOLOGY AND MINERALISATION CHARACTERISTICS

The Mineral Resource is contained within the Platreef Pyroxenite unit that is considered to represent the Upper Critical Zone in this area and starts at approximately 750m below surface, with an economically depth cut-off of 2000m applied. The Platreef Pyroxenite, which can be hundreds of metres thick, contains zones of PGM mineralisation, associated with various lithological units.

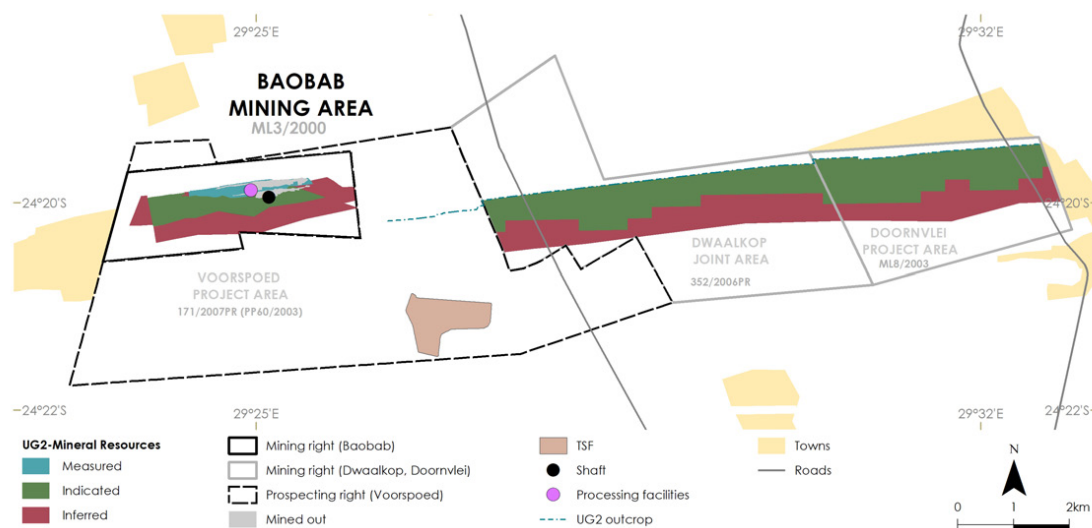
The higher grade mineralisation is generally well constrained within a geological unit towards the top of the Platreef known as the P2 Unit that has an average thickness of approximately 20m. Mineralisation in the P1 Unit occurs over a wider interval (30m) and appears to be less continuous than that of the P2 Unit. The P1 Unit is generally of lower grade than the P2 Unit.

Potholes and IRUP intrusions, such as those that occur on the Merensky and UG2 Reefs, have not been recognised on the Platreef at the Akanani project. Losses in the Mineral Resource area are anticipated to occur as a result of dykes and veins, faults and localised alteration, particularly calc-silicate alteration. Such alteration is rare in the P2 Unit and more common in the P1 Unit. Major discontinuities, such as faults and dykes, have been identified throughout the deposit, via the interpretation of magnetic survey and diamond drilling information.

A unique feature of the Platreef mineralisation is the ratio of platinum:palladium, which is close to 1:1, as well as the high concentration in base metal by-products, with nickel and copper grading 0.24% and 0.13% respectively, making for a very attractive and diversified metal mix.

PGM EXPLORATION continued

## LIMPOPO



## PROPERTY DESCRIPTION

The Limpopo project is located on the northern sector of the eastern limb of the BIC in the Limpopo province, approximately 50km south of the city of Polokwane.

The project area consists of three mineral title areas, Voorspoed (including the Baobab mining right and the Voorspoed prospecting area), and the Dwaalkop and Doornvlei mining right areas.

The Baobab property has the full surface and underground infrastructure to support a mining rate of 90ktpm. It has a vertical shaft to a depth of 450m. There is a 90,000tpm concentrator on the property. The Limpopo Baobab property was a producing operation that reached a maximum extraction rate of 75,000tpm, before being placed on care and maintenance in early 2009. The concentrator plant is currently being leased to Anglo American Platinum.

The Dwaalkop Project is a 50:50 JV with Northam Platinum (via Mvelaphanda Resources). Doornvlei is an undeveloped property.

## MINERAL TITLE

Voorspoed is owned by Western Platinum Limited (WPL) and holds a new order mining right (LP30/5/1/2/2/77MR), covering 60.24km<sup>2</sup> and expiring on 25 February 2044.

Dwaalkop, directly to the east of Voorspoed, is held by WPL, and has been granted a Mining Right (LP30/5/1/2/2/99MR) by the DMRE during 2021, which is currently awaiting execution. Doornvlei is held by WPL and holds a new order mining right (LP30/5/1/2/2/140MR) expiring on 25 February 2044.

## 4E PGM Mineral Resources estimate as at 31 December 2022

## Mineral Resources

				31 Dec 2022			31 Dec 2021		
PGM	Southern Africa			Tonnes	Grade	PGM	Tonnes	Grade	PGM
Limpopo				(Mt)	(g/t)	(Moz)	(Mt)	(g/t)	(Moz)
Exploration	Underground	Measured		1.8	4.2	0.2	1.8	4.2	0.2
		Indicated		80.0	4.1	10.5	73.6	4.3	10.3
		Measured + Indicated		81.7	4.1	10.7	75.4	4.3	10.5
		Inferred		70.9	4.0	9.2	67.9	4.2	9.1
Grand total				152.6	4.1	19.9	143.2	4.3	19.6

## Notes:

- Mineral Resource estimates are based on a practical mining cut of not less than 90cm and may include some diluting material
- The Mineral Resources at Dwaalkop and Doornvlei occur from surface to a maximum depth of 800m beyond the last line of surface drill holes
- The +1.5% (0.6Moz) change year-on-year to the stated Mineral Resources (Inclusive of Mineral Reserves) is attributed to the acceptance of a revised realistic prospect for eventual economic extraction (RPEEE) assessment for consideration of a geotechnical mechanised mining cut, prepared by the Dwaalkop JV partner

## GEOLOGY AND MINERALISATION CHARACTERISTICS

The UG2 and Merensky Reefs are developed, approximately 130m apart. The average width of the UG2 Reef for each property varies between approximately 1.90m and 3.05m, and the average width of the Merensky Reef for each property varies between approximately 0.90m and 2.25m.

The reef dip is relatively steep in this area, with the dip in the Baobab and Dwaalkop-Doornvlei blocks being approximately 60° to the south. The Mineral Resources occur over a strike length of approximately 15km and are dislocated by several large faults, which form the lateral boundaries of the delineated Mineral Resource blocks namely Baobab and Baobab East, Dwaalkop and Doornvlei. The UG2 Reef Mineral Resources in the northern sector of the Eastern Limb differ from other areas in the BIC in that the concentrations of both copper and nickel are elevated. These base metals form an important by-product of PGM mining. Merensky and UG2 Reef profiles at the Limpopo project.

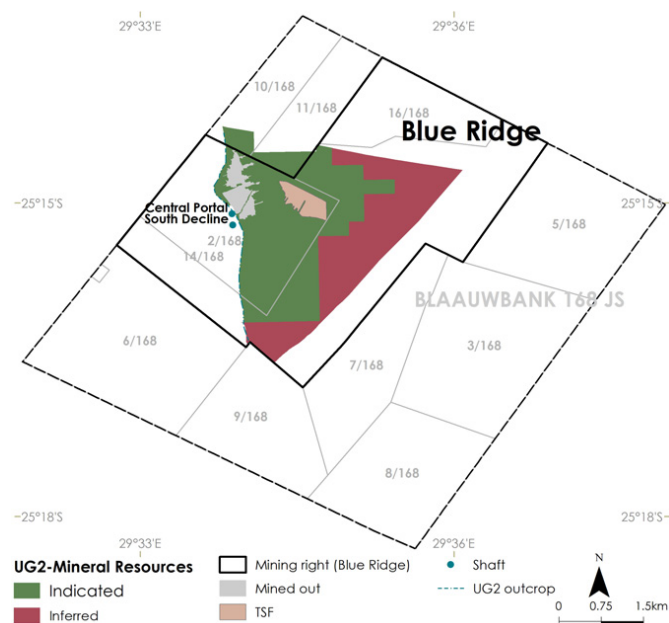
## KEY DEVELOPMENTS AND INTENT

Due to the steep dip of the UG2 and Merensky Reefs, the project remains an attractive mechanisation option, which fits well with Sibanye-Stillwater's strategic goals. Development of the project remains subject to Group capital expenditure ranking.

PGM EXPLORATION continued

## BLUE RIDGE

### PROPERTY DESCRIPTION



This 50:50 JV with Imbani Platinum is situated on the Blaauwbank farm, approximately 30km south-east of Groblersdal on the Eastern Limb of the BIC. It entails a shallow, mechanised PGM mine, with integrated concentrator, targeting the UG2 orebody.

The project was originally owned by Ridge Mining Ltd. (Ridge), which developed it in partnership with Imbani Platinum Pty. Ltd. Ridge started exploration in 2001, completed a feasibility study by the end of 2005, and mine development started in January 2007. Aquarius acquired Ridge in July 2009. The operation was placed on care and maintenance in 2011 on the back of depressed PGM prices, and has remained on care and maintenance ever since. Sibanye-Stillwater acquired its 50% stake in the JV through the acquisition of Aquarius in 2016.

### MINERAL TITLE

Blue Ridge Platinum (Pty) Ltd is the holder of a converted mining right under DMRE Ref No LP30/5/1/2/2/177 MR (Blue Ridge MR), valid from 21 May 2014 to 20 May 2044, in respect of a mining area totalling approximately 18.89km<sup>2</sup>.

### 4E PGM Mineral Resources estimate at 31 December 2022

#### Mineral Resources

			31 Dec 2022			31 Dec 2021		
PGM	Southern Africa		Tonnes	Grade	PGM	Tonnes	Grade	PGM
Blue Ridge			(Mt)	(g/t)	(Moz)	(Mt)	(g/t)	(Moz)
Exploration	Underground	Measured	—	—	—	—	—	—
		Indicated	9.2	3.2	1.0	9.2	3.2	1.0
		Measured + Indicated	9.2	3.2	1.0	9.2	3.2	1.0
		Inferred	6.7	3.0	0.6	6.7	3.0	0.6
Grand total			15.8	3.2	1.6	15.8	3.2	1.6

#### Notes:

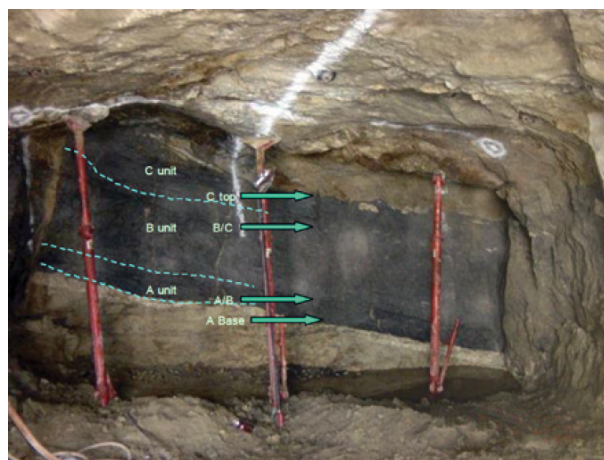
- Average resource width of 1.38m
- Excluded depletion due to historic mining

The DMRE has been notified of the care and maintenance status and ongoing engagements are taking place to ensure compliance with environmental and SLP conditions.

### DEPOSIT TYPE AND MINERALISATION CHARACTERISTICS

The UG2 Reef is targeted, with the thickness of the mineralisation varying from 60cm to 130cm. Mineralisation occurs as A, B and C chromitites locally separated by internal pyroxenites. The average dip of the reef is 18°. The Blue Ridge orebody is preserved in an enclave on the eastern flank of the Dennilton Dome, a positive feature in the floor rocks to the BIC, which outcrops south-east of Groblersdal.

The UG2 Reef at the Blue Ridge mine shown below depicting the UG2 Reef sub-division.



### KEY DEVELOPMENTS AND INTENT

Due to the relatively low grade nature of the ore-body, the complex nature of the shareholding, and the historic project finance agreements, which included substantial external debt holders, significant barriers exist to the restart of this operation.

This mining operation remains under care and maintenance while Sibanye-Stillwater engages with its partners and stakeholders to find an optimum way to maximise value for all stakeholders. No exploration work has been undertaken at this operation since being placed under care and maintenance in 2011, although a Mineral Resource estimate update and a PFS into the re-start of the operation was concluded in 2020.

- Provision made for losses around known dykes and known faults
- Implicit geological losses of 15% applied

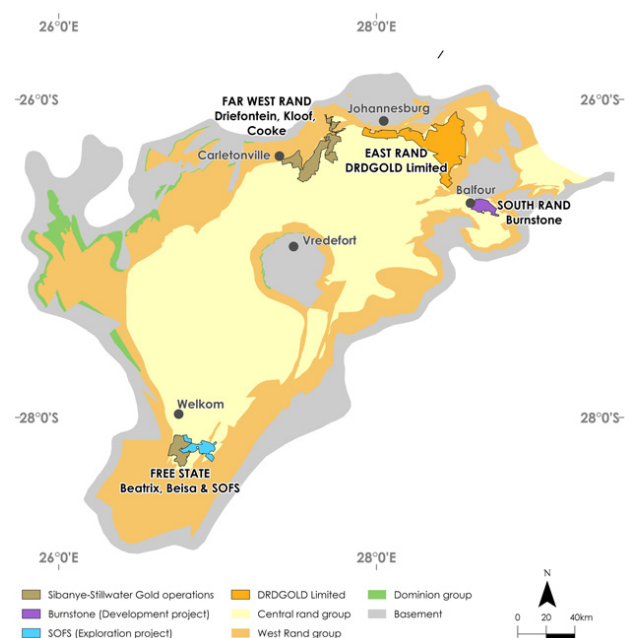


# GOLD OPERATIONS

## OVERVIEW

### GEOLOGICAL SETTING

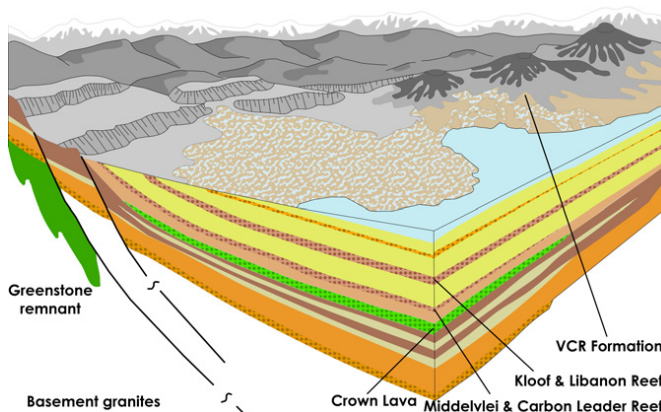
Gold occurs in quartz-pebble conglomeritic units (or reefs) in a thick succession of metamorphosed sediments in the Witwatersrand Basin. The basin is geographically located in the central-north to north-eastern part of South Africa and extends from Johannesburg in the north to some 40km south of Welkom and covers an area of approximately 70,000km<sup>2</sup>. More than 150 mines have operated in the basin since gold was first discovered in 1886, primarily producing gold. Uranium has been intermittently produced, often as by-product, since the early 1950s.



The reefs, which are generally less than 2m thick, are widely considered to represent extensive alluvial fan deposits within structurally controlled basin edges. The gold is considered to have been syngenetically deposited with the conglomerates. Although the gold generally occurs in native form and is usually associated with pyrite, carbon and uranium, most of it has been subsequently modified and remobilised during secondary hydrothermal alteration. This is the generally accepted model for the origin of gold and uranium mineralisation of the Witwatersrand Basin.

The most fundamental control to the gold distribution remains the association with mature quartz-pebble conglomerates on intra-basinal unconformity surfaces. The reefs typically are laterally continuous, as a consequence of the regional nature of the erosional surfaces. Consequently, the identification and modelling of erosional/sedimentary features are the key to in-situ Mineral Resource estimation.

An artist's conceptual illustration of how the reefs were formed at the time of the VCR formation



### MINERAL RESOURCES ESTIMATION (Managed operations)

Diamond drillhole and underground chip sample data forms the bulk of the analytical data used in the estimation. The data used in the Mineral Resource estimation is stored in a SQL (Fusion™) database (IRRIS) and becomes available after QA/QC validation processes are completed.

Geological facies and 3D structural modelling are completed, based on data gathered from drill holes, chip sampling and underground mapping. Geological facies interpretation is considered in the statistical analysis and estimation process. The resulting statistical domains may be further sub-divided or combined to ensure homogeneity of data and are used as hard boundaries in the estimation for the block sizes of 10m by 10m; 25m by 25m and 100m by 100m.

Detailed exploratory data analysis is carried out on data within individual domains. The main interpolation methodology utilised is ordinary kriging for the 10m by 10m, and 25m by 25m blocks. Simple kriging is only used for 100m by 100m blocks.

Mineral Resource tonnages and grades are estimated in-situ over an estimated minimum mining width and may include mineralisation below the selected cut-off grade to ensure that the Mineral Resources comprise practical mining blocks of adequate size and continuity. Mineral Resource estimations are depleted within defined 2D structurally modelled blocks, and dip corrections are applied to reflect true tonnages. The Mineral Resources are reported using a cut-off for cm.g/t (grade x thickness).

Mineral Resource classification is based on the robustness of various data sources available including the confidence in the geological interpretation, variography and other estimation parameters. A Measured Resource classification is based on slope of regression on average greater than 95% in the first range of variograms for the block models of 10m by 10m and 25m by 25m. An Indicated Resource classification is based on the first and/or second search ellipse ranges and the number of samples averaging nineteen within the 100m by 100m block models. The areas in the third range of the variograms on the block size of 100m by 100m are classified as Inferred.

## GOLD OPERATIONS continued

**INTERNAL CONTROLS (QA/QC) (Managed operations)**

The gold operations follow industry best practice in data acquisition, ensuring data reliability, and utilise accredited analytical laboratories, which are frequently audited, both internally and externally. QA/QC procedures are followed on all drilling and sampling programmes (including underground chip sampling). The database system in use at Sibanye-Stillwater is SQL (Fusion™). This has various levels of security and is managed by an onsite database administrator as well as the Fusion service providers.

Analytical QA/QC is maintained and enforced through the submission of blanks, certified reference material and duplicate samples; on average at least one QA/QC sample is inserted in every batch of 100 samples. This approximates to 1% of the total sampling database.

Analysis of the QA/QC samples consists of checks on the certified reference materials' expected values, and analysis of blank material and pulp duplicate material. An internal procedure to check the deviation from the expected value for the reference materials of samples are accepted within two standard deviations for geology drilling and three standard deviations for underground chip sampling.

Laboratory reporting of underground sampling results is not split into separate gold and silver assays. A combined grade is reported. For chip sampling, a "bullion" factor is then generated by the laboratory and released periodically to the operations to account for the silver content in the analysis.

The laboratory is required to participate in various round robin exercises as part of maintaining their accreditation status. Internal audits of the laboratories are conducted every three months by the Mineral Resource department.

The laboratory currently in use at the Sibanye-Stillwater gold operations, i.e. the Driefontein laboratory (Reg No 2002/031431/07) is SANAS (South African National Accreditation System) accredited with accreditation No T0379.

**MINERAL RESERVE ESTIMATION (Managed operations)**

The calculation of the Mineral Reserves from the Mineral Resource estimate includes the application of cut-off grades to ensure an average mining value that is above the pay limit. The pay limit is defined as the average value at which an orebody can be mined at break-even based on the planned mining volumes, updated modifying factors and the estimated working cost. The cut-off grades, which are the absolute minimum mining grades that can be mined in order to maintain a average Mineral Reserve value aligned with the pay limit, are calculated using the latest pay limits per mining area.

Mining area selection is based on the cut-off grades, structural models, pillar requirements together with other practical mining considerations. Plans are developed with an approach that encourages the production team's input into the process with guidance from all technical departments at multiple points in the planning process.

The sensitivities of gold Mineral Reserve ounces at all operations are shown in the accompanying chart at -10%, -5%, base (R850,000/kg), +5% and +10%, and are derived from a factored application of the base-case scheduled Mineral Reserves, reflecting the impact of a changing gold price on the prevailing cut-offs.

The Mineral Reserve sensitivities are not based on detailed depletion schedules and should be considered on a relative and indicative basis only.

**ESTIMATION RISKS**

Given the extensive mining history and well understood nature of the ore-bodies, there are no deemed material risks to the Mineral Resource Estimation. The key operational risks that could impact the Mineral Reserves are listed below.

**Ageing infrastructure resulting in business interruptions:** All the operating mines were developed between the 1960s and 1980s, and most of the original infrastructure needs regular maintenance. All major installations are continuously reviewed and a comprehensive planned maintenance system is in place.

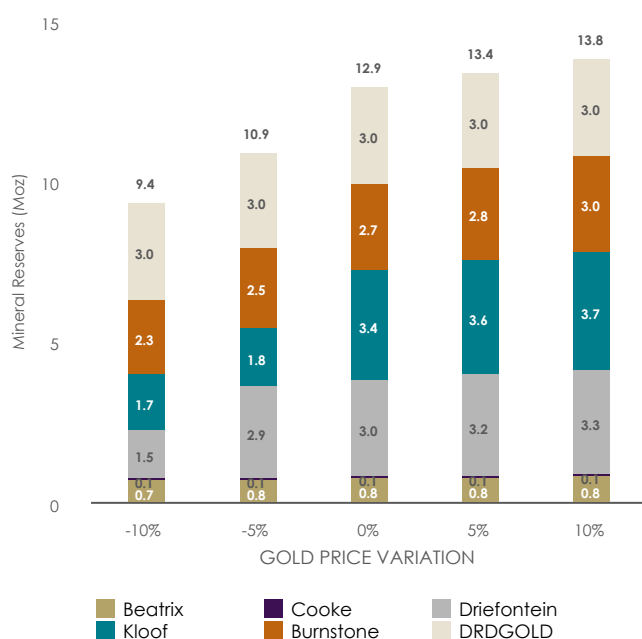
**Seismic risk:** Mining at depth and the extraction of high stressed areas makes the mines prone to mining-induced seismic events. All mine plans are reviewed and approved by qualified rock engineers, and a comprehensive seismic monitoring system is in place and the seismic response to production is monitored daily.

**Power supply interruptions and cost increases:** Eskom (the national power supplier) has proven to be unreliable causing a reduction (Loads shedding and load curtailment) in power supply at certain times and imposing tariff increases above inflation. The operations make use of emergency backup power and conduct load shifting to optimise power supply. The Group is actively expanding its portfolio of renewable energy projects to become more self-sustaining.

**Illegal mining:** Mining activities are occasionally disrupted by illegal miners who gain access to the underground workings and operating footprint. These issues pose threats both to the safety of our employees and our operations and contribute to increasing security-related costs. All shafts are completely fenced off with access controls, and all operating areas are monitored via closed circuit television (CCTV) and are patrolled by security personnel.

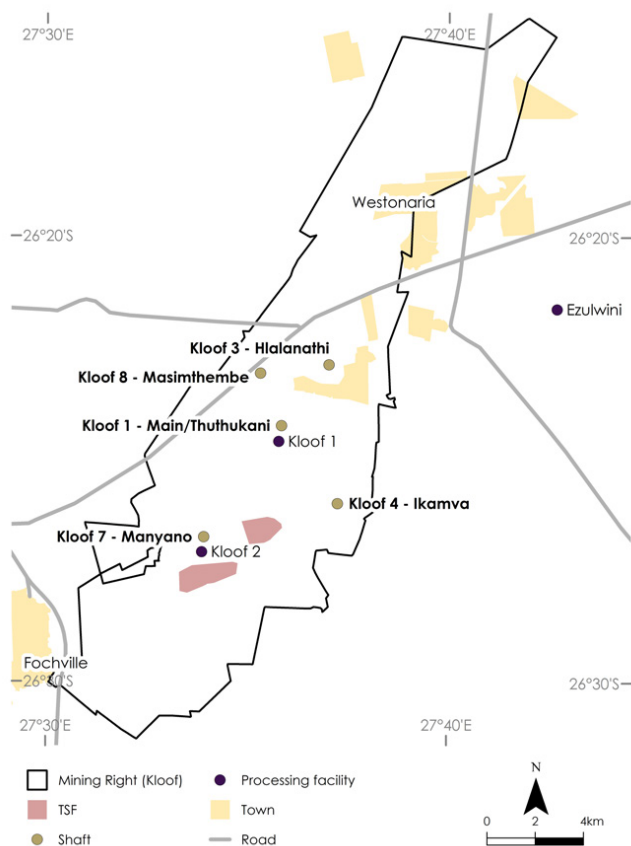
**Failure to deliver on operational plans:** The combined impact of these risks can contribute to a gap between planned and achieved production rates. A Mineral Reserve management programme, comprising an opening up and equipping plan in addition to normal grid development is in place to ensure mining flexibility. Short interval controls are in place to monitor and correct any deviations from the plans.

Gold Mineral Reserves price sensitivity



## GOLD OPERATIONS continued

## KLOOF



## PROPERTY DESCRIPTION

The Kloof operation is an intermediate to ultra-deep level gold mining complex, situated in the West Wits Line of the Witwatersrand Basin, near the towns of Randfontein and Westonaria, approximately 60km west of Johannesburg, in the Gauteng province of South Africa. As discussed in Section 1, the Group considers the Kloof operation as material for the purpose of SK-1300.

The Kloof operation consists of four producing vertical shafts, namely No.1 Shaft, No. 4 Shaft, No. 7 Shaft and No. 8 Shaft. The reef horizon is accessed the deepest (46 Level is currently the deepest working level) at No. 4 Shaft, approximately 3,432m below surface.

Fresh ore is processed at the No. 2 Plant, which is situated near No. 7 Shaft. In addition, selected Kloof surface rock dump (SRD) material is treated at the Ezulwini processing plant and also at the Driefontein No.1 Plant.

## MINERAL TITLE

The Kloof operation is operated under a converted mining right, held in terms of the provisions of the MPRDA under DMRE Ref No GP30/5/1/2/2(66) MR (Kloof MR), valid from 30 January 2007 to 29 January 2027, for gold ore and associated minerals, in respect of a mining area totalling 200.87km<sup>2</sup>.

Based on the current LoM, Kloof will need to request an extension of the Kloof mining right through a renewal application in terms of the provisions of the MPRDA from 2027.

## MINERALISATION CHARACTERISTICS

The Kloof ore bodies comprise four gold-bearing reefs, namely the Ventersdorp Contact Reef (VCR), the Middelvlei Reef (MVR), the Kloof Reef (KR), and the Libanon Reef (LR). The VCR, located at the top of the Central Rand Group, is the main exploited reef accounting for 68% of ore mining at Kloof, while the KR, MVR, and LR account for 21%, 9% and 2%, respectively.

The average dip of the reefs is 25 to 35 degrees to the south-east and the strike is approximately north-east south-west. The reefs are generally less than two metres thick.

Approximately 1% of the total planned gold production comes from low-grade SRDs, which is primarily constituted from contaminated development waste rock, which do not form part of the official Mineral Resources or Mineral Reserves.

## INFRASTRUCTURE AND EQUIPMENT

The Kloof operation is a mature, established mine, making use of conventional breast mining techniques, with all the permanent infrastructure required to access and mine the underground ore over the currently estimated 10 year LoM. In addition, all the surface infrastructure required to process the material and produce doré is in place.

Additional to the four producing shaft systems, one shaft is used for pumping, and one is on care-and-maintenance. There are also two mineral processing plants (One slated for final closure in 2023). Underground development is extensive, as can be expected of a mature mine of this size. Underground infrastructure include access infrastructure to convey personnel, materials and equipment to and from the working areas and associated services to support mining operations. Horizontal infrastructure includes crosscuts, return airway drives, footwall haulage levels and declines/inclines. Infrastructure required for ore flow and services include ore and waste passes, conveyor belts, battery powered rail conveyances, ore bins, loading stations, water dams, dewatering pump stations, secondary ventilation and workshops. Electrical, compressed air, and water reticulation are also part of the installed underground infrastructure.

All equipment required to mine is already in place and being used. SIB capital provisions are made in the LoM technical-economic model for all major equipment upgrades, replacements and maintenance to support the LoM. The property, plant and equipment book value (100%) of all the mine's assets as at 31 December 2022, was R3.6 billion.

The infrastructure on these mines is maintained using sophisticated computerised maintenance management systems, and critical spares are maintained and shared where necessary. Despite the age of the general infrastructure, all surface and underground infrastructure is reasonably well maintained and equipped.

A project to optimise surface and underground infrastructure is in process to reduce fixed overhead costs and capital.



## GOLD OPERATIONS KLOOF continued

## HOISTING AND PRODUCTION CAPACITIES

Operating shaft (No)	Operating hoisting capacity (ktpm)	5-year planned production (ktpm)
No. 1 Shaft	115	77
No. 3* Shaft	—	—
No. 4 Shaft	75	60
No. 7** Shaft	15	9
No. 8 Shaft	31	26

\*Closed end 2021

\*\* To close end 2023

## MINERAL PROCESSING AND CAPACITY

Plant	Design capacity (ktpm)	Operational capacity (ktpm)	Type	Average recovery factor (%)	Material treated
Kloof No.1* Plant	180	—	CIL	—	SRD
Kloof No.2 Plant	167	167	CIP	98	UG

\*No production planned for 2023. Final clean-up only with closure in 2023

## TAILINGS DEPOSITION AND CAPACITY

There are two active TSFs, namely Leeudoorn and Kloof No. 2.

The Leeudoorn TSF has a capacity of 36.4Mt and is fed by the Kloof No. 2 Plant. The LoM requirements for this TSF is 18.5Mt, resulting in a surplus capacity of 17.9Mt. The No. 2 TSF is fed from No. 1 Plant, which is in the process of being closed.

## KEY DEVELOPMENTS AND BROWNFIELD PROJECTS

The Kloof Integration Project aims to optimise and rationalise the infrastructure between No. 3 Shaft and No. 4 Shaft, and between No. 1 Shaft and No. 3 Shaft. This has allowed for the phased closure of the No. 3 Shaft sub vertical shaft with the final closure of the main shaft-barrel planned for 2023. The final phase entails the re-opening of old development areas between No. 1 Shaft and No. 3 Shaft which will allow the mining of the remaining VCR and other secondary reefs at No. 3 Shaft, from No. 1 Shaft.

The Kloof Integration Project also involves the development of inclined access from 41 Level at No. 4 Shaft up to 40 Level at No. 7 Shaft. The development phase is complete and equipping is in progress. An extension of the same project entails a similar access to link 42 and 43 Levels together. This project will allow access via No. 7 Shaft resulting in more face time for crews. The access development for this extension is already underway.

The Kloof No. 4 Shaft Depth Extension Project consists of a decline ramping down one level below infrastructure. The decline between 45 and 46 Levels has been developed, and the remaining raiseboring and equipping is in progress. The access ramp was developed by means of mechanised mining equipment. A raisebore drillhole site has been established and will be drilled and reamed back up to 45 Level for infrastructure and return ventilation purposes. The first raisebore hole will be completed in 2023.

## Gold Mineral Resource estimate at 31 December 2022

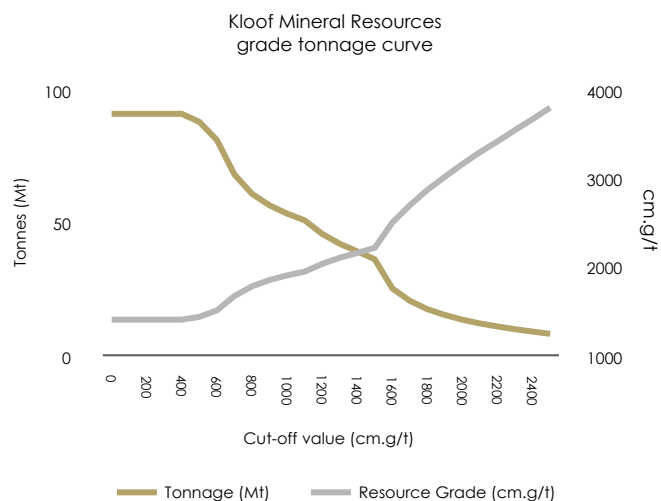
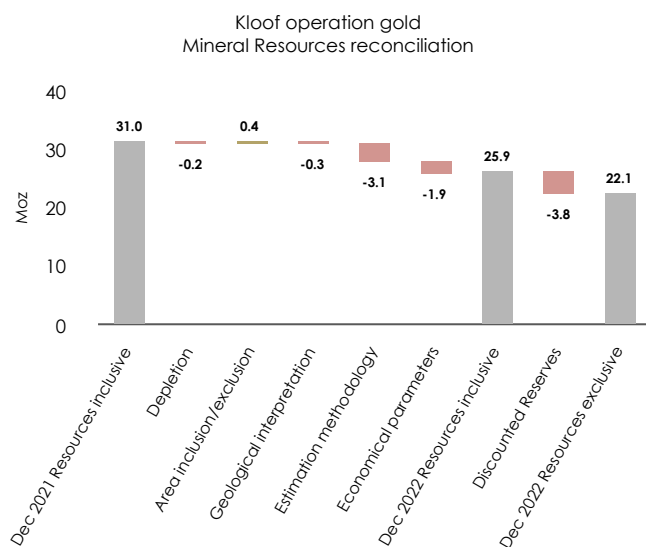
## Mineral Resources Inclusive of Mineral Reserves

GOLD Kloof			31 Dec 2022			31 Dec 2021		
			Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Tonnes (Mt)	Grade (g/t)	Gold (Moz)
Operations	Underground	Measured	32.8	11.4	12.0	34.5	11.3	12.6
		Indicated	35.8	6.8	7.9	35.7	7.0	8.0
		Measured + Indicated	68.6	9.0	19.9	70.2	9.1	20.6
		Inferred	21.7	8.7	6.1	28.1	11.5	10.4
Grand total			90.4	8.9	25.9	98.3	9.8	31.0

## Mineral Resources Exclusive of Mineral Reserves

GOLD Kloof			31 Dec 2022			31 Dec 2021		
			Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Tonnes (Mt)	Grade (g/t)	Gold (Moz)
Operations	Underground	Measured	24.9	11.2	9.0	26.7	11.1	9.5
		Indicated	33.3	6.6	7.1	32.0	6.7	6.9
		Measured + Indicated	58.2	8.6	16.1	58.7	8.7	16.4
		Inferred	21.7	8.7	6.1	28.1	11.5	10.4
Grand total			80.0	8.6	22.1	86.8	9.6	26.8

## GOLD OPERATIONS KLOOF continued

**Notes:**

The -16.3% change year-on-year in the stated Mineral Resources (Inclusive of Mineral Reserves) is attributed to:

- -0.2Moz in depletions
- +0.4Moz in area inclusion/exclusions

- -3.1Moz in estimation methodology with the key change the re-interpretation of the domain at the EBA area (-2.8Moz)
- -1.9Moz due to economical parameters related to changes in cut-off grades

On a Mineral Resources exclusive of Mineral Reserves basis, the year-on-year change is -17.5%.

The year-on-year change is not considered material. It impacts mostly on Inferred Resources, below Shaft Infrastructure (BI), that does not contribute to Mineral Reserves.

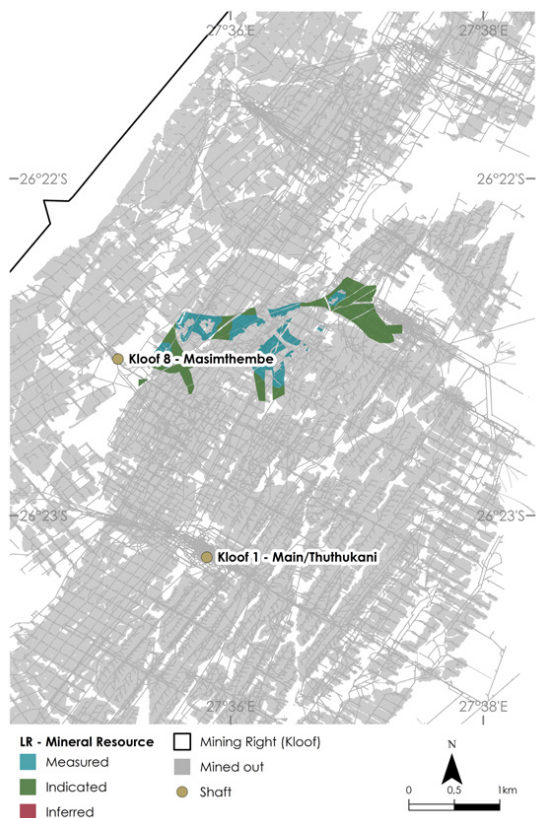
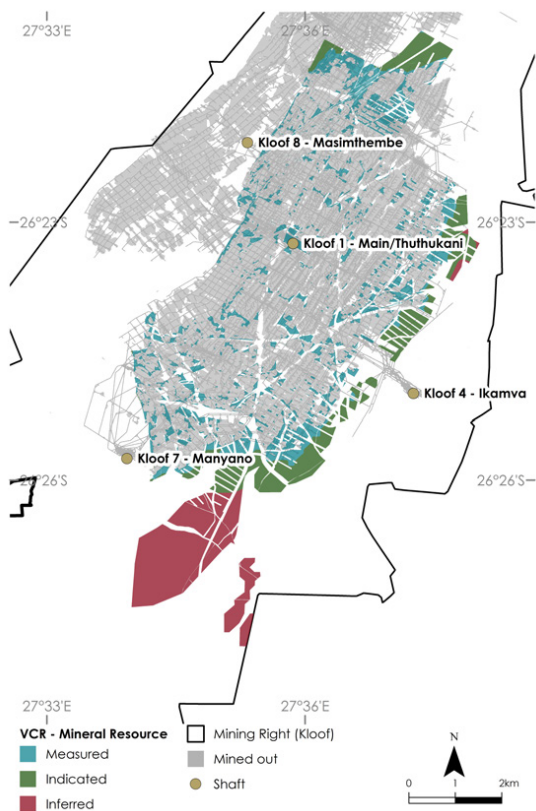


Kloof 8 shaft



## GOLD OPERATIONS KLOOF continued

## Mineral Resources classification maps for Kloof operation per reef





## GOLD OPERATIONS KLOOF continued

## Grade control and ore definition drilling summary

	Planned 2023		Actual 2022		Actual 2021	
	Drilled (m)	Expenditure (Rm)	Drilled (m)	Expenditure (Rm)	Drilled (m)	Expenditure (Rm)
Grade control and ore definition	20,200	27.60	12,714	18.40	14,282	15.96

## Annual development results

Category	Unit	2022	2021
Primary waste development (capital, declines, haulages, crosscuts, boxholes, travelling ways)	m	5,268	10,546
Primary reef development (raise, winzes, wide raises)	m	1,684	2,819

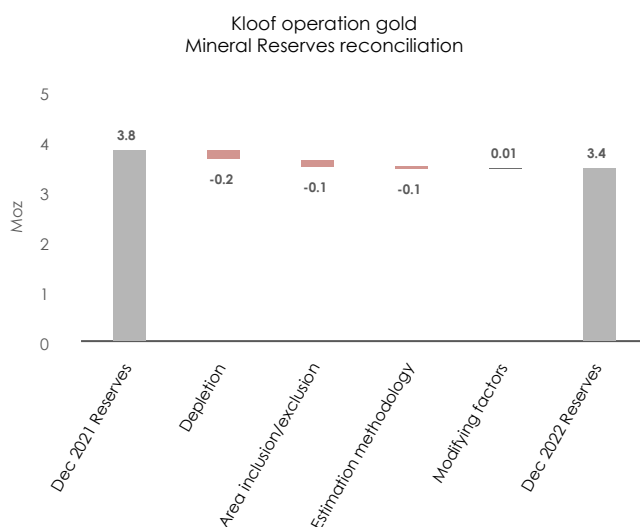
## Modifying factors (Underground) in converting Mineral Resources to Mineral Reserves

Parameter	Unit	2022	2021
Average Mined Value (over LoM)	(cm.g/t)	1559	1589
Waste Mining Percentage	%	2.4	3.5
Mine Call Factor	%	84.7	85.3
Plant Recovery Factor	%	98	97.7
Development to Mill	%	11.4	13
Survey Discrepancy	%	10.7	10.9
Resource Channel Width	cm	118	119
Average Stoping Width	cm	173	171
Average Weighted Resource Cut-off	(cm.g/t)	760	700
Mineral Reserves Pay Limit (Year 1)	(cm.g/t)	1640	1550

## Gold Mineral Reserve estimate at 31 December 2022

## Mineral Reserves

GOLD                      Southern Africa				31 Dec 2022			31 Dec 2021		
				Tonnes	Grade	Gold	Tonnes	Grade	Gold
Kloof				(Mt)	(g/t)	(Moz)	(Mt)	(g/t)	(Moz)
Operations	Underground	Proved		11.0	6.1	2.1	12.7	6.2	2.5
		Probable		7.5	5.4	1.3	7.7	4.9	1.2
Grand total Proved + Probable				18.6	5.8	3.4	20.3	5.7	3.8

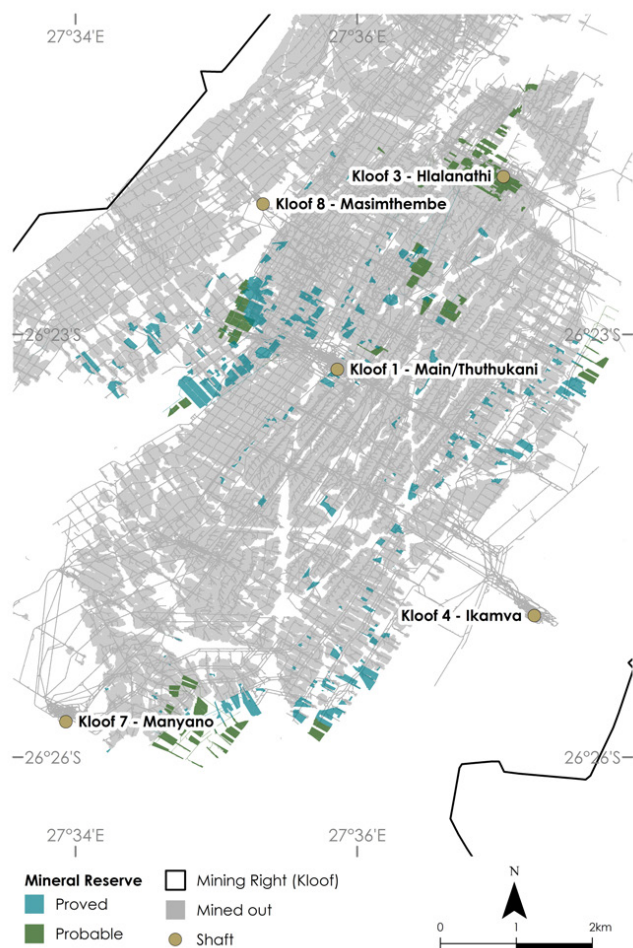


Notes: The -9% change year-on-year in the stated Mineral Reserves is attributed to:

- 0.2Moz in depletions
- 0.2Moz in area exclusions due to the removal of the 47 Level leg of the No. 4 Shaft depth extension
- 0.1Moz due to changes in the estimation model on the VCR affecting No. 1 and No. 4 Shafts

## GOLD OPERATIONS KLOOF continued

## Mineral Reserves classification map for Kloof operation (all reefs)



## HISTORY AND OPERATIONAL STATISTICS

- In 1887, Gold Fields of South Africa Limited was established.
- In 1892, Gold Fields of South Africa Limited was renamed Consolidated Gold Fields of South Africa to mine the deep-level gold deposit of the Witwatersrand.
- Geophysical prospecting work conducted in the 1930's led to the drilling and subsequent sinking of Venterspost Shaft in 1934, with first gold poured in 1939.
- In 1964, Kloof's main twin-shaft complex was initiated and the mine was officially opened in 1968.
- In 2000, the formation of the Kloof Gold Mine in its present form commenced with the amalgamation of the Venterspost, Libanon, Kloof and Leeudoorn gold mines.
- In 2012, the conventional South African assets of Gold Fields Limited were unbundled into Sibanye Gold Limited.
- The No. 4 Shaft drop-down project feasibility study was completed in 2015, and in 2017, the project commenced, while the integration project for the optimisation of infrastructure was approved in 2018.
- Production returned to normalised levels following protracted industrial action, which saw limited production taking place between December 2018 and May 2019.
- The COVID-19 pandemic and the associated national lockdown halted all production from April to the middle of May 2020, at which point a gradual build-up in production was initiated.
- In 2021, the No. 4 Shaft depth extension project development was completed to 46 Level.
- Industrial action by all unions resulted in a production stoppage between March 2022 and June 2022.

Operational statistics	2020	2021	2022
Underground tonnes milled (kt)	1,569	1,862	992
Underground yield (g/t)	5.77	5.13	4.34
Annual Au production - Underground (koz)	291	307	138
<b>Total Annual Au production (koz)</b>	<b>352</b>	<b>352</b>	<b>158</b>
Operating cost underground (R/t)	3,831	3,769	6,045
Total capital expenditure (Rm)	1,270	1,616	1,285
AISC (R/kg)	764,007	858,316	1,592,030
AISC (US\$/oz)	1,444	1,805	3,025

**Note:** AISC calculated based on Oz sold

## GOLD OPERATIONS continued

## DRIEFONTEIN



## PROPERTY DESCRIPTION

Driefontein is a mature intermediate to ultra-deep level gold mine, located near Carletonville, approximately 70km west of Johannesburg, in the Gauteng province of South Africa. It consists of four vertical operating shafts, No. 1 Shaft, No. 4 Shaft, No. 5 Shaft and No. 8 Shaft, extending down to 50 Level (the lowest working level) at No. 5 Shaft, approximately 3,300m below surface. As discussed in Section 1, the Group considers the Driefontein operation as material for the purpose of SK-1300.

Ore from all the shafts is processed at Driefontein No. 1 Plant. The production from No. 4 Shaft and No. 5 Shaft is conveyed underground to No. 2 Shaft on 22 and 24 levels for hoisting.

The Driefontein mining complex has three fissure water pumping shafts: No. 8 Shaft, No. 10 Shaft, and North Shaft (next to No. 8 Shaft), of which only No. 8 Shaft is still operational. North Shaft pumps bulk fissure water for treatment to potable water standards for own use. Driefontein No. 10 Shaft has been placed on care and maintenance and is only maintained to pump fissure water. These shafts combined pump approximately 100ML/day to prevent the operations from flooding.

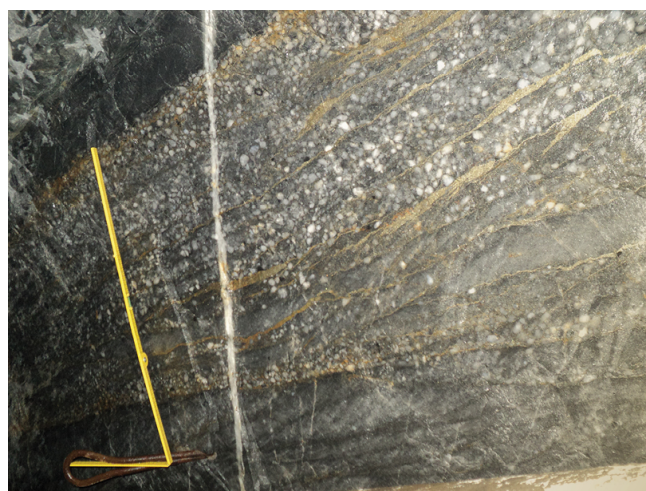
## MINERAL TITLE

Driefontein is operated under a converted mining right in terms of the MPRDA with DMRE Ref No GP30/5/1/2/2(51) MR (Driefontein MR), valid from 30 January 2007 to 29 January 2037, for gold and associated minerals, in respect of a mining area totalling 85.61km<sup>2</sup>.

## MINERALISATION CHARACTERISTICS

The Driefontein operation exploits three primary reefs, namely the Ventersdorp Contact Reef (VCR) located at the top of the Central Rand Group, the Carbon Leader Reef (CLR) near the base of the Group, and the Middelvellei Reef (MVR), which stratigraphically occurs some 50 to 75 metres above the CLR.

The VCR strikes east-northeast and has a regional dip of about 21° to the south-southeast, CLR strikes west-southwest and dips to the south at approximately 25°, and MVR strikes west-southwest with a regional dip of approximately 22° to the south-southeast. The reefs are generally less than two metres thick, and are widely considered to represent extensive fluvial fans, and as such they are laterally continuous with clear patterns of mineralisation governed by sedimentary characteristics. Most of the mining take place on the VCR, which constitutes 63% of the Mineral Reserves, the CLR 30%, and MVR the remaining 7%.



Carbon Leader Reef

## INFRASTRUCTURE AND EQUIPMENT

The Driefontein operation has been in production since the 1950s with the last shafts being commissioned in the late 1990s. It includes all the permanent infrastructure required to access and mine the underground areas. All the mineral processing infrastructure is also well established and in use.

The shafts are well maintained and will support mining operations over the estimated 10 year LoM.

The underground development is extensive, as can be expected of a mature mine of this size. All footwall access development is mined using mechanical rail-bound methods that are well understood.

All stoping is completed using conventional, narrow tabular methods and as such is relatively labour intensive. Provision is made in the LoM and technical-economic model for all major equipment upgrades, replacements and maintenance to support the LoM. The property, plant and equipment book value (100%) of all the mine's assets as at 31 December 2022, was R3.3 billion.



## GOLD OPERATIONS DRIEFONTEIN continued

## HOISTING AND PRODUCTION CAPACITIES

Operating shaft (No)	Operating hoisting capacity (ktpm)	5-year planned production (ktpm)
No. 1 Shaft	36	23
No. 2* Shaft	90	57
No. 4 Shaft	25	22
No. 5 Shaft	106	35
No. 8 Shaft	29	26

\* Includes No. 4 and No. 5 Shafts production

## MINERAL PROCESSING AND CAPACITY

Plant	Design capacity (ktpm)	Operational capacity (ktpm)	Type	Average recovery factor (%)	Material treated
No.1 Plant	240	240/120*	CIP	97.0 / 84.1	UG/SRD

\* Reduce to one mill

## TAILINGS DEPOSITION AND CAPACITY

There are two active TSFs, Driefontein TSF 1 and Driefontein TSF 2, both being fed with a mix of underground and SRD tailings:

- Driefontein TSF 1 has available capacity of 10.1Mt with an estimated LoM depositional requirement of 6.0Mt, resulting in surplus capacity of 4.1Mt
- Driefontein TSF 2 has available capacity of 10.0Mt with an estimated LoM depositional requirement of 6.0Mt, resulting in surplus capacity of 4.0Mt

## KEY DEVELOPMENTS AND BROWNFIELD PROJECTS

The No. 4 Shaft Pillar Extraction Project is in execution with initial wide raise development currently taking place in the outer rim of the pillar area. Final extraction has been sequenced to coincide with the extraction of the remaining Mineral Reserves on the lower levels.

Continuous exploration drilling of the VCR at No. 1 Shaft and No. 5 Shaft led to an increase in Mineral Reserves of more than 0.2Moz during 2022. This exploration programme is ongoing and is likely to continue playing a critical role in securing LoM extensions at these shafts.

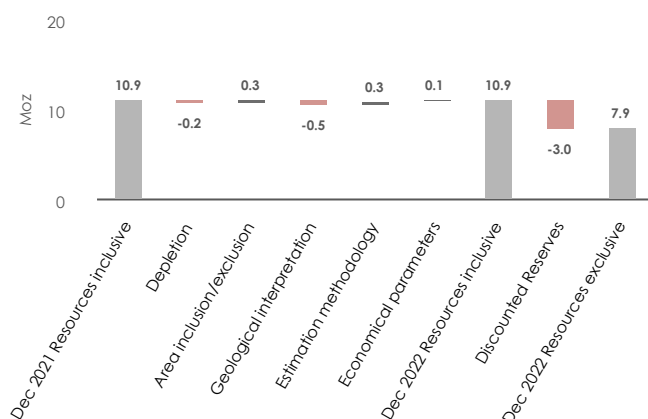
## Gold Mineral Resource estimate at 31 December 2022

## Mineral Resources Inclusive of Mineral Reserves

Mineral resources inclusive of mineral reserves				31 Dec 2022			31 Dec 2021		
				Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Tonnes (Mt)	Grade (g/t)	Gold (Moz)
GOLD	Southern Africa								
Driefontein									
Operations	Underground	Measured		20.7	11.0	7.3	21.1	10.9	7.4
		Indicated		11.7	9.0	3.4	12.2	8.5	3.3
		Measured + Indicated		32.4	10.2	10.7	33.3	10.0	10.7
		Inferred		1.3	4.8	0.2	0.8	6.6	0.2
Grand total				33.7	10.0	10.9	34.1	9.9	10.9

## Mineral Resources Exclusive of Mineral Reserves

				31 Dec 2022			31 Dec 2021		
				Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Tonnes (Mt)	Grade (g/t)	Gold (Moz)
GOLD	Southern Africa								
Driefontein									
Operations	Underground	Measured	16.7	9.4	5.0	16.0	9.1	4.7	
		Indicated	9.9	8.2	2.6	10.0	7.9	2.5	
		Measured + Indicated	26.6	8.9	7.7	26.0	8.7	7.2	
		Inferred	1.3	4.8	0.2	0.8	6.6	0.2	
Grand total			28.0	8.7	7.9	26.7	8.6	7.4	

Driefontein operation gold  
Mineral Resources reconciliation

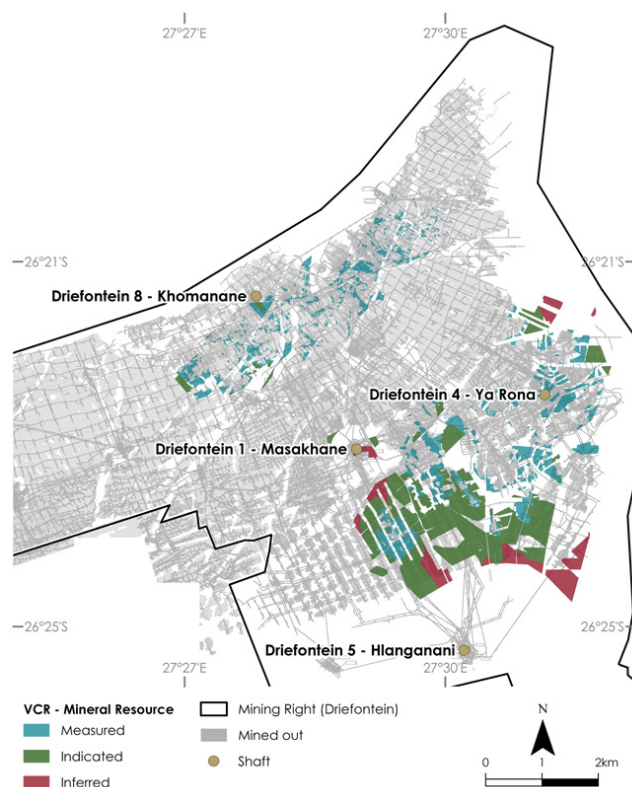
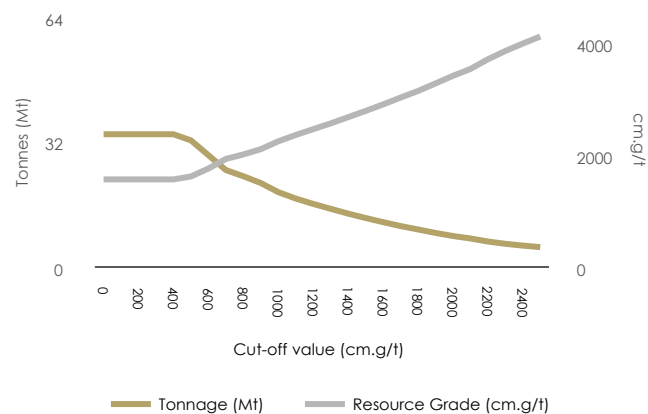
## Notes:

The -0.1% change year-on-year in the stated Mineral Resources (Inclusive of Mineral Reserves) is attributed to

- -0.2Moz in depletions
- +0.3Moz in area inclusion/exclusion
- -0.5Moz in changes to the geological interpretation: Shaft scenario and structure update at No. 1 Shaft (-0.8Moz); Shaft scenario and structure update at No. 5 Shaft (+0.3Moz)
- +0.3Moz due to a change in estimation methodology: No. 1 Shaft re-interpretation of domain (+0.1Moz); No. 5 Shaft re-interpretation of domain (+0.2Moz)
- +0.1Moz due to a change in economical parameters: increase in the cut-off grades for No. 4 and No. 8. Shaft (-0.3Moz); cut-off grades were decreased for No. 1 and No. 5 Shaft (+0.4Moz)

On a Mineral Resources exclusive of Mineral Reserves basis, the year-on-year change is +6.4%.

## GOLD OPERATIONS DRIEFONTEIN continued

Mineral Resources classification maps for Driefontein  
operation per reefDriefontein Mineral Resources  
grade tonnage curve

GOLD OPERATIONS DRIEFONTEIN continued

## Grade control and definition drilling summary

	Planned 2023		Actual 2022		Actual 2021	
	Drilled (m)	Expenditure (Rm)	Drilled (m)	Expenditure (Rm)	Drilled (m)	Expenditure (Rm)
Grade control and ore definition	20,017	22.59	13,280	16.99	20,028	22.54

## Annual development results

Category	Unit	2022	2021
Primary waste development (capital, declines, haulages, crosscuts, boxholes, travelling ways)	m	4,418	7,107
Primary reef development (raise, winzes, wide raises)	m	1,060	1,838

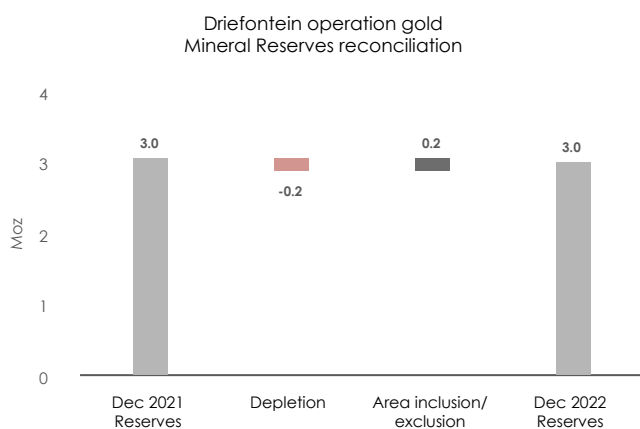
## Modifying factors (underground) in converting Mineral Resource to Mineral Reserves

Parameter	Unit	2022	2021
Average Mined Value (over LoM)	(cm.g/t)	1964	1925
Waste Mining Percentage	%	6	6
Mine Call Factor	%	82.8	85
Plant Recovery Factor	%	97	97
Development to Mill	%	9.4	11
Survey Discrepancy	%	11.1	12
Resource Channel Width	cm	72	71
Average Stoping Width	cm	152	152
Average Weighted Resource Cut-off	(cm.g/t)	700	810
Mineral Reserves Pay Limit (Year 1)	(cm.g/t)	1900	1820

## Gold Mineral Reserve estimate at 31 December 2022

## Mineral Reserves

GOLD Southern Africa				31 Dec 2022			31 Dec 2021		
				Tonnes	Grade	Gold	Tonnes	Grade	Gold
Driefontein				(Mt)	(g/t)	(Moz)	(Mt)	(g/t)	(Moz)
Operations	Underground	Proved		5.8	8.4	1.6	7.7	8.4	2.1
		Probable		5.6	7.9	1.4	4.2	7.2	1.0
Grand total Proved + Probable				11.4	8.1	3.0	11.9	8.0	3.0



**Notes:** The -2% change year-on-year in the stated Mineral Reserves is attributed mainly to depletion and area inclusions on the VCR at No. 1 and No. 5 Shafts.

## OPERATIONAL STATISTICS

Operational statistics	2020	2021	2022
Underground tonnes milled (kt)	1,224	1,474	840
Underground yield (g/t)	6.36	6.11	5.45
Annual Au production - Underground (koz)	250	290	147
<b>Total Annual Au production (koz)</b>	<b>250</b>	<b>298</b>	<b>157</b>
Operating cost underground (R/t)	4,091	3,778	6,289
Total capital expenditure (Rm)	929	1,499	1,152
AISC (R/kg)	788,708	793,000	1,378,868
AISC (US\$/oz)	1,490	1,668	2,620

**Note:** AISC calculated based on Oz sold



GOLD OPERATIONS DRIEFONTEIN continued

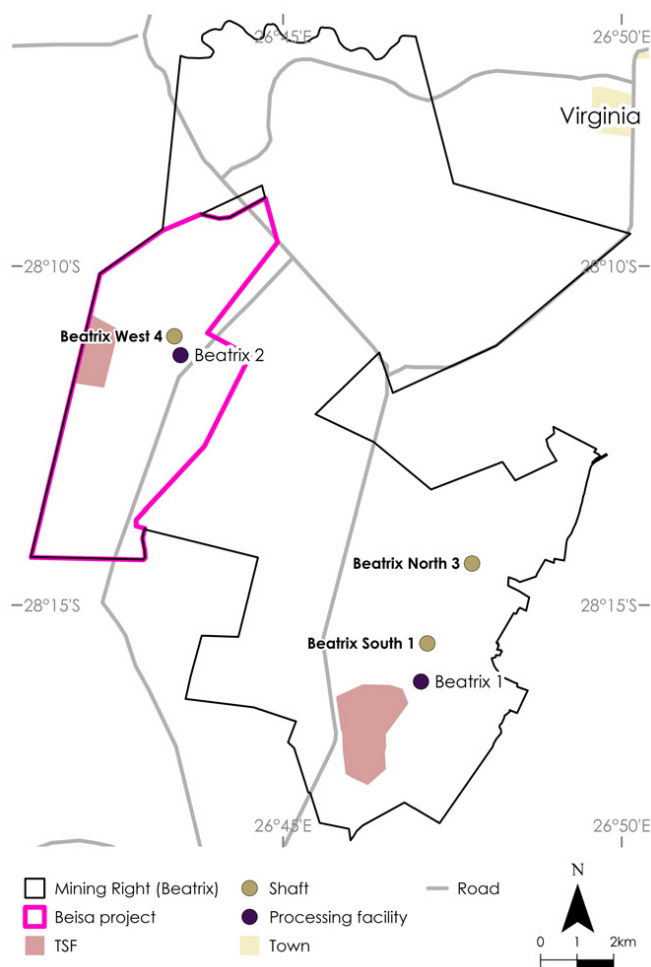
**Mineral Reserves classification map for the Driefontein operation (all reefs)****HISTORY**

- Exploration activities from 1933 to 1939 culminated in the registration of West Driefontein Mining Company in 1945
- West Driefontein started milling ore in 1952 following shaft sinking
- Further exploration lead to the adjoining East Driefontein Gold Mining Company Limited in 1968, with first production in 1972
- In 1981 East Driefontein Gold Mining Company Ltd became a wholly-owned subsidiary of Driefontein Consolidated Ltd
- In 1999, Gold Fields Limited obtained full control of Driefontein Gold Mine by buying AngloGold Ashanti Limited's 21.5% shareholding
- In 2012, the conventional South African assets of Gold Fields Limited were unbundled into Sibanye Gold Limited
- In 2014, Sibanye-Stillwater completed the PFS of the Driefontein No. 5 Shaft Drop-down Project and drop-down development commenced. This decline project was deferred in 2018
- In 2019 the No. 4 Shaft Pillar extraction project commenced
- The COVID-19 pandemic and the associated national lockdown halted all production from April to the middle of May 2020, at which point a gradual build-up in production was initiated
- In 2021, successful exploration of the secondary VCR at No.1 Shaft and No. 5 Shaft increased Mineral Reserves by >0.3Moz. Ongoing success has resulted in an extension of LoM to 2032

**Driefontein 5 Shaft**

## GOLD OPERATIONS continued

## BEATRIX



## PROPERTY DESCRIPTION

Beatrix is a mature, shallow to intermediate level underground gold operation, is located near the towns of Welkom and Virginia, approximately 280km south-west of Johannesburg, in the Free State province of South Africa.

## Gold Mineral Resource estimate at 31 December 2022

Mineral Resources Inclusive of Mineral Reserves

				31 Dec 2022			31 Dec 2021		
GOLD	Southern Africa			Tonnes	Grade	Gold	Tonnes	Grade	Gold
Beatrix				(Mt)	(g/t)	(Moz)	(Mt)	(g/t)	(Moz)
Operations	Beatrix	Underground	Measured	22.1	7.0	5.0	22.9	6.9	5.1
			Indicated	17.4	6.1	3.4	17.8	6.1	3.5
			Measured + Indicated	39.5	6.6	8.4	40.7	6.5	8.5
			Inferred	1.6	4.5	0.2	1.7	4.2	0.2
	Beisa	Underground	Measured	3.6	3.2	0.4	3.6	3.2	0.4
			Indicated	7.8	3.3	0.8	7.8	3.3	0.8
			Measured + Indicated	11.4	3.3	1.2	11.4	3.3	1.2
			Inferred	0.04	3.3	0.004	0.04	3.3	0.004
Total Measured + Indicated				50.9	5.9	9.6	52.1	5.8	9.7
Grand total				52.5	5.8	9.9	53.8	5.8	10.0

Beatrix, a conventional mining operation, consists of three operating shafts: No. 1 Shaft, No. 3 Shaft, and No. 4 Shaft. The ore-body is accessed using vertical shaft systems down to 26 Level (the lowest working level at No. 3 Shaft), approximately 1,350m below surface. Mining predominantly takes place from No. 3 Shaft. The No. 1 Shaft will remain open in support of No. 3 Shaft while No. 4 Shaft is in the process of being placed on care and maintenance.

## MINERAL TITLE

Beatrix is operated under a converted mining right in terms of the Mineral and Petroleum Resources Development Act (MPRDA), with DMRE Ref No FS30/5/1/2/2 81 MR (Beatrix MR). The Beatrix mining right expired on 6 February 2019, and a renewal was granted for a further period of eleven years ending in 2030 under DMRE renewal reference: FS 30/5/1/2/2/10047 MR for gold and associated minerals, in respect of a mining area totalling 168.21km<sup>2</sup>.

## MINERALISATION CHARACTERISTICS

The Beatrix operations exploits the VS5/Beatrix reefs (VS5/BXR) at the base of the Eldorado Formation and the Aandenk reef (AAR) at the base of the Aandenk Formation.

In general, the Composite VS5/AAR Reefs range between 130cm and 350cm in width. The orebody is shallow dipping at 10° to 15°.

## TAILINGS DEPOSITION AND CAPACITY

There is one active TSF, the Beatrix TSF; and one dormant TSF, the No. 4 Shaft TSF. The Beatrix TSF has remaining capacity of 11.8Mt with expected LoM deposition of 7.2Mt, which is 4.6Mt surplus.

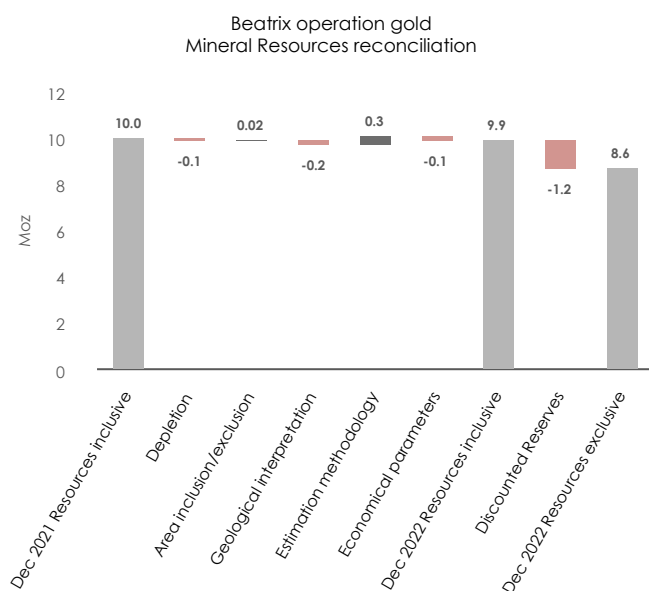
## KEY DEVELOPMENTS AND BROWNFIELD PROJECTS

The operation is at a mature stage with the current LoM plan ending in 2026. Life extension opportunities are limited, but No. 1 Shaft is being kept open on an incremental value contribution basis in the LoM plan. At No. 3 Shaft, previously unmined (white) areas have been included in the Mineral Reserves and remaining areas will continuously be assessed for viability.

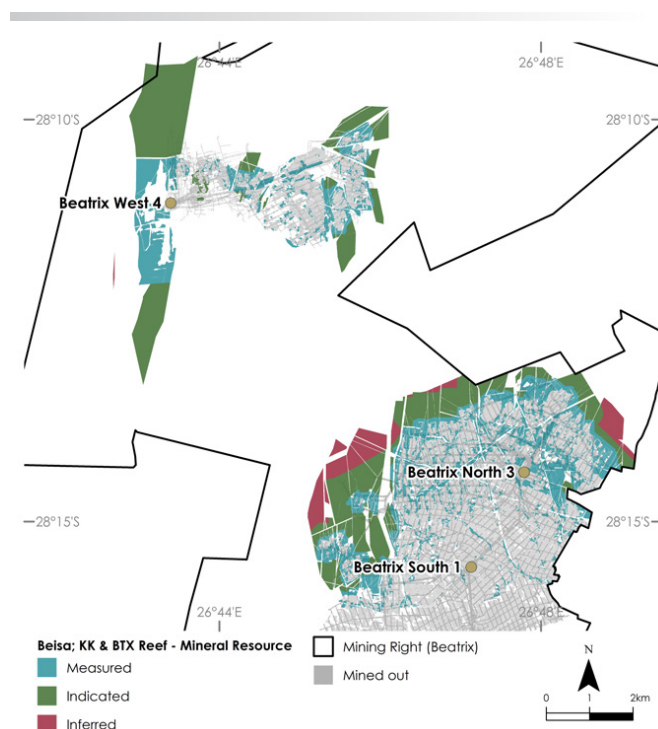
## GOLD OPERATIONS BEATRIX continued

## Mineral Resources Exclusive of Mineral Reserves

				31 Dec 2022			31 Dec 2021		
GOLD	Southern Africa			Tonnes	Grade	Gold	Tonnes	Grade	Gold
Beatrix				(Mt)	(g/t)	(Moz)	(Mt)	(g/t)	(Moz)
Operations	Beatrix	Underground	Measured	17.0	7.0	3.8	18.2	6.9	4.0
			Indicated	16.9	6.2	3.4	16.9	6.1	3.3
			Measured + Indicated	33.9	6.6	7.2	35.1	6.5	7.3
			Inferred	1.6	4.5	0.2	1.7	4.2	0.2
	Beisa	Underground	Measured	3.6	3.2	0.4	3.6	3.2	0.4
			Indicated	7.8	3.3	0.8	7.8	3.3	0.8
			Measured + Indicated	11.4	3.3	1.2	11.4	3.3	1.2
			Inferred	0.04	3.3	0.004	0.04	3.3	0.004
Total Measured + Indicated				45.2	5.8	8.4	46.4	5.7	8.5
Grand total				46.9	5.7	8.6	48.2	5.7	8.8



## Mineral Resources classification map for the Beatrix operation



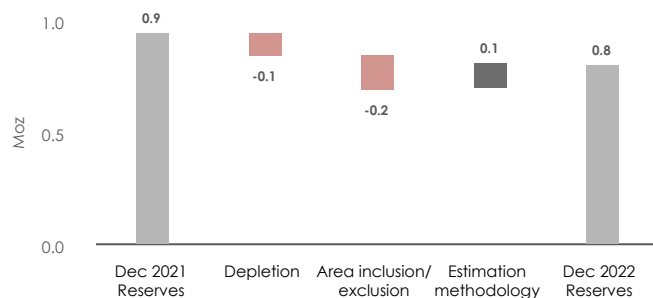
## Gold Mineral Reserve estimate at 31 December 2022

## Mineral Reserves

GOLD				31 Dec 2022			31 Dec 2021		
				Tonnes	Grade	Gold	Tonnes	Grade	Gold
Southern Africa				(Mt)	(g/t)	(Moz)	(Mt)	(g/t)	(Moz)
Beatrix									
Operations	Underground	Proved		5.9	3.8	0.7	6.8	3.9	0.8
		Probable		0.7	3.1	0.1	0.9	2.7	0.1
Grand total Proved + Probable				6.7	3.7	0.8	7.7	3.7	0.9



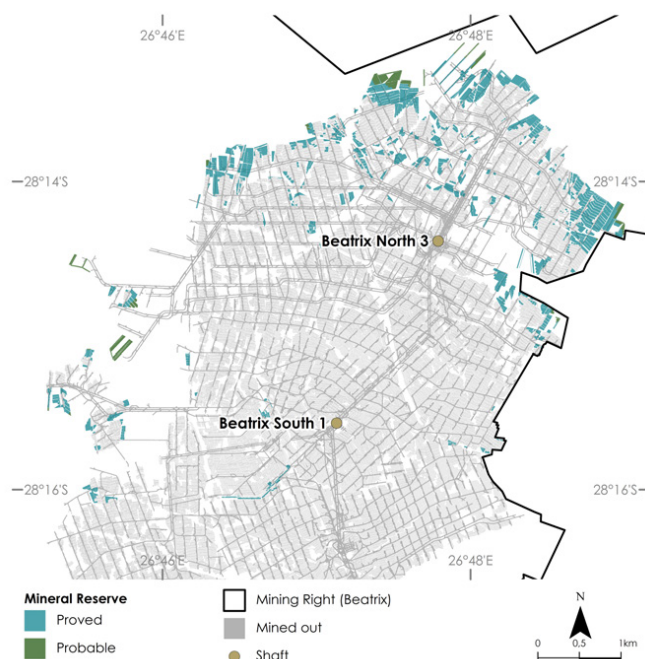
## GOLD OPERATIONS BEATRIX continued

Beatrix operation gold  
Mineral Reserves reconciliation

Operational statistics	2020	2021	2022
Underground tonnes milled (kt)	1,569	1,862	992
Underground yield (g/t)	5.77	5.13	4.34
Annual Au production - Underground (koz)	291	307	138
<b>Total Annual Au production (koz)</b>	<b>352</b>	<b>352</b>	<b>158</b>
Operating cost underground (R/t)	3,831	3,769	6,045
Total capital expenditure (Rm)	1,270	1,616	1,285
AISC (R/kg)	764,007	858,316	1,592,030
AISC (US\$/oz)	1,444	1,805	3,025

**Note:** AISC calculated based on Oz sold

Beatrix Mineral Reserves classification map



## URANIUM AT BEATRIX

The Beisa uranium Mineral Resource is contained in the Beisa Reef that occurs in the western portion (No. 4 Shaft) of the Beatrix operation's mining right. An initial concept study was conducted in 2013 into the feasibility of re-starting gold and uranium co-production by accessing the Beisa reef from the Beatrix No. 4 shaft. The feasibility of this project is continually being monitored and it remains an important, strategic uranium development opportunity under favourable uranium market conditions.

## Uranium Mineral Resource estimate at 31 December 2022

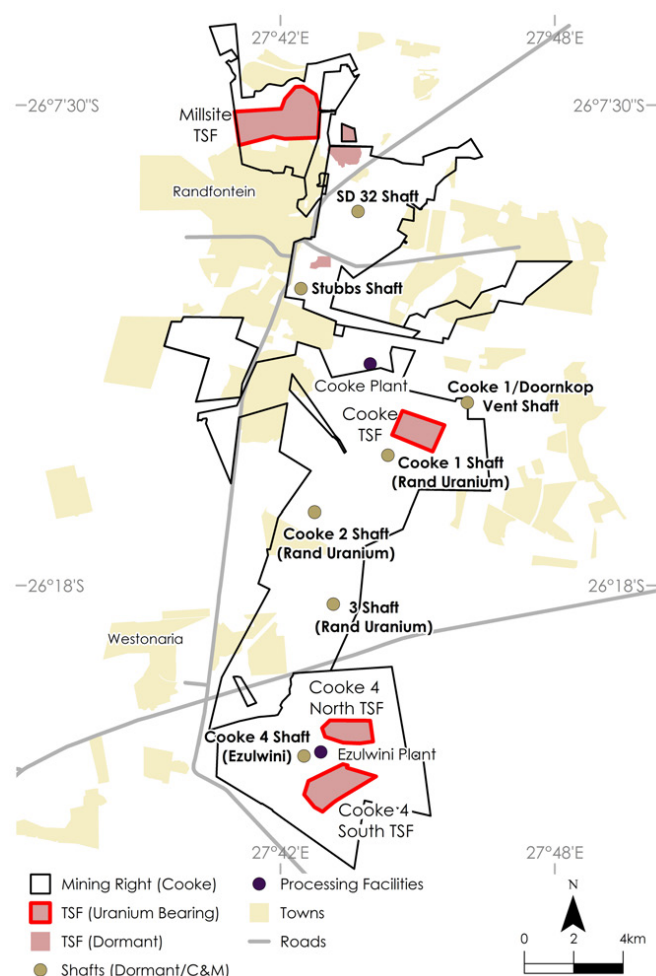
## Mineral Resources

URANIUM BEATRIX Southern Africa				31 Dec 2022			31 Dec 2021		
				Tonnes (Mt)	Grade (kg/t)	U <sub>3</sub> O <sub>8</sub> (Mlb)	Tonnes (Mt)	Grade (kg/t)	U <sub>3</sub> O <sub>8</sub> (Mlb)
Exploration	Beisa	Underground	Measured	3.6	1.1	8.5	3.6	1.1	8.5
			Indicated	7.8	1.1	18.3	7.8	1.1	18.3
			Measured + Indicated	11.4	1.1	26.9	11.4	1.1	26.9
			Inferred	0.04	1.1	0.1	0.04	1.1	0.1
Total Measured + Indicated				11.4	1.1	26.9	11.4	1.1	26.9
Grand total				11.4	1.1	27.0	11.4	1.1	27.0

**Note:** No year-on-year change

## GOLD OPERATIONS continued

## COOKE



## PROPERTY DESCRIPTION

The Cooke operation is situated in the West Wits Line of the Witwatersrand Basin, near the town of Randfontein approximately 35km south-west of Johannesburg, in the Gauteng province of South Africa.

It was previously a large underground mining complex, consisting of four vertical production shafts, but the final underground workings were placed on care and maintenance during 2017. Current operations comprise the Randfontein Surface Operation (RSO), which mines and re-treats historic tailings through the Cooke Gold Plant. In addition, Ezulwini Gold Plant (at No. 4 Shaft) is used as a toll treating facility, catering to both external and other internal operations.

## MINERAL TITLE

Rand Uranium (Pty) Ltd (a subsidiary of Sibanye Gold Limited) holds a converted mining right over the operations known as Cooke No. 1, No. 2 and No. 3 in terms of the MPRDA, under DMRE Ref No GP30/5/1/2/2/07 MR (Cooke No. 1, No. 2 and No. 3 MR), valid from 18 December 2007 to 17 December 2037 and covering a total area of 78.75km<sup>2</sup>.

An application was submitted in terms of the provisions of Section 102 of the MPRDA in 2015 for the areas covering Cooke 4 South TSF and Millsite tailings complex, to be incorporated into the Cooke No. 1, No. 2 and No. 3 mining right area. This application is not yet finalised.

Rand Uranium (Pty) Ltd also holds a converted mining right over the operation known as Randfontein Surface Operation in terms of the MPRDA, under DMRE Ref No GP30/5/1/2/2/173 MR (RSO MR) valid from 7 May 2009 to 6 May 2039, with a total area of 31.30km<sup>2</sup>.

Ezulwini Mining Company (Pty) Ltd (a subsidiary of Sibanye Gold Limited) holds a mining right in terms of the provisions of Section 23 of the MPRDA over the operation known as Cooke No. 4 (Ezulwini), under DMRE Ref No GP30/5/1/2/2/38 MR (Ezulwini MR), valid from 20 November 2006 to 19 November 2036 and covering a total area of 37.18km<sup>2</sup>.

## MINERALISATION CHARACTERISTICS

The mineral assets are historical gold plant tailings material from the mining of auriferous and uraniferous ore from the Witwatersrand Basin. The typical composition is quartz (70% to 80%), mica (10%), chlorite and chloritoid (9% to 18%) and pyrite (1% to 2%).

## INFRASTRUCTURE AND EQUIPMENT

The Rand Surface Operation (RSO) is a mature, established and ongoing reprocessing operation. At the Ezulwini plant, there is an independent uranium recovery circuit, which is currently on care and maintenance, constructed in the early 2000s. All the permanent infrastructure required to mine and process the surface Mineral Reserves declared in support of the LoM plan, is already established and in use. The mining method is via monitored high-pressure water jets. The Cooke plant has a design capacity of 400ktpa, while the Ezulwini plant can process 200ktpa.

## TAILINGS DEPOSITION AND CAPACITY

Tailings from Cooke Plant are deposited into historic, unrehabilitated open pits connected to the old underground workings of the historic Randfontein Estates Gold Mine as part of the approved EMPR. The volumetric depositional capacity available in these pits, which assumes there is no further storage capacity in the connected underground workings, is used to constrain the current three year LoM. To date there is no indication that the tailings are beaching and the material is still filling the underground voids.

The Ezulwini North TSF is situated next to Ezulwini Plant and has an available capacity of 17.3Mt. The LoM depositional requirements for this TSF are 2.2Mt which leaves a surplus capacity of 15.1Mt.

## KEY DEVELOPMENTS AND BROWNFIELD PROJECTS

A focus for the operations is to secure additional tailings depositional capacity that could support an increase in the reported three years LoM. The Millsite TSF complex, which is currently being exploited, and represents the bulk of the reported Mineral Resources, contains a total of more than 100Mt of Mineral Resources, potentially supporting a >20y LoM.

## GOLD OPERATIONS COOKE continued

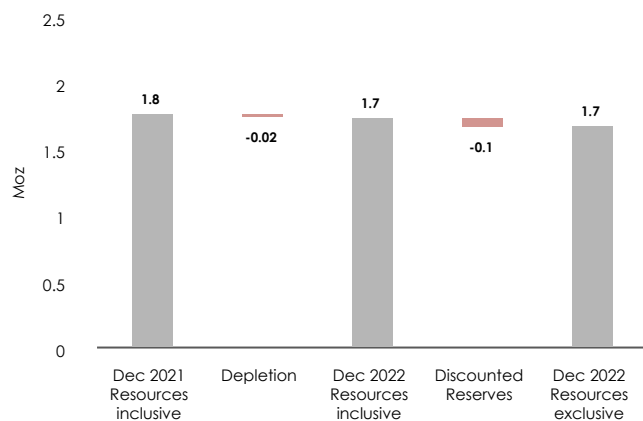
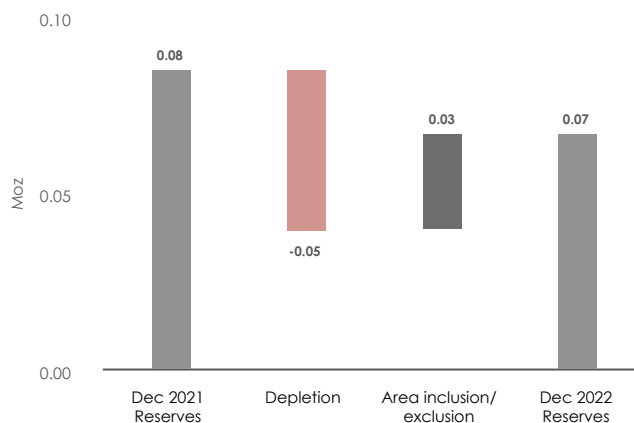
## Gold Mineral Resource estimate at 31 December 2022

## Mineral Resources Inclusive of Mineral Reserves

				31 Dec 2022			31 Dec 2021		
				Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Tonnes (Mt)	Grade (g/t)	Gold (Moz)
GOLD	Southern Africa								
Cooke									
Operations	Cooke	TSF Surface	Measured	60.3	0.3	0.5	60.3	0.3	0.5
			Indicated	5.3	0.4	0.1	5.3	0.4	0.1
			Measured + Indicated	65.6	0.3	0.6	65.6	0.3	0.6
			Inferred	—	—	—	—	—	—
	RSO-Millsite	TSF Surface	Measured	99.3	0.2	0.8	99.3	0.2	0.8
			Indicated	3.6	0.3	0.03	5.9	0.3	0.1
			Measured + Indicated	102.9	0.2	0.8	105.2	0.3	0.8
			Inferred	—	—	—	—	—	—
	Cooke 4	TSF Surface	Measured	—	—	—	—	—	—
			Indicated	34.4	0.3	0.3	34.4	0.3	0.3
			Measured + Indicated	34.4	0.3	0.3	34.4	0.3	0.3
			Inferred	—	—	—	—	—	—
Total Measured + Indicated				202.9	0.3	1.7	205.2	0.3	1.8
Grand total				202.9	0.3	1.7	205.2	0.3	1.8

## Mineral Resources Exclusive of Mineral Reserves

				31 Dec 2022			31 Dec 2021		
				Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Tonnes (Mt)	Grade (g/t)	Gold (Moz)
GOLD	Southern Africa								
Cooke									
Operations	Cooke	TSF Surface	Measured	60.3	0.3	0.5	60.3	0.3	0.5
			Indicated	5.3	0.4	0.1	5.3	0.4	0.1
			Measured + Indicated	65.6	0.3	0.6	65.6	0.3	0.6
			Inferred	—	—	—	—	—	—
	RSO-Millsite	TSF Surface	Measured	47.5	0.2	0.4	95.7	0.2	0.8
			Indicated	48.2	0.3	0.4	—	—	—
			Measured + Indicated	95.7	0.2	0.8	95.7	0.2	0.8
			Inferred	—	—	—	—	—	—
	Cooke 4	TSF Surface	Measured	—	—	—	—	—	—
			Indicated	34.4	0.3	0.3	34.4	0.3	0.3
			Measured + Indicated	34.4	0.3	0.3	34.4	0.3	0.3
			Inferred	—	—	—	—	—	—
Total Measured + Indicated				195.7	0.3	1.7	195.7	0.3	1.7
Grand total				195.7	0.3	1.7	195.7	0.3	1.7

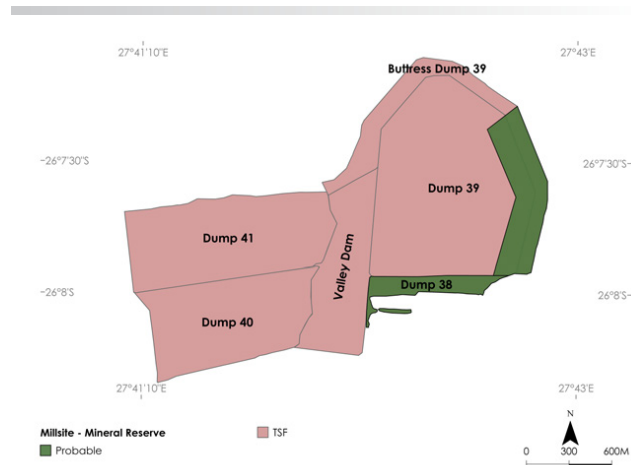
RSO and Cooke operation gold  
Mineral Resources reconciliationCooke operation gold  
Mineral Reserves reconciliation



GOLD OPERATIONS COOKE continued

**Gold Mineral Reserve estimate at 31 December 2022**

GOLD Cooke				31 Dec 2022			31 Dec 2021		
				Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Tonnes (Mt)	Grade (g/t)	Gold (Moz)
Operations	TSF Surface	Proved	—	—	—	—	—	—	
		Probable	7.3	0.3	0.1	9.5	0.3	0.1	
Grand total Proved + Probable			7.3	0.3	0.1	9.5	0.3	0.1	

**Mineral Reserves classification map for the RSO (Millsite)****OPERATIONAL STATISTICS**

Operational statistics	2020	2021	2022
Surface tonnes milled (kt)	4,569	4,642	4,074
Surface yield (g/t)	0.26	0.25	0.25
Annual Au production - surface (koz)	38	37	32
<b>Total Annual Au production (koz)</b>	<b>38</b>	<b>38</b>	<b>32</b>
Operating cost surface (R/t)	155	174	210
AISC (R/kg)	661,422	742,979	907,407
AISC (US\$/oz)	1,250	1,562	1,724

**Note:** AISC calculated based on Oz sold**URANIUM AT COOKE**

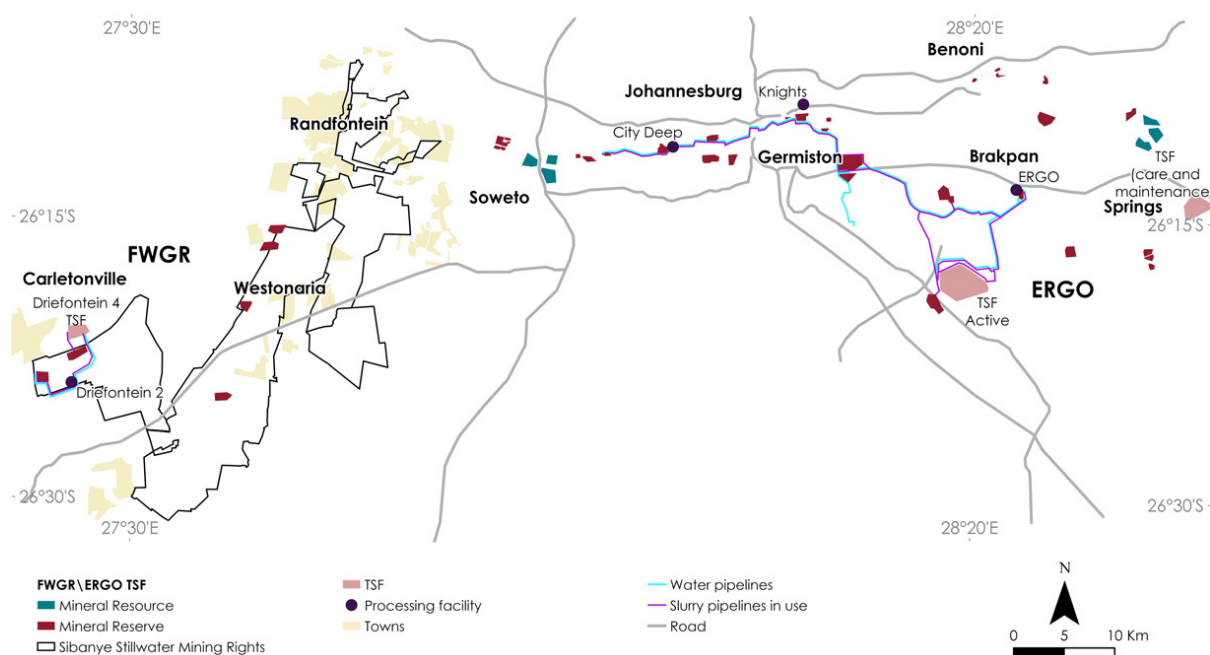
The Cooke uranium Mineral Resources are contained within three historic TSFs situated on the Cooke mineral rights. They are classified as “moveable assets” and as such the right to mine is not tied to the mining right. The uranium Mineral Resources are a by product of gold mining at the historic Cooke operations. These surface uranium Mineral Resources represents a key strategic opportunity due to the proximity of the existing Cooke and Ezulwini gold and uranium processing plants. A new study, currently at PFS level, has been initiated to determine the optimal extraction strategy for the Cooke TSF.

**Uranium Mineral Resource estimate at 31 December 2022****Mineral Resources**

URANIUM COOKE				31 Dec 2022			31 Dec 2021		
				Tonnes (Mt)	Grade (kg/t)	U <sub>3</sub> O <sub>8</sub> (Mlb)	Tonnes (Mt)	Grade (kg/t)	U <sub>3</sub> O <sub>8</sub> (Mlb)
Exploration	Cooke	TSF Surface	Measured	60.3	0.2	24.7	60.3	0.2	24.7
			Indicated	5.3	0.1	1.4	5.3	0.1	1.4
			Measured + Indicated	65.6	0.2	26.1	65.6	0.2	26.1
			Inferred	—	—	—	—	—	—
	Cooke 4	TSF Surface	Measured	—	—	—	—	—	—
			Indicated	34.4	0.1	6.2	34.4	0.1	6.2
			Measured + Indicated	34.4	0.1	6.2	34.4	0.1	6.2
			Inferred	—	—	—	—	—	—
	RSO-Millsite	TSF Surface	Measured	94.1	0.03	7.2	95.7	0.03	7.3
			Indicated	1.5	0.1	0.2	—	—	—
			Measured + Indicated	95.7	0.04	7.4	95.7	0.03	7.3
			Inferred	—	—	—	—	—	—
Total Measured + Indicated				195.7	0.1	39.6	195.7	0.1	39.5
Grand total				195.7	0.1	39.6	195.7	0.1	39.5

## GOLD OPERATIONS continued

## DRDGOLD



## PROPERTY DESCRIPTION

DRDGOLD is a JSE-listed organisation that operates the Ergo Mining and Far West Gold Recoveries (FWGR) operations focused on recovering gold from the retreatment of historic gold TSFs.

- The Ergo metallurgical plant, and its associated TSF's are located 70km east of Johannesburg in the Gauteng province
- The Knights metallurgical plant is located 25km east of Johannesburg, off the R29 Main Reef Road
- City Deep is a milling plant which operates as a pump/milling station feeding the Ergo and Knights metallurgical plants

The FWGR assets, acquired in 2018 from Sibanye-Stillwater, are situated in the West Rand of the Gauteng province, 30km south-west of Johannesburg. The FWGR operation includes historical TSF's with a total area of 4.1km<sup>2</sup> and includes the Driefontein No. 2 metallurgical plant.

## MINERAL TITLE

At ERGO, DRDGOLD and its subsidiaries own the rights to some of the properties where the Mineral Resources are located. In other cases, agreements are in place with the landowners to mine the dump material and rehabilitate the land. The necessary agreements are in place for all properties in the LoM plan.

Actual relevant Mining Rights are held at Ergo Mining Pty. Ltd. level, and their current status are listed below:

- CMR GP, 30/5/1/2/2/10024 MR, 6,16km<sup>2</sup>, expired on 20/06/2014. Renewal application submitted. Awaiting grant
- Crown GP, 30/5/1/2/2/10022 MR, 11,25km<sup>2</sup>, expired on 2/06/2014. Renewal application submitted. Awaiting grant

- City Deep GP, 30/5/1/2/2/10023 MR, 5.7km<sup>2</sup>, expired on 20/06/2014. Renewal application submitted. Awaiting grant
- Knights GP, 30/5/1/2/2/10067 MR, 5.76km<sup>2</sup>, expired on 20/06/2018. Renewal application submitted. Awaiting grant
- Ergo GP, MR 30/5/1/2/2/10097, 33,58km<sup>2</sup>, expired on 27/10/2021. Renewal application submitted. Awaiting grant.

These rights are enforceable until such stage as the DMRE have acceptable or rejected the mining renewal applications as per the MPRDA.

There are impediments on the right to mine at the Grootvlei Complex and Marievale TSF's. Please refer to the DRDGOLD Annual Integrated Report 2022 for details (page 92).

At the FWGR operation, the TSF's were acquired from Sibanye-Stillwater in a transaction in which common law ownership was established over the various TSF's. A Use and Access agreement articulates the various rights, permits and licenses held by Sibanye-Stillwater in terms of which FWGR operates, pending the finalisation of the tributing agreements between the parties.

## MINERALISATION CHARACTERISTICS

DRDGOLD's surface deposits are by-products or residue of the processing of gold and uranium ores of the gold bearing late Archaean (2.7Ga to 3.2Ga) Witwatersrand sedimentary basin.

## GOLD OPERATIONS DRDGOLD continued

## INFRASTRUCTURE AND EQUIPMENT

The Ergo assets include multiple TSF's, a 50km pipeline, and tailings deposition facilities including the significant Brakpan/Withok TSF. The Ergo plant (1.8Mtpm capacity) currently treats around 1.7Mtpm of material. A total of 1.2Mtpm of material is delivered via two feeder lines from the Elsburg complex, Van Dyk and the 4L30 reclamation sites. A further 0.5Mtpm is delivered from the City Deep area (including 4L2, 3L42 and externally sourced material).

Material treated at the Knights plant is deposited onto the Brakpan/Withok TSF shared with the Ergo plant. At FWGR, the upgraded Driefontein No. 2 Plant currently treats around 0.5Mtpm of material from Driefontein No. 5 TSF.

At ERGO, Sandy material is reclaimed using mechanical front-end loaders, re-pulped with water and pumped to the plant. At both operations, fine tailings are reclaimed hydraulically using high-pressure water monitoring guns. The re-pulped slime is pumped to the plant and the reclaimed material is treated using screens, cyclones, ball mills, and carbon-in-leach (CIL) technology to extract the gold. Ergo LoM is estimated at 19 years (until 2041).

At the FWGR operations there is a smelting agreement in place with Sibanye-Stillwater, for the Driefontein No. 2 Plant (600ktpm capacity), whereby Sibanye-Stillwater receives a fee based on the smelting costs, plus 10% of the smelting costs. FWGR has sufficient Mineral Reserves to allow processing of an eventual 1.2Mtpm for approximately 20 years (until 2042).

## TAILINGS DEPOSITION AND CAPACITY

Ergo currently deposits tailings on the Brakpan/Withok TSF, which has sufficient capacity for the planned 13 year LoM. Planning for the expansion of the Brakpan/Withok TSF to accommodate higher grade TSF's in the far East Rand area and extend Ergo's LoM is currently underway.

FWGR phase one production tailings are currently deposited on Driefontein 4 TSF, which has sufficient capacity for six years' at a rate of production at 500ktpm. To fully exploit the larger FWGR Mineral Resources, feasibility studies have been conducted into the possible construction of a large, centralised, regional deposition facility, and permitting is being pursued.

## KEY DEVELOPMENTS AND BROWNFIELD PROJECTS

DRDGOLD plans to develop the FWGR assets into a large scale (1.2Mtpm), long life (20 years) operation through a phased approach. Phase one, involving the retreatment of the Driefontein No. 5 TSF through the Driefontein No. 2 Plant and deposition on the Driefontein No. 4 TSF is underway. Phase two involves the construction of a regional storage facility for retreatment of the remaining historical TSFs acquired and allows for potential future expansion into the far west area.

## Gold Mineral Resource estimate at 31 December 2022

## Mineral Resources Inclusive of Mineral Reserves

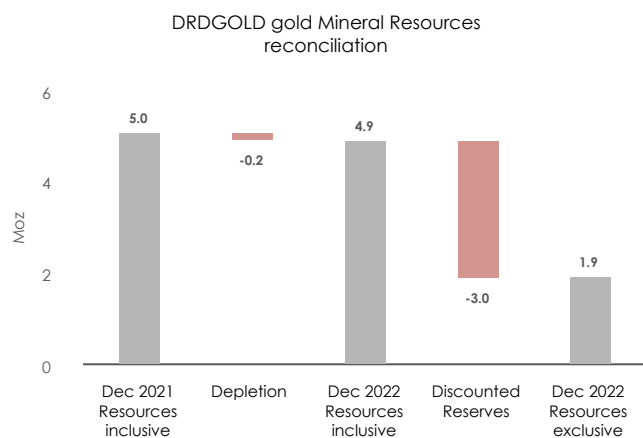
GOLD DRDGOLD				31 Dec 2022			31 Dec 2021		
				Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Tonnes (Mt)	Grade (g/t)	Gold (Moz)
Operations	ERGO	TSF Surface	Measured	130.8	0.3	1.3	137.7	0.3	1.4
			Indicated	285.8	0.2	2.3	290.1	0.2	2.3
		Measured + Indicated		416.6	0.3	3.6	427.8	0.3	3.7
		Inferred	10.7	0.2	0.1	10.8	0.2	0.1	
	FWGR	TSF Surface	Measured	113.9	0.3	1.2	117.2	0.3	1.3
			Indicated	—	—	—	—	—	—
		Measured + Indicated		113.9	0.3	1.2	117.2	0.3	1.3
		Inferred	—	—	—	—	—	—	
Total Measured + Indicated				530.5	0.3	4.8	545.1	0.3	4.9
Grand total				541.2	0.3	4.9	555.8	0.3	5.0

## Mineral Resources Exclusive of Mineral Reserves

GOLD DRDGOLD				31 Dec 2022			31 Dec 2021		
				Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Tonnes (Mt)	Grade (g/t)	Gold (Moz)
Operations	ERGO	TSF Surface	Measured	33.2	0.3	0.3	—	—	—
			Indicated	188.7	0.2	1.5	290.1	0.2	2.3
			Measured + Indicated	222.0	0.3	1.8	290.1	0.2	2.3
			Inferred	10.7	0.2	0.1	10.8	0.2	0.1
Grand total				232.7	0.3	1.9	300.9	0.2	2.4



## GOLD OPERATIONS DRDGOLD continued

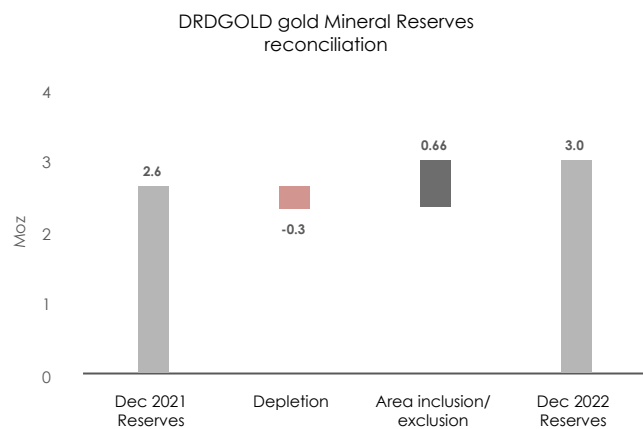


## Modifying factors in converting Mineral Resources to Mineral Reserves

Parameter	Unit	2022	2021
Mineral Reserve Pay Limit (ERGO)	g/t	0.24	0.20
Mineral Reserve Pay Limit (FWGR)	g/t	0.15	0.13-0.18
Plant Recovery Factor (ERGO)	%	41	48.9
Plant Recovery Factor (FWGR)	%	54	53.7

## Gold Mineral Reserves estimate as at 31 December 2022

				31 Dec 2022			31 Dec 2021		
GOLD	Southern Africa			Tonnes	Grade	Gold	Tonnes	Grade	Gold
DRDGOLD				(Mt)	(g/t)	(Moz)	(Mt)	(g/t)	(Moz)
Operations	ERGO	TSF Surface	Proved	97.6	0.3	1.0	11.7	0.3	0.1
			Probable	97.0	0.2	0.7	126.0	0.3	1.3
			Proved + Probable	194.6	0.3	1.8	137.7	0.3	1.4
	FWGR	TSF Surface	Proved	107.5	0.3	1.1	110.7	0.3	1.2
			Probable	6.5	0.3	0.1	6.5	0.3	0.1
			Proved + Probable	113.9	0.3	1.2	117.2	0.3	1.3
Grand total Proved + Probable				308.5	0.3	3.0	255.0	0.3	2.6



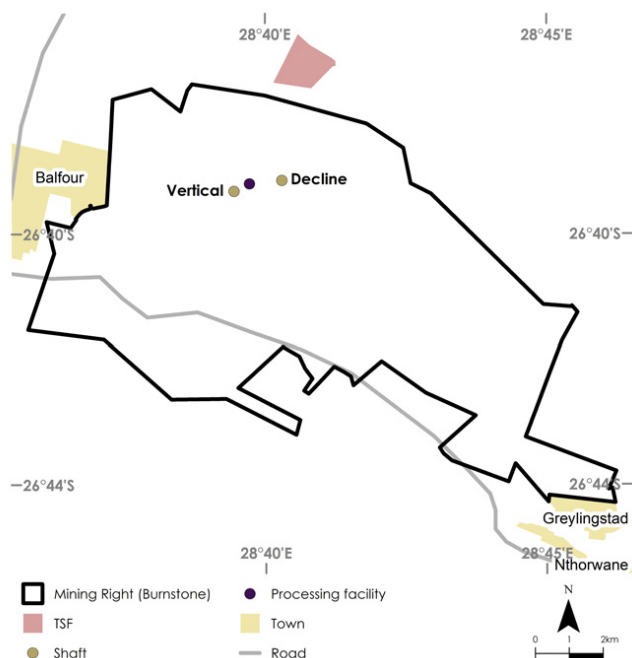
**Note:** Inclusion of +0.66Moz from Daggafontein TSF on ERGO Proved Mineral Reserves

Operational statistics	2020	2021	2022
Surface tonnes milled (kt)	4,569	4,642	4,074
Surface yield (g/t)	0.26	0.25	0.25
<b>Total Annual Au production (koz)</b>	<b>38</b>	<b>38</b>	<b>32</b>
Operating cost surface (R/t)	155	174	210
AISC (R/kg)	661,422	742,979	907,407
AISC (US\$/oz)	1,250	1,562	1,724

**Note:** AISC calculated based on Oz sold

# GOLD DEVELOPMENT STAGE

## BURNSTONE



### PROPERTY DESCRIPTION

Burnstone is a shallow gold development project, situated near Balfour in the Mpumalanga province, South Africa, 80km south-east of Johannesburg.

The project targets the UK9A Kimberley reef orebody, and aims to produce approximately 140kozpa over a 22-year LoM and is scheduled for steady state production by 2030.

Sibanye acquired the Burnstone project through the acquisition of WitsGold Ltd. in 2014 and has proceeded with development and infrastructure upgrades since 2016. Following an updated feasibility study, the Sibanye-Stillwater Board gave approval for the continuation of the construction of the Burnstone project in quarter one of 2021.

### MINERAL TITLE

Sibanye Gold Eastern Operations (Pty) Ltd. is the holder of a mining right in respect of the Burnstone project under DMRE reference number: MP30/5/1/2/2/(248)MR (Burnstone MR). The Burnstone MR is valid from 17 February 2009 to 16 February 2027 in respect of an area totalling 131.36km<sup>2</sup>, and is located in the Dipaleseng District Municipality (Balfour) in the Mpumalanga Province of South Africa.

### MINERALISATION CHARACTERISTICS

The targetted UK9A reef is a thin (less than 1 metre), highly channelised and shallow dipping (<10°) conglomerate orebody.

### INFRASTRUCTURE AND EQUIPMENT

Burnstone is a shallow trackless / conventional hybrid project in development phase, which was significantly pre-developed by previous owners. The mining layout was revised to incorporate both trackless development and conventional stoping with the aim of being able to negotiate the complex geological structure.

The Burnstone project has two established access points into the underground workings: a three-legged decline shaft and a vertical shaft (165ktpm capacity), as well as an established metallurgical processing facility. To access the down-dip extent of the orebody, a number of declines have been planned and development is progressing towards the eastern and southern extents.

All surface infrastructure to support the underground mining is either in place or has been planned in the LoM with an appropriate capital estimate. A mineral processing plant (125ktpm capacity, upgradeable to 175ktpm with the addition of another mill) is situated next to the vertical shaft where the bulk of the tonnage will be hoisted. It is currently on care-and-maintenance and will be restarted after a suitable ore-stockpile has been established.

### TAILINGS DEPOSITION AND CAPACITY

There is an existing TSF with a capacity of 24.1Mt, which is a surplus of 3.6Mt over LoM requirements.

### Gold Mineral Resource estimate at 31 December 2022

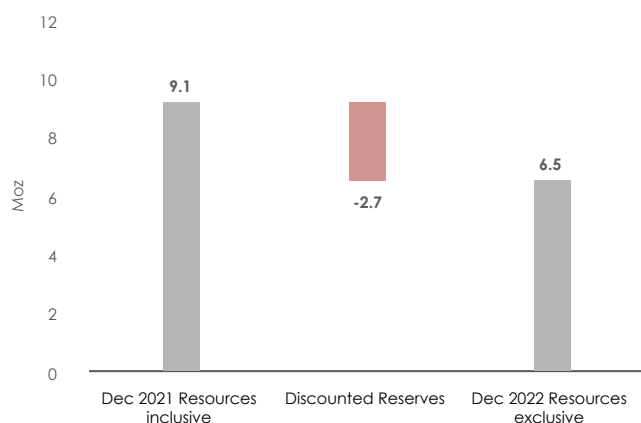
Mineral Resources Inclusive of Mineral Reserves

				31 Dec 2022			31 Dec 2021		
GOLD	Southern Africa			Tonnes	Grade	Gold	Tonnes	Grade	Gold
Burnstone				(Mt)	(g/t)	(Moz)	(Mt)	(g/t)	(Moz)
Development	Underground	Measured		1.1	6.2	0.2	1.1	6.2	0.2
		Indicated		25.5	5.6	4.6	25.5	5.6	4.6
		Measured + Indicated		26.6	5.7	4.8	26.6	5.7	4.8
		Inferred		31.5	4.2	4.3	31.5	4.2	4.3
Grand total				58.1	4.9	9.1	58.1	4.9	9.1

## GOLD DEVELOPMENT BURNSTONE continued

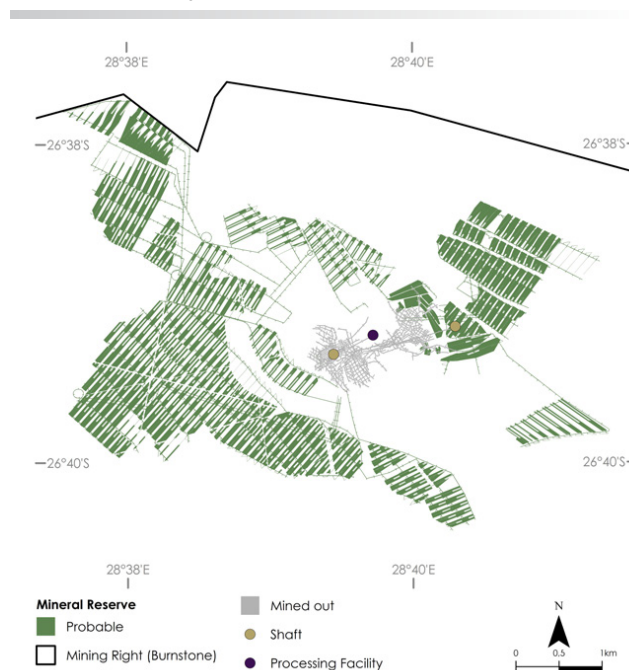
## Mineral Resources Exclusive of Mineral Reserves

			31 Dec 2022			31 Dec 2021		
GOLD	Southern Africa		Tonnes	Grade	Gold	Tonnes	Grade	Gold
Burnstone			(Mt)	(g/t)	(Moz)	(Mt)	(g/t)	(Moz)
Development	Underground	Measured	0.3	13.4	0.1	0.3	13.8	0.1
		Indicated	5.8	11.1	2.1	5.8	11.5	2.1
		Measured + Indicated	6.0	11.2	2.2	6.0	11.6	2.2
		Inferred	31.5	4.2	4.3	31.5	4.2	4.3
Grand total			37.6	5.3	6.5	37.5	5.4	6.5

Burnstone project gold  
Mineral Resources reconciliation

Operational statistics	2020	2021	2022
Total capital expenditure (Rm)	6	186	934

Mineral Reserves classification map for the Burnstone development project



## Gold Mineral Reserve estimate at 31 December 2022

## Mineral Reserves

				31 Dec 2022			31 Dec 2021		
GOLD	Southern Africa			Tonnes	Grade	Gold	Tonnes	Grade	Gold
Burnstone				(Mt)	(g/t)	(Moz)	(Mt)	(g/t)	(Moz)
Operations	Underground	Proved	—	—	—	—	—	—	—
		Probable	20.5	4.0	2.7	20.6	3.9	2.6	
Grand total Proved + Probable				20.5	4.0	2.7	20.6	3.9	2.6

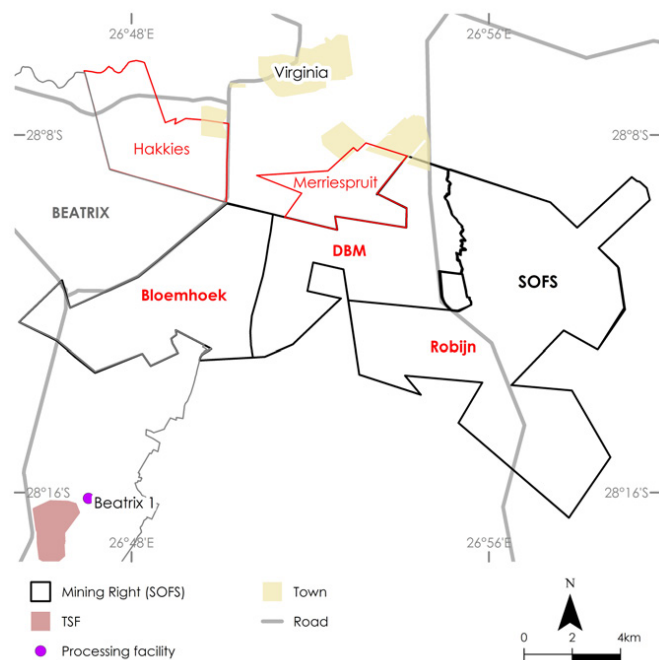
**Notes:** The +3% change year-on-year in the stated Mineral Reserves is attributed to +0.1Moz in area inclusions as an optimised production profile and the inclusion of a smaller area identified through exploration



Burnstone mine

# GOLD EXPLORATION STAGE

## SOUTHERN FREE STATE (SOFS)



### PROPERTY DESCRIPTION

SOFS is an advanced stage exploration project, including the Bloemhoek, De Bron-Merriespruit (DBM), Robijn, Merriespruit and Hakkies areas, situated close to the town of Virginia in the Free State province of South Africa, adjacent and contiguous to the Beatrix operation.

### MINERAL TITLE

Sibanye-Stillwater's subsidiary, WitsGold (Pty) Ltd. (WitsGold), was granted a mining right under DMRE Ref No FS30/5/1/2/2/10005 MR to extract gold, silver and uranium from a 170.22km<sup>2</sup> area. The right was granted on 25 February 2014, executed on 14 June 2017 and is valid to 13 June 2040.

An application was submitted in terms of Section 102 of the MPRDA on 30 November 2018 to include various properties, including Merriespruit, into the SOFS MR area. The relevant Section 102 application is yet to be finalised.

Given the inactive status of the project, Sibanye-Stillwater submitted an application in terms of Section 25(2)(b) of the MPRDA to the DMRE in the name of WitsGold for the extension of the period to commence mining activities. The matter has now been escalated to the office of the relevant Minister for finalisation.

### MINERALISATION CHARACTERISTICS

Four primary reef horizons containing gold and uranium are present on well-defined regional unconformities in the SOFS area. These include the Beatrix/V5, Aandenk, B, and Leader reefs, all of which have been mined extensively in the southern Free State Goldfields. The four reefs are developed within a 20m to 40m stratigraphic interval on the DBM property and are present at depths of between 500m and 1,200m below surface. The Beatrix/V5 and Aandenk Reefs constitute the principal economic orebodies, while the less extensive Leader and B reefs are regarded as secondary. The reefs are generally characterised by shallow dips of between 10° and 25° and a thickness of 60cm to 210cm.

### KEY DEVELOPMENTS

The project is currently inactive, with no change year-on-year in the reported Mineral Resources.

### Gold Mineral Resource estimate at 31 December 2022

#### Mineral Resources

				31 Dec 2022			31 Dec 2021		
GOLD	Southern Africa			Tonnes	Grade	Gold	Tonnes	Grade	Gold
SOFS				(Mt)	(g/t)	(Moz)	(Mt)	(g/t)	(Moz)
Exploration	Bloemhoek	Underground	Measured	—	—	—	—	—	—
			Indicated	27.4	4.7	4.2	27.4	4.7	4.2
			Measured + Indicated	27.4	4.7	4.2	27.4	4.7	4.2
			Inferred	0.9	4.9	0.1	0.9	4.9	0.1
	De Bron	Underground	Measured	—	—	—	—	—	—
			Indicated	16.7	4.2	2.3	16.7	4.2	2.3
			Measured + Indicated	16.7	4.2	2.3	16.7	4.2	2.3
			Inferred	3.1	3.2	0.3	3.1	3.2	0.3
	Merriespruit								
Total Measured + Indicated				44.1	4.5	6.4	44.1	4.5	6.4
Grand total				48.1	4.4	6.9	48.1	4.4	6.9





BATTERY METALS DEVELOPMENT STAGE

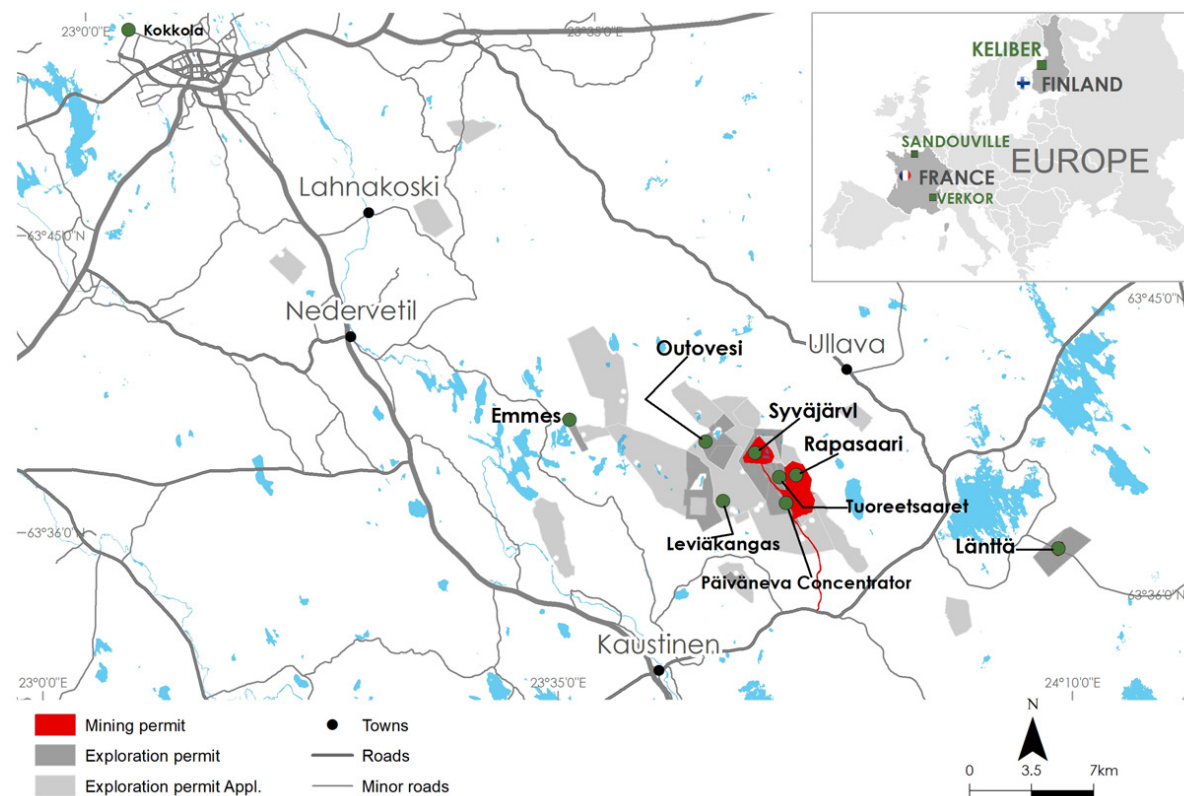
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Keliber Lithium Project

97

# BATTERY METALS DEVELOPMENT STAGE

## KELIBER LITHIUM PROJECT



### PROPERTY DESCRIPTION

The Keliber Lithium Project is a development project, located in the Central Ostrobothnian area, Kaustinen, Kokkola and Kruunupy municipalities, western Finland. As discussed in Section 1, the Group considers the Driefontein operation as material for the purpose of SK-1300.

During 2022, Sibanye-Stillwater increased its initial stake in Keliber Oy (Keliber, the Finnish mining and chemical company that owns and manages the project) acquired in 2021, from 26.6% to 84.96%. Following this, the Sibanye-Stillwater Board approved capital expenditure of €588m for the project, beginning with the construction of the Keliber lithium hydroxide refinery (the Keliber refinery).

The Keliber lithium project will consist of open-pit (Initially) and underground mining operations from seven spodumene exploration or mining properties namely; Syväjärvi, Rapasaari, Lantta, Outovesi, Emmes, Leviakangas and Tuoreetsaaret; a mineral processing plant (concentrator) at Kaustinen and the refinery at Kokkola.

### MINERAL TITLE

Keliber has three mining permits (7.12km<sup>2</sup>) and fourteen exploration permit areas covering a total area of 21.97km<sup>2</sup>, for the element lithium. The Rapasaari mining and environmental permits were granted in March and December 2022 respectively, along with the concentrator permit, but they are currently subject to appeal. Three of the exploration permits (3.92km<sup>2</sup>) are being appealed. In addition there are a further twenty eight exploration permits (79.96km<sup>2</sup>) under application.

All the exploration and mining permits, except the ones under application, are either valid or granted, and all tenures are in good standing. The expiry date for the exploration permits varies between 2023-2025. Renewal is, however, possible under standard conditions under the Finnish Mining Act.

### GEOLOGY AND MINERALISATION CHARACTERISTICS

Lithium mineralisations in the region are hosted within spodumene bearing pegmatite dyke intrusions. Mineral Resources have been delineated in seven deposits, all within 25km of the village of Kaustinen.



*Spodumene pegmatite sample*

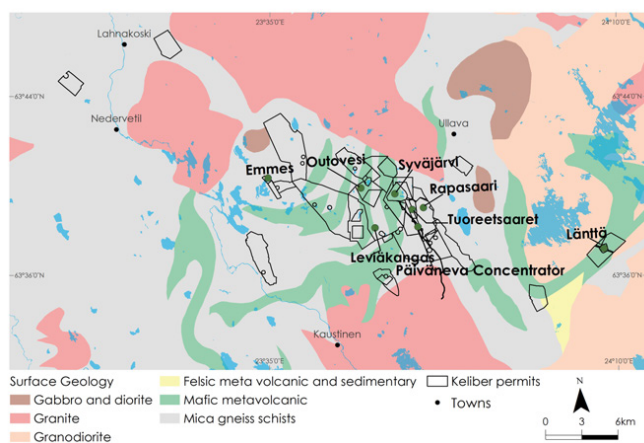


## BATTERY METALS DEVELOPMENT KELIBER continued

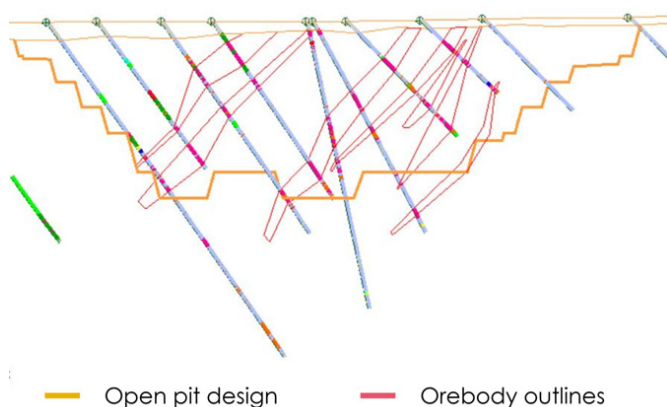
The spodumene-rich pegmatite veins vary in thickness between 1m and 30m. Pegmatites in this region have been classified into the albite-spodumene subgroup of the Li, Cs, Ta pegmatite family and are typically coarse-grained, light-coloured and mineralogically similar. At most of the deposits, no weathering is observed. At the Rapasaari deposit, however, partial weathering or fracture oxidation occurs to a depth of 20m to 30m. At each deposit, bedrock is covered by sandy till and peat with a mean thickness of about 5m.

The spodumene pegmatites have intruded into supracrustal rocks in different orientations. At Syväjärvi, the main dyke intrusion cuts the host rocks forming a thick elliptic body plunging gently to the north-northeast. The massive body has some narrow subparallel veins on both sides and in western area it bends downwards to a more stratabound orientation. The thickest drilled pegmatite intercepts are 20-30m (true thickness).

## Keliber region surface geology map



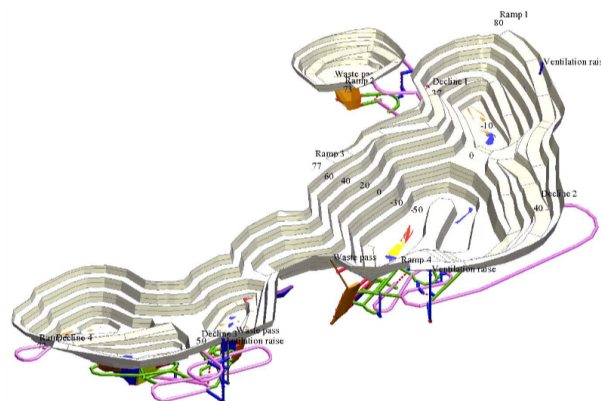
## Keliber drilling and geological section – Rapasaari deposit



## TAILINGS DEPOSITION AND CAPACITY

The new TSF and ancillary dams have been designed according to the Finnish Dam Safety Guide (2018) and the Swedish Guide for Mine Dams (2010), and will be constructed in stages.

## Rapasaari deposit open-pit mine design and conceptual UG extension



## INTERNAL CONTROLS (QA/QC)

Keliber has been following a well-defined logging, sampling and analytical procedure. The sampling and core storage facility in Kaustinen is considered a secure facility with the sample preparation and analytical methodologies considered appropriate for the commodity being evaluated (lithium). All material used for analyses on the project was sourced from split diamond drill core. To ensure confidence in the quality of the results, precision and accuracy, Keliber have since 2013 employed a quality assurance and quality control (QA/QC) standard operating procedure over all of its drilling programs at the Keliber Project. The quality control policy includes the insertion of CRMs, blanks and duplicates into the sampling stream on a frequency of one in every 20 samples (5%). All sample preparation and analyses were completed by Labtium's laboratory facility in Kuopio, Finland, which also submitted regular check samples to ALS Ltd.

## PROJECT SUMMARY

The planned operation first targets the opencast Syväjärvi and Rapasaari deposits. The original DFS, completed in 2018, envisaged the production of lithium carbonate. Following further market studies, a decision was made to produce battery-grade lithium hydroxide monohydrate ( $\text{LiOH} \cdot \text{H}_2\text{O}$ ).

Over the open-pit LoM a total of 12.5Mt of ore is expected to be mined at a stripping ratio of 5.8:1, and an average grade of 0.91%  $\text{Li}_2\text{O}$ . Steady state production of ~700ktpa of ore will produce ~15,000tpa of battery-grade lithium hydroxide. First production is scheduled for 2025, with ramp up to steady state by 2026.

Over the LoM, the maximum processing feed is 83.7 ktpm. It is planned to supplement open-pit mining production with underground mining but the underground studies are currently at scoping study level and have not been included in the LoM plan or Mineral Reserves at this stage. Conventional truck and shovel mining method will be employed for the open-pit mining. Ore sorting technology will be applied to remove up to 10.9% of the mass, constituting 73% of the waste rock in mill feed, from all ore types.

The key modifying factors applied during the mine planning process are mining losses (5%), to account for ore that is lost (hailed to the waste rock storage facility or not mined) during selective ore mining; and mining dilution (15-25%) for where ore and waste material are mixed.

## BATTERY METALS DEVELOPMENT KELIBER continued

The major infrastructure for the planned mines will comprise of access roads, power transmission lines, main electrical substations, security, weighbridges, offices, laboratories, workshops, crushing units, access roads to the Paivaneva concentrator and internal roads.

Total project capital (refinery, concentrator and initial mining operations) is forecast at €588m. The property has a current book value of R2.3b (100% basis).

## ESTIMATION RISKS

There are no deemed material risks to the Mineral Resource Estimation. The key operational risks that could impact the Mineral Reserves are listed below.

**Permitting:** Although several of the required operating permits have been obtained, potential timing delays due to public objection and appeals could impact construction timelines. Environmental permit conditions could also be strenuous, impacting planned mining operations.

**Processing:** The effectiveness of ore sorting to screen out 73% of waste, once applied to full-scale mining volumes, could impact plant feed grades.

**Human Capital:** A significant amount of skilled personnel will be required to develop and work the operations.

## KEY DEVELOPMENTS AND INTENTIONS

An update of the FS was finalised during the first quarter of 2022, which confirmed the financial and technical feasibility of the project. The construction of the Keliber lithium refinery is scheduled to start in 2023 and production to commence in 2025. A key focus remains on achieving full permitting. The Keliber refinery and the first lithium mine (Syvajarvi) have all the required permits.

The concentrator and the second mine (Rapasaari) have the required mining and environmental permits, but they are not yet legally valid due to various appeal processes. In parallel, exploration drilling on the highly prospective tenement package will be ongoing. During 2022, exploration drilling added 30.4kt of LCE to the Mineral Resource Inventory. The increased Mineral Resources are related to the maiden Mineral Resource estimates of the Tuoreetsaaret and Leviakangas deposits.

## Lithium Mineral Resource estimate as at 31 December 2022

## Mineral Resources Inclusive of Mineral Reserves

			31 Dec 2022			31 Dec 2021		
			Tonnes	Li	LCE	Tonnes	Li	LCE
Lithium	Europe		(Mt)	(%)	(kt)	(Mt)	(%)	(kt)
Keliber								
Development	Measured		3.7	0.55	106.4	1.1	0.55	33.3
	Indicated		8.0	0.48	202.4	2.4	0.48	62.0
	Measured + Indicated		11.6	0.50	308.9	3.6	0.50	95.3
	Inferred		2.8	0.38	57.2	0.4	0.42	9.8
Grand total			14.5	0.48	366.1	4.0	0.49	105.1

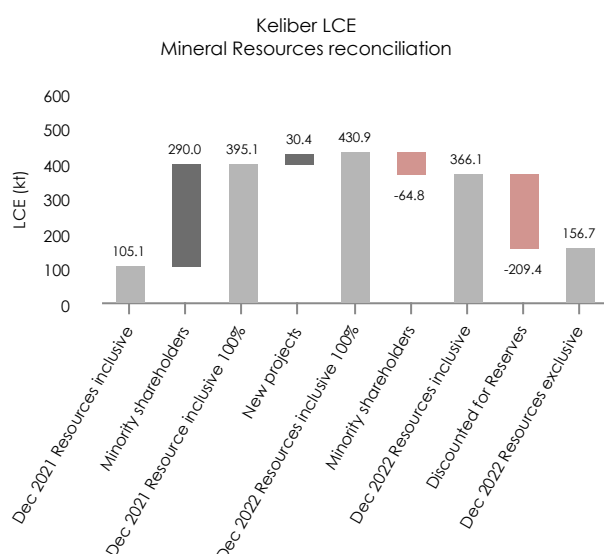
## Mineral Resources Exclusive of Mineral Reserves

			31 Dec 2022			31 Dec 2021		
			Tonnes	Li	LCE	Tonnes	Li	LCE
Lithium	Europe		(Mt)	(%)	(kt)	(Mt)	(%)	(kt)
Keliber								
Development	Measured		0.5	0.47	13.5	1.1	0.55	33.3
	Indicated		3.3	0.48	86.1	2.4	0.48	62.0
	<b>Measured + Indicated</b>		<b>3.9</b>	<b>0.48</b>	<b>99.6</b>	<b>3.6</b>	<b>0.50</b>	<b>95.3</b>
	Inferred		2.8	0.38	57.1	0.4	0.42	9.8
<b>Grand total</b>			<b>6.7</b>	<b>0.44</b>	<b>156.7</b>	<b>4.0</b>	<b>0.49</b>	<b>105.1</b>

- Li has been derived from the original  $\text{Li}_2\text{O}$  based estimate by multiplying by a factor of 0.464.
- Mineral Resources were initially estimated at a 0.5%  $\text{Li}_2\text{O}$  (0.23% equivalent Li) lower cut-off grade, with the exception of the maiden estimate for Tuoreetsaaret, which has been reported at a 0.4%  $\text{Li}_2\text{O}$  (0.1% equivalent Li) lower cut-off grade.
- Lithium Hydroxide prices for the cut-off grade calculations varied between US\$/t 14,634 for the open-pit, and US\$/t16,570 for the underground.
- For the Lithium Mineral Resources, LCE content was calculated by multiplying the Li (%) content by a factor of 5.323. Lithium Hydroxide Monohydrate ( $\text{LiOH}\cdot\text{H}_2\text{O}$ ) can be derived from LCE by dividing by a factor of 0.88.



## BATTERY METALS DEVELOPMENT KELIBER continued

**Notes:**

The 248% increase change year-on-year to the stated Mineral Resources (Inclusive of Mineral Reserves) is attributed to:

- +9.8 LCE(kt) due to addition of Leviakangas
- +20.6 LCE(kt) due to addition of Tuoreetsaaret
- Shareholding increase from 26.6% to 84.96%

On a Mineral Resources exclusive of Mineral Reserves basis, the year-on-year change is +49%

**Lithium Mineral Reserve estimate as at 31 December 2022****Mineral Reserves**

Mineral reserves		31 Dec 2022			31 Dec 2021		
		Tonnes (Mt)	Li (%)	LCE (kt)	Tonnes (Mt)	Li (%)	LCE (kt)
Lithium	Europe						
Keliber							
Development	Proved	3.3	1.49	85.4	—	—	—
	Probable	4.9	1.91	108.2	—	—	—
Grand total Proved + Probable		8.2	0.44	193.6	—	—	—

- Li has been derived from the original  $\text{Li}_2\text{O}$  based estimate by multiplying by a factor of 0.464.
- $\text{Li} \cdot \text{OH} \cdot \text{H}_2\text{O}$  price assumption for the overall pit optimisation ranged between US\$10,950/t and US\$16,500/t.
- A cut-off grade of 0.5%  $\text{Li}_2\text{O}$  (0.23% equivalent Li) was used in the open-pit optimisation for Syvajarvi, Lantta and Outovesi and 0.4%  $\text{Li}_2\text{O}$  (0.19% equivalent Li) cut-off was applied to Rapasaari.

**DRILLING SUMMARY**

	Planned 2023		Actual 2022		Actual 2021	
	Drilled (m)	Expenditure (Rm)	Drilled (m)	Expenditure (Rm)	Drilled (m)	Expenditure (Rm)
Ore definition	26,400	53.38	<b>12,898</b>	<b>25.33</b>	9,145	13.25

Successful exploration drilling at the Tuoreetsaaret and Leviakangas deposits led to an increase of 30.4kt of LCE to the Mineral Resources during 2022. The majority of the drilling planned (~15,600m) for 2023 is aimed at existing deposits to improve confidence levels and to expand the LoM, with a further ~5,200m targetting brownfields exploration. New targets will receive ~4,000m of exploration drilling, and approximately 1,300m of sterilisation drilling is planned under the footprint of the planned waste rock dump. Additional work will include boulder mapping, percussion drilling for bedrock sampling, surface fill sampling and Mineral Resource estimation.

**HISTORY**

- The mining rights to the Lantta, Emmes and Syvajarvi deposits were first owned by Suomen Mineraali Oy and then by Paraisten Kalkkivuori Oy (Later Partek Oy). These rights expired in 1992 and the areas were unclaimed until 1999
- In 1999, Olle Siren, together with private partners, claimed the Lantta deposit and later the Emmes deposit
- In 2001, Keliber Oy was established. Subsequently, the Finnish Minerals Group ("FMG"), which manages the Finnish State's mining industry shareholdings, became the significant shareholder
- From 2003 to 2012, the Geological Survey of Finland (GTK) held the mineral rights of the Syvajarvi and Rapasaari deposits
- In 2021 Sibanye-Stillwater acquired an initial 26.4% interest in Keliber Oy
- During 2022, Sibanye-Stillwater increased its stake to 84.96%, becoming the majority owner of Keliber Oy and the Keliber Lithium Project
- Keliber is in development and does not have any associated historical operating statistics, but some waste material was been mined during 2022 to construct the connection road between the public road and the Syvajarvi and Rapasaari operational areas



# 5 AUSTRALIA



ZINC OPERATION

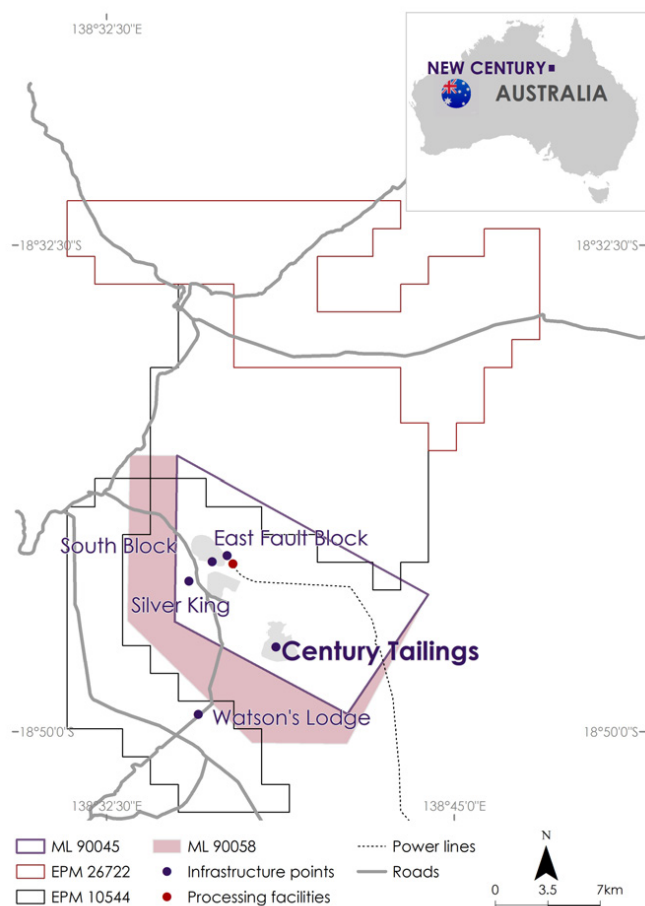
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New Century

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# ZINC OPERATION

## NEW CENTURY



### INTRODUCTION AND BRIEF DESCRIPTION

The Century mine is a tailings reprocessing operation located at Lawn Hill, 250km north-west of Mount Isa in the Lower Gulf of Carpentaria, Queensland, Australia.

The Century mine began open-pit production in 1999 and was one of the largest zinc mines in the world. Following the depletion of the original Mineral Reserves, the mine was put on care and maintenance in 2016. New Century acquired the operation in 2017 from MMG Ltd, focusing on reprocessing the historic mine tailings.

In October 2021, Sibanye-Stillwater acquired a 19.99% shareholding in New Century Resources Ltd., aiming to expand its exposure to the circular economy and green battery metal production.

### MINERAL TITLE

The Century TSF lies within the mining lease ML90045, which is owned by Century Mining (Pty) Ltd., a wholly owned subsidiary of New Century Resources Ltd. There are also one further mining lease and two exploration permits granted.

- ML90045, Century Mine, granted 19/09/1997, expiring on 18/09/2037, for 146.88 km<sup>2</sup>
- ML90058, Century Mine, granted 19/09/1997, expiring on 18/09/2037, for 84.96 km<sup>2</sup>
- EPM10544, Lawn Hill, granted 23/06/1995, expiring on 31/12/2025, for 368 km<sup>2</sup>
- EPM26722, Lawn Hill, granted 25/09/2017, expiring on 24/09/2023, for 158km<sup>2</sup>

### GEOLOGY AND MINERALISATION CHARACTERISTICS

A single substantial tailings deposit exists at Century, generated from 16 years of large-scale operations from the Century open pit zinc mine.

The in-situ Century deposit consists of sediment hosted stratiform Zn-Pb-Ag mineralisation hosted within a sequence of shale, siltstone and sandstone marine sediments. The deposit is dislocated by faulting, and unconformably overlain by up to 100m of Cambrian limestones in the north. Mineralisation outcropped at surface (South Block) and extended to a maximum depth of 310 m. The remaining South Block mineralization is an elongated tabular body that is approximately 1km in length, between 80m and 150m wide, and approximately 30m thick, and ranges from 20m to 218m below natural surface. The East Fault Block is a small remnant located 35m below the surface of the run-of-mine stockpile area at the mine site and extends to a depth of 112m.

Discovered in 1897, the adjacent Silver King deposit consists of a series of moderately to steeply dipping quartz-galena-sphalerite-siderite veins associated with a north-east trending dextral strike-slip fault. The Watsons Lode deposit occurs ~10km south of the Century deposit, also within the Burketown Mineral field, and consists of a series of steeply dipping quartz-galena-sphalerite-siderite hydrothermal veins associated with a north-east trending sinistral strike-slip fault. Mineralisation is structurally controlled, being focused in dilatant zones associated with fault flexures.

## ZINC OPERATION NEW CENTURY continued

## INFRASTRUCTURE AND EQUIPMENT

Re-mining takes place via top down hydraulic mining, and the company has a fleet of six remotely operated hydro-mining rigs. The current LoM is five years, up to 2027 based on available historic tailings material, with upside from fresh ore.

Key processing infrastructure (12mtpa capacity) includes: primary crushing facilities, grinding facilities consisting of one SAG mill and two balls mills; fifteen ultrafine sand mills; a conventional froth flotation circuit, full site laboratory capable of handling all exploration and plant samples, and equipment workshops and stores for all mobile and fixed plant maintenance. The existing, historical Century mine open-pit workings has been licensed as a TSF to deposit the reprocessed tailings. Sufficient capacity exists for the LoM.

The concentrate is transferred in slurry form via a 304km, wholly owned and fully permitted, underground pipeline to Century's port facility at Karumba. Century's transfer vessel, the M.V. Wunma, is custom-built for the shallow waters of the Norman River channel and is used to transfer concentrate to export ships anchored in the Gulf of Carpentaria.

## KEY DEVELOPMENTS AND BROWNFIELDS PROJECTS

A feasibility study has been completed by New Century Resources during 2021, designed to determine the economic viability of the Silver King and East Fault Block deposits, by incorporating them into the existing mine plan (in addition to the current tailings reprocessing) to produce zinc concentrate and a new lead concentrate.

The feasibility study LoM production profile for the in-situ operations targets 2.9Mt at 5.2% zinc, 5.7% lead and 66g/t silver (approximately 86% of which is at probable Mineral Reserves status). The project would result in a 65% increase in annualised Zn equivalent metal production from Century to over 200ktpa. A final investment decision is pending.

## Zinc Mineral Resource estimate at 31 December 2022

## Mineral Resources Inclusive of Mineral Reserves

Australia				31 Dec 2022					31 Dec 2021				
				Tonnes	Zinc	Zinc	Lead	Lead	Tonnes	Zinc	Zinc	Lead	Lead
New Century				(Mt)	(%)	(Mlb)	(%)	(Mlb)	(Mt)	(%)	(Mlb)	(%)	(Mlb)
Operations	Century Tailings	TSF Surface	Measured	7.3	3.1	490.7	—	—	10.6	3.0	706.9	—	—
			Indicated	—	—	—	—	—	—	—	—	—	—
			Measured + Indicated	7.3	3.1	490.7	—	—	10.6	3.0	706.9	—	—
			Inferred	—	—	—	—	—	—	—	—	—	—
Exploration	Silver King	Open Pit	Measured	0.2	4.8	21.0	5.4	23.7	0.2	4.8	21.2	5.4	23.8
			Indicated	—	—	—	—	—	—	—	—	—	—
			Measured + Indicated	0.2	4.8	21.0	5.4	23.7	0.2	4.8	21.2	5.4	23.8
			Inferred	—	—	—	—	—	—	—	—	—	—
		Underground	Measured	—	—	—	—	—	—	—	—	—	—
			Indicated	0.4	5.0	46.5	5.3	48.7	0.4	5.0	46.7	5.3	48.9
			Measured + Indicated	0.4	5.0	46.5	5.3	48.7	0.4	5.0	46.7	5.3	48.9
			Inferred	0.1	2.7	7.0	6.2	16.2	0.1	2.7	7.1	6.2	16.3
	East Fault Block	Open Pit	Measured	—	—	—	—	—	—	—	—	—	—
			Indicated	0.1	10.5	27.6	1.2	3.1	0.1	10.5	27.8	1.2	3.1
			Measured + Indicated	0.1	10.5	27.6	1.2	3.1	0.1	10.5	27.8	1.2	3.1
			Inferred	—	—	—	—	—	—	—	—	—	—
	South Block	Underground	Measured	—	—	—	—	—	—	—	—	—	—
			Indicated	1.2	5.4	146.9	1.5	40.8	1.2	5.4	147.6	1.5	41.0
			Measured + Indicated	1.2	5.4	146.9	1.5	40.8	1.2	5.4	147.6	1.5	41.0
			Inferred	—	—	—	—	—	—	—	—	—	—
	Watson's Lode	Underground	Measured	—	—	—	—	—	—	—	—	—	—
			Indicated	—	—	—	—	—	—	—	—	—	—
			Measured + Indicated	—	—	—	—	—	—	—	—	—	—
			Inferred	0.3	7.9	58.8	2.1	15.3	0.3	7.9	59.1	2.1	15.4
Total Measured + Indicated				9.2	3.6	732.7	2.7	116.2	12.6	3.4	950.2	2.7	116.8
Grand total				9.7	3.7	798.5	2.8	147.8	13.0	3.5	1,016.3	2.8	148.5



## ZINC OPERATION NEW CENTURY continued

## Mineral Resources Exclusive of Mineral Reserves

Australia				31 Dec 2022					31 Dec 2021				
				Tonnes	Zinc	Zinc	Lead	Lead	Tonnes	Zinc	Zinc	Lead	Lead
New Century				(Mt)	(%)	(Mlb)	(%)	(Mlb)	(Mt)	(%)	(Mlb)	(%)	(Mlb)
Exploration	Silver King	Open Pit	Measured	0.20	4.8	21.0	5.40	23.7	0.2	4.8	21.2	5.4	23.8
			Indicated	—	—	—	—	—	—	—	—	—	—
			Measured + Indicated	0.20	4.8	21.0	5.40	23.7	0.2	4.8	21.2	5.4	23.8
			Inferred	—	—	—	—	—	—	—	—	—	—
		Underground	Measured	—	—	—	—	—	—	—	—	—	—
			Indicated	0.4	5.0	46.5	5.3	48.7	0.4	5.0	46.7	5.3	48.9
			Measured + Indicated	0.4	5.0	46.5	5.3	48.7	0.4	5.0	46.7	5.3	48.9
			Inferred	0.1	2.7	7.0	6.2	16.2	0.1	2.7	7.1	6.2	16.3
	East Fault Block	Open Pit	Measured	—	—	—	—	—	—	—	—	—	—
			Indicated	0.1	10.5	27.6	1.2	3.1	0.1	10.5	27.8	1.2	3.1
			Measured + Indicated	0.1	10.5	27.6	1.2	3.1	0.1	10.5	27.8	1.2	3.1
			Inferred	—	—	—	—	—	—	—	—	—	—
	South Block	Underground	Measured	—	—	—	—	—	—	—	—	—	—
			Indicated	1.2	5.4	146.9	1.5	40.8	1.2	5.4	147.6	1.5	41.0
			Measured + Indicated	1.2	5.4	146.9	1.5	40.8	1.2	5.4	147.6	1.5	41.0
			Inferred	—	—	—	—	—	—	—	—	—	—
	Watson's Lode	Underground	Measured	—	—	—	—	—	—	—	—	—	—
			Indicated	—	—	—	—	—	—	—	—	—	—
			Measured + Indicated	—	—	—	—	—	—	—	—	—	—
			Inferred	0.3	7.9	58.8	2.1	15.3	0.3	7.9	59.1	2.1	15.4
Total Measured + Indicated				2.0	5.6	242.1	2.7	116.2	2.0	5.6	243.3	2.7	116.8
Grand total				2.4	5.8	307.8	2.8	147.8	2.4	5.8	309.4	2.8	148.5

## Notes:

- No cut-off grades applied to the TSF Mineral Resources
- TSF Mineral Resource constrained within a boundary string defining the dam walls and excluding outflow areas
- Silver King Mineral Resource has been reported above a cut-off of Pb+Zn >4%
- East Fault Block Mineral Resource was reported at a nominal 3.0% zinc equivalence (ZnEq) Cut-off grade
- South Block Mineral Resource was reported at a 3.0% zinc equivalent (ZnEq) Cut-off grade
- Watson's Lode Mineral Resource has been reported above a cut-off of Pb+Zn >4%

## Zinc Mineral Reserve estimate at 31 December 2022

## Mineral Reserves

				31 Dec 2022			31 Dec 2021		
				Tonnes	Zinc	Zinc	Tonnes	Zinc	Zinc
Australia				(Mt)	(%)	(Mlb)	(Mt)	(%)	(Mlb)
New Century									
Operations	Century Tailings	TSF Surface	Proved	6.8	3.0	445.5	9.9	3.0	649.2
			Probable	—	—	—	—	—	—
Grand total Proved + Probable				6.8	3.0	445.5	9.9	3.0	649.2

## Notes:

- Based on metal price assumptions for Zn: US\$2.75/t and Ag US\$17.8/t
- Assumed metallurgical recoveries of Zn 63% and Ag 61%



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# PROFESSIONAL ORGANISATIONS

## GEOLOGICAL SOCIETY OF SOUTH AFRICA (GSSA)

Mandela Mining Precinct  
(formerly CSIR Miningtek)  
Corner Rustenburg and  
Carlow Roads, Melville Johannesburg, South  
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Website: [www.gssa.org.za](http://www.gssa.org.za)

## SOCIETY FOR MINING METALLURGY AND EXPLORATION (SME)

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United States

Tel: +1 303 948 4200 / +1 720 738 4085

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Website: [www.smenet.org](http://www.smenet.org)

## THE ASSOCIATION OF PROFESSIONAL ENGINEERS AND GEOSCIENTISTS OF ALBERTA (APEGA)

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10060 Jasper Avenue NW  
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Tel: 780 426 3990

Website: [www.apega.ca](http://www.apega.ca)

## SOUTH AFRICAN COUNCIL FOR NATURAL SCIENTIFIC PROFESSIONS (SACNASP)

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Website: [www.sacnasp.org.za](http://www.sacnasp.org.za)

## ENGINEERING COUNCIL OF SOUTH AFRICA (ECSA)

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Website: [www.aipg.org](http://www.aipg.org)

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# SAMREC CODE DEFINITIONS

TERM	DEFINITION
<b>Competency</b>	The public report is based on work that is the responsibility of suitably qualified and experienced persons who are subject to an enforceable professional code of ethics.
<b>Competent Person</b>	A Competent Person is a person who is registered with SACNASP, the Engineering Council of South Africa, or is a member or fellow of the Southern African Institute of Mining and Metallurgy (SAIMM), the Geological Society of South Africa (GSSA) or a Recognised Professional Organisation (RPO). The Competent Person must comply with the provisions of the relevant promulgated acts, have a minimum of five years experience relevant to the style of mineralisation and type of deposit or class of deposit under consideration and to the activity he or she is undertaking. Persons being called upon to sign as a Competent Person must be clearly satisfied in their own minds that they are able to face their peers and demonstrate competence in the commodity, type of deposit and the situation under consideration.
<b>Deposit</b>	A concentration (or occurrence) of material of possible economic interest, in or on the earth crust, that may include mineralised material that cannot be estimated with sufficient confidence to be classified in the Inferred category. Portions of a deposit that do not have reasonable and realistic prospects for eventual economic extraction are not included in a Mineral Resource.
<b>Materiality</b>	A public report contains all the relevant information that investors and their professional advisors would reasonably require, and expect to find, for the purpose of making a reasoned and balanced judgement regarding the exploration results, Mineral Resources and Mineral Reserves reported on.
<b>Mineral Resource</b>	A concentration or occurrence of material of economic interest in or on the earth's crust in such form, quality and quantity that there are reasonable and realistic prospects for eventual economic extraction. The location, quantity, grade, continuity and other geological characteristics of a Mineral Resource are known, or estimated from specific geological evidence, sampling and knowledge interpreted from an appropriately constrained and portrayed geological model. Mineral Resources are subdivided, and must be so reported, in order of increasing confidence in respect of geoscientific evidence, into Inferred, Indicated and Measured categories.
<b>Measured Mineral Resource</b>	That part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable information from exploration, sampling and testing of material from locations such as outcrops, trenches, pits, workings and drillholes. The locations are spaced closely enough to confirm geological and grade continuity.
<b>Indicated Mineral Resource</b>	That part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based on information from exploration, sampling and testing of material gathered from locations such as outcrops, trenches, pits, workings and drillholes. The locations are too widely or inappropriately spaced to confirm geological and/or grade continuity but are spaced closely enough for continuity to be assumed.
<b>Inferred Mineral Resource</b>	That part of a Mineral Resource for which tonnage, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence and sampling, and assumed but not verified geologically or through analysis of grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes that may be limited or of uncertain quality and reliability.
<b>Mineral Reserve</b>	The economically mineable material derived from a Measured and/or Indicated Mineral Resource. It is inclusive of diluting and contaminating materials and allows for losses that are expected to occur when the material is mined. Appropriate assessments to a minimum of a PFS for a project and a LoM plan for an operation must have been completed, including consideration of, and modification by, realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors (the modifying factors). Such modifying factors must be disclosed.
<b>Proved Mineral Reserve</b>	Economically mineable material derived from a Measured Mineral Resource. It is estimated with a high level of confidence. It includes diluting and contaminating materials and allows for losses that are expected to occur when the material is mined. Appropriate assessments to a minimum of a PFS for a project or a LoM plan for an operation must have been carried out, including consideration of, and modification by, realistic assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. Such modifying factors must be disclosed.
<b>Probable Mineral Reserve</b>	Economically mineable material derived from a Measured or Indicated Mineral Resource or both. It is estimated with a lower level of confidence than a Proved Mineral Reserve. It includes diluting and contaminating materials and allows for losses that are expected to occur when the material is mined. Appropriate assessments to a minimum of a PFS for a project or a LoM plan for an operation must have been carried out, including consideration of, and modification by, realistic assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. Such modifying factors must be disclosed.
<b>Transparency</b>	The reader of a public report must be provided with sufficient information, the presentation of which is clear and unambiguous, to understand the report and not to be misled.



# GLOSSARY OF TERMS

TERM	DEFINITION
<b>Above infrastructure (AI)</b>	That part of the Mineral Resources and/or Mineral Reserves, which are above the lowest mining level and can be accessed via the current mine infrastructure (shafts and underground haulages).
<b>Below infrastructure (BI)</b>	That part of the Mineral Resources and/or Mineral Reserves which are below the lowest mining level and that can only be accessed following approved capital expenditure.
<b>Brownfield</b>	A mineral deposit, not yet exploited but conceptualised as an extractable orebody.
<b>Bushveld Igneous Complex</b>	World's largest known layered mafic-ultramafic intrusive complex, covering an area of approximately 67,000km <sup>2</sup> , containing more than 80% of all known PGM resource.
<b>Carbon-in-leach (CIL)</b>	Gold is leached from a gold ore slurry with cyanide in agitation tanks and absorbed onto carbon granules in the same circuit. The carbon granules are separated from the slurry and treated in an elution circuit to extract the gold.
<b>Carbon-in-pulp (CIP)</b>	Gold is leached conventionally from a gold ore slurry with cyanide in agitation tanks. The leached slurry then passes into the CIP circuit where carbon granules are mixed with the slurry and gold is absorbed onto the carbon. The carbon granules are separated from the slurry and treated in an elution circuit to extract the gold.
<b>Concept study</b>	A study of the viability of options to determine the potential value of the opportunity and confirm alignment with the business strategy. The study details the required work to fully define the opportunity, and outlines the economic potential of that being studied.
<b>Cut-off grade</b>	The grade of ore that would result in direct mining costs to be covered.
<b>Depletion</b>	The decrease in the quantity of ore in a deposit or property (mining right) resulting from extraction or production.
<b>Dilution</b>	Waste or material below the cut-off grade that contaminates the ore during the course of mining operations and thereby reduces the average grade mined.
<b>Feasibility study (FS)</b>	A comprehensive design and costing study of a project. Appropriate assessments have been made of realistically assumed geological, mining, metallurgical, economic, marketing, legal, environmental, social, governmental, engineering, operational and all other modifying factors, which are considered in sufficient detail to demonstrate at the time of reporting that extraction is reasonably justified (economically mineable) and the factors 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 overall confidence of the study should be stated.
<b>Life of mine (LoM)</b>	Number of years that an operation is currently planning to mine and treat ore and is derived from the current mining plan.
<b>Mine call factor (MCF)</b>	The ratio expressed as a percentage in which the specific product accounted for in 'recovery plus residue' bears the corresponding product 'called for' by the mine's measuring and evaluation methods.
<b>Pay limit</b>	The average mining grade for a mine that would result in all direct and indirect costs being covered.
<b>Pillars</b>	<p>Pillars comprise of:</p> <ul style="list-style-type: none"> <li>• Dip and strike stability pillars</li> <li>• Water and ventilation pillars</li> <li>• Regional stability pillars as defined by rock engineering</li> <li>• Bracket pillars adjacent to seismically active areas or large structures</li> <li>• Boundary and remnant pillars</li> <li>• Abandoned pillars</li> </ul> <p>Inter alia, some pillars may become available to mine once appropriate investigations and rehabilitation have taken place.</p>
<b>Plant recovery factor</b>	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.
<b>Post depletion</b>	2020 Mineral Resources and Mineral Reserves, as at December 2020, minus 2019 mined-out areas.
<b>Prefeasibility study (PFS)</b>	A comprehensive study of the viability of options for a mineral project that has advanced to a stage at which the preferred mining method in the case of underground mining or the pit configuration in the case of an open pit has been established. Additionally, an effective method of mineral processing has been determined. It includes a financial analysis based on realistic assumptions of technical, engineering, operating, economic factors and the evaluation of other relevant factors that are sufficient for a Competent Person, acting reasonably, to determine if all or part of the Mineral Resource may be classified as a Mineral Reserve. The overall confidence of the study should be stated. A PFS is at a lower confidence level than a FS.
<b>Prill Split</b>	The ratio of co-occurring precious metals present in ore expressed as a percentage.
<b>Reef</b>	A geological horizon or stratigraphic horizon that may contain economic levels of mineralisation.
<b>Stope</b>	Underground excavation where the orebody is extracted.
<b>Survey shortfall</b>	Difference between the tonnage hoisted as ore and that accounted for by the plant measuring methods. Discrepancy is referred to as a shortfall when the calculated tonnage is less than the tonnage accounted for by the plant, or an excess when the opposite occurs.
<b>Unconformity</b>	An erosional marker surface indicating a lapse in time between two differing aged stratigraphic units.
<b>White areas</b>	Areas that were excluded from previous LoM plans that have since been proven to have realistic expectation of safe economic extraction, with the required investigations, rock engineering modelling and detail mining plan to support it. White areas include open ground, areas that were excluded due to economics or lack of information and pillars.

# ABBREVIATIONS

TERM	DEFINITION
<b>2D</b>	Two dimensional
<b>2E PGM</b>	Platinum, palladium
<b>3D</b>	Three dimensional
<b>4E PGM</b>	Platinum, palladium, rhodium, gold
<b>6E PGM</b>	Platinum, palladium, rhodium, gold, ruthenium, iridium
<b>AAP</b>	Anglo American Platinum
<b>AAR</b>	Aandenk Reef
<b>Ag</b>	Silver
<b>AI</b>	Above infrastructure
<b>AIPG</b>	American Institute of Professional Geologists
<b>AISC</b>	All-in sustaining costs
<b>Amsl</b>	Above mean sea level
<b>Aquarius</b>	Aquarius Platinum Ltd
<b>Au</b>	Gold
<b>BI</b>	Below infrastructure
<b>BIC</b>	Bushveld Igneous Complex
<b>BR</b>	Beatrix Reef
<b>BTTP</b>	Bulk Tailing Treatment Project
<b>C\$</b>	Canadian dollar
<b>C&amp;F</b>	Cut and fill
<b>C2022 BP</b>	2022 Business Plan
<b>CCTV</b>	Closed Circuit Television
<b>CDP</b>	Community Development Programme
<b>CEO</b>	Chief Executive Officer
<b>CIL</b>	Carbon-in-leach
<b>CIM</b>	Canadian Institute of Mining, Metallurgy and Petroleum
<b>CIM NI 43-101</b>	Canadian Institute of Mining – National Instrument 43-101
<b>CIP</b>	Carbon-in-pulp
<b>cm</b>	Centimetre
<b>cm.g/t</b>	Centimetre gramme per tonne
<b>COVID-19</b>	Coronavirus Disease
<b>CP/QP</b>	Competent Person/Qualified Person
<b>CPG</b>	Certified Professional Geologists for the AIPG
<b>CPG</b>	Certified Professional Geologist
<b>CPR</b>	Competent Persons Report
<b>Cr2O3</b>	Chromium oxide
<b>CRIRSCO</b>	Committee for Mineral Reserves International Reporting Standards
<b>CRM</b>	Certified reference materials
<b>CRP</b>	Chrome retreatment plant
<b>Cs</b>	Caesium
<b>Cu</b>	Copper
<b>CW</b>	Channel width
<b>DBM</b>	De Bron Merriespruit
<b>DFS</b>	Definitive feasibility study
<b>DMRE</b>	Department of Mineral Resources and Energy
<b>DRDGOLD</b>	DRDGOLD Limited
<b>DWS</b>	Department of Water and Sanitation
<b>EDGAR</b>	Electronic data gathering, analysis, and retrieval system
<b>EIA</b>	Environmental Impact Assessment
<b>EIS</b>	Environmental impact statement
<b>EL</b>	Exploration License
<b>EMC</b>	Ezulwini Mining Company

TERM	DEFINITION
<b>EPL</b>	Eastern Platinum Limited
<b>EqCu</b>	Copper Equivalent
<b>ESG</b>	Environmental Social and Governance
<b>ETTP</b>	Eastern Tailings Treatment Plant
<b>ETD1</b>	Eastern Tailings Dam One
<b>FS</b>	Feasibility study
<b>FWGR</b>	Far West Gold Recoveries
<b>g</b>	Gramme
<b>g/t</b>	Grammes per tonne
<b>Ga</b>	(Giga-annum) billion years
<b>GBG</b>	Great Basin Gold
<b>GDE</b>	Graduate Diploma Engineering
<b>GHG</b>	Green House Gas
<b>GISTM</b>	Global Industry Standard on Tailings Management
<b>GSSA</b>	Geological Society of South Africa
<b>GTC</b>	Grade tonnage curve
<b>Guide 7</b>	SEC Industry Guide 7
<b>ha</b>	Hectare
<b>ICMM</b>	International Council on Mining and Metals
<b>ICP</b>	Induction Coupled Plasma Mass Spectrometry
<b>IOCG</b>	Iron-oxide copper-gold
<b>Ir</b>	Iridium
<b>IRUP</b>	Iron-rich ultramafic pegmatoids
<b>ISO/IEC</b>	International standard on how to manage information security
<b>JCI</b>	Johannesburg Consolidated Investments
<b>JM</b>	Johns Manville (a manufacturer)
<b>JSE</b>	Johannesburg Stock Exchange Limited
<b>JV</b>	Joint venture
<b>kg</b>	Kilogramme
<b>kg/t</b>	Kilogrammes per tonne
<b>KKR</b>	Kalkoenkrans Reef
<b>km</b>	Kilometre
<b>Km²</b>	Square kilometres
<b>koz</b>	Thousand ounces
<b>KPM</b>	Kroondal Platinum Mines
<b>KR</b>	Kloof Reef
<b>kt</b>	Thousand tonnes
<b>Ktpm</b>	Thousand tonnes per month
<b>lb</b>	Pounds
<b>LCE</b>	Lithium Carbonate Equivalent
<b>LHD</b>	Load haul dump truck
<b>Li</b>	Lithium
<b>LIMS</b>	Lab Information Management System
<b>LoM</b>	Life of mine
<b>LR</b>	Libanon Reef
<b>m</b>	Metre
<b>m²</b>	Square metre
<b>Ma</b>	(Mega annum) million years
<b>MBA</b>	Master of Business Administration
<b>MBCCR</b>	Multiband Carbon Leader Reef
<b>MCF</b>	Mine call factor
<b>MER</b>	Merensky Reef

## ABBREVIATIONS continued

TERM	DEFINITION
<b>Mlb</b>	Million pounds
<b>mm</b>	Millimetre
<b>MMSA</b>	Mining and Metallurgical Society of America
<b>Moz</b>	Million ounces
<b>MPO</b>	Mine Plan of Operations
<b>MPRDA</b>	Minerals and Petroleum Resources Development Act
<b>MPTRO</b>	Mineral and Petroleum Titles Registration Office
<b>MR</b>	Mining right
<b>MRM</b>	Mineral Resource Management
<b>MSCC</b>	Mine Surveyor Certificate of Competency
<b>MSZ</b>	Main Sulphide Zone
<b>Mt</b>	Million tonnes
<b>Mtpa</b>	Million tonnes per annum
<b>MVR</b>	Middelvelei Reef
<b>MWP</b>	Mine Works Programme
<b>NDEP</b>	Nevada Division of Environmental Protection
<b>NDEP-BMRR</b>	Nevada Bureau of Mining Regulation and Reclamation
<b>NDT</b>	Non-destructive testing
<b>NEPA</b>	National Environmental Protection Authority
<b>Ni</b>	Nickel
<b>NPV</b>	Net present value
<b>NSR</b>	Net Smelter Royalty
<b>NYSE</b>	New York Stock Exchange
<b>OB-I</b>	Olivine occurrence
<b>Opt</b>	Ounces per tonne
<b>ORET</b>	Ore reserves economic test
<b>Os</b>	Osmium
<b>oz</b>	Ounces (troy)
<b>P&amp;SA</b>	Pool and Share Agreement
<b>Pb</b>	Lead
<b>Pd</b>	Palladium
<b>PdEq</b>	Paladium equivalent
<b>PEA</b>	Preliminary economic assessment
<b>PFS</b>	Prefeasibility study
<b>PGM</b>	Platinum Group Metals
<b>PGO</b>	Professional Geoscientist Ontario
<b>POC</b>	Purchase of concentrate
<b>PR</b>	Prospecting right
<b>Pr.Sci.Nat</b>	Professional Natural Scientist
<b>Pt</b>	Platinum
<b>QA/QC</b>	Quality assurance / quality control
<b>QDM</b>	Quebrada de la Mina
<b>QEMSCAN</b>	Quantitative evaluation of minerals by scanning electron microscopy
<b>R</b>	South African Rand
<b>R/kg</b>	South African Rand per kilogramme
<b>REGM</b>	Randfontein Estates Gold Mine
<b>Rh</b>	Rhodium
<b>RLS</b>	Rustenburg Layered Suite
<b>ROM</b>	Run-of-mine
<b>RPA</b>	Roscoe Postle Associates Inc
<b>RPEEE</b>	Reasonable prospects for eventual economic extraction

TERM	DEFINITION
<b>RPM</b>	Rustenburg Platinum Mines
<b>RPO</b>	Recognised Professional Organisation
<b>RSO</b>	Randfontein Surface Operation
<b>Ru</b>	Ruthenium
<b>SACNASP</b>	South African Council for Natural Scientific Professions
<b>SAGC</b>	South African Geomatics Council
<b>SAIMM</b>	Southern African Institute of Mining and Metallurgy
<b>SAMREC CODE</b>	The South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves
<b>SAMVAL CODE</b>	The South African Code for the Reporting of Mineral Asset Valuation
<b>SANAS</b>	South African National Accreditation System
<b>SCI</b>	Stillwater Canada Incorporated
<b>SDG's</b>	Sustainable development goals
<b>SEC</b>	The United States Securities and Exchange Commission
<b>SIB</b>	Stay in business
<b>SIC</b>	Stillwater Igneous Complex
<b>SK-1300</b>	Subpart 1300 of Regulation S-K under the US Securities Act of 1993
<b>SLE</b>	Sub-level extraction
<b>SLP</b>	Social and labour plan
<b>SMC</b>	Stillwater Mining Company
<b>SME</b>	Society for Mining Metallurgy and Exploration
<b>SMU</b>	Selective mining unit
<b>SOFS</b>	Southern Free State projects
<b>SOX</b>	Sarbanes-Oxley Act of 2002
<b>SRD</b>	Surface rock dump
<b>SRPM</b>	Sibanye Rustenburg Platinum Mine
<b>SV</b>	Sub-vertical
<b>SW</b>	Stoping width
<b>SWE</b>	Stillwater East
<b>t</b>	Metric tonne
<b>Ta</b>	Tantalum
<b>TCFD</b>	Task force on climate-related financial disclosures
<b>TMM</b>	Trackless Mining Machinery
<b>tpm</b>	Tonnes per month
<b>TSF</b>	Tailings storage facility
<b>U</b>	Uranium
<b>U3O8</b>	Uranium oxide
<b>UG</b>	Underground
<b>UG2</b>	Upper group two chromium layer
<b>US</b>	United States
<b>US\$</b>	United States dollar
<b>US\$/oz</b>	United States dollar per ounce
<b>VCR</b>	Ventersdorp Contact Reef
<b>VS5</b>	VS5 Reef of the Eldorado Formation
<b>WCWDM</b>	Water conservation and water demand management
<b>Wits Gold</b>	Witwatersrand Consolidated Gold Resources Limited
<b>WLTRP</b>	Western Limb Tailings Retreatment Project
<b>WPL</b>	Western Platinum Limited
<b>WRTRP</b>	West Rand Tailings Retreatment Project
<b>XRF</b>	X-ray fluorescence
<b>Zn</b>	Zinc

# DISCLAIMER

## Forward-looking statements

The information in this report may contain forward-looking statements within the meaning of the "safe harbour" provisions of the United States Private Securities Litigation Reform Act of 1995. These forward-looking statements, including, among others, those relating to Sibanye Stillwater Limited's (Sibanye-Stillwater or the Group) financial positions, business strategies, plans and objectives of management for future operations, are necessarily estimates reflecting the best judgment of the senior management and directors of Sibanye-Stillwater 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.

All statements other than statements of historical facts included in this report may be forward-looking statements. Forward-looking statements also often use words such as "will", "would", "expect", "forecast", "potential", "may", "could", "believe", "aim", "anticipate", "target", "estimate" and words of similar meaning. By their nature, forward-looking statements involve risk and uncertainty because they relate to future events and circumstances and should be considered in light of various important factors, including those set forth in this disclaimer. Readers are cautioned not to place undue reliance on such statements.

The important factors that could cause Sibanye-Stillwater's actual results, performance or achievements to differ materially from estimates or projections contained in the forward-looking statements include, without limitation, Sibanye-Stillwater's future financial position, plans, strategies, objectives, capital expenditures, projected costs and anticipated cost savings, financing plans, debt position and ability to reduce debt leverage; economic, business, political and social conditions in South Africa, Zimbabwe, the United States, Europe and elsewhere; plans and objectives of management for future operations; Sibanye-Stillwater's ability to obtain the benefits of any streaming arrangements or pipeline financing; the ability of Sibanye-Stillwater to comply with loan and other covenants and restrictions and difficulties in obtaining additional financing or refinancing; Sibanye-Stillwater's ability to service its bond instruments; changes in assumptions underlying Sibanye-Stillwater's estimation of its Mineral Resources and Mineral Reserves; any failure of a tailings storage facility; the ability to achieve anticipated efficiencies and other cost savings in connection with, and the ability to successfully integrate, past, ongoing and future acquisitions, as well as at existing operations; the ability of Sibanye-Stillwater to complete any ongoing or future acquisitions; the success of Sibanye-Stillwater's business strategy and exploration and development activities, including any proposed, anticipated or planned expansions into the battery metals or adjacent sectors and estimations or expectations of enterprise value (including the Rhyolite Ridge project); the ability of Sibanye-Stillwater to comply with requirements that it operate in ways that provide progressive benefits to affected communities; changes in the market price of gold, PGMs, battery metals (e.g., nickel, lithium, copper and zinc) and the cost of power, petroleum fuels, and oil, among other commodities and supply requirements; the occurrence of hazards associated with underground and surface mining; any further downgrade of South Africa's credit rating; the impact of South Africa's greylisting; a challenge regarding the title to any of Sibanye-Stillwater's properties by claimants to land under restitution and other legislation; Sibanye-Stillwater's ability to implement its strategy and any changes thereto; the outcome of legal challenges to the Group's mining or other land use rights; the outcome of any disputes or litigation; the occurrence of labour disputes, disruptions and industrial actions; the availability, terms and deployment of capital or credit; changes in the imposition of industry standards, regulatory costs and relevant government regulations, particularly environmental, sustainability, tax, health and safety regulations and new legislation affecting water, mining, mineral rights and business ownership, including any interpretation thereof which may be subject to dispute; the outcome and consequence of any potential or pending litigation or regulatory proceedings, including in relation to any environmental, health or safety issues; failure to meet ethical standards, including actual or alleged instances of fraud, bribery or corruption; the effect of climate change or other extreme weather events on Sibanye-Stillwater's business; the concentration of all final refining activity and a large portion of Sibanye-Stillwater's PGM sales from mine production in the United States with one entity; the identification of a material weakness in disclosure and internal controls over financial reporting; the effect of US tax reform legislation on Sibanye-Stillwater and its subsidiaries; the effect of South African Exchange Control Regulations on Sibanye-Stillwater's financial flexibility; operating in new geographies and regulatory environments where Sibanye-Stillwater has no previous experience; power disruptions, constraints and cost increases; supply chain disruptions and shortages and increases in the price of production inputs; the regional concentration of Sibanye-Stillwater's operations; fluctuations in exchange rates, currency devaluations, inflation and other macro-economic monetary policies; the occurrence of temporary stoppages or precautionary suspension of operations at its mines for safety or environmental incidents (including natural disasters) and unplanned maintenance; Sibanye-Stillwater's ability to hire and retain senior management and employees with sufficient technical and/or production skills across its global operations necessary to meet its labour recruitment and retention goals, as well as its ability to achieve sufficient representation of historically disadvantaged South Africans in its management positions; failure of Sibanye-Stillwater's information technology, communications and systems; the adequacy of Sibanye-Stillwater's insurance coverage; social unrest, sickness or natural or man-made disaster at informal settlements in the vicinity of some of Sibanye-Stillwater's South African-based operations; and the impact of HIV, tuberculosis and the spread of other contagious diseases, such as the coronavirus disease (COVID-19).

Further details of potential risks and uncertainties affecting Sibanye-Stillwater are described in Sibanye-Stillwater's filings with the Johannesburg Stock Exchange and the United States Securities and Exchange Commission, including the 2022 Integrated Report and the Annual Financial Report for the fiscal year ended 31 December 2022 on Form 20-F filed with the United States Securities and Exchange Commission on 24 April 2023 (SEC File no. 333-234096).

These forward-looking statements speak only as of the date of the content. Sibanye-Stillwater expressly disclaims any obligation or undertaking to update or revise any forward-looking statement (except to the extent legally required). These forward-looking statements have not been reviewed or reported on by the Group's external auditors.

## Non-IFRS measures

The information contained in this report may contain certain non-IFRS measures, including among others, adjusted EBITDA, adjusted free cash flow, AISC, AIC, Nickel equivalent sustaining cost and normalised earnings. These measures may not be comparable to similarly-titled measures used by other companies and are not measures of Sibanye-Stillwater's financial performance under IFRS. These measures should not be considered in isolation or as a substitute for measures of performance prepared in accordance with IFRS. Sibanye-Stillwater is not providing a reconciliation of the forecast non-IFRS financial information presented in this report because it is unable to provide this reconciliation without unreasonable effort. These forecast non-IFRS financial information presented have not been reviewed or reported on by the Group's external auditors.

## Mineral Resources and Mineral Reserves

Sibanye-Stillwater's Mineral Resources and Mineral Reserves are estimates at a particular date, and are affected by fluctuations in mineral prices, the exchange rates, operating costs, mining permits, changes in legislation and operating factors. Sibanye-Stillwater reports its Mineral Resources and Mineral Reserves in accordance with the rules and regulations promulgated by each of the United States Securities and Exchange Commission (SEC) and the JSE at all managed operations, development, and exploration properties.

## Websites

References in this document to information on websites (and/or social media sites) are included as an aid to their location and such information is not incorporated in, and does not form part of, this report.



# ADMINISTRATION AND CORPORATE INFORMATION

## SIBANYE STILLWATER LIMITED (SIBANYE-STILLWATER)

Incorporated in the Republic of South Africa  
Registration number 2014/243852/06  
Share code: SSW and SBSW  
Issuer code: SSW  
ISIN: ZAE000259701

### LISTINGS

JSE: SSW  
NYSE: SBSW

### WEBSITE

[www.sibanyestillwater.com](http://www.sibanyestillwater.com)

## REGISTERED AND CORPORATE OFFICE

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Bridgeview House, Building 11, Ground floor,  
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South Africa

Private Bag X5  
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South Africa

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Fax: +27 11 278 9863

## COMPANY SECRETARY

**Lerato Matlosa**

Email: [lerato.matlosa@sibanyestillwater.com](mailto:lerato.matlosa@sibanyestillwater.com)

## DIRECTORS

Dr Vincent Maphai\* (Chairman)  
Neal Froneman (CEO)  
Charl Keyter (CFO)  
Dr Elaine Dorward-King\*  
Harry Kenyon-Slaney\*  
Jeremiah Vilakazi\*  
Keith Rayner\*  
Nkosemntu Nika\*  
Richard Menell\*\*  
Savannah Danson\*  
Susan van der Merwe\*  
Timothy Cumming\*  
Sindiswa Zilwa\*

\* Independent non-executive

^ Lead independent director

## INVESTOR ENQUIRIES

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Mobile: +27 83 453 4014  
Email: [james.wellsted@sibanyestillwater.com](mailto:james.wellsted@sibanyestillwater.com)  
or [ir@sibanyestillwater.com](mailto:ir@sibanyestillwater.com)

## JSE SPONSOR

**JP Morgan Equities South Africa Proprietary Limited**

Registration number 1995/011815/07

1 Fricker Road  
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Johannesburg 2196  
South Africa

Private Bag X9936  
Sandton 2146  
South Africa

## AUDITORS

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South Africa

Private Bag X14  
Sandton 2146  
South Africa

Tel: +27 11 772 3000

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Overnight/certified/registered delivery:  
Computershare  
150 Royall Street, Suite 101  
Canton, MA 02021

US toll free: +1 888 269 2377

Tel: +1 201 680 6825

Email: [shrrelations@cpushareownerservices.com](mailto:shrrelations@cpushareownerservices.com)

**Tatyana Vesselovskaya**

Relationship Manager - BNY Mellon  
Depositary Receipts  
Email: [tatyana.vesselovskaya@bnymellon.com](mailto:tatyana.vesselovskaya@bnymellon.com)

## TRANSFER SECRETARIES SOUTH AFRICA

**Computershare Investor Services Proprietary Limited**

Rosebank Towers  
15 Biermann Avenue  
Rosebank 2196

PO Box 61051  
Marshalltown 2107  
South Africa

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# RSA GENERIC MINING PERMIT CONDITIONS

The following is an extract of the key, generic Mining Permit conditions, as applicable to the South African operations.

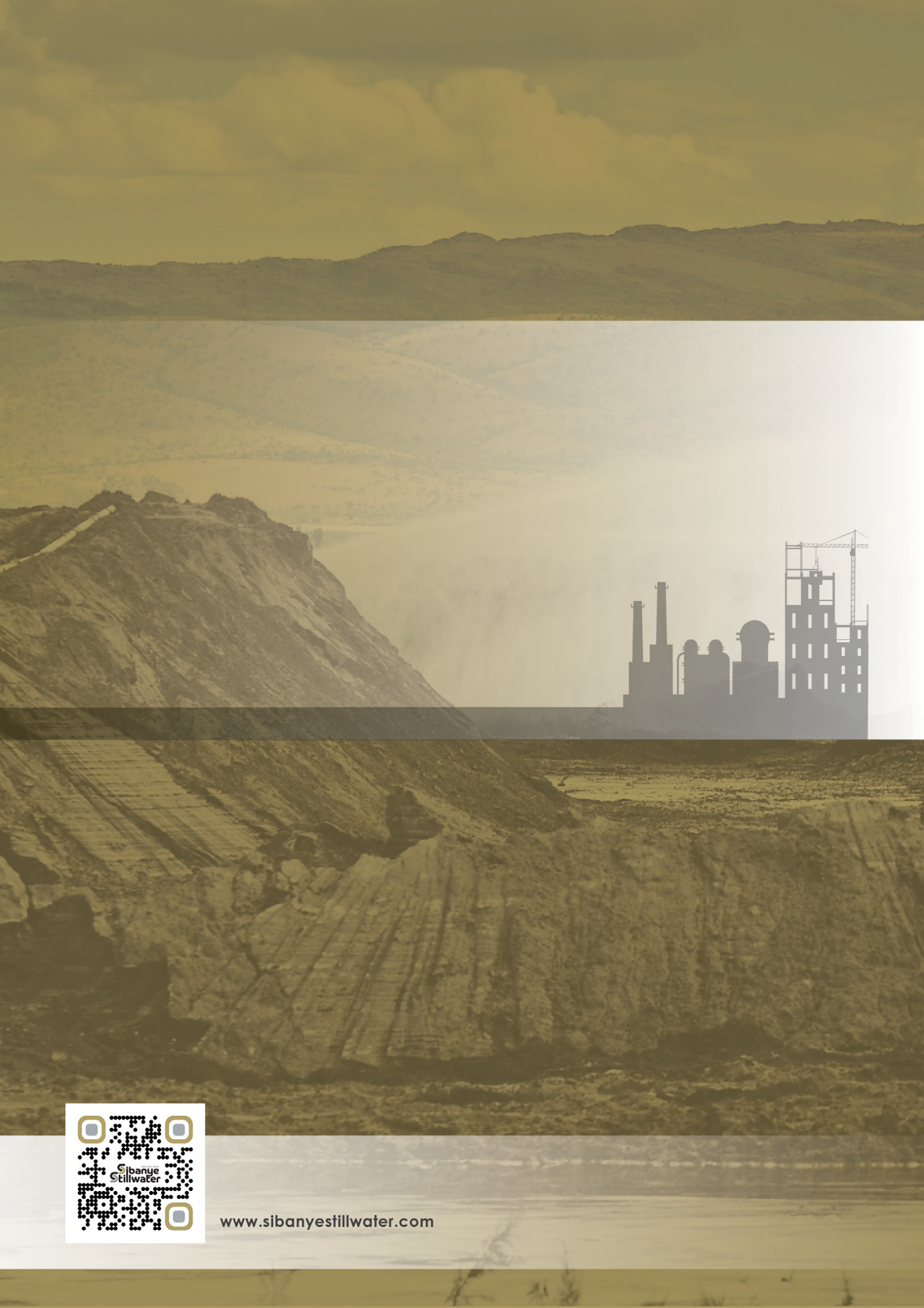
1. Mining right renewal applications are to be submitted 60 working days prior to the date of expiry of the right
2. The holder of a MR must continue with mining operations, failing which the right may be suspended or cancelled
3. The terms of the right may not be varied or amended without the consent of the Minister of Mineral Resources and Energy
4. The Holder shall be entitled to abandon or relinquish the right of the area covered by the right entirely or in part. Upon abandonment or relinquishment the Holder must:
  - a. Furnish the Regional Manager with all prospecting and/or mining results and/or information, as well as the general evaluation of the geological, geophysical and borehole data in respect of such abandoned area; and
  - b. Apply for a closure certificate in terms of section 43(3) of the MPRDA
5. The holder shall pay royalties to the State in accordance with section 25(2)g of the MPRDA throughout the duration of the mining right
6. The holder shall pay royalties to the State in accordance with section 25(2)g of the MPRDA throughout the duration of the mining right
7. Mining operations must be conducted in accordance with the Mining Work Programme (MWP) and any amendment to the MWP and an approved Environmental Management Plan (EMP)
8. The holder shall not trespass or enter into any homestead, house or its curtilage, nor interfere with or prejudice the interests of the occupiers and/or owners of the surface of the mining right area except to the extent to which such interference or prejudice is necessary for the purposes of enabling the holder to properly exercise the holder's rights under the mining right
9. The holder must dispose of all minerals derived from mining at competitive market prices which shall mean in all cases, non-discriminatory prices or non-export parity prices
10. A shareholding, an equity, an interest or participation in the mining right or joint venture, or a controlling interest in a company/JV may not be encumbered, ceded, transferred, mortgaged, let, sublet, assigned, alienated or otherwise disposed of without the written consent of the Minister, except in the case of a change of controlling interest in listed companies
11. All boreholes, shafts, adits, excavations and openings created by the holder shall be sealed, closed, fenced and made safe in accordance with the approved EMP and the Mine Health and Safety Act
12. The holder of the mining right, while carrying out mining operations, should safeguard and protect the environment, the mining area and any person using or entitled to use the surface of the mining area from possible damage or injury
13. The Minister or a person authorised by the Minister shall be entitled to inspect the mining area and the execution of the approved mining right conditions
14. A mining right may be cancelled or suspended subject to Section 47 of the MPRDA if the holder:
  - a. Submits inaccurate, incorrect and/or misleading information in connection with any matter required to be submitted under this act
  - b. Fails to honour or carry out any agreement, arrangement or undertaking, including the undertaking made by the holder in terms of the Broad Based Socio Economic Empowerment Charter and Social and Labour Plan
  - c. Breaches any material term and condition of the mining right
  - d. Conducts mining in contravention of the MPRDA
  - e. Contravenes the requirements of the approved EMP
  - f. Contravenes any provisions of this act in any other manner
15. The Holder shall submit monthly returns contemplated in Section 28 (2) of the MPRDA no later than the 15th of every month, and maintain all such books, plans and records in regard to mining of the mining area as may be required by the act
16. The holder shall, at the end of each year, following commencement of this mining right, inform the Regional Manager in writing of any new developments and of the future mining activities planned in connection with the exploitation/ mining of the minerals in the mining area
17. Provisions relating to Section 2(d) and Section 2(f) of the MPRDA, relating to the Broad Based Socio Economic Empowerment Charter differs in each mining right
18. The mining right does not exempt the holder from complying with the MHSA or any act in South Africa
19. The holder shall, annually, no later than three months before financial year end, submit a detailed implementation plan to give effect to Regulation 46(e) (i), (ii) and (iii) in line with the Social and Labour Plan
20. The holder shall, annually, no later than three months after finalization of its audited annual report, submit a detailed report on the implementation of the previous year's SLP

## SLP COMPLIANCE REQUIREMENTS

1. A new Social and Labour Plan is to be submitted and reviewed every 5 years
2. Social and Labour Plan implementation plans must be submitted annually
3. A Social and Labour Plan report is to be submitted annually

## ENVIRONMENTAL MANAGEMENT COMPLIANCE REQUIREMENTS

1. A performance assessment relating to the EMP is to be conducted biannually
2. A performance assessment relating to the Water Use License is to be conducted annually
3. A performance assessment relating to the Atmospheric Emission License is to be conducted annually



[www.sibanyestillwater.com](http://www.sibanyestillwater.com)