



Delivering  
on our purpose

# MRMR

Mineral Resource and Mineral  
Reserve Statement

For the year ended 30 June 2024



Implats' purpose is to create a better future – through the rare green metals it produces, through the way it conducts business and shares value, and through performance excellence across all spheres of its business.

## 1 – 21 INTRODUCTION, GROUP OVERVIEW AND GOVERNANCE

- 1 Purpose, vision, values and strategy
- 2 The report
- 2 Headline summary
- 3 Group structure
- 4 Attributable Mineral Resources and Mineral Reserves
- 11 Reconciliation of estimates
- 12 Governance and compliance
- 14 Reporting principles and framework
- 16 Mineral rights and legal tenure
- 18 ESG in Mineral Resource and Mineral Reserve reporting
- 19 Mineral Resource and Mineral Reserve risk management
- 20 Managing Mineral Resources, Mineral Reserves and life-of-mine

## 22 – 31 TECHNICAL SYNOPSIS

- 22 Regional geological settings
- 27 Exploration
- 28 Group production
- 30 Group life-of-mine outlook
- 31 Valuation and sensitivities

## 32 – 95 THE OPERATIONS – MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

- 32 Impala Rustenburg
- 41 Impala Bafokeng
- 54 Marula
- 62 Two Rivers
- 70 Zimplats
- 78 Mimosa
- 86 Impala Canada

## 96 – 105 THE PROJECTS – MINERAL RESOURCE ESTIMATES AND CHROMIUM ORE

- 96 Afplats project
- 100 Waterberg project
- 105 Chromium ore

## 106 – 113 APPENDICES

- 106 Mineral Resource and Mineral Reserve definitions
- 108 Acronyms and glossary of terms
- 111 Appointed Competent Persons and recognised professional organisations' details
- 113 Contact details and administration

### How to navigate this report

For easy navigation and cross-referencing, we have included the following icons within this report:



Information available  
on our website  
[www.implats.co.za](http://www.implats.co.za)



Information available  
elsewhere in this report

### Follow us online at [www.implats.co.za](http://www.implats.co.za)

- Direct access to all our reports available on release
- Our website has detailed investor, sustainability and business information.



<https://x.com/Implats>



<https://www.linkedin.com/company/impala-platinum/>



[https://www.youtube.com/channel/UCgshehA\\_JCYUeox7ICZw6bw/featured](https://www.youtube.com/channel/UCgshehA_JCYUeox7ICZw6bw/featured)



<https://www.facebook.com/implats/>

### OUR 2024 REPORTING SUITE

Implats is committed to establishing and maintaining trust through high-quality and transparent reporting that is useful to a wide variety of stakeholders:



**AIR**

#### Annual integrated report

- Reports to providers of financial capital how Implats creates, preserves or erodes value over time.



**AFS**

#### Audited annual financial statements

- Financial statement assurance, including the audit and risk committee report and directors' report
- Consolidated financial statements
- Company financial statements.



**CCR**

#### Climate change report

- Climate change risks and adaptations, decarbonisation plans and adoption of renewable energy
- Prepared in accordance with the recommendations of the TCFD and the Johannesburg Stock Exchange (JSE) Climate Change Disclosure Guidance.



**ESG**

#### ESG report

- Detail on material economic, social and environmental performance and governance
- GRI G4 core compliance
- Internal reporting guidelines in line with the UN Global Compacts
- Independent assurance report.



**AGM**

#### Notice to shareholders

- Notice of annual general meeting
- Form of proxy.



**REM**

#### Remuneration report

- Background statement
- Remuneration philosophy and policy
- Implementation report.



**TTECR**

#### Tax transparency and economic contribution report

- Prepared in accordance with GRI 207 and provides information on Implats'
- Approach to tax
  - Tax governance and risk management
  - Tax numbers and performance
  - Country-by-country tax and economic contribution.



# Purpose, vision, values and strategy

## Our purpose

To create a better future

## Our vision

To be the most valued and responsible metals producer, creating a better future for our stakeholders

## Our values

### RESPECT

- We believe in ourselves
- We work together as a team
- We take ownership of our responsibilities
- We are accountable for our actions

### CARE

- We set each other up for success
- We care for the environment
- We work safely and smartly
- We make a positive contribution to society

### DELIVER

- We play our A-game every day
- We go the extra mile
- We learn, adapt and grow
- We create a better future

We welcome your feedback to ensure we cover all aspects



Go to [www.implats.co.za](http://www.implats.co.za) or email [investor@implats.co.za](mailto:investor@implats.co.za) to provide us with your feedback.

## Our strategy

The six focus pillars of our strategy guide and inform the Group's goals and activities to ensure it achieves its purpose and vision.

Progress on these strategic objectives is monitored through specific key performance areas. The outcomes of this strategy relative to our capitals and stakeholders is discussed in chapter two of this report.

### Our strategic framework



**Sustainable development:** We aspire to deliver an industry-leading sustainability performance, producing metals that sustain livelihoods through and beyond mining, creating a cleaner and better future for all



**Operational excellence:** We generate superior value for all stakeholders through modern, safe, responsible, competitive and consistent operational delivery



**Organisational effectiveness:** We place people at the centre of our organisation, and engender a shared culture founded on our values to respect, care and deliver



**Optimal capital structure:** We pursue value creation by sustaining and leveraging a strong and flexible balance sheet within a prudent capital allocation framework



**Competitive asset portfolio:** We seek to leverage, strengthen and grow our diverse asset base through operational exposure to shallow, mechanisable orebodies



**Future focused:** We sustain and grow value by supporting present and future demand drivers, creating strong customer relationships and aligning our production to evolving demand

This report provides updated estimates and reconciliations of the Implats Group's Mineral Resources and Mineral Reserves as at 30 June 2024.

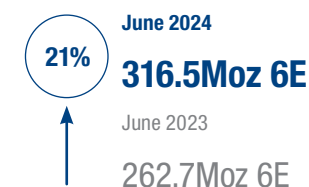
It conforms to the South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves, SAMREC Code (2016) and Section 12.13 of the JSE Listings Requirements.

The Group attributable Mineral Resource estimate increased by 21% to 316.5 million ounces 6E, due to the inclusion of Impala Bafokeng at 87% shareholding. This increase is marginally offset by production depletion and the decrease in the shareholding of Impala Rustenburg from 96% to 87%.

The Group attributable Mineral Reserve estimate increased by 4% to 54.6 million ounces 6E, due to the inclusion of Impala Bafokeng at 87% shareholding. The increase is reduced by production depletion, the decrease in the shareholding of Impala Rustenburg from 96% to 87%, the exclusion of the Mimosa North Hill project and the Two Rivers Merensky Mine due to the unfavourable prevailing metal prices.

### KEY TAKE-AWAY 2024

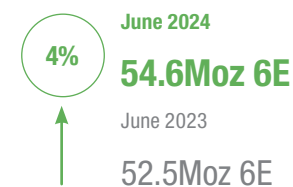
#### Attributable Mineral Resources



#### Prominent changes (Moz 6E)

- Implats increased by 53.8Moz 6E
  - Total production depletion of 3.5Moz
  - Impala Bafokeng inclusion of 65.0Moz
  - Impala Rustenburg attributable share contribution decrease 0.16Moz
  - Impala Bafokeng attributable share contribution decrease 0.05Moz

#### Attributable Mineral Reserves



#### Prominent changes (Moz 6E)

- Implats increased by 2.2Moz
  - Total production depletion of 3.4Moz
  - Impala Bafokeng inclusion of 10.5Moz
  - Impala Rustenburg attributable share contribution decrease 0.1Moz
  - Impala Bafokeng attributable share contribution decrease 0.02Moz
  - Two Rivers exclusion of Merensky Reef Mineral Reserves 2.3Moz
  - Mimosa exclusion of North Hill Mineral Reserves 1.7Moz

# The report

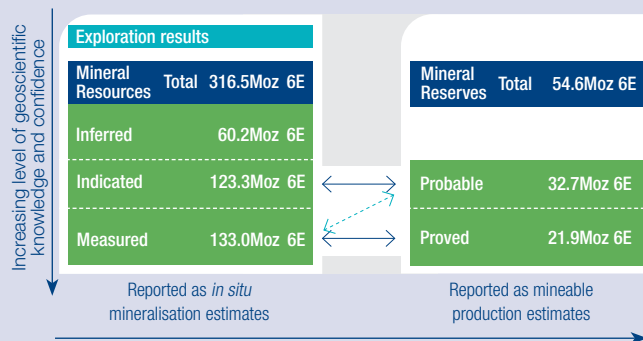
## FORWARD-LOOKING STATEMENTS

This report contains certain forward-looking statements and forecasts, which involve risk and uncertainty as they relate to events and rely on, or may be influenced by, future events. Several factors beyond our control could cause actual results or developments to differ materially from those expressed or implied by these forward-looking statements.

**Implata Platinum Holdings Limited (Implats) is one of the world's foremost Platinum Group Metals (PGMs) producers. Implats is structured around seven mining operations, with 24 underground shafts, re-mining of a dormant tailings storage facility, concentrator, smelting and refining operations.**

Our mining operations are located within the Bushveld Complex in South Africa, the Great Dyke in Zimbabwe and the Lac des Iles Intrusive Complex in Ontario, Canada.

### Relationship between Exploration Results, Mineral Resources and Mineral Reserves showing Implats' attributable Mineral Resources and Mineral Reserves as at 30 June 2024 (Moz 6E)



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

Implats has its primary listing on the JSE Limited (JSE) in South Africa and a secondary listing on the A2X Markets (A2X), also in South Africa. Our headquarters are based in Johannesburg. The seven primary mining operations are Impala Rustenburg, Impala Bafokeng, Marula and Two Rivers in South Africa, Mimosa and Zimplats in Zimbabwe, and Lac des Iles in Canada. The Mimosa and Two Rivers operations are joint-venture operations with Sibanye-Stillwater and African Rainbow Minerals (ARM) respectively, with Mimosa managed by an on-site mine team and overseen by a joint venture board, and Two Rivers by ARM.

The structure of our operating model allows each operation to establish and maintain close relationships with its stakeholders, while operating within a Group-wide framework to manage the economic, social and environmental (ESG) aspects of their sustainability performances.

The report relates to the Mineral Resource and Mineral Reserve Statement, compiled for Implats and its subsidiaries, and provides the status of estimates as at 30 June 2024. An abridged version is included in the Implats integrated annual report for 2024, published annually and available at ([www.implats.co.za](http://www.implats.co.za)). The report seeks to provide transparent and compliant details relating to the Mineral Resources and Mineral Reserves considered material to stakeholders.



16 Shaft operation at Impala Rustenburg

# Headline summary

## MINERAL RESOURCE AND MINERAL RESERVE STATEMENT

The Mineral Resource and Mineral Reserve Statement as at 30 June 2024 reflects the benefit of the positive long-term pricing outlook for the significant PGMs Implats produces, as well as the capital investment in material projects in the period under review.

**The attributable Group Mineral Resource estimate increased by 53.8Moz 6E to 316.5Moz 6E, and the attributable Group Mineral Reserve estimate increased by 2.2Moz 6E to 54.6Moz 6E.**

Greenfields exploration activities remain dormant at the South African, Zimbabwean and Canadian operations. Shaft sinking activities at Impala Rustenburg's 17 Shaft, Maseve North Shaft and Afplats' Leeuwkop Shaft remain suspended. The Two Rivers Merensky project is placed on care and maintenance and Mimosa North Hill project is stopped.

## GROUP OPERATIONS




Implats is structured around seven mining and processing operations and Impala Refining Services (IRS), a refining business. Group operations are located on the Bushveld Complex in South Africa, the Great Dyke in Zimbabwe – the two most significant PGM orebodies in the world – as well as the Canadian Shield, a prominent igneous complex domain for PGMs in Canada. In South Africa, our operations at Impala Rustenburg, Impala Bafokeng and the Afplats project are located in the Bojanala Platinum district of the North West province. The Marula and Two Rivers operations, together with the Waterberg joint venture project, are located in the Limpopo province.



# Group structure

as at 30 June 2024

## FINANCIAL REPORTING BOUNDARY – GROUP STRUCTURE AT 30 JUNE 2024

Impala Platinum Holdings Limited					
South Africa	87%	Impala Rustenburg	13%	Impala Employee Share Ownership Trust, Community Share Ownership Trust, Bokamoso Consortium	
	87%	Impala Bafokeng	13%	IBR Employee Share Ownership Trust, Community Share Ownership Trust, Bokamoso Consortium	
	73.26%	Marula	26.74%	Tubatse Platinum (Pty) Ltd, Mmakau Mining (Pty) Ltd, Marula Community Trust	
	46%	Two Rivers	54%	African Rainbow Minerals Ltd	
	74%	Afplats	26%	Ba-Mogopa Platinum Investments (Pty) Ltd	
	14.95%	Waterberg	85.05%	Platinum Group Metals Ltd Mnombo, JOGMEC, Hanwa	
Zimbabwe	87%	Zimplats	13%	Minorities	
	50%	Mimosa	50%	Sibanye-Stillwater	
Canada	100%	Lac des Iles			

Attributable estimates		2024	2023	2022	2021	2020
Mineral Resources*	Moz Pt	156.3	127.1	128.2	132.3	132.4
	Moz Pd	97.4	85.4	87.7	90.2	89.9
	Moz 3E	266.1	223.3	227.7	234.4	233.9
	Moz 4E	284.2	237.7	242.4	249.7	249.1
	Moz 6E	316.5	262.7	268.6	277.3	277.1
	Mt	2 031.4	1 800.2	1 834.6	1 885.9	1 818.8
Mineral Reserves	Moz Pt	26.3	24.3	25.5	24.6	21.8
	Moz Pd	18.0	18.4	19.7	18.8	17.3
	Moz 3E	46.7	45.3	47.8	46.0	41.2
	Moz 4E	49.6	48.0	50.7	48.7	43.6
	Moz 6E	54.6	52.5	55.7	53.4	47.8
	Mt	489.7	506.0	528.2	512.4	419.7

\* Mineral Resource estimate is inclusive of Mineral Reserves.



Laboratory high temperature melting oven sample preparation

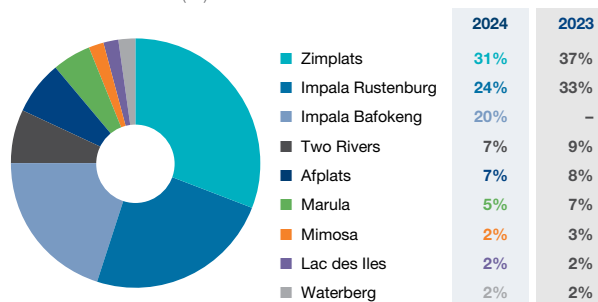
# Attributable Mineral Resources and Mineral Reserves

## Summary Mineral Resources

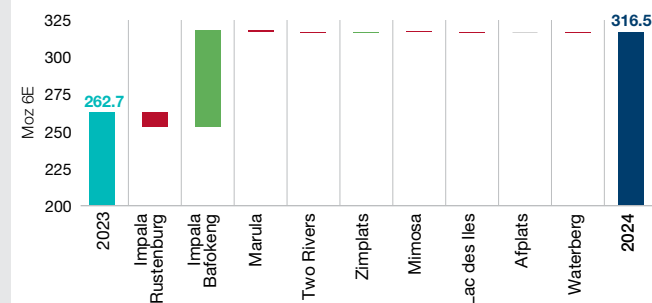
Overall, the attributable Group Mineral Resource estimate increased by 53.8Moz 6E to 316.5Moz 6E. Zimplats accounts for 31% of the Group's Mineral Resource base, Impala Rustenburg accounts for 24%, and the balance of 45% comprises Impala Bafokeng, Marula, Mimosa, Two Rivers, Lac des Iles, Waterberg and Afplats. The inclusion of Impala Bafokeng accounts for 20% of the total attributable Mineral Resource.

For more detail, see page 5.

**Attributable Mineral Resource estimate of 316.5Moz 6E**  
as at 30 June 2024 (%)



**Attributable Mineral Resource estimate**  
as at 30 June 2024 (variance Moz 6E)

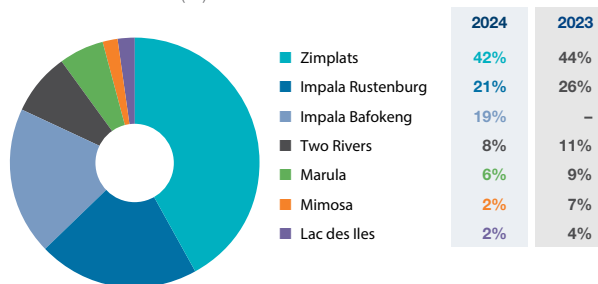


## Summary Mineral Reserves

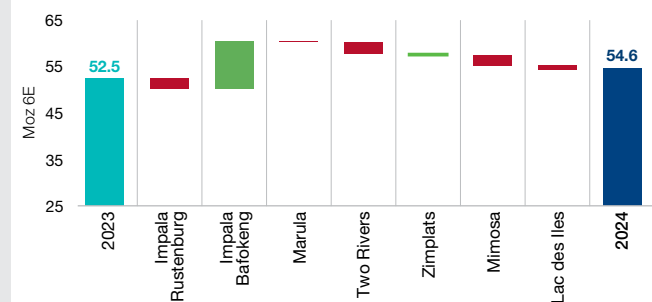
Overall, the attributable Group Mineral Reserve estimate increased by 2.2Moz 6E to 54.6Moz 6E. Zimplats accounts for 42% of the attributable 6E Mineral Reserve estimate base and Impala Rustenburg accounts for 21%. The inclusion of Impala Bafokeng accounts for 19% of the total attributable Mineral Reserve.

For more detail, see page 7.

**Attributable Mineral Reserve estimate of 54.6Moz 6E**  
as at 30 June 2024 (%)



**Attributable Mineral Reserve estimate**  
as at 30 June 2024 (variance Moz 6E)



# Attributable Mineral Resources and Mineral Reserves continued

## ATTRIBUTABLE MINERAL RESOURCE ESTIMATES INCLUSIVE OF MINERAL RESERVES AS AT 30 JUNE 2024

Based on Implats' equity interest

				Attributable Mineral Resource estimates, inclusive of Mineral Reserves													
	Implats' shareholding %	Orebody	Category	Tonnes Mt	3E grade g/t	4E grade g/t	6E grade g/t	Moz									
Operations and projects				Pt	Pd	Rh	Ru	Ir	Au	3E	4E	6E					
Impala Rustenburg South Africa	87%	Merensky	Measured	89.0	6.14	6.48	7.10	11.93	4.95	0.97	1.37	0.40	0.68	17.6	18.5	20.3	
			Indicated	59.4	5.74	6.06	6.64	7.44	3.09	0.61	0.86	0.25	0.43	11.0	11.6	12.7	
			Inferred	12.8	5.14	5.43	5.95	1.44	0.60	0.12	0.17	0.05	0.08	2.1	2.2	2.4	
		UG2	Measured	119.4	5.06	5.64	6.51	12.54	6.69	2.22	2.46	0.87	0.21	19.4	21.7	25.0	
			Indicated	62.5	4.93	5.49	6.33	6.39	3.41	1.13	1.25	0.44	0.11	9.9	11.0	12.7	
			Inferred	10.9	4.72	5.26	6.07	1.07	0.57	0.19	0.21	0.07	0.02	1.7	1.9	2.1	
Total				354.1	5.42	5.88	6.61	40.81	19.31	5.24	6.31	2.09	1.53	61.7	66.9	75.3	
Impala Bafokeng South Africa	87%	Merensky	Measured	56.0	7.15	7.47	8.24	8.68	3.62	0.58	1.17	0.22	0.57	12.9	13.5	14.8	
			Indicated	40.1	6.67	6.98	7.70	5.85	2.36	0.40	0.78	0.14	0.39	8.6	9.0	9.9	
			Inferred	23.8	7.13	7.46	8.23	3.71	1.50	0.25	0.50	0.09	0.24	5.5	5.7	6.3	
		UG2	Measured	78.9	4.63	5.20	6.41	7.82	3.85	1.46	2.48	0.58	0.07	11.7	13.2	16.3	
			Indicated	61.8	4.47	5.03	6.19	5.95	2.87	1.11	1.88	0.44	0.06	8.9	10.0	12.3	
			Inferred	26.9	4.47	5.01	6.17	2.54	1.29	0.46	0.81	0.19	0.02	3.9	4.3	5.3	
Total				287.5	5.56	6.02	7.03	34.55	15.50	4.26	7.62	1.66	1.36	51.4	55.7	65.0	
Marula South Africa	73.26%	Merensky	Measured	25.1	4.14	4.26	4.56	1.99	1.09	0.10	0.20	0.03	0.26	3.3	3.4	3.7	
			Indicated	5.6	4.08	4.20	4.50	0.44	0.24	0.02	0.04	0.01	0.06	0.7	0.8	0.8	
			Inferred	3.8	3.71	3.82	4.10	0.27	0.15	0.01	0.03	0.00	0.04	0.5	0.5	0.5	
		UG2	Measured	27.4	5.80	6.39	7.43	2.42	2.61	0.51	0.75	0.17	0.08	5.1	5.6	6.6	
			Indicated	15.4	5.95	6.55	7.63	1.41	1.48	0.30	0.43	0.10	0.05	2.9	3.2	3.8	
			Inferred	4.2	6.07	6.68	7.78	0.39	0.42	0.08	0.12	0.03	0.01	0.8	0.9	1.1	
Total				81.5	5.12	5.51	6.25	6.92	5.99	1.03	1.58	0.35	0.49	13.4	14.4	16.4	
Two Rivers South Africa	46%	Merensky	Indicated	41.5	2.95	3.05	3.33	2.43	1.24	0.14	0.31	0.06	0.27	3.9	4.1	4.4	
			Inferred	32.9	3.92	4.06	4.40	2.46	1.42	0.15	0.31	0.06	0.27	4.1	4.3	4.7	
		UG2	Measured	6.7	4.16	4.64	5.65	0.57	0.32	0.10	0.17	0.04	0.01	0.9	1.0	1.2	
			Indicated	33.9	4.31	4.79	5.78	2.84	1.80	0.53	0.87	0.21	0.05	4.7	5.2	6.3	
			Inferred	37.3	4.06	4.50	5.38	2.84	1.97	0.53	0.84	0.21	0.06	4.9	5.4	6.4	
			Total				152.3	3.78	4.08	4.71	11.14	6.74	1.45	2.50	0.57	0.65	18.5
Zimplats Zimbabwe	87%	MSZ	Measured	218.5	3.21	3.35	3.53	11.75	9.11	0.95	0.86	0.43	1.69	22.6	23.5	24.8	
			Indicated	438.8	3.29	3.42	3.61	24.67	18.01	1.93	1.72	0.89	3.66	46.3	48.3	50.9	
			Inferred	183.6	3.25	3.38	3.57	10.40	7.20	0.81	0.72	0.38	1.57	19.2	20.0	21.1	
Total				840.8	3.26	3.39	3.58	46.82	34.32	3.69	3.31	1.70	6.92	88.1	91.8	96.8	
Mimosa Zimbabwe	50%	MSZ	Measured	37.5	3.37	3.52	3.74	2.07	1.64	0.18	0.18	0.09	0.35	4.1	4.2	4.5	
			Indicated	8.9	3.41	3.56	3.78	0.50	0.39	0.04	0.04	0.02	0.09	1.0	1.0	1.1	
			Inferred	14.5	3.29	3.44	3.66	0.80	0.61	0.07	0.07	0.03	0.13	1.5	1.6	1.7	
Total				60.9	3.36	3.51	3.73	3.37	2.63	0.29	0.29	0.14	0.57	6.6	6.9	7.3	
Lac des Iles Canada	100%	LDI	Measured	26.3	2.87	2.87	2.87	0.19	2.09	—	—	—	0.15	2.4	2.4	2.4	
			Indicated	39.0	2.44	2.44	2.44	0.27	2.60	—	—	—	0.19	3.1	3.1	3.1	
		Intrusive Complex	Inferred	4.3	2.47	2.47	2.47	0.03	0.29	—	—	—	0.02	0.3	0.3	0.3	
Total				69.6	2.60	2.60	2.60	0.49	4.98	—	—	—	0.36	5.8	5.8	5.8	
Afrplats South Africa	74%	UG2	Measured	58.9	4.68	5.29	6.58	6.09	2.72	1.15	1.98	0.46	0.05	8.9	10.0	12.4	
			Indicated	6.8	4.61	5.22	6.48	0.70	0.31	0.13	0.23	0.05	0.01	1.0	1.1	1.4	
			Inferred	35.3	4.52	5.15	6.35	3.53	1.58	0.66	1.15	0.27	0.03	5.1	5.8	7.2	
Total				101.0	4.62	5.24	6.49	10.31	4.61	1.94	3.36	0.78	0.08	15.0	17.0	21.1	
Waterberg South Africa	14.95%	T-Zone	Measured	0.7	4.16	4.20	4.20	0.02	0.05	0.00	—	—	0.02	0.1	0.1	0.1	
			Indicated	2.5	4.58	4.61	4.61	0.11	0.19	0.00	—	—	0.07	0.4	0.4	0.4	
			Inferred	3.3	3.83	3.86	3.86	0.12	0.20	0.00	—	—	0.08	0.4	0.4	0.4	
		F-Zone	Measured	8.1	3.31	3.36	3.36	0.25	0.57	0.01	—	—	0.04	0.9	0.9	0.9	
			Indicated	25.0	3.19	3.24	3.24	0.76	1.67	0.04	—	—	0.12	2.6	2.6	2.6	
			Inferred	6.7	2.94	2.98	2.98	0.19	0.41	0.01	—	—	0.03	0.6	0.6	0.6	
Total				46.2	3.31	3.36	3.36	1.46	3.10	0.07	—	—	0.36	4.9	5.0	5.0	
Implats	Total underground			1 993.8	4.14	4.42	4.92	155.9	97.2	18.0	25.0	7.3	12.3	265.4	283.4	315.6	
Impala Rustenburg South Africa	87%	TSF1 and 2		Indicated	37.5	0.64	0.67	0.75	0.48	0.19	0.03	0.08	0.02	0.10	0.8	0.8	0.9
		Total surface		37.5	0.64	0.67	0.75	0.48	0.19	0.03	0.08	0.02	0.10	0.8	0.8	0.9	
		Grand total		2 031.3	4.08	4.35	4.85	156.3	97.4	18.0	25.0	7.3	12.4	266.2	284.2	316.5	

Estimated values that are less than 0.01 are reported as 0.00.

Impala Bafokeng Attributable Mineral Resources inclusive of Mineral Reserves include the Triple Flag Gold Streaming Au ounces.

Implats reports a summary of total attributable ounces, as sourced from all categories of Mineral Resources for the Implats Group of companies and its other strategic interests, on a percentage equity-interest basis. The tabulation reflects estimates for 3E, 4E and 6E ounces, based on the percentage equity interest. For clarity, both attributable Mineral Resources, inclusive of Mineral Reserves, and attributable Mineral Resources, exclusive of Mineral Reserves, are shown separately in different sections of this report. Note that these are not additive to each other.



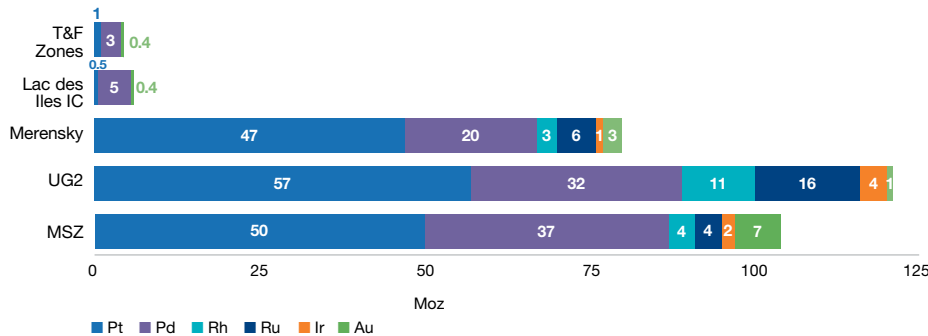
Underground hangingwall inspection at Impala Rustenburg



# Attributable Mineral Resources and Mineral Reserves continued

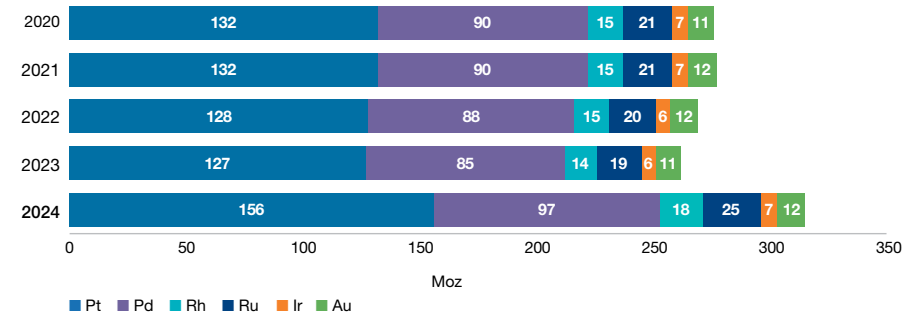
## Attributable Mineral Resource estimate per reef inclusive of Mineral Reserves

as at 30 June 2024 (Moz)



## Attributable Mineral Resource estimate inclusive of Mineral Reserves

as at 30 June 2024 (Moz 6E per annum)



## Summary of attributable Mineral Resource estimate

Attributable Moz 6E	2020	2021	2022	2023	2024
Impala Rustenburg	90.2	89.9	87.8	85.8	76.2
Impala Bafokeng	—	—	—	—	65.0
Marula	18.0	17.9	17.4	17.2	16.4
Two Rivers*	22.4	22.7	22.2	23.7	23.1
Zimplats	102.8	101.4	100.5	96.2	96.8
Mimosa*	6.8	7.9	7.6	7.4	7.3
Lac des Iles	6.8	7.4	7.1	6.4	5.8
Afplats	25.1	25.1	21.1	21.1	21.1
Waterberg*	5.0	5.0	5.0	5.0	5.0
<b>Total</b>	<b>277.1</b>	<b>277.3</b>	<b>268.6</b>	<b>262.7</b>	<b>316.5</b>

\* Non-managed.

The accompanying graphs illustrate the following:

- The five-year statistics for the estimated attributable platinum, palladium, rhodium, ruthenium, gold and iridium Mineral Resources indicate an increase in the total inventory, with platinum contributing 49% and palladium 31%
- The comparison based on 6E ounces shows that the Impala Rustenburg and Zimplats Mineral Resources comprise the bulk of the Group's Mineral Resources (55% of the total Implats inventory) (see [page 4](#))
- The 6E ounces per reef grouping shows that the UG2 chromitite (UG2) in South Africa's Bushveld Complex hosts 38% of the attributable Implats Mineral Resources.



Drill core logging at the central core yard of Impala Rustenburg

# Attributable Mineral Resources and Mineral Reserves continued

## ATTRIBUTABLE MINERAL RESERVES ESTIMATES AS AT 30 JUNE 2024

Based on Implats' equity interest

Operations and projects	Implats' shareholding %	Orebody	Category	Attributable Mineral Reserve estimates												
				Tonnage Mt	3E grade g/t	4E grade g/t	6E grade g/t	Moz								
								Pt	Pd	Rh	Ru	Ir	Au	3E	4E	6E
Impala Rustenburg South Africa	87%	Merensky	Proved	15.4	3.38	3.56	3.91	1.13	0.47	0.09	0.13	0.04	0.07	1.7	1.8	1.9
			Probable	20.7	3.44	3.63	3.98	1.55	0.64	0.13	0.18	0.05	0.09	2.3	2.4	2.6
		UG2	Proved	19.1	3.01	3.35	3.87	1.19	0.64	0.21	0.23	0.08	0.02	1.8	2.1	2.4
			Probable	26.3	3.15	3.52	4.05	1.72	0.92	0.31	0.34	0.12	0.03	2.7	3.0	3.4
		Total		81.5	3.23	3.51	3.96	5.60	2.67	0.74	0.88	0.29	0.20	8.5	9.2	10.4
Impala Bafokeng South Africa	87%	Merensky	Proved	21.7	3.67	3.84	4.24	1.71	0.73	0.12	0.23	0.04	0.12	2.6	2.7	3.0
			Probable	30.7	4.03	4.22	4.65	2.66	1.13	0.18	0.36	0.07	0.19	4.0	4.2	4.6
		UG2	Proved	3.3	3.29	3.70	4.55	0.24	0.11	0.04	0.07	0.02	0.00	0.4	0.4	0.5
			Probable	15.9	3.47	3.90	4.79	1.19	0.57	0.22	0.37	0.09	0.01	1.8	2.0	2.5
		Total		71.6	3.77	4.01	4.55	5.81	2.54	0.56	1.03	0.22	0.33	8.7	9.2	10.5
Marula South Africa	73.26%	UG2	Proved	2.3	3.72	4.11	4.77	0.13	0.14	0.03	0.04	0.01	0.00	0.3	0.3	0.4
			Probable	30.4	3.42	3.78	4.40	1.58	1.71	0.35	0.49	0.12	0.05	3.3	3.7	4.3
		Total		32.7	3.44	3.80	4.42	1.71	1.85	0.38	0.53	0.13	0.06	3.6	4.0	4.7
Two Rivers South Africa	46%	Merensky	Proved	0.3	1.82	1.88	2.05	0.01	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0
			Probable	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0
		UG2	Proved	5.3	2.25	2.51	3.06	0.24	0.14	0.04	0.07	0.02	0.00	0.4	0.4	0.5
			Probable	24.8	2.37	2.64	3.20	1.17	0.69	0.22	0.36	0.09	0.02	1.9	2.1	2.6
		Total		30.3	2.34	2.61	3.17	1.42	0.84	0.26	0.44	0.11	0.03	2.3	2.5	3.1
Zimplats Zimbabwe	87%	MSZ	Proved	110.1	3.02	3.15	3.33	5.48	4.41	0.46	0.42	0.21	0.79	10.7	11.1	11.8
			Probable	105.1	2.95	3.08	3.25	5.10	4.12	0.43	0.39	0.19	0.75	10.0	10.4	11.0
		Total		215.2	2.99	3.11	3.29	10.59	8.53	0.89	0.81	0.40	1.54	20.7	21.5	22.8
Mimosa Zimbabwe	50%	MSZ	Proved	11.0	3.24	3.37	3.59	0.58	0.46	0.05	0.05	0.03	0.10	1.1	1.2	1.3
			Probable	1.4	3.25	3.39	3.60	0.07	0.06	0.01	0.01	0.00	0.01	0.1	0.1	0.2
		Total		12.4	3.24	3.37	3.59	0.66	0.52	0.05	0.06	0.03	0.11	1.3	1.3	1.4
Lac des Iles Canada	100%	LDI Intrusive Complex	Proved	2.0	3.67	3.67	3.67	0.02	0.20	–	–	–	0.01	0.2	0.2	0.2
			Probable	6.5	3.43	3.43	3.43	0.05	0.62	–	–	–	0.05	0.7	0.7	0.7
		Total		8.5	3.48	3.48	3.48	0.06	0.82	–	–	–	0.06	0.9	0.9	0.9
Implats		Total underground		452.2	3.16	3.36	3.70	25.8	17.8	2.9	3.7	1.2	2.3	45.9	48.8	53.7
Impala Rustenburg South Africa	87%	TSF 1 and 2	Proved													
			Probable	37.5	0.64	0.67	0.75	0.48	0.19	0.03	0.08	0.02	0.10	0.8	0.8	0.9
		Total surface		37.5	0.64	0.67	0.75	0.48	0.19	0.03	0.08	0.02	0.10	0.8	0.8	0.9
Implats		Grand total		489.7	2.97	3.15	3.47	26.3	18.0	2.9	3.8	1.2	2.4	46.7	49.6	54.6

Estimated values that are less than 0.01 are reported as 0.00.

Impala Bafokeng Attributable Mineral Reserves include the Triple Flag Gold Streaming Au ounces.

## Summary of attributable Mineral Reserve estimates

Attributable Moz 6E	2020	2021	2022	2023	2024
Impala Rustenburg	15.1	17.7	16.5	13.5	11.3
Impala Bafokeng					10.5
Marula	2.2	2.0	5.2	4.7	4.7
Two Rivers*	3.3	5.8	5.6	5.7	3.1
Zimplats	22.4	22.6	21.9	23.1	22.8
Mimosa*	1.6	2.0	3.6	3.6	1.4
Lac des Iles	3.2	3.3	2.9	1.9	0.9
<b>Total</b>	<b>47.8</b>	<b>53.4</b>	<b>55.7</b>	<b>52.5</b>	<b>54.6</b>

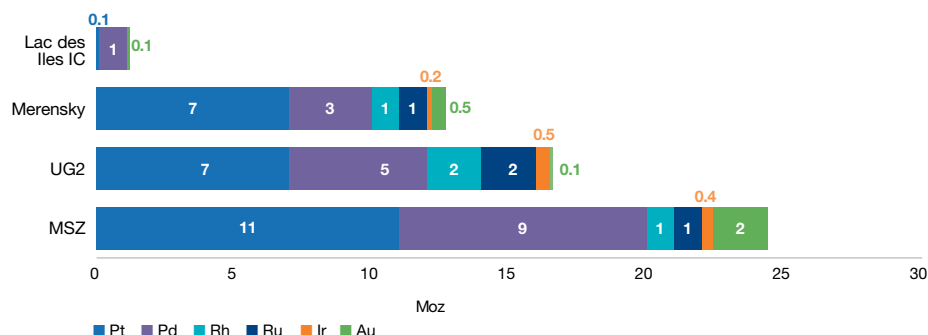
\* Non-managed.

- The attendant table compares the past five reporting periods and indicate an increase in attributable Mineral Reserves
- Comparisons based on 6E ounces show that the Zimplats Mineral Reserves comprise 41% of the Implats Mineral Reserves (see [page 4](#))
- The estimates per reef show that the MSZ hosts some 42% of the attributable 6E Implats Mineral Reserves at the Zimplats and Mimosa mines
- The five-year statistics for the estimated attributable 6E Mineral Reserves indicate an increase as at 30 June 2024 compared with the previous reporting period
- The updated allocation of Implats' 6E Mineral Reserves per operation is shown on the next page. The advantage at Zimplats, related to the operating depth and size, is clearly illustrated.

# Attributable Mineral Resources and Mineral Reserves continued

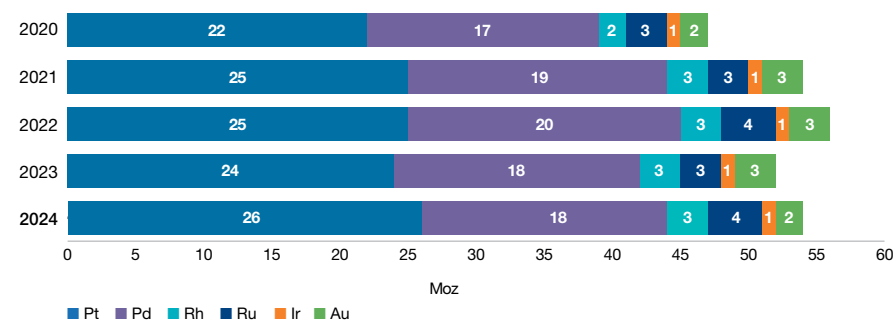
## Attributable Mineral Reserve estimate per reef

as at 30 June 2024 (Moz)



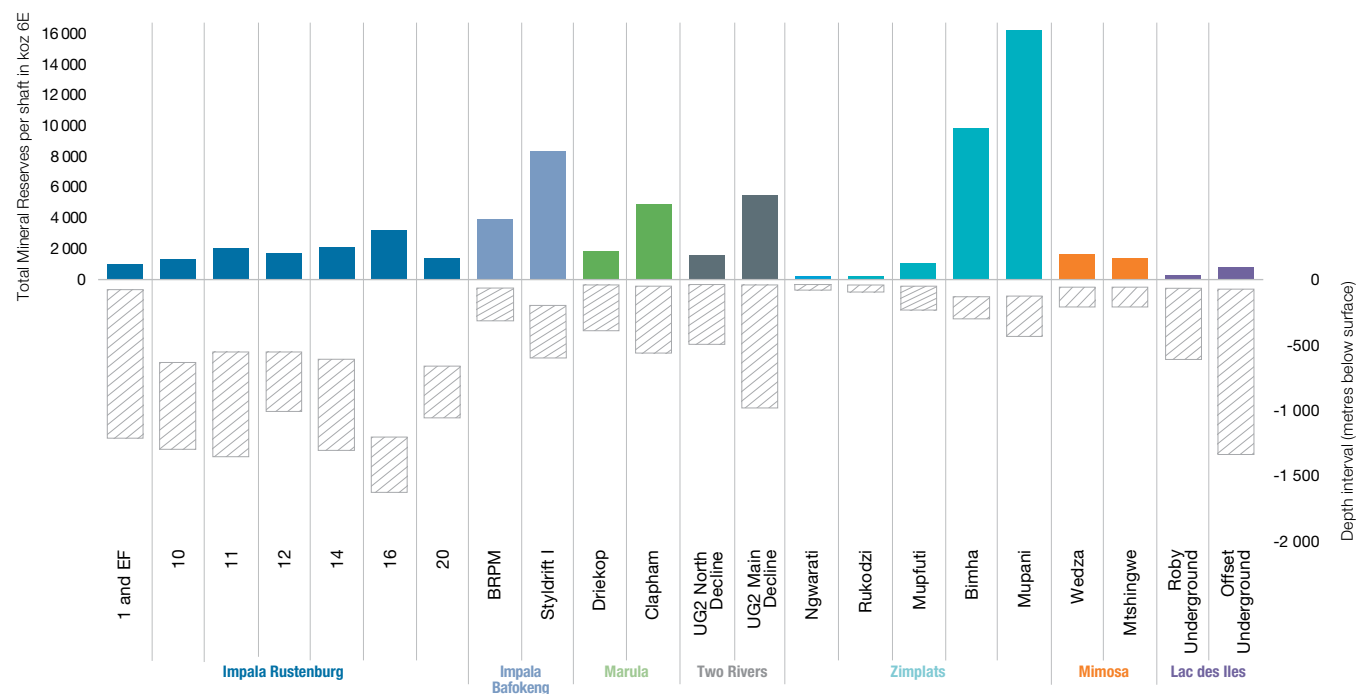
## Attributable Mineral Reserve estimate

as at 30 June 2024 (Moz per annum)



## 6E Mineral Reserve estimate and depth range for individual Implats operations and joint venture operations (100%)

as at 30 June 2024



Drill core inspection at an exploration drill site at Impala Bafokeng



# Attributable Mineral Resources and Mineral Reserves continued

Various international reporting codes permit both inclusive and exclusive methods of reporting Mineral Resources. Implats has adopted inclusive reporting for consistency and alignment with its strategic partners. A collation of the Mineral Resource estimates, exclusive of Mineral Reserves, is presented below, allowing for additional transparency.

## ATTRIBUTABLE MINERAL RESOURCES SUMMARY, EXCLUSIVE OF MINERAL RESERVES AS AT 30 JUNE 2024

				Total Mineral Resource estimates, exclusive of Mineral Reserves				Attributable Mineral Resource estimates, exclusive of Mineral Reserves									
	Implats' shareholding %	Orebody	Category	Tonnes Mt	3E grade g/t	4E grade g/t	6E grade g/t	Moz									
Operations and projects								Tonnes Mt	Pt	Pd	Rh	Ru	Ir	Au	3E	4E	6E
Impala Rustenburg South Africa	87%	Merensky	Measured	65.8	6.24	6.58	7.21	57.3	7.80	3.24	0.64	0.90	0.26	0.45	11.5	12.1	13.3
			Indicated	68.3	5.74	6.06	6.64	59.4	7.44	3.09	0.61	0.86	0.25	0.43	11.0	11.6	12.7
			Inferred	14.7	5.14	5.43	5.95	12.8	1.44	0.60	0.12	0.17	0.05	0.08	2.1	2.2	2.4
		UG2	Measured	90.7	5.02	5.59	6.45	78.9	8.21	4.38	1.45	1.61	0.57	0.14	12.7	14.2	16.4
			Indicated	71.8	4.93	5.49	6.33	62.5	6.39	3.41	1.13	1.25	0.44	0.11	9.9	11.0	12.7
			Inferred	12.6	4.72	5.26	6.07	10.9	1.07	0.57	0.19	0.21	0.07	0.02	1.7	1.9	2.1
		Total	324.0	5.39	5.85	6.58	281.9	32.35	15.29	4.14	4.99	1.65	1.22	48.9	53.0	59.6	
Impala Bafokeng South Africa	87%	Merensky	Measured	27.6	7.55	7.89	8.70	24.1	3.98	1.62	0.26	0.53	0.10	0.24	5.8	6.1	6.7
			Indicated	31.8	6.75	7.06	7.79	27.7	4.10	1.65	0.28	0.55	0.10	0.26	6.0	6.3	6.9
			Inferred	27.3	7.13	7.46	8.23	23.7	3.70	1.50	0.25	0.49	0.09	0.24	5.4	5.7	6.3
		UG2	Measured	74.1	4.56	5.13	6.32	64.5	6.31	3.08	1.18	2.00	0.47	0.06	9.5	10.6	13.1
			Indicated	69.5	4.46	5.02	6.19	60.4	5.81	2.81	1.09	1.84	0.44	0.06	8.7	9.8	12.0
			Inferred	30.9	4.47	5.01	6.17	26.9	2.54	1.29	0.46	0.81	0.19	0.02	3.9	4.3	5.3
		Total	261.2	5.38	5.86	6.90	227.2	26.45	11.94	3.52	6.22	1.39	0.88	39.3	42.8	50.4	
Marula South Africa	73.26%	Merensky	Measured	34.3	4.14	4.26	4.56	25.1	1.99	1.09	0.10	0.20	0.03	0.26	3.3	3.4	3.7
			Indicated	7.6	4.08	4.20	4.50	5.6	0.44	0.24	0.02	0.04	0.01	0.06	0.7	0.8	0.8
			Inferred	5.2	3.71	3.82	4.10	3.8	0.27	0.15	0.01	0.03	0.00	0.04	0.5	0.5	0.5
		UG2	Measured	6.1	5.52	6.09	7.13	4.5	0.39	0.39	0.08	0.12	0.03	0.01	0.8	0.9	1.0
			Indicated	16.2	6.02	6.62	7.70	11.8	1.09	1.16	0.23	0.33	0.08	0.04	2.3	2.5	2.9
			Inferred	5.8	6.07	6.68	7.78	4.2	0.39	0.42	0.08	0.12	0.03	0.01	0.8	0.9	1.1
		Total	75.07	4.77	5.07	5.65	54.99	4.57	3.45	0.53	0.85	0.18	0.42	8.4	9.0	10.0	
Two Rivers South Africa	46%	Merensky	Measured	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			Indicated	90.2	2.95	3.05	3.33	41.5	2.43	1.24	0.14	0.31	0.06	0.27	3.9	4.1	4.4
			Inferred	71.5	3.92	4.06	4.40	32.9	2.46	1.42	0.15	0.31	0.06	0.27	4.1	4.3	4.7
		UG2	Measured	3.7	4.41	4.95	6.00	1.7	0.16	0.08	0.03	0.05	0.01	0.00	0.2	0.3	0.3
			Indicated	21.0	4.47	4.96	5.95	9.6	0.82	0.55	0.15	0.25	0.06	0.02	1.4	1.5	1.8
			Inferred	81.0	4.06	4.50	5.38	37.3	2.84	1.97	0.53	0.84	0.21	0.06	4.9	5.4	6.4
		Total	267.4	3.68	3.94	4.48	123.0	8.71	5.24	1.00	1.75	0.39	0.61	14.6	15.6	17.7	
Zimplats Zimbabwe	87%	MSZ	Measured	60.0	3.47	3.61	3.80	52.2	3.10	2.27	0.24	0.21	0.11	0.46	5.8	6.1	6.4
			Indicated	323.1	3.41	3.55	3.74	281.1	16.65	11.66	1.26	1.12	0.59	2.50	30.8	32.1	33.8
			Inferred	211.0	3.25	3.38	3.57	183.6	10.40	7.20	0.81	0.72	0.38	1.57	19.2	20.0	21.1
		Total	594.1	3.36	3.50	3.68	516.9	30.15	21.12	2.30	2.05	1.08	4.53	55.8	58.1	61.2	
Mimosa Zimbabwe	50%	MSZ	Measured	34.1	3.28	3.43	3.63	17.1	0.91	0.72	0.08	0.08	0.03	0.16	1.8	1.9	2.0
			Indicated	16.4	3.42	3.57	3.79	8.2	0.47	0.36	0.04	0.04	0.02	0.08	0.9	0.9	1.0
			Inferred	29.0	3.29	3.44	3.66	14.5	0.80	0.61	0.07	0.07	0.03	0.13	1.5	1.6	1.7
Total	79.6	3.32	3.46	3.67	39.8	2.18	1.68	0.19	0.18	0.09	0.38	4.2	4.4	4.7			
Lac des Iles Canada	100%	LDI Intrusive Complex	Measured	18.8	2.54	2.54	2.54	18.8	0.13	1.31	—	—	—	0.09	1.5	1.5	1.5
			Indicated	35.7	2.37	2.37	2.37	35.7	0.24	2.31	—	—	—	0.17	2.7	2.7	2.7
			Inferred	4.2	2.48	2.48	2.48	4.2	0.03	0.28	—	—	—	0.02	0.3	0.3	0.3
		Total	58.7	2.43	2.43	2.43	58.7	0.40	3.90	—	—	—	0.28	4.6	4.6	4.6	
Afrplats South Africa	74%	UG2	Measured	79.5	4.68	5.29	6.58	58.9	6.09	2.72	1.15	1.98	0.46	0.05	8.9	10.0	12.4
			Indicated	9.2	4.61	5.22	6.48	6.8	0.70	0.31	0.13	0.23	0.05	0.01	1.0	1.1	1.4
			Inferred	47.7	4.52	5.15	6.35	35.3	3.53	1.58	0.66	1.15	0.27	0.03	5.1	5.8	7.2
		Total	136.5	4.62	5.24	6.49	101.0	10.31	4.61	1.94	3.36	0.78	0.08	15.0	17.0	21.1	
Waterberg South Africa	14.95%	T-Zone	Measured	4.4	4.16	4.20	4.20	0.7	0.02	0.05	0.00	—	—	0.02	0.1	0.1	0.1
			Indicated	17.0	4.58	4.61	4.61	2.5	0.11	0.19	0.00	—	—	0.07	0.4	0.4	0.4
			Inferred	21.8	3.83	3.86	3.86	3.3	0.12	0.20	0.00	—	—	0.08	0.4	0.4	0.4
		F-Zone	Measured	54.1	3.31	3.36	3.36	8.1	0.25	0.57	0.01	—	—	0.04	0.9	0.9	0.9
			Indicated	166.9	3.19	3.24	3.24	25.0	0.76	1.67	0.04	—	—	0.12	2.6	2.6	2.6
			Inferred	44.8	2.94	2.98	2.98	6.7	0.19	0.41	0.01	—	—	0.03	0.6	0.6	0.6
		Total	309.1	3.31	3.36	3.36	46.2	1.46	3.10	0.07	—	—	0.36	4.9	5.0	5.0	
All Mineral Resources exclusive of Mineral Reserves			Measured	553.4	4.59	4.96	5.63	411.7	39.4	21.5	5.2	7.7	2.1	2.0	62.8	68.1	77.8
			Indicated	944.7	3.87	4.08	4.45	637.9	47.5	30.6	5.1	6.8	2.1	4.2	82.3	87.4	96.3
			Inferred	607.4	3.87	4.12	4.59	400.0	29.8	18.2	3.3	4.9	1.4	2.6	50.6	54.0	60.2
Implats		Grand total		2 105.5	4.06	4.32	4.80	1 450.0	116.6	70.3	13.7	19.4	5.6	8.8	195.7	209.4	234.3

Estimated values that are less than 0.01 are reported as 0.00.

Impala Bafokeng Attributable Mineral Resources exclusive of Mineral Reserves include the Triple Flag Gold Streaming Au ounces.

# Attributable Mineral Resources and Mineral Reserves continued

## Summary of attributable Mineral Resource estimates exclusive of Mineral Reserves

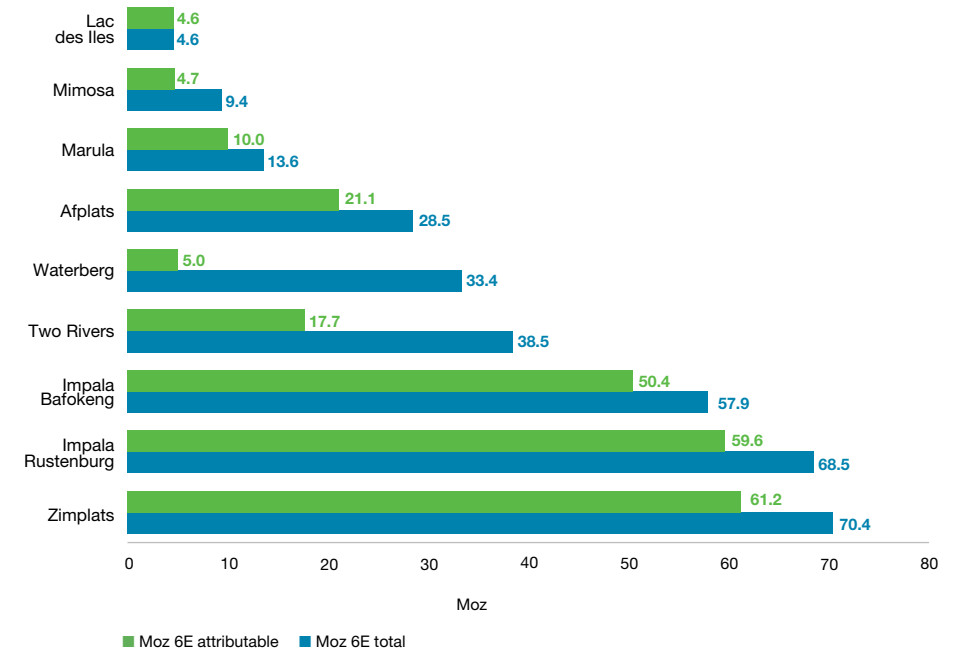
Attributable Moz 6E	2020	2021	2022	2023	2024
Impala Rustenburg	67.0	63.4	63.7	62.2	<b>59.6</b>
Impala Bafokeng	–	–	–	–	<b>50.4</b>
Marula	15.1	15.2	9.5	9.6	<b>10.0</b>
Two Rivers	15.9	14.0	13.9	14.3	<b>17.7</b>
Zimplats	64.3	61.1	61.1	59.5	<b>61.2</b>
Mimosa	4.2	4.9	2.4	2.3	<b>4.7</b>
Lac des Iles	3.0	3.5	3.4	4.1	<b>4.6</b>
Afplats	25.1	25.1	21.1	21.1	<b>21.1</b>
Waterberg	5.0	5.0	5.0	5.0	<b>5.0</b>
<b>Total</b>	<b>199.6</b>	<b>192.2</b>	<b>180.0</b>	<b>178.1</b>	<b>234.3</b>

## NOTES

- The figures in the accompanying table reflect the Mineral Resources which have not been converted to Mineral Reserves – these are the Mineral Resources exclusive of Mineral Reserves
- The tabulation should be read in conjunction with the Mineral Reserve Statement in the preceding sections
- A direct comparison of tonnes and grade is not possible between inclusive and exclusive reporting, owing to mixing
- Mineral Resource figures with production estimates reflect a net increase, which can be ascribed to the acquisition of Impala Bafokeng off-setting the exclusion of the Two Rivers Merensky Reef and Mimosa North Hill Mineral Reserves.

## Exclusive Mineral Resource estimate

as at 30 June 2024 (total and attributable) (Moz 6E)



Lac des Iles operation

# Reconciliation of estimates

The consolidated high-level reconciliations of attributable Mineral Resources and Mineral Reserves, for both managed and non-managed operations, are shown on the right. Net of production depletion, the acquisition of Impala Bafokeng significantly increased the Mineral Resources and Mineral Reserves. More details pertaining to particular variances are illustrated in the operational sections. Rounding may result in computational discrepancies, specifically in these high-level comparisons.

## MINERAL RESOURCE RECONCILIATION

The significant variances in the estimated attributable Group Mineral Resources during the past five years are:

- 2020 to 2021: A minor increase year-on-year, mainly due to an increase at Two Rivers, Mimosa and Lac des Iles
- 2021 to 2022: Minor variances, mostly due to depletion at the mining operations and a decrease in the Afplats Mineral Resources due to the exclusion of the expired prospecting rights
- 2022 to 2023: A modest combined decrease of 5.9Moz 6E, mostly related to depletion and updated models
- 2023 to 2024: The attributable Mineral Resources increased by 53.8Moz 6E as a result of the acquisition of Impala Bafokeng which offset mining depletion and the decrease in the attributable contribution at Impala Rustenburg and Impala Bafokeng.

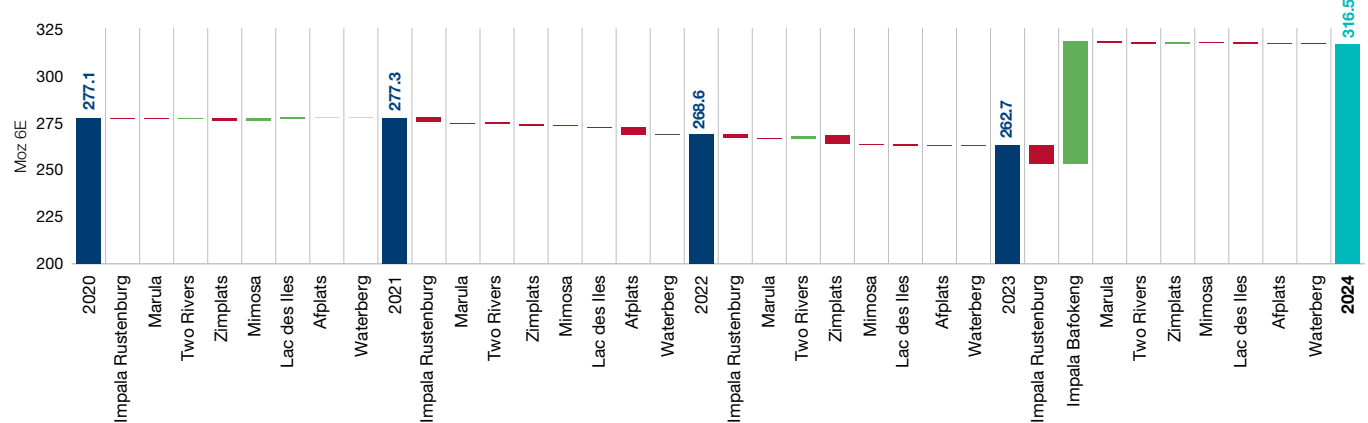
## MINERAL RESERVE RECONCILIATION

The significant variances in the estimated Group Mineral Reserves during the past five years are:

- 2020 to 2021: An increase due to the growth of LoM I at Impala Rustenburg, the addition of Merensky Reef Mineral Reserves at Two Rivers and, at Mimosa, the acquisition of Wedza West (the Anglo American Platinum claims)
- 2021 to 2022: An increase following approval of the Marula Phase II and Mimosa North Hill projects. The year-on-year comparison is impacted by the depletion of Mineral Reserves
- 2022 to 2023: A combined decrease of 3.2Moz 6E, due to depletion, updated models and increased tail-cutting at Impala Rustenburg and Impala Canada. The decrease is offset by increases at Zimplats and Two Rivers
- 2023 to 2024: A year-on-year increase of 2.1Moz 6E is attributed to the acquisition of Impala Bafokeng, which offsets the exclusion of the Two Rivers Merensky Reef and Mimosa North Hill Mineral Reserves, due to reasonable prospects for economic extraction (RPEE) considerations. Mining depletions, model updates and economic tail-cutting contributed to the operational factors that influence the decrease of Mineral Reserves. The attributable contribution at Impala Rustenburg and Impala Bafokeng decreased both to 87%.

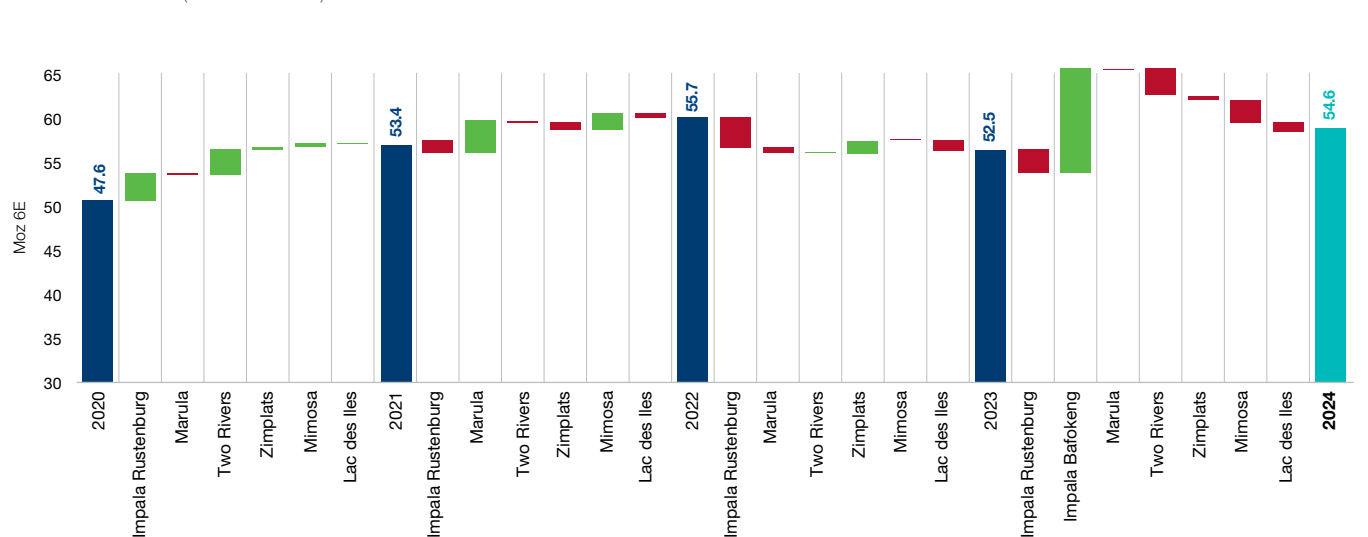
### Attributable Mineral Resource estimate

as at 30 June 2024 (variance Moz 6E)



### Attributable Mineral Reserve estimate

as at 30 June 2024 (variance Moz 6E)





## Governance and compliance

Reporting Mineral Resources and Mineral Reserves for Implats' South African, Zimbabwean and Canadian operations is undertaken in accordance with the principles and guidelines of the SAMREC Code (2016), including Appendices and Table 1, and Section 12.13 of the JSE Listings Requirements.

All operations' Mineral Resources and Mineral Reserves report to the SAMREC Code (2016), except Zimplats, which uses the JORC Code (2012) as required by the Australian Securities Exchange (ASX). This code is either identical to SAMREC Code (2016), or not materially different. Implats reviews the Zimplats' processes, procedures and estimates to ensure its Mineral Resource and Mineral Reserve estimates fully comply with the SAMREC Code (2016). Mimosa, a Mauritius-based company, has no regulatory reporting code and adopted the SAMREC Code (2016).

The SAMREC Code was last updated in 2016, which superseded the previous editions of the code, and this iteration was launched on 19 May 2016 at the JSE. Section 12 of the JSE Listings Requirements was updated, and the revised SAMREC and SAMVAL Codes were enacted on 1 January 2017.

The latest edition of the SAMREC Code (2016 Edition) includes an updated Table 1 template, which provides an extended list of the main criteria that must be considered and reported when reporting on Exploration Results, Mineral Resources and Mineral Reserves.

Various Competent Persons (CPs), as defined by the SAMREC Code (2016) and JORC Code (2012), contributed to the estimation of the Mineral Resource and Mineral Reserve figures quoted in this report. Implats has written confirmation from the CPs that the information disclosed in this document complies with the SAMREC Code (2016) and, where applicable, the relevant SAMREC Table 1, Appendices and JSE Section 12 Listings Requirements (Section 12.13), and that it may be published in the form, format and context in which it was intended. A list detailing the appointed CPs per operation and project is reported in the appendices of this report (page 111).

Mark Munroe, Group Chief Technical Officer, PrEng, ECSA Registration No 201390028, a full-time employee of Implats with 35 years' relevant mining experience, takes full responsibility for the Mineral Reserve estimates for the Group.

Johannes du Plessis, Acting Executive Mineral Resources, PrSciNat, SACNASP Registration No 400284/07, a full-time employee of Implats with 22 years' relevant experience, assumes responsibility for the Mineral Resource estimates for the Group. He also assumes responsibility for collating the combined Mineral Resource and Mineral Reserve Statement for Implats.

Nico Strydom, Group Manager: Project Finance, BCompt (Hons), CA(SA), ACMA, a full-time employee of Implats with 30 years' relevant experience, takes full responsibility for the Mineral Resources and Mineral Reserves' valuation.

The address for ECSA is:  
Engineering Council of South Africa (ECSA)  
Private Bag X691, Bruma, 2026, Gauteng,  
South Africa.

The address for SACNASP is:  
South African Council for Natural Scientific Professions (SACNASP)  
Private Bag X540, Silverton, 0127  
Gauteng, South Africa.

The address for SAICA is:  
The South African Institute of Chartered Accountants (SAICA)  
Private Bag X32, Northlands, 2116  
Gauteng, South Africa.

The contact details of the Lead Competent Persons are as follows:



Mark Munroe

ECSA 201390028, FSAIMM  
**Lead Competent Person – Mineral Reserves**  
**Group Chief Technical Officer**  
Impala Platinum Holdings Limited  
2 Fricker Road  
Illovo, 2196  
Private Bag X18  
Northlands, 2116



Johannes du Plessis

SACNASP 400284/07, FGSSA, SAIMM  
**Lead Competent Person – Mineral Resources**  
**Group Head Mineral Resources**  
Impala Platinum Holdings Limited  
2 Fricker Road  
Illovo, 2196  
Private Bag X18  
Northlands, 2116



Nico Strydom

SAICA 03141381, CIMA  
**Lead Competent Valuator**  
**Group Manager – Project Finance**  
Impala Platinum Holdings Limited  
2 Fricker Road  
Illovo, 2196  
Private Bag X18  
Northlands, 2116

## Governance and compliance continued



### 2024 AUDITS OF THE MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

Implats has exhausted all reasonable means of oversight towards ensuring the integrity of the 2024 Mineral Resource and Mineral Reserve Statement.

In line with the mandate from the Group Audit & Risk Committee, all Operations were subjected to an internal Group MRM technical compliance review, with the exception of Two Rivers (TRP) which, under African Rainbow Minerals' (ARM) management, was subjected to an internal ARM compliance review at its UG2 operations, while the Merensky Reef operation / project, which has been excluded from the Mineral Reserve and re-classified as LoM II in light of the prevailing metal price outlook and capital rationalisation, was subjected to an external audit by The MSA Group (MSA). Our joint venture partners at Mimosa, Sibanye Stillwater, were fully sighted on our process and the outcomes of our internal review and endorse the outcomes of the Implats technical compliance review.

The combined external audits and internal reviews endorse the integrity of the Mineral Resource and Mineral Reserve estimates as at 30 June 2024 as contained in this report, confirming:

- SAMREC Code (2016) and JSE Listing Requirements compliance,
- No Fatal Flaws,
- No Material Findings, and
- No impediments for inclusion towards public domain year-end reporting.

The individual Operations' audit findings have been shared with the respective mines' Chief Executives and will be progressed with each mine's technical staff via the Implats Resources and Reserves Committee (IRRC) during FY2025 and have also been shared with the Implats Internal Audit Department, as well as the Group's external financial auditors, Deloitte for transparency.

The Group Audit & Risk Committee (ARC), supported by the Group Strategic Investment Committee (SIC) provided oversight on the outcomes of the Mineral Resource and Mineral Reserve for 2024, which includes the Mineral Resource and Mineral Reserve Statement; this oversight is in the form of proof reading of the progressive draft report as well as a formal, review workshop for technical scrutiny, guidance and endorsement of content and format of the Mineral Resource and Mineral Reserve Statement as a supplement to the Annual Group Integrated Report.

Mark Munroe

**MC Munroe (ECSA 201390028)**  
Lead CP – Mineral Reserves, Implats

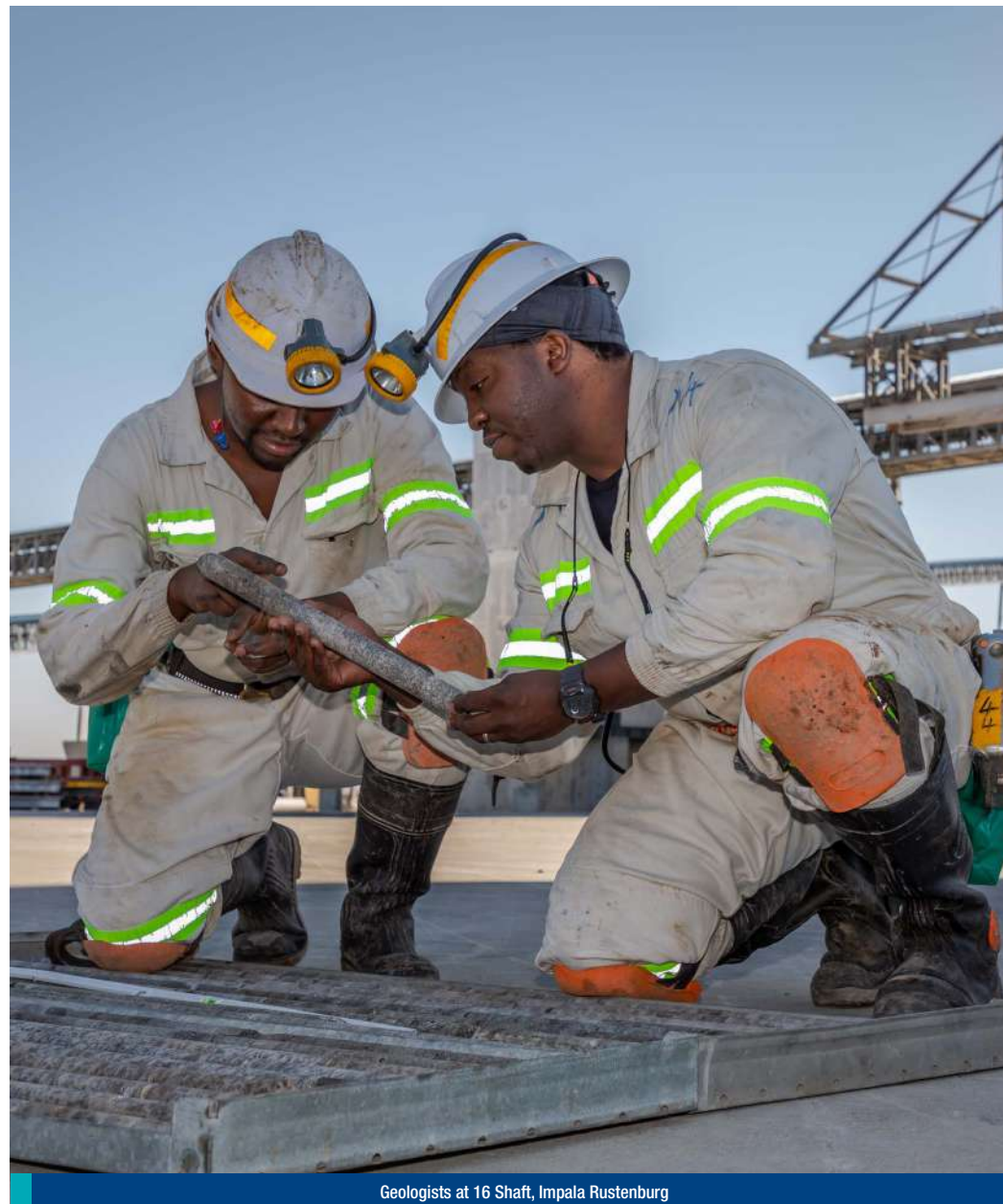
Johannes du Plessis

**JJ du Plessis (SACNASP 400284/07)**  
Lead CP – Mineral Resources, Implats

**Impala Platinum Holdings Limited** Reg. No. 1957/001979/06  
2 Fricker Road, Illovo, 2196 • Private Bag X18, Northlands, 2116, South Africa  
Tel: +27 11 731 9000 • Fax: +27 11 731 9254 • www.implats.co.za

Directors: NDB Orleyn (Chairman) • NJ Muller (Chief Executive Officer) • M Kerber (Chief Financial Officer)  
D Earp • R Havenstein • BT Koshane • B Mawasha • MJ Moshe  
FS Mufamadi • MEK Nkeli • LN Samuel • PE Speckmann • ZB Swanepoel

Secretary: TT Liale



Geologists at 16 Shaft, Impala Rustenburg

# Reporting principles and framework

Unless otherwise stated, the following key assumptions and parameters were used in compiling the 2024 estimates:

- A Group-wide committee, the Implats Resource and Reserve Committee (IRRC), was constituted in 2009 to promote standardised, compliant and transparent reporting, continuous improvement and internal peer reviews. As a result, in 2010, Implats developed a Group-wide protocol for estimating, classifying and reporting Mineral Resources and Mineral Reserves to enhance standardisation and facilitate auditing consistency. This protocol is updated annually to improve and guide the classification of Mineral Resources and ensure compliance with the SAMREC Code (2016).

## Structural hierarchy of principles, requirements, standards, assumptions and estimates

<b>1.</b> <b>The SAMREC Code (2016) and Table 1</b> Generic code for the whole mining industry	<b>2.</b> <b>The JSE Listings Requirements</b> Section 12	<b>3.</b> <b>Implats code of practice aligned with SAMREC (2016) and JSE</b> Specific for Implats group	<b>4.</b> <b>Project feasibility study or detailed annual report</b> Detailed assumptions, data and estimates
--	---	---	---

- A vital aspect of the Group-wide protocol is that it determines the standards for classifying Mineral Resources. The classification standard is a matrix process, which measures geological and grade continuity between observation points. This is a detailed decision-tree structure that considers legal, ESG, economic and reasonable prospects for eventual economic extraction (RPEEE) aspects, as a precursor to technical evaluation. The quality, distribution and quantity of available data, and the confidence thereof, form the basis of the Mineral Resource classification

- Mineral Resource and Mineral Reserve evaluation is based on a systematic process of collecting and validating geological data according to the Group-wide protocol. Updating geological and geostatistical models with data from exploration and underground drilling, mapping and sampling, forms the basis of the Mineral Resource and Mineral Reserve Statements
- Geostatistical estimation is performed using different geostatistical software packages within the Implats Group. Various interpolation methods and geostatistical parameters are used, depending on the orebody and sampling density. Ordinary kriging and inverse distance weighting are the primary interpolation methods used
- The Mineral Resources for the Merensky Reef are estimated at a minimum mining width and may include mineralisation below the selected cut-off grade. Mineral Resource estimates for the UG2 Reef reflect the minimum mineable width and may include dilution
- Mineral Resource estimates for the Main Sulphide Zone on the Great Dyke are based on optimal mining widths. These mining widths are reviewed from time to time, given the varying economic and operational considerations
- Mineral Resource estimates at Lac des Iles and the Waterberg project consider the suitable mining method, and an economic grade cut-off is applied
- Mineral Resource estimates are reported inclusive of Mineral Reserves, unless otherwise stated. A summary table with the estimated attributable Mineral Resources, exclusive of Mineral Reserves, is provided on [page 9](#)
- Mineral Resource estimates allow for estimated geological losses, but not for anticipated pillar losses during eventual mining, except where these pillars will never be extracted, such as legal, boundary and shaft pillars
- Rounding-off in the accompanying summary estimates may result in minor computational discrepancies. Where this occurs, it is not deemed significant
- Mineral Resource Statements, in principle, remain imprecise and estimates cannot be referred to as calculations. All Inferred Mineral Resources should be read as approximations
- The nickel sulphide fire assay collection method is used at southern African operations to assay for all PGEs and gold by using an inductively coupled plasma mass spectrometer (ICP-MS). Lac des Iles analyses for platinum, palladium and gold by using an inductively coupled plasma-atomic emission spectrometry (ICP-AES). Base metal content is determined by atomic absorption (AA) spectrometer, using partial digestion to state metal in sulphide that is amenable to recovery by flotation processes. Base metal assays at Impala Bafokeng, Lac des Iles and the Waterberg project are based on four-acid digestions, which result in the near-total dissolution
- Southern African operations report Mineral Resource and Mineral Reserve Platinum Group Elements (PGE) estimates for four metals (4E) and six metals (6E). Reporting on a 4E basis reflects the total of platinum, palladium, rhodium and gold, while 6E reflects the total of platinum, palladium, rhodium, gold, ruthenium and iridium. For the South African Waterberg project, only 4Es are reported, given the available compliant data and the negligible ruthenium and iridium concentration levels
- Impala Canada's Lac des Iles Mineral Resource and Mineral Reserve PGE estimates are reported on a 3E basis. This reflects the summation of platinum, palladium and gold. The other PGE metals, such as rhodium, iridium and ruthenium, occur in negligible concentrations and are not considered material
- All references to tonnage are to the metric unit
- All references to ounces (oz) are troy, with the factor used being 31.10348 metric grams per ounce
- The Mineral Resources and Mineral Reserves reported for the individual operations and projects are reflected as the total estimate (100%). The corresponding estimates relating to attributable Mineral Resources and Mineral Reserves are only given as combined summary tabulations (see [pages 5 and 7](#))
- Mineral Reserves constitute that portion of the Mineral Resource for which techno-economic studies have confirmed economic viability at the time of disclosure, have secured board approval and for which funding has been provided



## Reporting principles and framework continued

- Accordingly, no Mineral Reserve estimates are included in this report for the Afplats and Waterberg projects in the absence of board approval and funding
- The Impala Bafokeng planning, Mineral Resource and Mineral Reserve cycle has been fully aligned with the Group business planning and Mineral Resource and Mineral Reserve reporting cycle.

The modifying factors considered for converting Mineral Resources to Mineral Reserves include the full spectrum, as defined by the SAMREC Code (2016). This includes metallurgical, processing, infrastructural, economic, marketing, legal, environmental, social and governmental considerations in addition to mining considerations. These factors inform the reasonable prospects for eventual economic extraction, as illustrated below:

- Mining parameters and modifying factors used to convert a Mineral Resource to a Mineral Reserve are derived from historical performance, while considering future anticipated conditions
- Mineral Reserve estimates include allowances for mining dilution and are reported as tonnage and grade delivered to the mill
- Mineral Reserve estimates take cognisance of all mine stability pillars and exclude the content associated with pillars
- Effective mining losses captured in the Mineral Reserve estimates combine geological losses, pillar losses, dilution parameters and the mine-call factor as key considerations
- Implats' long-term price assumptions in today's money are considered a modifying factor supporting Mineral Reserve estimates. These are shown on [page 31](#)
- The declaration of Mineral Reserves is predicated on the completion of a bankable feasibility study, and subsequent board approval and release of funding to execute the project in line with the study
- Allowances for estimated rehabilitation and mine closure costs and obligations are incorporated in the economic models
- Work processes and flow are fully integrated with the planning cycle, and the Group adopts a structured approach with activities aligned in a continuous sequence
- No Inferred Mineral Resources, other than insignificant incidental dilution at Lac des Iles, included at zero grade, have

been converted into Mineral Reserves at any Implats operations reported. No Inferred Mineral Resources were considered in feasibility studies. According to the SAMREC Code (2016), Inferred Mineral Resources may be included in mine design, mine planning and economic studies only if a mine plan exists. SAMREC requires that a comparison of the results with and without the Inferred Mineral Resources must be shown, and the rationale behind including it must be explained

- In summary, Mineral Reserve estimates result from the planning process applied against the Measured and Indicated Mineral Resources only, by applying detailed modifying factors. Importantly, this process is subjected to rigorous economic viability testing at given market conditions.

### REASONABLE PROSPECTS FOR EVENTUAL ECONOMIC EXTRACTION (RPEEE)

Rigorous RPEEE testing is based on the Group standard. Among others, the Implats standard considers:

- Security of tenure
- Relevant legal aspects
- Exclusion due to ESG considerations
- Infrastructure
- Technical constraints (for example, virgin rock temperature (VRT))
- Data quality and distribution
- Confidence in estimation
- Geological complexity
- Feasible mining method
- Potential metallurgical constraints
- Economic testing for RPEEE
- Combined risk assessment.

All Mineral Resources reported for the Group are considered for RPEEE. Various Mineral Resource blocks are considered on a case-by-case basis, and this has resulted in areas where the RPEEE is in doubt. The following examples impact the Mineral Resource estimates:

- Impala Rustenburg applies a depth cut-off of 2 000m below surface for all Mineral Resources considering RPEEE. These excluded Mineral Resources will be evaluated from time to time, on an economical basis, to test the validity of the

applied depth cut-off. Complex geological structures, among others, derived from 3D vibroseis geophysical surveys, have been excluded due to the lack of RPEEE

- At Impala Bafokeng, no Mineral Resources have been excluded due to RPEEE considerations, compared to the 2023 declaration. All Mineral Resources passed eventual economic extraction thresholds and none are excluded due to a geothermal constraint. The deepest Mineral Resources are situated 1 600m below surface, with a virgin rock temperature of 60°C. This is well within the average cut-off temperature of 70°C, applied in the Western Bushveld Complex
- At Marula, the shallow weathered areas have been excluded due to the impact of surface infrastructure, environmental considerations and economic testing. In addition, certain geologically complex areas at Marula are not included in the Mineral Resource estimates
- At Two Rivers, a substantial area on the Buffelshoek farm was excluded from the Merensky Reef Mineral Resource due to reducing the economic channel width and doubt about its RPEEE. The Merensky and UG2 Mineral Resources to the west of the Kalkfontein Fault are currently excluded due to the depth of the reef intersections
- At Zimplats, a sizeable area between the Mupfuti and Bimha portals is excluded from Mineral Resource and Mineral Reserve estimates, given the inherent disruption of the normal mineralisation profile in that area
- Similarly, Mimosa estimates are impacted due to the lack of RPEEE in selected areas of inherent low grades at South Hill and North Hill
- At Afplats, the UG2 Reef has also been subjected to the 2 000m below surface depth cut-off and excluded from Mineral Resources. This will be evaluated from time to time, on an economic basis, to test the validity of the applied depth cut-off. The Merensky Reef has been excluded, given the RPEEE consideration of the underlying modest-to-low *in situ* grade
- The Waterberg project Mineral Resource estimates applied a depth cut-off of 1 250m given the limit of the orebody defined by current exploration
- At the Lac des Iles operation and the Waterberg project, mineralised material is excluded based on the prevailing cut-off grade.

## Mineral rights and legal tenure

Implats has legal entitlement, without any known impediments, to the minerals reported on in the period under review. While ongoing third party conflicting applications over Implats' mining rights is of concern, the company is defending its rights through available legal recourses. There are no material considerations which hinder Implats' ability to sustain exploration and mining activities.

### SOUTH AFRICA

The Mineral and Petroleum Resources Development Act, No 28 of 2002 (MPRDA), governing mineral extraction in South Africa, came into effect on 1 May 2004. The MPRDA, with the associated broad-based socio-economic empowerment charter for the mining industry and its attendant scorecard, as revised and amended from time to time, has played a significant role in transforming the South African mining industry. Implats embraces the principles of transformation as a moral and strategic imperative and continues to cement its position as a leading southern African precious metals producer.

The Broad-Based Socio-Economic Empowerment Charter for the Mining and Minerals Industry, 2018 (Mining Charter, 2018), was declared in 2021 an instrument of policy, and not binding subordinated legislation, with certain clauses being set aside. Implats continues to strive to achieve the transformation objectives of the MPRDA, to the extent possible, using the residual clauses as well as the clauses set aside as guiding principles.

Implats' South African Group operating companies (managed operations: Impala Rustenburg, Impala Bafokeng Resources, Afplats and Marula) submitted their annual Mining Charter reports to the Department of Mineral Resources (DMR) for the 2023 calendar year. Each operation submitted self-assessment scores, as guided by the Mining Charter, 2018.

The DMR conducts regular compliance audits concerning Implats' mining and prospecting rights. The Group attended to the required closure obligations and closure applications relating to former prospecting rights now cancelled, abandoned

or expired, of which the issuing of closure certificates for seven prospecting rights are pending. Two closure certificates were issued. No prospecting rights are active within the Group, apart from one right in process to be transferred to a third party. In terms of the MPRDA, mining rights can be renewed on expiry, until mined out.

### Impala Rustenburg

The mining rights at Impala Rustenburg were converted into new order rights in 2008 and Converted Mining Rights 130, 131 and 133 MR were awarded for 30 years.

Converted Mining Right 132 MR was awarded for 10 years. The renewal application for Converted Mining Right 132 MR was submitted on 18 September 2018 and a letter of grant regarding the renewal of the mining right was issued by the DMR on 11 March 2024. Impala Rustenburg holds four contiguous mining rights over 29 773ha across 16 farms or portions of farms.

The letters of consent regarding the Section 11 lease of part of the Impala Bafokeng Resources mining right to Impala, applied for in FY2019, were issued by the DMR on 3 June 2024. Once executed, the leases will replace the current contractors' agreements and sale of ore agreements in terms of which Impala will access certain of the mining areas at Bafokeng Rasimone Platinum Mine (BRPM) from 6 and 20 shafts (and previously 8 Shaft). In terms of the leases, Impala will continue to pay royalties to Impala Bafokeng Resources which provides mining flexibility to these shafts.

### Impala Bafokeng

Impala Bafokeng Resources holds one Converted Mining Right 89 MR, the Bafokeng Rasimone Platinum Mine, covering 3 363.2745ha across various portions of the farm Boschkoppie 104 JQ. This right was awarded for 30 years in 2010, with an expiry date of 9 September 2040.

It is also the holder of two new order mining rights. Mining Right 312 MR, the Styldrift Mine, across the farm Styldrift 90 JQ and portions of the farm Frischgewaagd 96 JQ in extent of 5 102.1074ha. The mining right was awarded for 30 years in 2008, with an expiry date of 10 March 2038. Mining Right 528 MR, the Maseve Mine, across various portions of the farms

Elandsfontein 102 JQ, Koedoesfontein 94 JQ, Frischgewaagd 96 JQ, Onderstepoort 98 and Mimosa 81 JQ in extent of 4 781.9036ha. The right was awarded for 30 years in 2012 and expires on 14 May 2042. During FY2024, this mining right was transferred in terms of Section 11 from Maseve Investments 11 (Pty) Ltd to Impala Bafokeng Resources and executed on 6 February 2024. The Maseve Mine is currently on care and maintenance.

During FY2024, Impala Bafokeng Resources and Royal Bafokeng Nation Development Trust (RBNDT) entered into an amendment agreement, in terms of which they agreed to transfer the Impala Bafokeng Resources prospecting rights (553 (11553) PR and 549 (12745) PR) to RBNDT. The parties agreed that Impala Bafokeng Resources will submit, prior to the expiry date of prospecting right 553 (11553) PR, an application for a mining right, to be transferred in terms of Section 11 to RBNDT, once granted. Subsequently, a mining right application (10229 MR) was submitted on 27 September 2023 and is currently pending. A Section 11 transfer application of 549 PR from Impala Bafokeng Resources to RBNDT was submitted on 27 September 2023 and the required letter of consent was issued by the DMR on 30 January 2024.

### Marula

Marula holds two contiguous Converted Mining Rights 61 and 63 MR covering 5 494ha across farms or portions of farms Winnaarshoek 250-KT, Clapham 118-KT, Driekop 253-KT and Forest Hill 117-KT. The converted mining rights were awarded for 30 years in 2008.

### Afplats

Afplats holds Mining Right 256 MR, in respect of the Leeuwkop 402 JQ farm, extent of about 4 602ha. The project remains deferred, in line with Implats' view to exit from the project.

On 6 June 2013, an application was lodged, under Section 102 of the MPRDA, to amend the Leeuwkop mining right by incorporating the Kareepoort/Wolvekraal prospecting area into the existing mining right, which underlying prospecting right expired and its closure application is pending. Based on a third-party prospecting right granted over these farms, Implats

## Mineral rights and legal tenure continued

adjusted the inclusive Afplats Mineral Resource Statement, by excluding the contribution from Kareepoort 407 JQ and Wolvekraal 408 JQ.

### Non-managed South African project and operation

Details about the Waterberg mineral rights can be found on the Platinum Group Metals (PGM) website:

[www.platinumgroupmetals.net](http://www.platinumgroupmetals.net).

Details about Two Rivers' mineral rights can be found in the African Rainbow Minerals (ARM) 2023 Mineral Resource and Mineral Reserve Statement [www.arm.co.za](http://www.arm.co.za).

South Africa	Implats' interest (%)	Mining right (ha)	Prospecting right (ha)
Impala Rustenburg	87	29 773	–
Impala Bafokeng	87	13 247	–
Marula	73.26	5 494	–
Two Rivers*	46	11 349	–
Afplats	74	4 602	–
Waterberg*	14.95	20 532	4 190

\* Non-managed.

### ZIMBABWE

#### Zimplats

Zimplats holds two mining leases, ML 36 and ML 37, covering two areas of land measuring a total of 24 632ha, which are valid for the LoM, after previously releasing 23 903ha to the Zimbabwean government. These mining leases replaced the special mining lease that Zimplats previously held, and there are no material issues arising on either, which could affect Zimplats' activities related to the total mineral rights.

#### Mimosa

The Mimosa mining rights are covered by a contiguous mining lease, individual mining claims, and four special grants amounting to 7 757ha. Lease No 24 was granted to Mimosa on 5 September 1996. In 2021 Mimosa acquired mining claims adjacent to the Mimosa mining lease from Anglo American Platinum (Southridge (Pvt) Ltd).

Zimbabwe	Implats' interest (%)	Mining leases (ha)	Mining claims (ha)	Special grant (ha)
Zimplats	87	24 632	–	–
Mimosa*	50	6 594	1 029	134

\* Non-managed.

### CANADA

Mining rights in Canada fall into two broad categories: 'claims' (or exploration licences), and mining leases. A claim grants its holder the exclusive right to carry out exploration work, for a limited period and within a designated area. Exploration work may include overburden removal, exploratory drilling, test-ore extraction and milling. A mining lease allows its holder to carry out extractive and processing activities on a commercial scale.

The Mining Act is the provincial legislation that governs and regulates prospecting, mineral exploration, mine development and rehabilitation in the province of Ontario, where Impala Canada's operations are located. The purpose of the act is to encourage prospecting, online mining claim registration and exploration, to develop Mineral Resources in a way that recognises and affirms existing indigenous and treaty rights in section 35 of the Constitution Act, 1982. This includes the duty to consult and to minimise the impact on public health and safety and the environment.

Impala Canada's leases have a renewal date in 2027, with the exception of a newly converted claim to lease CLM 568, encompassing 2 557ha, with a renewal date of 2041. The company has the exclusive right to apply for renewal at these dates. Some mining leases are subject to a 5% net smelter return (NSR) royalty.

Impala Canada holds 100% in mining leases encompassing 6 070ha and active mining claims totalling 53 774ha in the Thunder Bay district. It also holds a 50% interest in the past-producing 8 046ha Shebandowan Mine property, located approximately 75km northwest of Thunder Bay, Ontario. The mine ceased production in 1998 and is currently under care and maintenance. The 174 mining claims (3 677ha) of the Sunday Lake

joint venture is owned by Impala Canada, Transition Metals and Implats, each holding 64.99%, 25% and 10.01% respectively. This joint venture has the ability to purchase surface rights for one private land parcel.

Canada	Implats' interest (%)	Mining leases (ha)	Mining claims (ha)
Lac des Iles	100	6 070	–
Shebandowan Mine lease	50	8 046	–
Thunder Bay district	100	–	53 774
Sunday Lake joint venture	75	–	3 677



Underground core inspection at Lac des Iles



# ESG in Mineral Resource and Mineral Reserve reporting

## ESG MANAGEMENT

Effectively managing environmental, social and governance (ESG) risks remains a key strategic pillar. Implats has a comprehensive ESG framework guiding its sustainability programmes, from exploration, through projects and operations. The Group aspires to deliver an industry-leading sustainability performance, producing metals that sustain livelihoods beyond mining and create a better future. This section should be read in conjunction with the Implats 2024 ESG report for more detail ([www.implats.co.za](http://www.implats.co.za)).

## ESG modifying factors for Mineral Resources and Mineral Reserves

The SAMESG guidelines 2017 provide guidelines for disclosing ESG parameters when reporting Exploration Results, Mineral Resources and Mineral Reserves. The SAMESG also provides guidance on the technical supporting information required for more inclusive and transparent analysis of environmental, social and governance matters, which in turn influence decision-making and project development practices.

Implats has mature risk and corporate governance structures in place which promote and safeguard the long-term success of the business, while considering the interests of its various stakeholders. Implats adheres to the highest ethics standards as per King IV, the Companies Act, the JSE Listings Requirements as well as the environmental, human rights, labour and social laws and regulations in its operating jurisdictions. These guide Implats' policies and enterprise risk management framework (ERM) as well as the Group's approach to exploration.

As such, Implats has adopted a risk-based approach when evaluating the impact of ESG on the RPEEE of Mineral Resources, Mineral Reserves and LoM. The ESG modifying factors that Implats considers as potential risks in estimating Mineral Resources and Mineral Reserves are illustrated in the diagram alongside. Subject matter technical experts take responsibility for managing these aspects and mitigating related risks.



The current rehabilitation cost estimates and financial provisions are tabulated as follows:

	Current cost estimates*		Financial provisions**	
Operations	2024	2023	2024	2023
Impala Rustenburg	2 029	1 906	10	1 004
Impala Refineries – Springs	956	1 008	421	464
Impala Bafokeng	693	654	259	210
Marula	450	436	65	84
Zimplats	1 111	902	12	366
Impala Canada	57	593	499	500
Afplats	29	27	2	26
<b>Total</b>	<b>5 325</b>	<b>5 526</b>	<b>1 268</b>	<b>2 654</b>

\* The current expected Group cost to restore the environmental disturbances for regulatory compliance purposes, as estimated by third-party experts, is R5 325 million. The amounts in the table exclude VAT.

\*\* Future value of the current cost estimates, discounted to current balance sheet date, as provided in the Group annual financial statements.

Financial guarantees concerning environmental rehabilitation are submitted to the DMR for the South African operations and projects, to satisfy the requirements of the National Environmental Management Act. Third-party consultants, E-Tek Consulting conducted these assessments for Impala Rustenburg, Afplats and Marula while SRK for Impala Bafokeng.

In line with DMR mine-closure requirements, the South African liabilities are secured through insurance policies and bank guarantees. Only bank and insurance guarantees are currently used as financial provisions. Similar arrangements are in place in Zimbabwe and Canada.

# Mineral Resource and Mineral Reserve risk management

The Group's reported Mineral Resources and Mineral Reserves represent the estimated quantity of PGMs that have the potential to be economically mined and refined under anticipated geological, environmental, social, governance and economic conditions. Several uncertainties and risks are inherent in estimating Mineral Resources and Mineral Reserves and projecting potential future rates of metal production, coupled with many factors beyond the Group's control. The 2024 Mineral Resources and Mineral Reserves Statement strives to capture specific Mineral Resource Management (MRM) related risks.

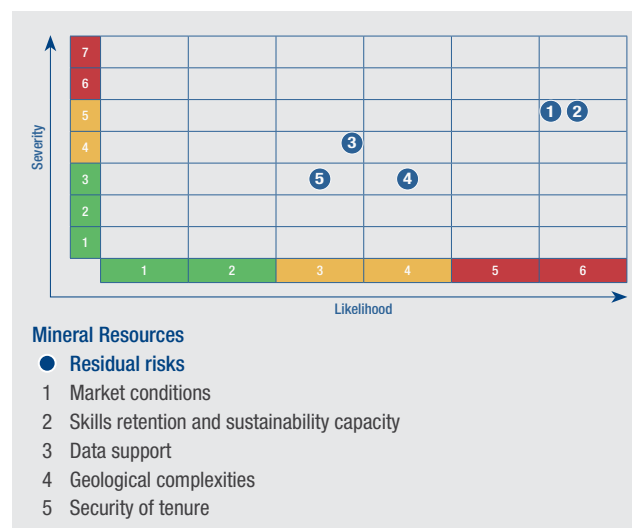
The MRM function adopts a formal risk management process that systematically covers all Mineral Resources and Mineral Reserves. Implats recognises that Mineral Resource and Mineral Reserve estimations are based on projections, which may vary as new information becomes available, or if assumptions, modifying factors and market conditions change materially. This approach is consistent with the Group definitions of risk, which are aligned with the updates published in the International Risk Management Standard, ISO 31000:2018. This standard defines risk as 'the effect of uncertainty on objectives'.

The Group has developed a matrix to measure the relative severity and likelihood of risks related to Mineral Resources and Mineral Reserves. This risk-rating tool is applied to highlight risks and implement key management interventions to mitigate perceived risks. The risk approach is integral to all the components of Mineral Resource and Mineral Reserve estimation, classification and modifying factors, such as ESG risks and reporting.

The residual risk matrices at an Implats Group level for the Mineral Resources and Mineral Reserves estimates are illustrated alongside, highlighting the respective top five residual risks.

The top residual risks identified for the Implats Group Mineral Resources are (1) Market conditions: costs and basket metal price sensitivity; (2) Skills retention and sustainability capacity; (3) Limitations in data support; (4) Geological complexities; and (5) Tenure and permits – Ongoing third-party conflicting applications over Implats' mining rights.

The top residual risks identified for the Implats Group Mineral Reserves are (1) Market conditions, costs and basket metal price sensitivity; (2) Declining LoM/Mineral Reserves; (3) Skills retention and sustainability capacity; (4) Availability of electricity and water; and (5) Technical challenges.



## Legend

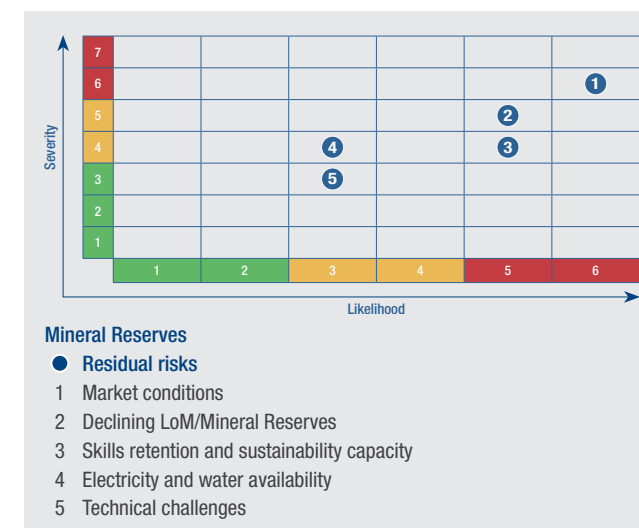
### Likelihood

- 1 – 2 Ongoing monitoring
- 3 – 4 Special focus areas, implement initiatives
- 5 – 6 Immediate action required by management

All the risks identified as relevant to Mineral Resources and Mineral Reserves are acceptable to management. Where risks are identified, management mitigation interventions are put in

place. Management interventions are in place to mitigate these risks listed above at Group and operational level.

Summary details are illustrated in the various sections per individual operation.



## Legend

### Severity

- 1 – 3 Maintain risk level
- 4 – 5 Ongoing monitoring of risk mitigations
- 6 – 7 Independent assessment and/or risk financing

place. Details about the Group's risks are published in the 2024 Implats Annual Integrated Report ([www.implats.co.za](http://www.implats.co.za)).

# Managing Mineral Resources, Mineral Reserves and life-of-mine

Implats embraces an integrated MRM function. Systems, procedures and practices are aligned and continuously improved to achieve this objective.

MRM includes exploration, geology, geostatistical modelling and evaluation, mine surveying, sampling, mine planning, ore accounting and reconciliation, and the MRM information systems.

The MRM function is the custodian of the mineral assets and strives explicitly to optimise these assets through a constant search for optimal extraction plans that yield returns in line with the Group's business objectives.

The main objective of the MRM function is to support strategic intent and add value to the organisation through:

- Safe production, which is the first principle underpinning all Mineral Reserve estimates
- The appropriate investigation, interpretation and understanding of the orebodies
- Integrated short-, medium- and long-term plans
- Technically appropriate and proven management information systems
- Accurate and reconcilable Mineral Resource and Mineral Reserve estimates
- Compliant and transparent reporting of Mineral Resource and Mineral Reserve estimates
- Seeking optimal solutions to ensure sustainable and profitable operations.

Continuous improvement is embedded in the MRM function. Specific focus is given to new learnings, standardisation and protocols, and collaboration with the industry.

2024 saw the conclusion to the MRM systems migration at Impala Rustenburg and Marula operations to a fully integrated 3D spatial platform. All geological and related mapping data are now captured electronically via TOUGHBOOK tablets directly into Datamine Mine Mapper and SABLE™. The geological and wireframe modelling spatial grade estimation is undertaken in Datamine Studio RM, with integrated mine design and scheduling being undertaken in Datamine Studio UG.

## MRM focus areas



### Geological information

- Structural geology model updates
- Grade block model updates
- Timeous brownfields exploration
- Cost-effective infill surface drilling
- Optimal underground drilling
- Mapping and observation tools
- Optimal underground sampling for geological risk mitigation.

### Quality mining

- Grade reviews, action plans
- Face observations, issue stop notes
- Grade control by geology observers
- Improved dashboards
- Cross-functional oversight.

### Mining flexibility

- Detailed development scheduling
- Development tracking
- Redevelopment and panel establishment
- Face length management at Impala Rustenburg
- Matched capital allocation to fund the LoM II and LoM III pipeline.

### Systems

- Utilise appropriate systems to suit orebody
- Successfully transitioned to an integrated 3D spatial geology and mine planning platform.

### Optionality

- Optimal use of current infrastructure
- Expanding the footprint of current shafts and infrastructure
- Scenarios for future sustainability
- M&A opportunities
- Sequential upgrade of LoM II and LoM III pipeline projects
- Compliance with LoM classification.

Present focus areas include:

- Embedding a standardised risk analysis framework, specific to Mineral Resource and Mineral Reserve estimates, across all projects and operations
- Timeous exploration drilling, to support sustainable operations and LoM planning
- Improved Mineral Reserve flexibility, measured as mineable face length in conventional, hybrid and mechanised mining sections

- Improving the quality of mining
- Revisiting optionality of long-term planning
- Scenario planning for LoM II and LoM III Mineral Resources to ensure a sustainable business model (see [page 21](#))
- Embedding the new 3D spatial platforms and consolidating skills for sustainability
- Workstreams to ensure optionality to sustain operations.



## Managing Mineral Resources, Mineral Reserves and life-of-mine continued

The integrated Implats planning cycle seeks to integrate the different planning levels to provide continuity, and it incorporates review processes linked to business reporting periods. There is a strong emphasis on risk mitigation, optimising plans, ensuring compliance with industry and Group standards, and consolidation to track delivery. The planning process is iterative, with top-down goals flowing through to operations and vice versa, which allows for any adjustments needed as conditions change.

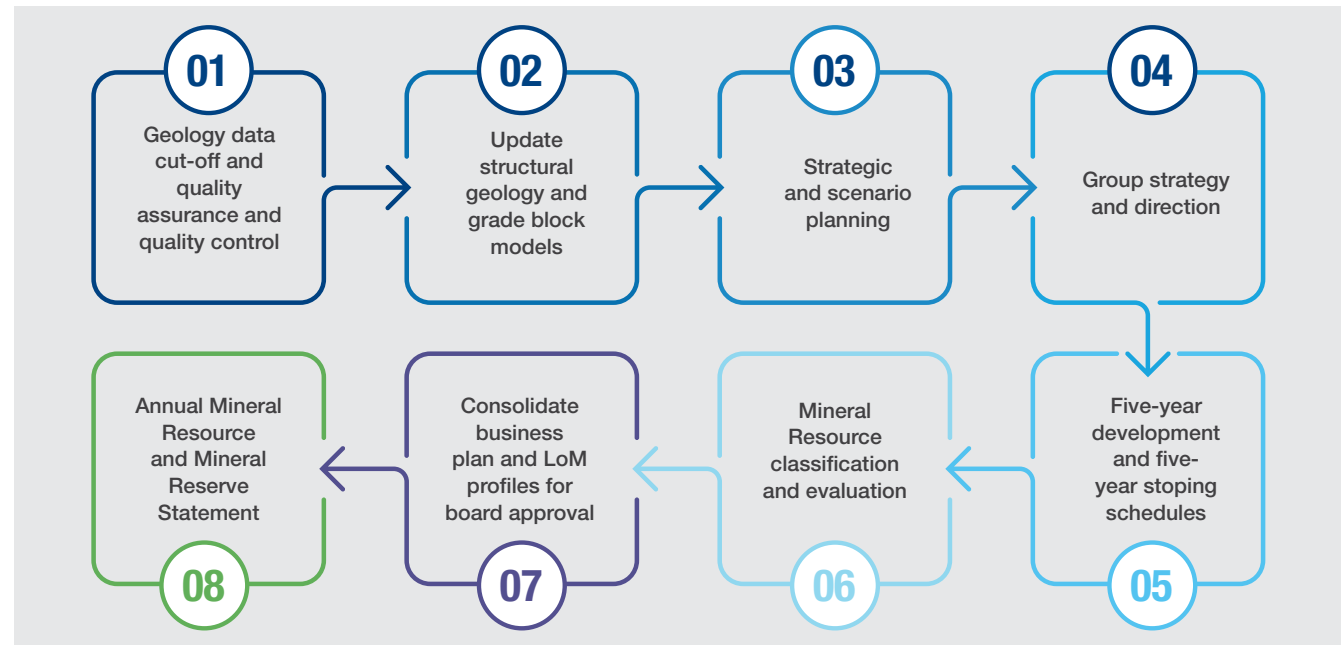
The embedded planning cycle considers the sequence and the duration of the business planning period, and it entrenches long-term strategic planning. A summarised planning cycle is shown alongside. It starts with data consolidation, geological model and spatial Mineral Resource estimate updates in August until November, followed by a detailed business planning phase in January until May, with a five-year focus. The life-of-mine (LoM) profiles are then derived as a continuation of the business plan for the remainder of the respective mining right areas, while considering metal price forecasts and operating costs.

The planning process is integrated with Group costing, the outlook for commodity prices and financial valuations. The Mineral Reserve estimates are therefore the product of the planning process, applied against the Measured and Indicated Mineral Resource estimates only. The Mineral Reserve estimates are classified as Proved and Probable Mineral Reserves, based on confidence and risk considerations.

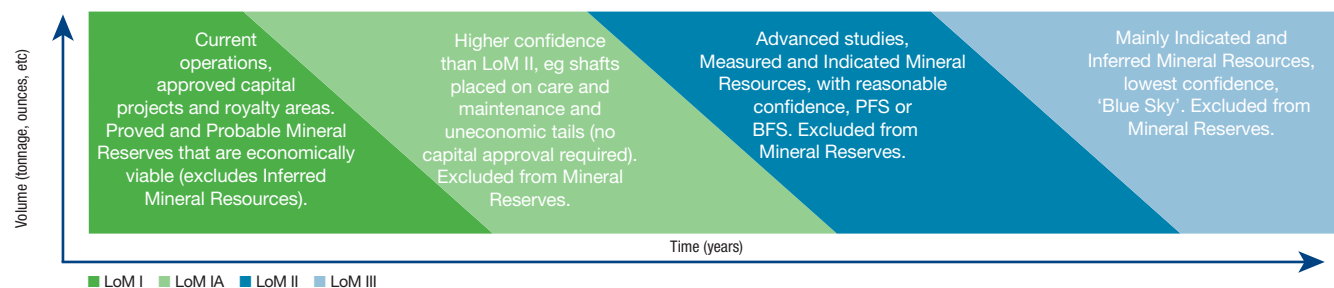
Implats has defined four LoM planning levels, classified as levels III, II, IA and I. The four levels are linked to increased confidence levels from III to I, and the conversion of Mineral Resources to Mineral Reserves.

LoM level III includes 'Blue Sky' and scoping studies, focusing mainly on Inferred Mineral Resources and Exploration Results. It may also include contiguous areas and opportunities outside existing mining right boundaries and ownership. LoM III is excluded from the Mineral Reserve estimate.

LoM level II includes planned and unapproved projects, with a reasonable chance of future board approval.



### LoM levels and definitions



LoM level IA can be defined as those Mineral Reserves that fail the economic valuation of LoM level I. These uneconomic volumes are removed from LoM I, but are retained as Mineral Resources. Likewise, operations deemed uneconomic under the current LoM considerations also fall in the LoM IA category. No capital approval is required for these operations. LoM II and LoM IA areas will be excluded from the Mineral Reserve estimate.

LoM level I includes operational shafts and approved capital projects where a portion of Mineral Resources is converted to Mineral Reserves, and sufficient confidence exists for the declaration of Mineral Reserves in a public report. No Inferred Mineral Resources are included in LoM I, other than incidental dilution, which is included at zero grade.

## Regional geological settings

Implats explores and mines the platiniferous horizons in the Bushveld Complex in South Africa and the Great Dyke in Zimbabwe, and the palladium-dominant orebody located in the Lac des Iles Intrusive Complex in Canada.

The Bushveld Complex and Great Dyke layered intrusions are unique in size and geological continuity. Mining mostly takes place underground, with specific mining methods adapted to suit the local geology and morphology of the mineralised orebodies.

### THE BUSHVELD COMPLEX

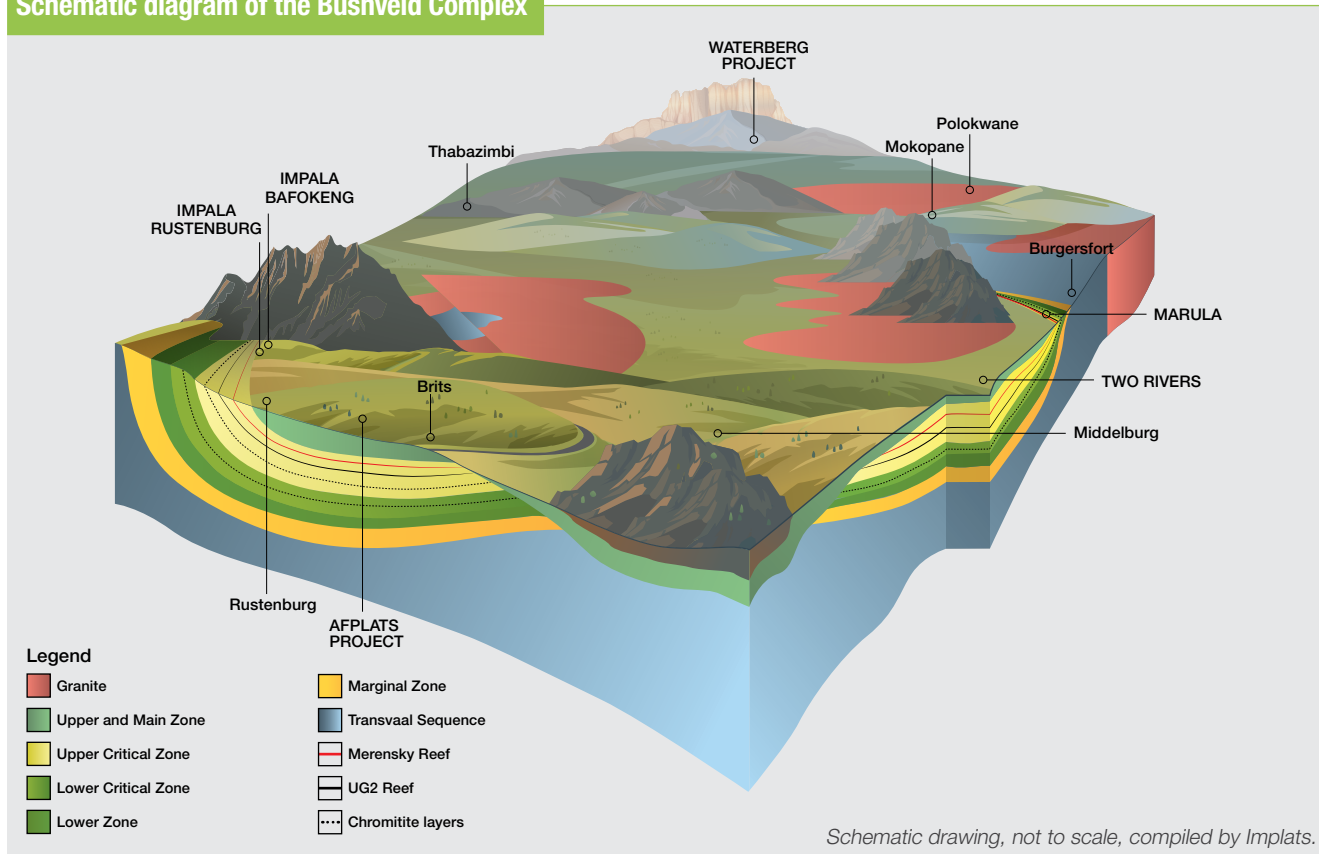
The Bushveld Complex is an extremely large (65 000km<sup>2</sup>), two billion-year-old layered igneous intrusion, located in the northern part of South Africa. Rock types range in composition from ultramafic to felsic. The complex is unique due to its size and the economic significance of its mineral wealth. In addition to the PGMs and associated base metals found in the complex, it also produces vast quantities of chromium, vanadium, tin, fluorine and dimension stone.

The accompanying map [page 23](#) and schematic diagram alongside show the extent of the Bushveld Complex. The layered sequence, the Rustenburg Layered Suite, comprises five significant sub-divisions. These are, from the bottom upwards, the Marginal, Lower, Critical, Main and Upper Zones, as indicated in the generalised stratigraphic column on [page 23](#).

Three horizons within the Critical Zone, namely the Merensky Reef, the Upper Group 2 (UG2) Reef and the Platereef, host extensive economically exploitable quantities of PGMs. Two of these horizons – the Merensky and UG2 Reefs – are the focus of Implats' current operations. The PGMs – platinum, palladium, rhodium, ruthenium, iridium and osmium – and the associated gold, copper, nickel, cobalt, chromium and other minor metals and compounds, are mined concurrently but recovered by different processes.

The chromitite layers present below the UG2 Reef contain little to no PGM mineralisation and are mined by other operators for their chromium content. Some PGEs are recovered as a

Schematic diagram of the Bushveld Complex



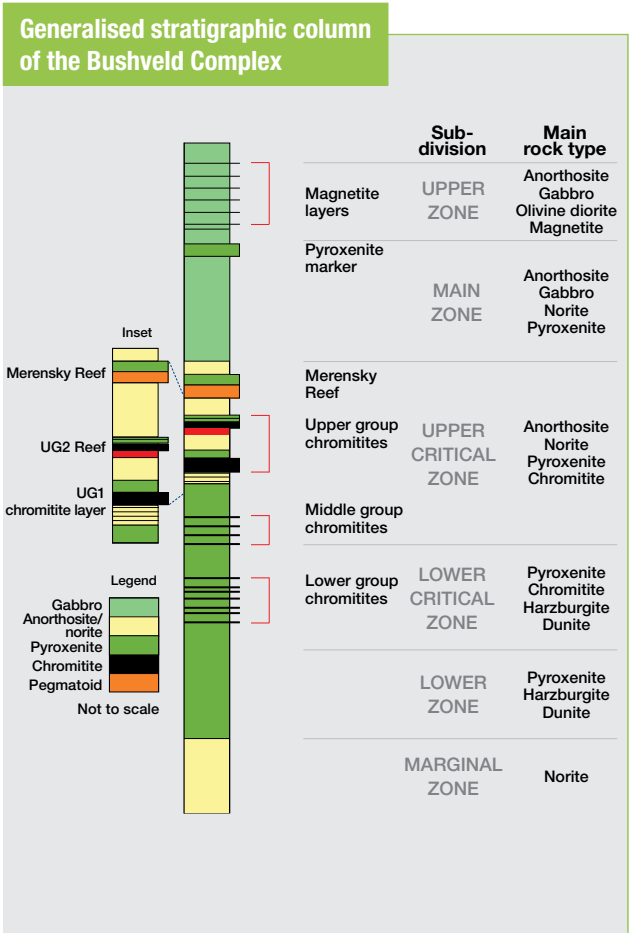
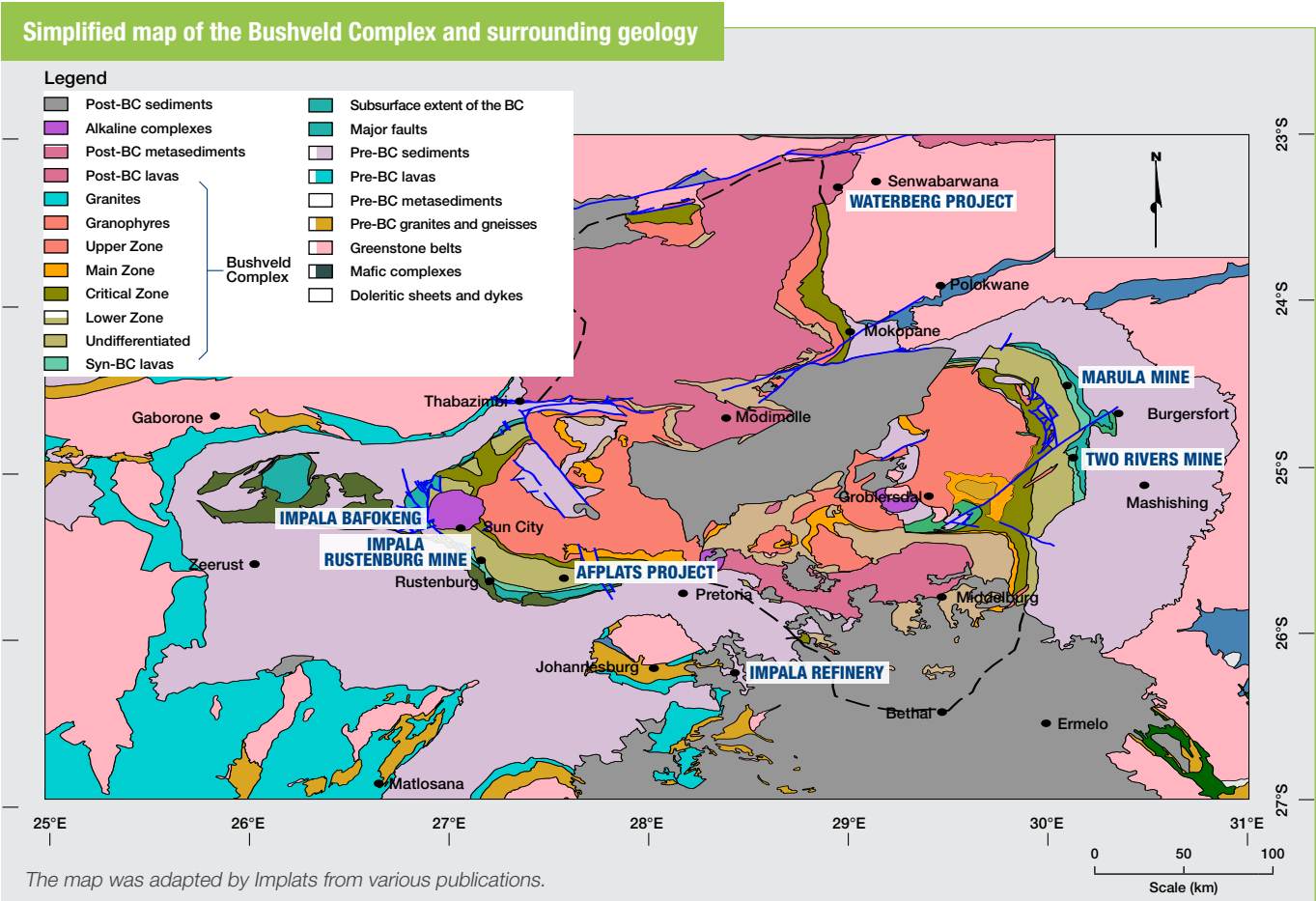
by-product from these chromitite layers. The economic potential of the Waterberg PGM deposit at the northern extremity of the Northern Limb is the focus of optimisation studies before the potential commencement of mining. There are two PGE copper-nickel-gold mineralised intervals in the Waterberg deposit, a lower F-Zone and an upper T-Zone. Both these contain palladium-dominant PGE mineralisation.

Implats' mining operations on the Bushveld Complex comprise Impala Rustenburg north of Rustenburg, Impala Bafokeng adjacent to Impala Rustenburg, Marula northwest of Burgersfort,

and Two Rivers, a joint venture between Implats and ARM, situated southwest of Steelpoort. The Afplats Leeuwkop project is located in the Western Limb of the Bushveld Complex, west of Brits. Implats owns a 14.95% interest in the Waterberg joint venture project, which is located in the Northern Limb.

The relevant operational sections in this report provide geological descriptions of the various reef types and reef facies. The grade distribution varies materially from area to area.

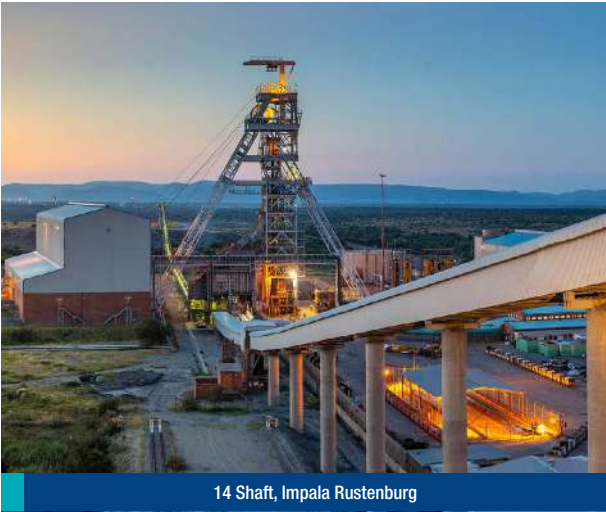
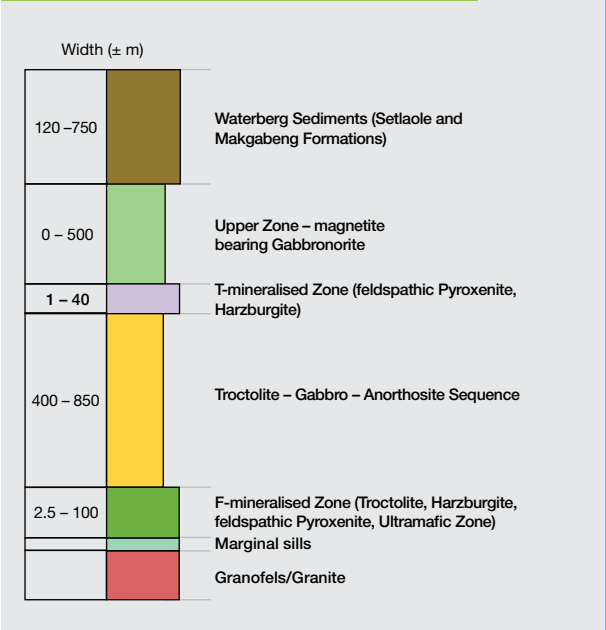
# Regional geological settings continued





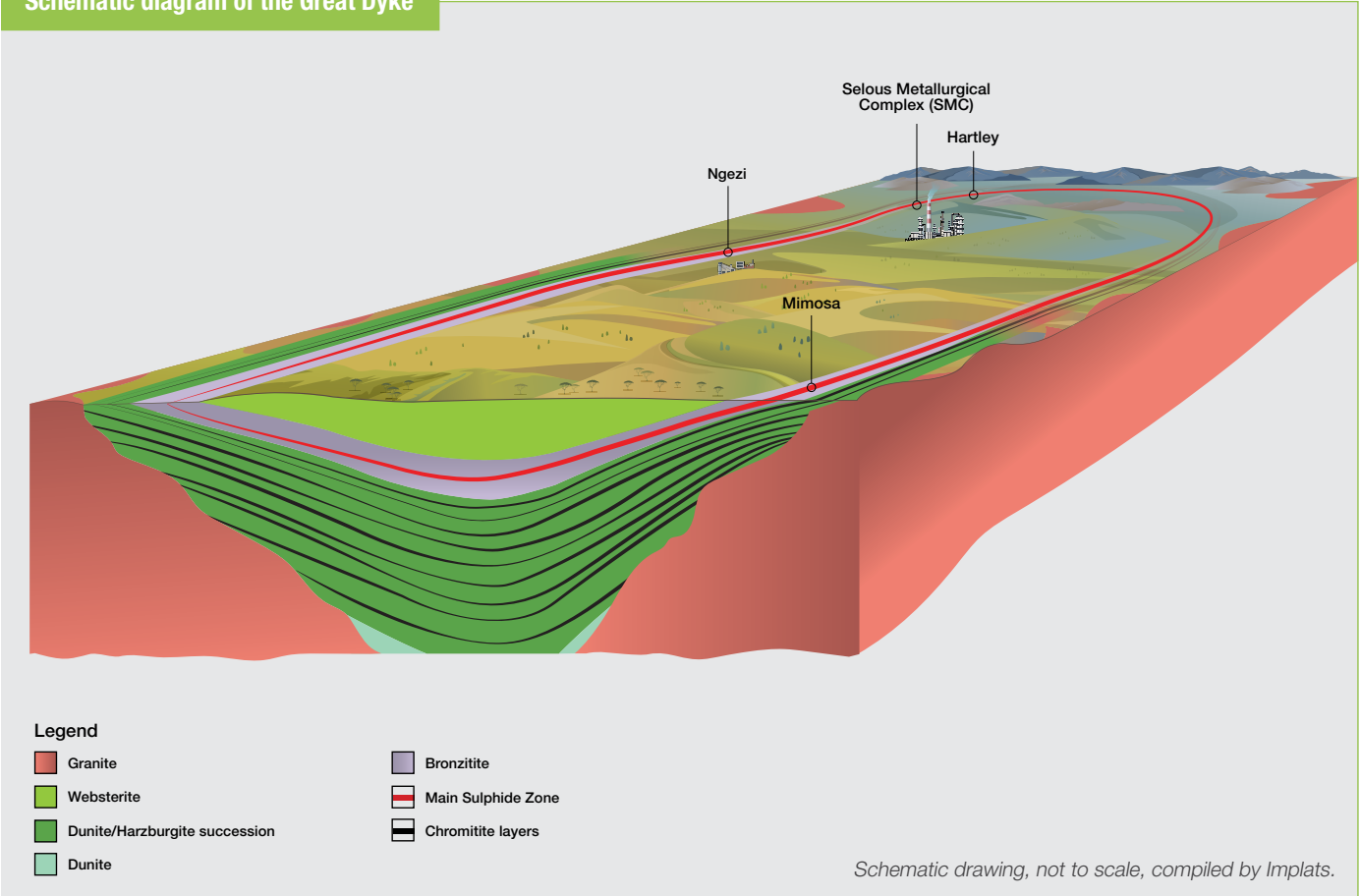
# Regional geological settings continued

## Generalised geological succession of the Bushveld Complex at the Waterberg project



14 Shaft, Impala Rustenburg

## Schematic diagram of the Great Dyke

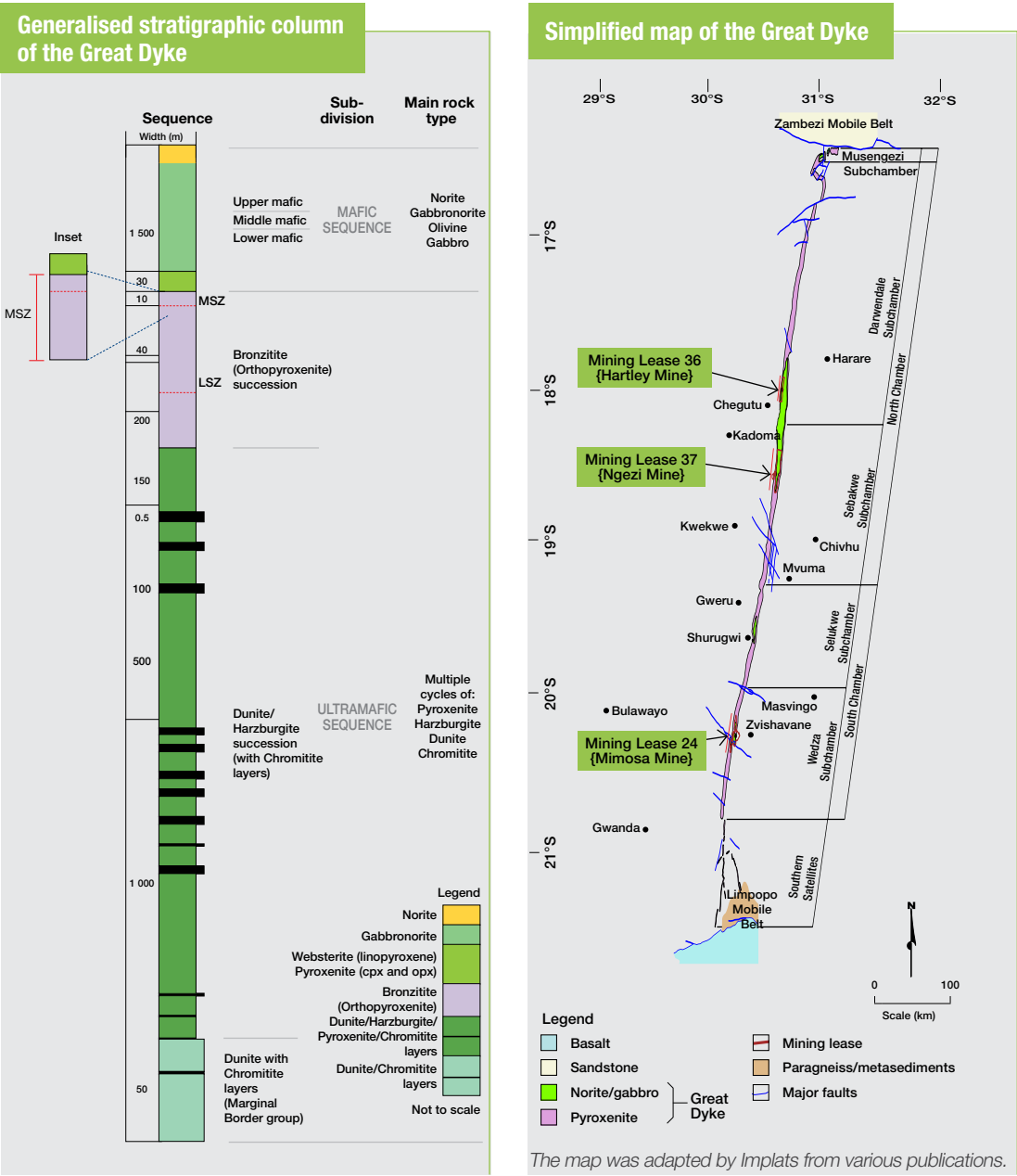


### THE GREAT DYKE

The Great Dyke is a 2.5 billion-year-old layered mafic-ultramafic body that intruded into Zimbabwe's Archaean granites and greenstone belts. It is highly elongated, slightly sinuous, 550km long, north-northeast trending with a maximum width of 12km. It bisects Zimbabwe in a north-north easterly direction. It is divided vertically into a lower ultramafic sequence, comprising cyclic repetitions of pyroxenite, harzburgite, dunite and chromitite, and an upper mafic sequence consisting mainly of norite, gabbronorite and olivine gabbro. It is

U-shaped, with layers dipping and flattening towards the axis of the intrusion. Much of the mafic sequence has been removed by erosion and, at the present plane of erosion, the Great Dyke is exposed as a series of narrow, contiguous layered complexes or chambers. From north to south, these are Musengezi, Hartley (comprising the Darwendale and Sebakwe sub-chambers) and a southern chamber (comprising the Selukwe and Wedza sub-chambers) (page 25).

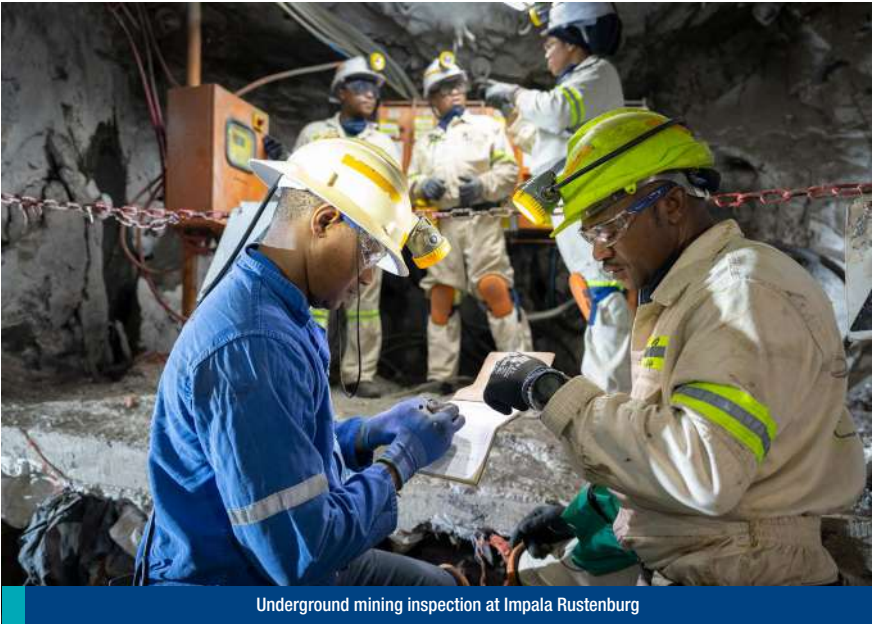
Regional geological settings continued



The Main Sulphide Zone (MSZ), which hosts the economically exploitable PGMs and associated base metal mineralisation, is located 10m to 50m below the ultramafic/mafic contact in the P1 pyroxenite. PGMs, gold, copper and nickel, occur in the MSZ. The relevant operational sections in this report provide descriptions of the MSZ and the value distributions. The grade profiles vary between areas and the platinum and palladium peaks are somewhat offset. Typically, the MSZ consists of a 2m to 10m thick zone containing 2% to 8% iron-nickel-copper sulphides disseminated in pyroxenite. This nickel- and copper-rich layer base is straddled by a 1m to 5m thick zone of elevated precious metals (platinum, palladium, rhodium and gold). The base metal zone contains up to 5% sulphides, while the sulphide content of the PGM Zone is less than 0.5%. This change in sulphide content is consistently related to the metal distribution and is used as a mining marker. It can usually be located visually in the drillhole core and, with careful observation, it can also be visually identified underground. Therefore, careful monitoring, supported by channel sampling and XRF scanning, is required to guide mining.

The chromitite layers present below the MSZ contain little to no PGM mineralisation and are mined by other operators for their chromium content only.

Implats' operations on the Great Dyke comprise Zimplats' Ngezi Mine southwest of Harare and the Mimosa Mine, a joint venture between Implats and Sibanye-Stillwater, situated east of Bulawayo.





## Regional geological settings continued

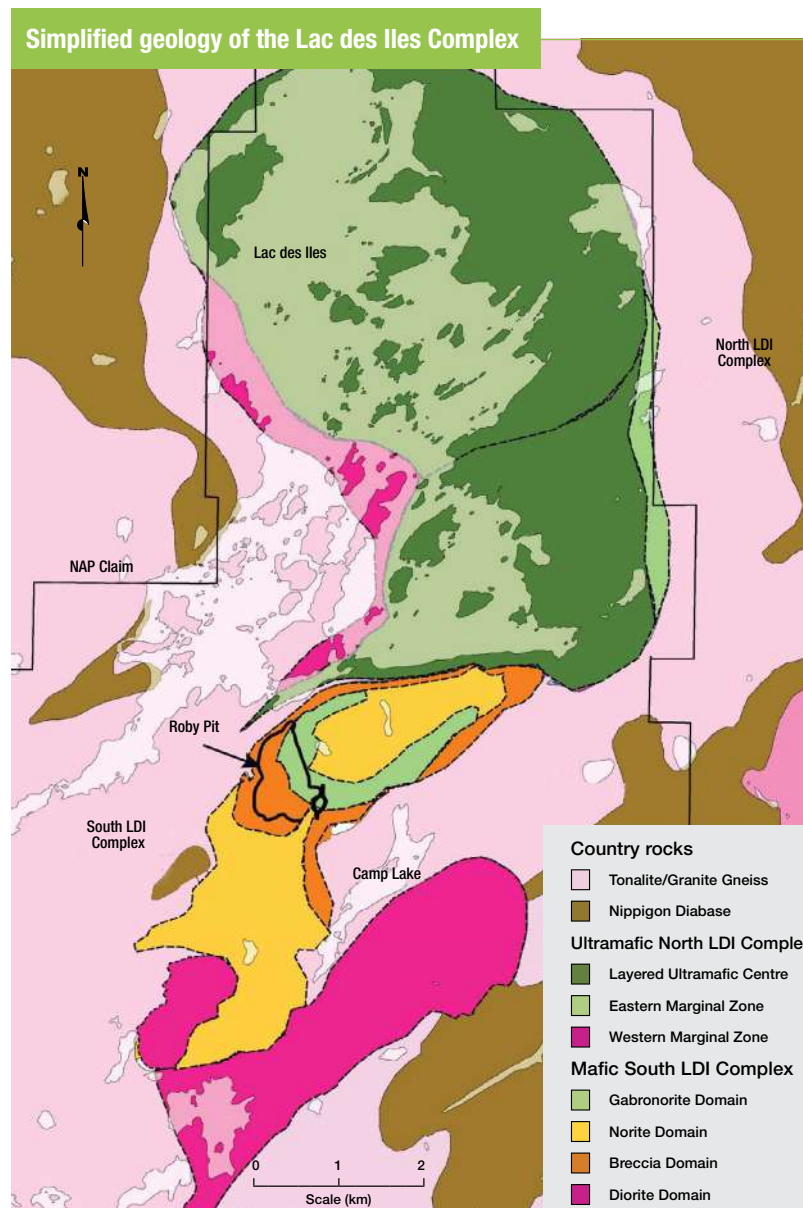
### THE LAC DES ILES INTRUSIVE COMPLEX

The Lac des Iles property is underlain by mafic to ultramafic rocks of the Archaean Lac des Iles Intrusive Complex (LDI-IC). The LDI-IC is the best documented of a suite of mafic to ultramafic intrusive bodies occurring within 30km of the Lac des Iles Mine. The intrusions are hosted by the Central Wabigoon Subprovince of the Wabigoon Terrane in the northwestern Superior Province of the Canadian Shield. Impala Canada holds title to active mineral claims covering most of the known Lac des Iles suite intrusions.

The easternmost bodies of the Lac des Iles suite of intrusions are the LDI-IC and the Legris Lake Complex. The LDI-IC and the Legris Lake Complex appear along with northeast-trending splay structures (eg Shelby Lake Fault) emanating from the Quetico Fault Zone. The Quetico Fault Zone is a collisional structural boundary between the Quetico Subprovince and the Wabigoon Terrane. The Lac des Iles suite intrusions were emplaced into the 3.0 to 2.9 billion-year-old granite-greenstone basement rocks designated as the Marmion Terrane, representing an older slice of magmatic arc-related crustal rocks.

The Lac des Iles mine property hosts the North Lac des Iles Complex, which mainly comprises ultramafic rocks, and the South Lac des Iles Complex, which is dominated by mafic rocks.

The South Lac des Iles Complex, which hosts the Lac des Iles Mine, was emplaced into predominantly intermediate composition orthogneiss basement rocks. The emplacement age of the main block intrusion has been established as 2.6 billion years. Four major intrusive sequences (series) are now recognised in the complex. The oldest is referred to as the gabbro-norite series. This was succeeded by a significant period of noritic magmatism that produced both the norite and breccia series. The altered norite is strongly foliated with aligned chlorite grains in highly strained areas, defining a pervasive schistosity. The youngest magmatism in the South Lac des Iles Complex produced the diorite series, comprising more evolved hornblende-bearing mafic to intermediate intrusive rocks with a wide range of textures and grain sizes.



The map was adapted by Implats from various publications.



Lac des Iles underground headframe



# Exploration

## EXPLORATION SYNOPSIS

Implats' exploration focus is limited to its current operations – the Group's exploration strategy focuses on brownfields activities supporting ongoing mining at existing operations.

For the Bushveld Complex operations, infill drilling at a targeted 250m to 400m drillhole collar spacing is routinely provided for as part of the annual budget process, to better define geological structures, specific local complexities, ground conditions and grade variations, which informs mine planning and direct medium-term layouts. The target remains to gather information timeously to enable, direct and support the five-year Mineral Reserve development plans and minimise the impact of geological risk. Accordingly, Marula and Impala Rustenburg are tightening their surface drillhole spacing. Given the cost rationalisation, we are prioritising the immediate need for geological confirmation and the upgrade of Mineral Resource confidence and conversion to Mineral Reserves. Several brownfields feasibility opportunities require additional supporting geological information. As such, brownfields exploration plans are revisited annually and subjected to scrutiny at various management levels to ensure optimised spend in mitigating operational risks.

Surface and underground exploration is ongoing towards the systematic upgrade and conversion of the deeper-seated middle group (MGs) and lower group (LGs) chromitite layers from Mineral Occurrence to Mineral Resource and eventually to Mineral Reserve in line with SAMREC (2016), cognisant of ever-fluctuating metal prices and economic viability.

Underground geotechnical core-recovering drilling activities are routinely undertaken at the different operations to detect potential hazardous geological features.

Annual group exploration expenditure from surface and underground operations decreased by 48% to R281.7 million (FY2023: R543.7 million) however, the planned budget was R445.5 million for FY2024. This significant decrease expenditure was due to the economic market and capital expenditure rationalisation. Exploration expenditure for the forthcoming year is projected to be R403.6 million to continue Implats' commitment to bolstering its confidence in both LoM I and pipeline LoM II and LoM III projects to ensure operational sustainability.

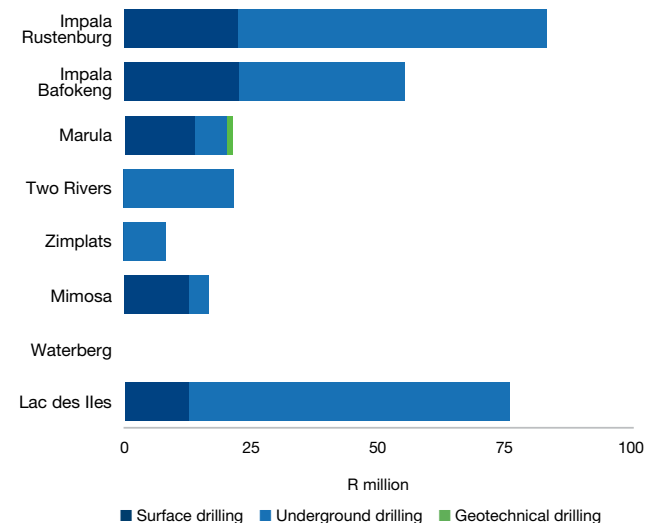
	Surface drilling			Underground drilling			Geotechnical drilling		
	Total number	Length (m)	Amount (R'000)	Total number	Length (m)	Amount (R'000)	Total number	Length (m)	Amount (R'000)
Impala Rustenburg	11	6 428	22 160	682	34 939	60 737	–	–	–
Impala Bafokeng	19	14 280	22 392	310	27 960	32 781	–	–	–
Marula	11	6 075	13 700	65	7 800	6 600	20	600	1 100
Two Rivers	–	–	–	230	18 145	21 686	–	–	–
Zimplats <sup>1</sup>	–	–	–	60	6 179	8 326	–	–	–
Mimosa <sup>1</sup>	20	2 929	12 623	56	5 874	3 958	–	–	–
Waterberg	–	–	–	–	–	–	–	–	–
Lac des Iles <sup>2</sup>	34	4 776	12 464	61	37 856	63 232	–	–	–
<b>Total</b>	<b>95</b>	<b>34 488</b>	<b>83 339</b>	<b>1 464</b>	<b>138 753</b>	<b>197 319</b>	<b>20</b>	<b>600</b>	<b>1 100</b>

<sup>1</sup> R18.21 per US dollar (as at 30 June 2024).

<sup>2</sup> R13.28 per Canadian dollar (as at 30 June 2024).

## Annual exploration expenditure

as at 30 June 2024 (R million)



## OFFSHORE PROJECTS

Greenfields exploration activities have ceased in light of the low metal price environment and cost rationalisation initiatives. Brownfields exploration activities towards facilitating the systematic upgrade of geological confidence, remain in place.

Implats continues to monitor PGM exploration worldwide to maintain intelligence concerning Mineral Resource developments and exploration opportunities.

## Group production

	Units	FY2024	FY2023	FY2022	FY2021	FY2020
<b>Tonnes milled</b>						
Impala Rustenburg	kt	10 204	10 248	9 801	10 686	9 635
Impala Bafokeng	kt	4 243	403	–	–	–
Marula	kt	1 851	1 935	1 995	1 802	1 636
Two Rivers	kt	3 568	3 558	3 458	3 283	3 016
Zimplats	kt	7 912	7 500	6 882	6 821	6 751
Mimosa	kt	2 894	2 735	2 816	2 861	2 701
Lac des Iles	kt	3 676	3 798	3 685	3 901	1 553
<b>Mill head grade</b>						
Impala Rustenburg	g/t 6E	3.99	3.88	3.86	4.05	3.91
Impala Bafokeng	g/t 6E	4.36	3.30	–	–	–
Marula	g/t 6E	4.28	4.39	4.53	4.37	4.70
Two Rivers	g/t 6E	3.12	3.09	3.22	3.43	3.45
Zimplats	g/t 6E	3.32	3.33	3.42	3.44	3.48
Mimosa	g/t 6E	3.61	3.77	3.82	3.87	3.85
Lac des Iles	g/t 3E	2.90	2.93	2.68	2.59	2.45
<b>Production ex Impala Rustenburg Mine*</b>						
Platinum refined	koz	660.3	647.8	608.4	696.4	638.3
Palladium refined	koz	305.5	304.9	291.1	344.3	343.2
Rhodium refined	koz	77.5	80.3	78.1	96.4	100.0
Nickel refined	t	3 704	3 708	3 372	3 945	4 720
6E refined	koz	1 214.1	1 206.6	1 137.5	1 334.4	1 270.1
<b>Production ex Impala Bafokeng Mine*</b>						
Platinum in concentrate	koz	270.3	23.9	–	–	–
Palladium in concentrate	koz	114.8	10.3	–	–	–
Rhodium in concentrate	koz	29.3	2.5	–	–	–
Nickel in concentrate	t	2 187	202	–	–	–
6E in concentrate	koz	482.6	42.7	–	–	–
<b>Production ex Marula Mine*</b>						
Platinum in concentrate	koz	86.9	92.2	99.2	88.3	80.5
Palladium in concentrate	koz	86.4	94.9	101.5	90.5	82.6
Rhodium in concentrate	koz	17.8	18.8	20.3	18.2	16.6
Nickel in concentrate	t	255	284	310	297	270
6E in concentrate	koz	223.3	241.0	259.4	231.3	210.5
<b>Production ex Two Rivers Mine*</b>						
Platinum in concentrate	koz	137.6	137.8	140.3	139.2	122.4
Palladium in concentrate	koz	83.9	82.5	84.8	84.5	73.2
Rhodium in concentrate	koz	22.5	23.9	24.5	24.0	21.2
Nickel in concentrate	t	873	713	609	609	481
6E in concentrate	koz	291.4	295.4	301.9	300.2	261.0

	Units	FY2024	FY2023	FY2022	FY2021	FY2020
<b>Production ex Zimplats Mine*</b>						
Platinum in matte	koz	297.8	282.0	266.6	266.0	266.9
Palladium in matte	koz	253.3	237.7	227.9	226.5	228.0
Rhodium in matte	koz	26.2	23.4	23.8	23.7	23.4
Nickel in matte	t	6 108	5 787	5 338	4 925	4 991
6E in matte	koz	645.9	611.2	583.5	579.0	580.2
<b>Production ex Mimosa Mine*</b>						
Platinum in concentrate	koz	120.8	115.1	116.3	122.8	116.6
Palladium in concentrate	koz	93.8	89.7	90.5	96.2	91.7
Rhodium in concentrate	koz	10.2	9.5	9.5	10.2	9.8
Nickel in concentrate	t	3 697	3 549	3 610	3 680	3 421
6E in concentrate	koz	255.4	245.1	246.4	261.1	247.8
<b>Production ex Lac des Iles Mine*,***</b>						
Platinum in concentrate	koz	19.3	21.8	18.7	16.5	6.4
Palladium in concentrate	koz	242.3	250.0	212.9	227.5	84.7
6E in concentrate	koz	280.6	290.9	248.7	260.5	97.4
<b>Gross margin</b>						
Impala Rustenburg	%	0.7	22.3	35.8	49.0	29.5
Impala Bafokeng	%	(10.2)	–	–	–	–
Marula	%	(12.3)	38.8	51.8	63.0	45.7
Two Rivers	%	9.1	38.4	51.7	62.9	45.5
Zimplats	%	10.6	35.2	52.6	58.0	48.7
Mimosa	%	(10.2)	26.6	46.1	58.1	34.8
Lac des Iles	%	(1.7)	7.8	24.9	45.7	27.0
<b>Gross Implats refined production**</b>						
6E	koz	3 378	2 959	3 087	3 271	2 813
Platinum	koz	1 590	1 360	1 426	1 517	1 349
Palladium	koz	1 158	1 051	1 071	1 121	892
Rhodium	koz	190	169	181	193	181
Nickel	kt	16.2	15.0	16.5	15.4	15.4

\* Numbers reflect 100% of production, not the portion attributable to Implats.

\*\* Includes IRS production from other sources.

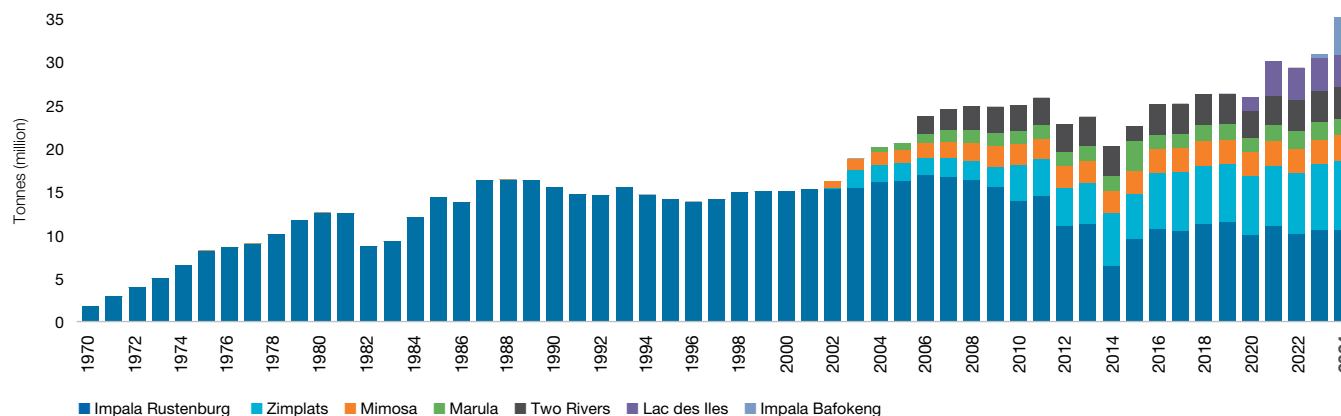
\*\*\* Nickel is forfeited at Lac des Iles as part of the off-take agreement with Glencore.

## Group production continued

Summary statistics relating to the Implats' production are indicated in the accompanying graphs and table [page 28](#). Overall, gross refined ounces increased to 3 378koz 6E from 2 959koz 6E, compared with the previous financial year.

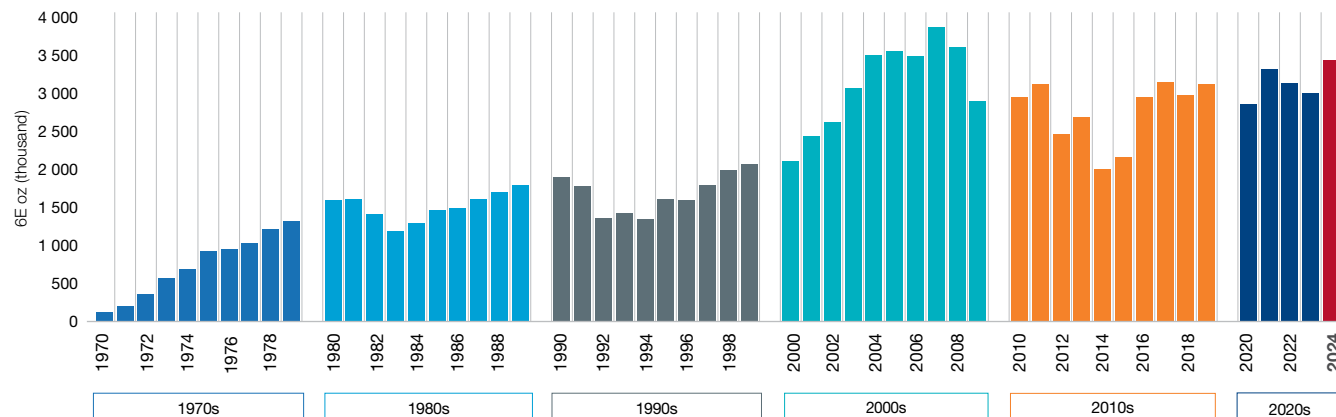
### Production at Impala Rustenburg, Zimplats, Mimosa, Marula, Two Rivers, Lac des Iles and Impala Bafokeng

as at 30 June 2024 (million tonnes)



### Gross Implats 6E production

as at 30 June 2024 (thousand ounces)



Surface drilling at Impala Rustenburg

## Group life-of-mine outlook

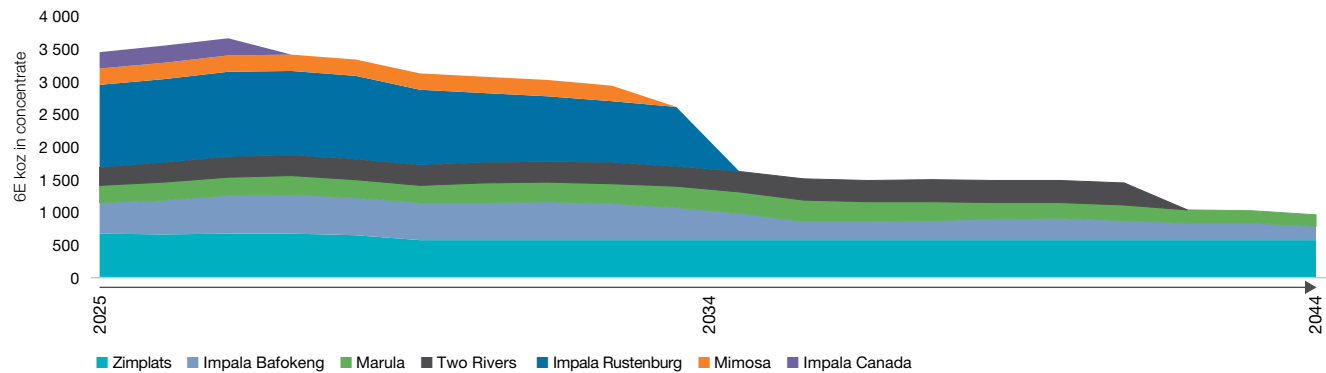
The high-level LoM (20-year) plans are depicted in the detailed sections per operation in planning LoM levels I, IA, II and III. These graphs reflect 100% of the annual production forecasts and not the portion attributable to Implats, and they include the two Impala Bafokeng royalty areas at Impala Rustenburg. The plans do not include all the 'Blue Sky' opportunities – some of this potential is explicitly excluded at this early stage. Caution should be exercised when considering the LoM plans, as these may vary if assumptions, modifying factors, exchange rates or metal prices change materially. The LoM profiles should be read in conjunction with Mineral Resource estimates to determine the long-term potential.

The graph to the right shows the consolidated high-level LoM I plans collated from the individual profiles per operation. The profiles represent the Mineral Reserve estimates as at 30 June 2024 and reflect the current infrastructure. All LoM I profiles were subjected to economic testing and unprofitable production was excluded and classified as LoM IA. This is referred to as tail-cutting. No Inferred Mineral Resources are included in the LoM I and Mineral Reserve estimates, other than minor incidental dilution in isolated cases, which is included at zero grade.

Implats is committed to an increased strategic thrust to evaluate LoM scenarios and options to optimise current infrastructure and Mineral Resources. This relates to the Group's brownfields opportunities, but does not exclude mergers or new acquisitions.

### Implats estimated 20-year 6E LoM I ounce profile

as at 30 June 2024

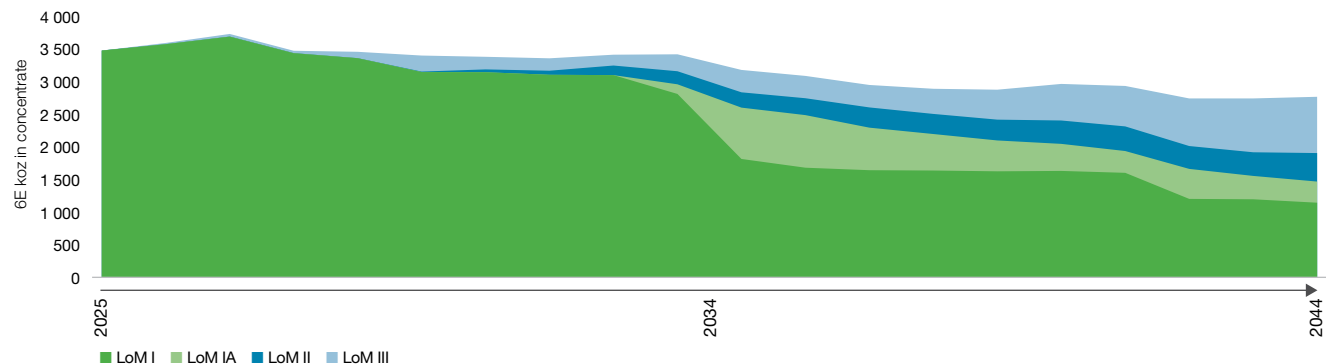


The pictorial 20-year profile in this chapter is shown below as a combination of level I with selected level IA, II and III LoM profiles. Only LoM I is based on Mineral Reserves, while LoM IA, II and III have not been converted to Mineral Reserves.

It is clear from a combined Group perspective that a proportion of the 20-year LoM plan is still at levels II and III and would require an improved financial outlook, further studies, funding and capital approval by the board. Feasibility studies are continuing at Impala Rustenburg, Impala Bafokeng, Two Rivers, Zimplats, Marula, Lac des Iles, Mimosa and the Waterberg project to evaluate future opportunities.

### Implats' estimated 20-year 6E LoM I, IA, II and III ounce profile

as at 30 June 2024





## Valuation and sensitivities

Implats uses a discounted cash flow model that embodies economic, financial and production estimates in the valuation of mineral assets. Forecasts of key inputs are:

- Relative rates of inflation in South Africa, Zimbabwe, Canada and the United States
- Rand exchange rates – R/C\$ and R/US\$
- Metal prices
- Capital expenditure
- Operating expenditure
- Production profile
- Metal recoveries.

The outputs are a net present value, an internal rate of return, annual free cash flow, project payback period and funding requirements. Implats' marketing department regularly updates metal price and exchange rate forecasts. As at 30 June 2024, the Group used a real long-term forecast of R27 359 (US\$1 670) for the 6E basket revenue per 6E ounce sold. Specific real long-term forecasts in today's money include:

	Units	2023	2024
Platinum	US\$/oz	1 359	<b>1 643</b>
Palladium	US\$/oz	1 223	<b>594</b>
Rhodium	US\$/oz	6 567	<b>5 853</b>
Ruthenium	US\$/oz	408	<b>414</b>
Iridium	US\$/oz	4 302	<b>4 365</b>
Gold	US\$/oz	1 571	<b>1 697</b>
Nickel	US\$/t	19 145	<b>18 009</b>
Copper	US\$/t	8 163	<b>8 599</b>
Exchange rate	R/US\$	15.63	<b>16.38</b>

The Group's spot basket price as at 30 June 2024 was calculated at R25 101 (US\$1 378), and the equivalent real long-term market consensus basket price is R27 470 (US\$1 599) per 6E ounce. The long-term market consensus estimates for metal prices are the mean of between 11 and 17 broker companies' real term metal price estimates over the next three to five years, depending on the metal concerned. Long-term

basket price forecasts per operation vary according to the metal ratios.

The Group conducts rigorous profitability tests to assess the viability of the Mineral Reserves. References to these are listed in the sections per operation, and highlight the spot price scenarios. A summary graph showing the price sensitivity of the total Group Mineral Reserves is depicted alongside.

It is important to note that the basket price is materially impacted by the characteristics of the orebody, specifically the individual 6E metal proportions. These ratios vary significantly from area to area and from orebody to orebody, as illustrated in the operational sections of this report.

Economic profitability tests were conducted at each operation. This process entails determining when an operation is no longer profitable and no longer contributes to fixed overheads. Each operation's processing, services and other costs are split between their relevant fixed and variable portions by virtue of a declining production profile. Once an operation is no longer profitable (or contributing to fixed overheads), it is removed from the LoM I profile (and Mineral Reserves). The fixed costs apportioned to the operation are then reallocated to the remaining operations.

A Mineral Resource, as defined by SAMREC Code (2016), is 'a concentration or occurrence of solid material of economic interest in or on the earth's crust in such form, grade, quality and quantity that there are RPEEE'. The interpretation of such 'eventual economics' varies significantly. However, it implies some form of high-level view regarding either 'yard-stick comparisons' or high-level scenario models.

On this basis, Implats excluded significant mineralisation due to its depth below surface at Impala Rustenburg and Afplats UG2 (2 000m) and Two Rivers (1 000m), considering geology and potential infrastructure. The Afplats Merensky Mineral Resources are excluded on the basis of no RPEEE. In total, some 100.0Moz 6E was excluded from current statements.

Beyond current infrastructure investment, the deeper-level Mineral Resources in the Western Bushveld require a real basket price of R37 100 to R40 950 per 6E ounce (\$2 165). In the Eastern Bushveld the investment into Mineral Resources beyond current infrastructure require a real basket price of R26 500 to R30 000 per 6E ounce (\$1 565).

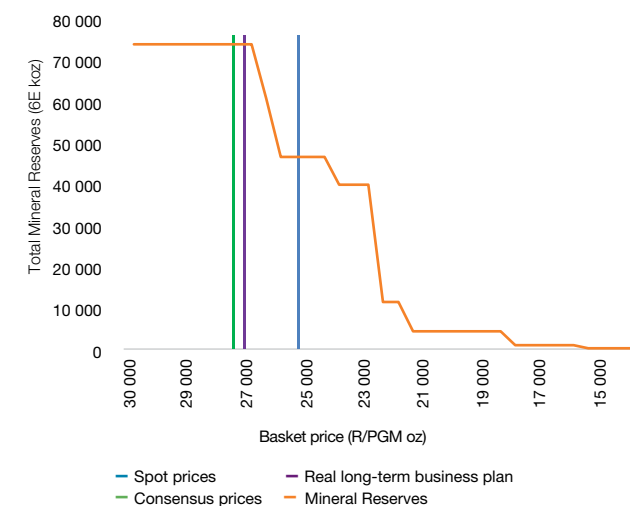
This suggests that future investments in the deeper-level Mineral Resources of the Western Bushveld might at best be marginal under the current long-term price assumptions.

The Zimbabwean Mineral Resources are reasonably robust in terms of RPEEE. Mineral Resources beyond current infrastructure investment will require a real long-term basket price in the order of R32 000 to R35 000 per 6E ounce (\$1770).

It should be acknowledged that the commodity market remains fluid.

Further details can be seen in the Marketing section of the Implats 2024 integrated annual report ([www.implats.co.za](http://www.implats.co.za)).

**Implats Mineral Reserves versus real basket price**  
as at 30 June 2024



# Impala Rustenburg

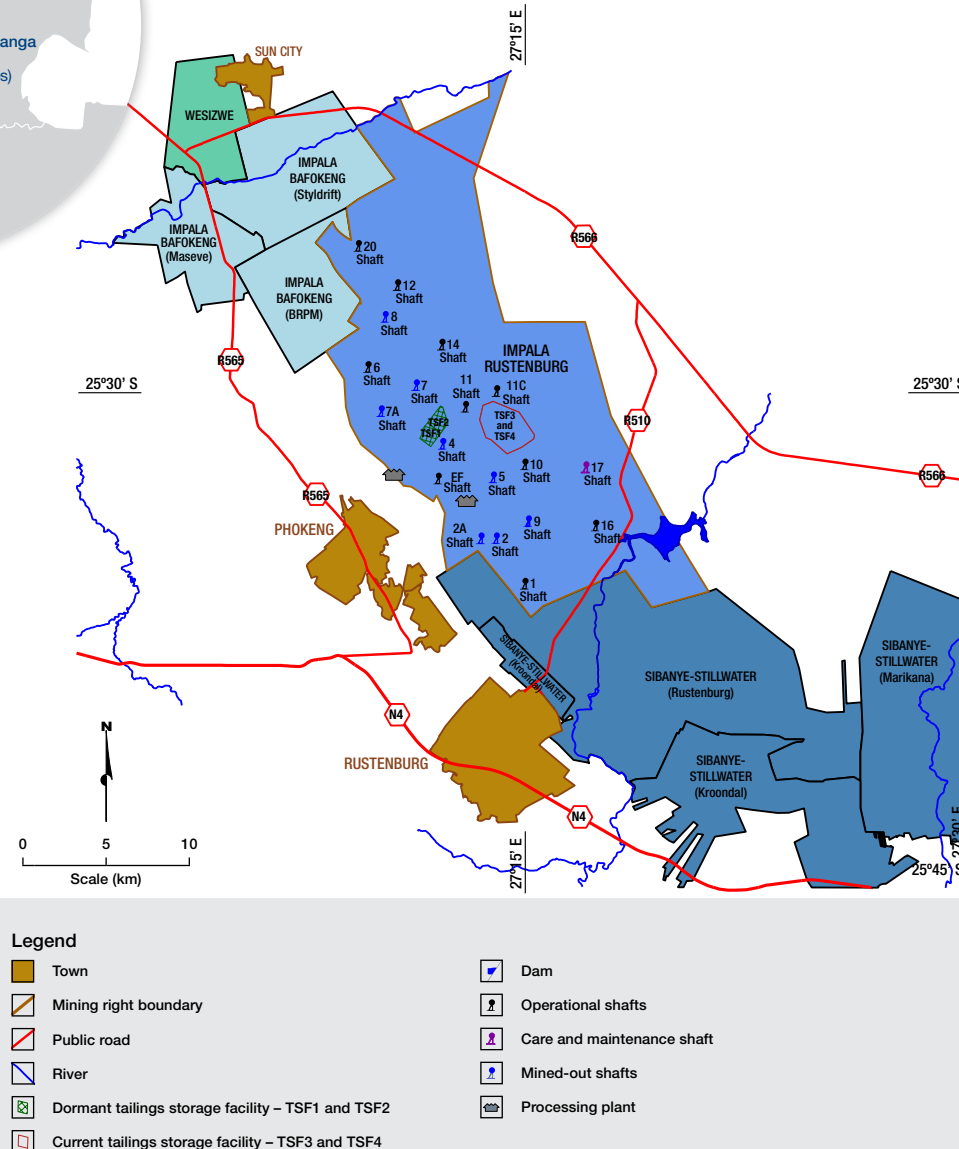
# South Africa

The Impala Rustenburg operations currently comprise nine active shafts and contribute 24% of the Group's Mineral Resource base.

Mining right  
**29 773ha**

Implats' interest  
**87%** managed

16 Shaft at Impala Rustenburg



## LOCATION

Impala Rustenburg is located 25km northwest of Rustenburg in the North West province, and 140km west of South Africa's administrative capital city, Pretoria. The Rustenburg region is known as the 'platinum belt', which produces vast proportions of global platinum supply. Impala Rustenburg is bounded by mining operations Impala Bafokeng to the north and Sibanye-Stillwater to the south.

## BRIEF HISTORY

In 1965, Union Corporation purchased a company called Impala Prospecting Company. The first vertical shaft (62m) was developed in 1967 to obtain a bulk Merensky Reef sample. Impala Platinum Limited was created on 26 April 1968 as a subsidiary of Union Corporation. Production started on 22 July 1969. Initially, only the Merensky Reef was mined at Impala Rustenburg. UG2 Reef mining started in the early 1980s when the technology was developed to smelt ore containing chromitite at a higher temperature. By the early 1990s, 13 vertical shafts were in operation and Impala Rustenburg produced some one million platinum ounces per annum. Sinking of 16 and 20 shafts started in the mid-2000s. Sinking operations at 17 Shaft started in 2008, but the shaft was subsequently placed on care and maintenance.

# Impala Rustenburg continued

## GEOLOGICAL SETTING

Impala Rustenburg explores and mines the Merensky and UG2 Reefs, which are separated by a sequence of primarily anorthositic and noritic layered units, ranging from 45m in the northern part of the mining right area and thickening to 125m in the south.

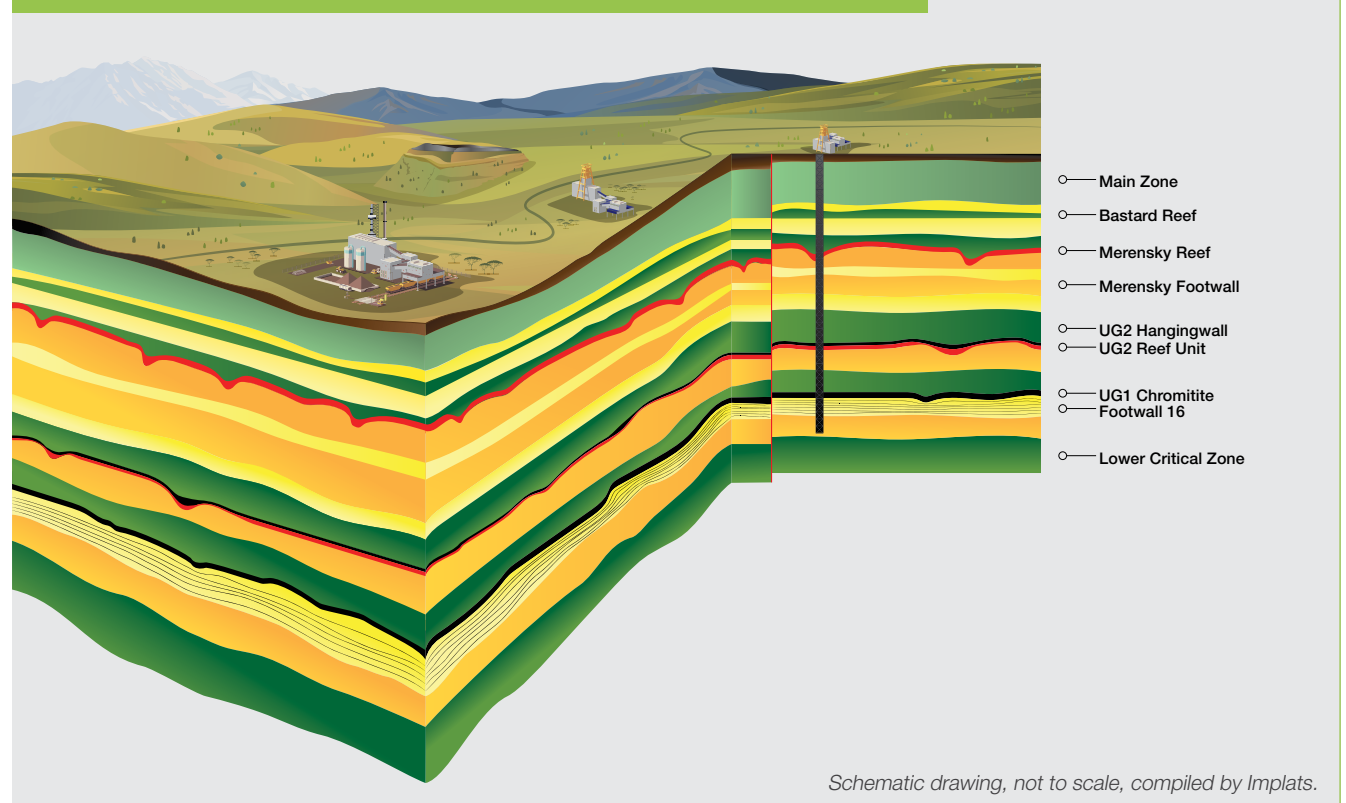
The Merensky Reef is generally composed of an upper feldspathic pyroxenite, overlying a thin basal chromitite stringer, followed by an anorthosite to norite footwall. Locally, this is termed a 'pyroxenite reef'. In some areas a pegmatoidal pyroxenite and a second chromitite stringer may be developed between the feldspathic pyroxenite and the footwall units. Locally this pegmatoidal pyroxenite can exceed 2m in thickness. This is termed a 'pegmatoid reef'.

The UG2 Reef is defined as the main chromitite layer, with most PGM and base metal mineralisation confined to this unit, with a poorly mineralised pegmatoidal pyroxenite footwall. The main chromitite layer's hangingwall is a feldspathic pyroxenite containing up to four thin and poorly mineralised chromitite layers. The vertical grade distribution is depicted in the accompanying graphs on [page 35](#), showing peak values at reef contacts associated with chromitite layers. Examples of typical vertical-grade profiles at Impala Rustenburg are illustrated on [page 35](#).

The average 6E ratios show the differences between the Merensky and UG2 Reefs, particularly the higher platinum to palladium ratio in the Merensky Reef and the relatively high proportion of rhodium in the UG2 Reef.

Both mineralised horizons dip gently away from the sub-outcrop in a north-easterly direction at 10° to 12°. The reefs may be disrupted by minor and major faults, lamprophyre, syenite

Generalised schematic section of the stratigraphic sequence at Impala Rustenburg



and dolerite dykes, late-stage ultramafic replacement pegmatoid bodies and potholes. The potholes are generally circular and represent 'erosion' of, or slumping into the footwall units. They vary from a few metres to tens of metres across and up to tens of metres in depth. These features are accounted for in the Mineral Resource and Mineral Reserve estimates as geological losses, contributing to dilution or absence of the mineralised horizons.

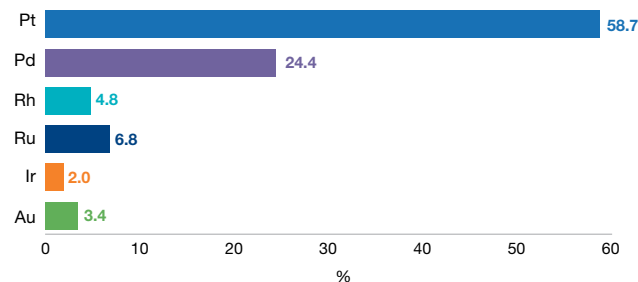
## EXPLORATION AND STUDIES

Exploration activities at Impala Rustenburg have typically comprised geological mapping (surface and underground), geophysical surveys (aeromagnetics, 3D vibroseis) and core-recovering drilling (surface and underground).

# Impala Rustenburg continued

## Impala Rustenburg Merensky Reef 6E ratio

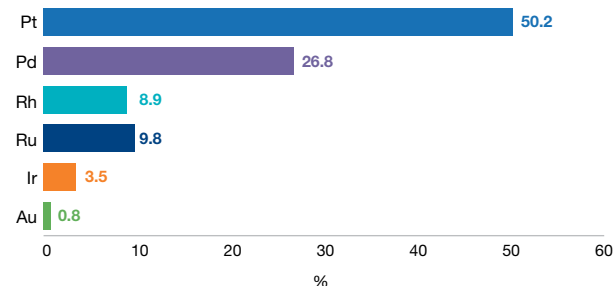
as at 30 June 2024 (%)



Merensky Reef metal ratios derived from historic mill feed composite.

## Impala Rustenburg UG2 Reef 6E ratio

as at 30 June 2024 (%)



UG2 Reef metal ratios derived from historic mill feed composite.

Surface drilling is a combination of infill work, to supplement a broader grid completed during the original feasibility studies, and work to support ongoing LoM extension studies. This work assists with detailed geological structural interpretations. Underground geotechnical core-recovering drilling is routinely undertaken at Impala Rustenburg to detect hazardous geological features and guide mining operations. Underground drilling is often used to keep the footwall drives at the ideal elevation and resolve geological structural complexities. Summary statistics about the work conducted in the past year are reported in the exploration overview section of this report.

During the past year, exploration at the Impala Rustenburg lease area focused on providing information for ongoing brownfields feasibility studies – infill drilling from the surface at 16 and 20 shafts, where five drillholes were completed. In addition, 682 underground drillholes were completed across the various shafts, primarily aimed at guiding the spatial placement of development at the ideal elevation, while also providing geotechnical information. The result of this work yielded critical geological information required for short- and medium-term planning. Other studies included the assessment of potential deeper seated chromitite layers of the Middle and Lower Group Chromitite Layers. Drilling included six holes on the farms Beerfontein 263 JQ and Uitvalgrond 105 JQ and forms part of an investigation that started in the early 2000s. Surface and underground exploration is ongoing towards the systematic upgrade and conversion of the middle group (MGs) and lower group (LGs) chromitite layers from Mineral Occurrence to Mineral Resource and eventually to Mineral Reserve in line with SAMREC (2016), cognisant of ever-fluctuating metal prices and economic viability.

## GENERAL INFRASTRUCTURE

A well-established operation, Impala Rustenburg's infrastructure includes tarred roads, shaft areas, buildings, offices, railway lines, powerlines, pipelines, concentrators, a smelter, a chromite recovery plant, and sewage, rock and tailings storage facilities. The size of the servitude area that constitutes the infrastructure, roads, rails and dumps, is 46.23km<sup>2</sup>. A 92km electrified rail network connects shafts to two concentrating complexes.

Electricity is supplied to Impala Rustenburg operations by Eskom, primarily from its Ararat Main Transmission substation (MTS), which has a total installed capacity of 945MVA. There are eight main intake points at Impala Rustenburg, all of which have adequate redundancy. An alternate source of electricity is the Marang Main Transition substation, connected to 16 Shaft, to provide electricity during emergencies.

Rand Water supplies water to the city of Rustenburg and Impala Rustenburg from the Vaal River system (Vaal Dam) and the Magalies Water system. The total allocation is 42MI per day, 2MI of which is allocated to the Platinum Village. In addition, Impala Rustenburg has a contract to receive 10MI treated effluent (greywater) per day from the Rustenburg municipal water care works for the two processing plants. Impala Rustenburg's three water care works supply about 3MI to 5MI of treated effluent per day to the Mineral Processes operations.

## MINERAL RESOURCE ESTIMATION AND CLASSIFICATION

The Mineral Resources for the Merensky Reef are estimated at a minimum mining width and may include mineralisation below the selected cut-off grade. The UG2 Reef Mineral Resources have been estimated using a minimum mining cut of 95cm. The Mineral Resource estimation method is ordinary kriging. The evaluation is conducted using on-reef development sampling and drillhole samples to establish a Mineral Resource estimate for short- and long-term planning. Grade block models are developed using Datamine software.

The Mineral Resource classification is based on the Group's standard practice (see [page 14](#)). In the case of Impala Rustenburg, classification is primarily informed by the confidence in the geological continuity and structural interpretation, drillhole and underground reef intersection populations, as well the geostatistical confidence.

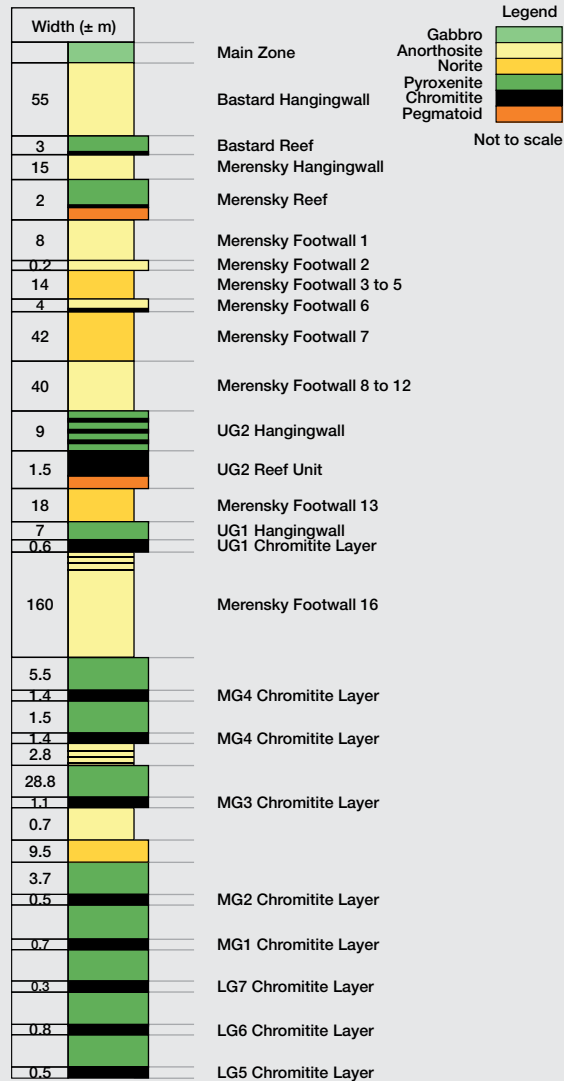
Mineral Resources in the dormant tailings storage facilities (TSF1 and TSF2) are reported separately. Reprocessing of the facilities is ongoing.

Mineral Resource estimates are based on mining faces as at 31 December 2023. The Mineral Resource estimates have been non-spatially depleted per shaft and reef horizon for six months until 30 June 2024.

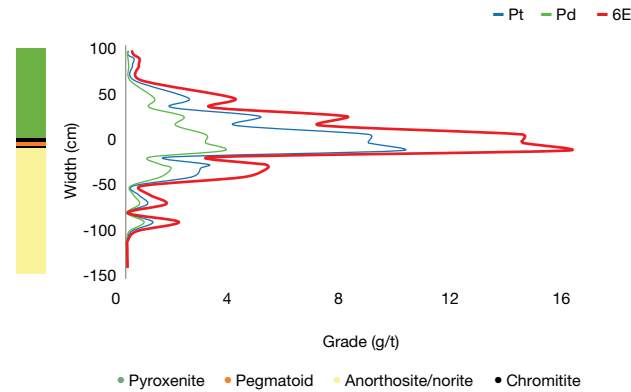


# Impala Rustenburg continued

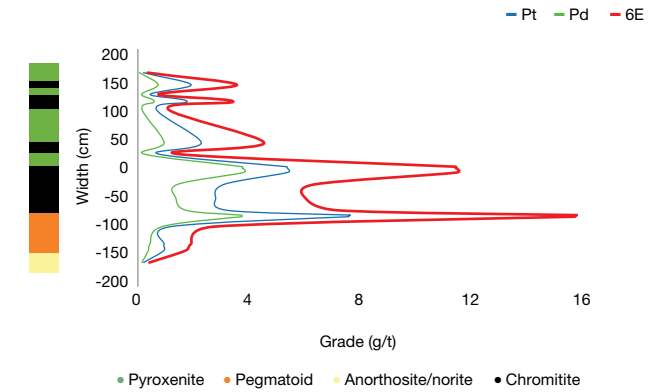
## Generalised geological succession of the upper Critical Zone: Impala Rustenburg



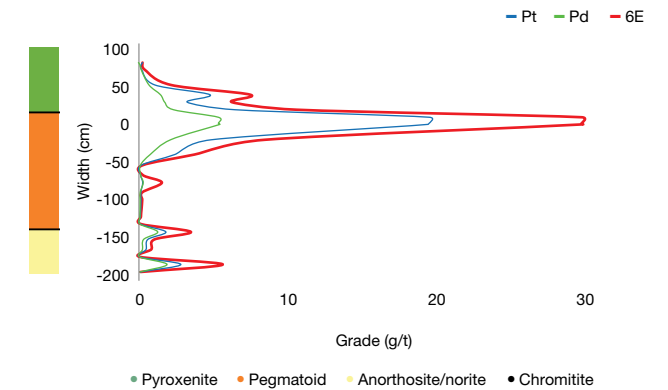
## Impala Rustenburg – Merensky Pyroxenite Reef



## Impala Rustenburg – UG2 Reef



## Impala Rustenburg – Merensky Pegmatoid Reef



Surveyors inspecting a geological model at Impala Rustenburg

# Impala Rustenburg continued

## Impala Rustenburg Mineral Resource estimate (inclusive reporting)

As at 30 June 2024

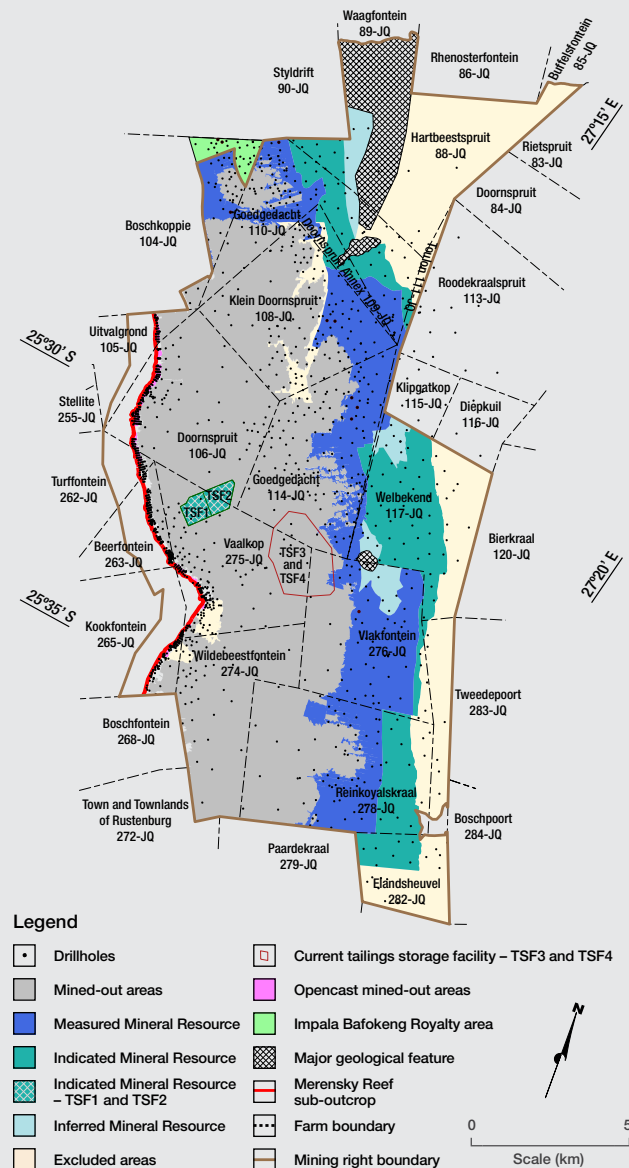
Orebody		Merensky				UG2				Underground total	Tailing Storage Facility				Total
Category	Units	Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total		Measured	Indicated	Inferred	Total	
Tonnes	Mt	102.2	68.3	14.7	185.3	137.3	71.8	12.6	221.7	407.0	–	43.1	–	43.1	450.1
Width	cm	120	107	131	–	95	95	95	–	–	–	–	–	–	–
4E grade	g/t	6.48	6.06	5.43	6.24	5.64	5.49	5.26	5.57	5.88	–	0.67	–	0.67	5.38
6E grade	g/t	7.10	6.64	5.95	6.84	6.51	6.33	6.07	6.43	6.61	–	0.75	–	0.75	6.05
Ni	%	0.16	0.17	0.15	0.16	0.04	0.04	0.04	0.04	0.09	–	0.02	–	0.02	0.09
Cu	%	0.09	0.09	0.08	0.09	0.01	0.01	0.01	0.01	0.04	–	0.01	–	0.01	0.04
4E oz	Moz	21.3	13.3	2.6	37.2	24.9	12.7	2.1	39.7	76.9	–	0.9	–	0.9	77.8
6E oz	Moz	23.3	14.6	2.8	40.7	28.7	14.6	2.5	45.8	86.5	–	1.0	–	1.0	87.6
Pt oz	Moz	13.7	8.6	1.6	23.9	14.4	7.3	1.2	23.0	46.9	–	0.6	–	0.6	47.5
Pd oz	Moz	5.7	3.6	0.7	9.9	7.7	3.9	0.7	12.3	22.2	–	0.2	–	0.2	22.4

As at 30 June 2023

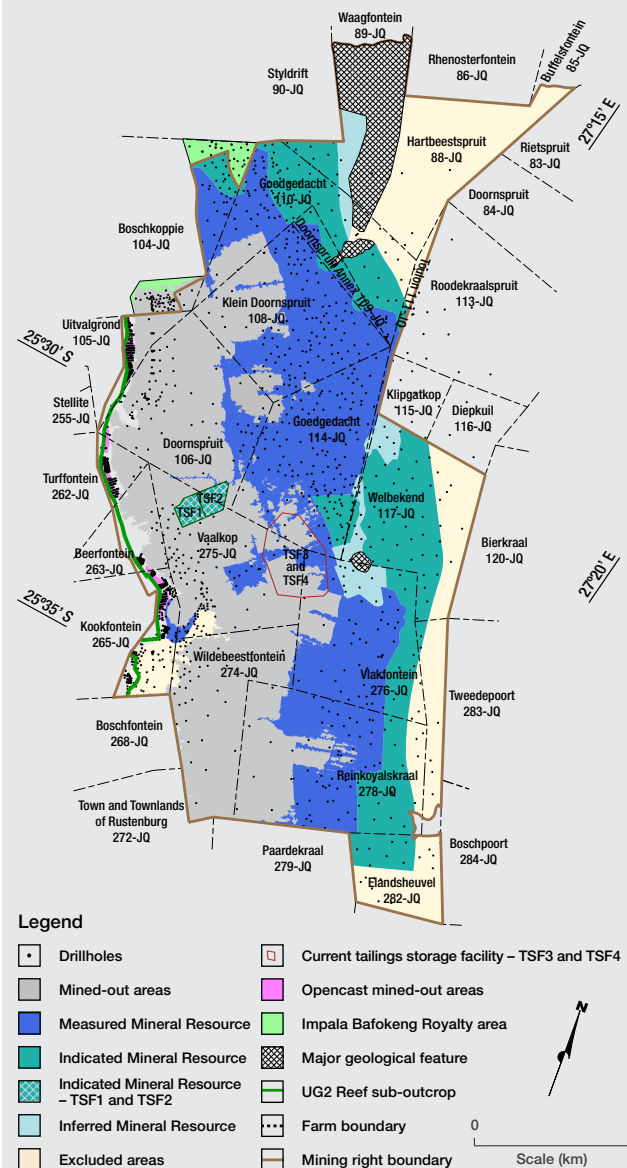
Orebody		Merensky				UG2				Underground total	Tailing Storage Facility				Total
Category	Units	Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total		Measured	Indicated	Inferred	Total	
Tonnes	Mt	102.3	66.4	12.4	181.1	137.9	70.3	12.4	220.6	401.8	–	49.1	–	49.1	450.9
Width	cm	118	104	111	–	95	95	95	–	–	–	–	–	–	–
4E grade	g/t	6.53	6.31	6.47	6.44	5.72	5.58	5.24	5.65	6.01	–	0.67	–	0.67	5.43
6E grade	g/t	7.21	6.96	7.14	7.11	6.67	6.51	6.12	6.59	6.83	–	0.76	–	0.76	6.17
Ni	%	0.16	0.17	0.15	0.16	0.04	0.04	0.04	0.04	0.09	–	0.02	–	0.02	0.09
Cu	%	0.09	0.09	0.08	0.09	0.01	0.01	0.01	0.01	0.04	–	0.01	–	0.01	0.04
4E oz	Moz	21.5	13.5	2.6	37.5	25.3	12.6	2.1	40.1	77.6	–	1.1	–	1.1	78.7
6E oz	Moz	23.7	14.9	2.8	41.4	29.6	14.7	2.4	46.8	88.2	–	1.2	–	1.2	89.4
Pt oz	Moz	13.7	8.6	1.6	24.0	14.6	7.3	1.2	23.1	47.1	–	0.6	–	0.6	47.8
Pd oz	Moz	5.8	3.7	0.7	10.2	7.9	3.9	0.7	12.4	22.6	–	0.3	–	0.3	22.9

# Impala Rustenburg continued

## Impala Rustenburg Merensky Reef Mineral Resources



## Impala Rustenburg UG2 Reef Mineral Resources

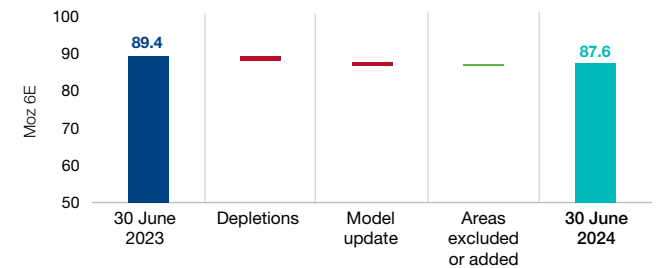


## MINERAL RESOURCE RECONCILIATION

The year-on-year reconciliation of both the Impala Rustenburg Merensky and UG2 Reef 6E Mineral Resource estimates reduced marginally, based on depletion, updates to the geological and geostatistical models.

### Total Impala Rustenburg 6E Mineral Resources

as at 30 June 2024 (variance Moz 6E)



## MINING METHODS

Both the Merensky and UG2 Reefs are mined across the Impala Rustenburg operations. Stopping at the operations is predominantly carried out through conventional double-sided breast mining, following the best practice principles. Access haulages are developed in opposite directions from cross-cuts, following the two reef horizons on strike in the reef footwall. Access haulages are developed approximately 18m to 30m below the reef horizon, with on-reef raise/winze connections between 180m and 250m apart. Panel face lengths vary from 15m to 28m for Merensky and UG2 Reefs, with panels typically separated by 6m x 3m grid pillars with 2m ventilation holings. Stopping widths are approximately 1.3m and 1.1m for conventional Merensky and UG2 Reefs respectively, depending on the width of the economic mineralisation. In addition, bord and pillar mining (trackless) occurs in selected Merensky Reef areas at 14 Decline and 12 North Decline. The average stopping width of the bord and pillar panels is about 1.9m.

The hydro-mining activities at TSF1 and TSF2 use high-pressure water directed in a concentrated beam towards the surface of the dam, gradually undercutting high walls within the trench to ensure loosened soils are properly mixed with the water. This forms a high load stream of concentrated solids slurry, which is gravity fed via a trench to a collection point.

# Impala Rustenburg continued

## MINING PLANNING PROCESS

Mine design and scheduling of operational shafts are done in Datamine StudioUG and EPS and geological models were updated using Datamine software. The planning process commences with a five-year development schedule. The stoping schedule is done monthly per crew, per workplace, for the first years. Year two is then planned with crews per half level, per month. Years three to five are planned with crews per half level, per year. This is followed by the LoM plan from year six, which is planned with crews per half level, per year, to the extent of the mining right area.

## MINERAL RESERVE ESTIMATION AND CLASSIFICATION

The conversion and classification of Mineral Reserves at Impala Rustenburg are informed by:

- Feasible mine plan and project studies, board approval and available funding
- Economic testing at given market conditions (price deck)
- Measured Mineral Resources are converted to Proved and Probable Mineral Reserves. In contrast, Indicated Mineral Resources are only converted to Probable Mineral Reserves, subject to confidence and economic viability
- Proved Mineral Reserves are those areas where the main development has been completed
- The 2025 Mine Plan was based on the survey faces of December 2023 with a spatial mine design and schedule forecast of six months until 30 June 2024
- The Mineral Reserves in the dormant tailings storage facilities (TSF1 and TSF2) are reported separately.

## MODIFYING FACTORS

The table below summarises the significant modifying factors impacting on the Mineral Resource and Mineral Reserve estimates (see [pages 15, 31, 36](#) and [40](#) for further details).

Mineral Resource Key assumptions	Merensky Reef	UG2 Reef
Geological losses	25 – 35%	32 – 46%
Area	53 million ca	61 million ca
Average resource cut	116cm	95cm
Mineral Reserve Modifying factors	Merensky Reef	UG2 Reef
Dilution	9 – 12%	9 – 12%
Pillars	8 – 10%	8 – 10%
Planning factor	80 – 84%	88 – 94%
Relative density	3.05	3.66
Average stoping width	141cm	117cm
Concentrator recoveries	92 – 93%	79 – 81%

## Impala Mineral Reserve estimate

As at 30 June 2024												
Orebody Category	Units	Merensky			UG2			Total	Tailing Storage Facility			Total
		Proved	Probable	Total	Proved	Probable	Total		Proved	Probable	Total	
Tonnes	Mt	17.7	23.7	41.4	22.0	30.3	52.2	93.7	–	43.1	43.1	136.8
Width	cm	139	143	–	118	117	–	–	–	–	–	–
4E grade	g/t	3.56	3.63	3.60	3.35	3.52	3.45	3.51	–	0.67	0.67	2.62
6E grade	g/t	3.91	3.98	3.95	3.87	4.05	3.98	3.96	–	0.75	0.75	2.95
4E oz	Moz	2.0	2.8	4.8	2.4	3.4	5.8	10.6	–	0.9	0.9	11.5
6E oz	Moz	2.2	3.0	5.3	2.7	3.9	6.7	11.9	–	1.0	1.0	13.0
Pt oz	Moz	1.3	1.8	3.1	1.4	2.0	3.4	6.4	–	0.6	0.6	7.0
Pd oz	Moz	0.5	0.7	1.3	0.7	1.1	1.8	3.1	–	0.2	0.2	3.3

As at 30 June 2023												
Orebody Category	Units	Merensky			UG2			Total	Tailing Storage Facility			Total
		Proved	Probable	Total	Proved	Probable	Total		Proved	Probable	Total	
Tonnes	Mt	12.8	29.9	42.7	13.9	44.7	58.6	101.3	–	49.1	49.1	150.5
Width	cm	140	139	–	115	114	–	–	–	–	–	–
4E grade	g/t	3.62	3.52	3.55	3.77	3.30	3.41	3.47	–	0.67	0.67	2.56
6E grade	g/t	3.99	3.89	3.92	4.40	3.85	3.98	3.95	–	0.76	0.76	2.91
4E oz	Moz	1.5	3.4	4.9	1.7	4.7	6.4	11.3	–	1.1	1.1	12.4
6E oz	Moz	1.6	3.7	5.4	2.0	5.5	7.5	12.9	–	1.2	1.2	14.1
Pt oz	Moz	0.9	2.2	3.1	1.0	2.7	3.7	6.8	–	0.6	0.6	7.5
Pd oz	Moz	0.4	0.9	1.3	0.5	1.5	2.0	3.3	–	0.3	0.3	3.6



Ore transport by rail at Impala Rustenburg



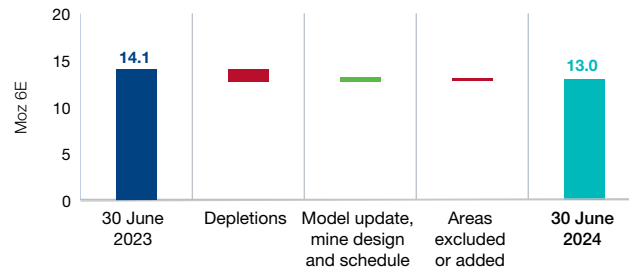
# Impala Rustenburg continued

## MINERAL RESERVE RECONCILIATION

Depletions, tail-cutting and model updates impacted the year-on-year reconciliation of the Impala Rustenburg Merensky and UG2 Reef 6E Mineral Reserves.

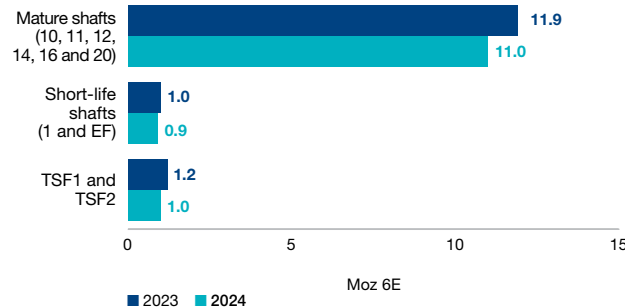
### Total Impala Rustenburg 6E Mineral Reserves

as at 30 June 2024 (variance Moz 6E)



### Impala Rustenburg Mineral Reserve distribution

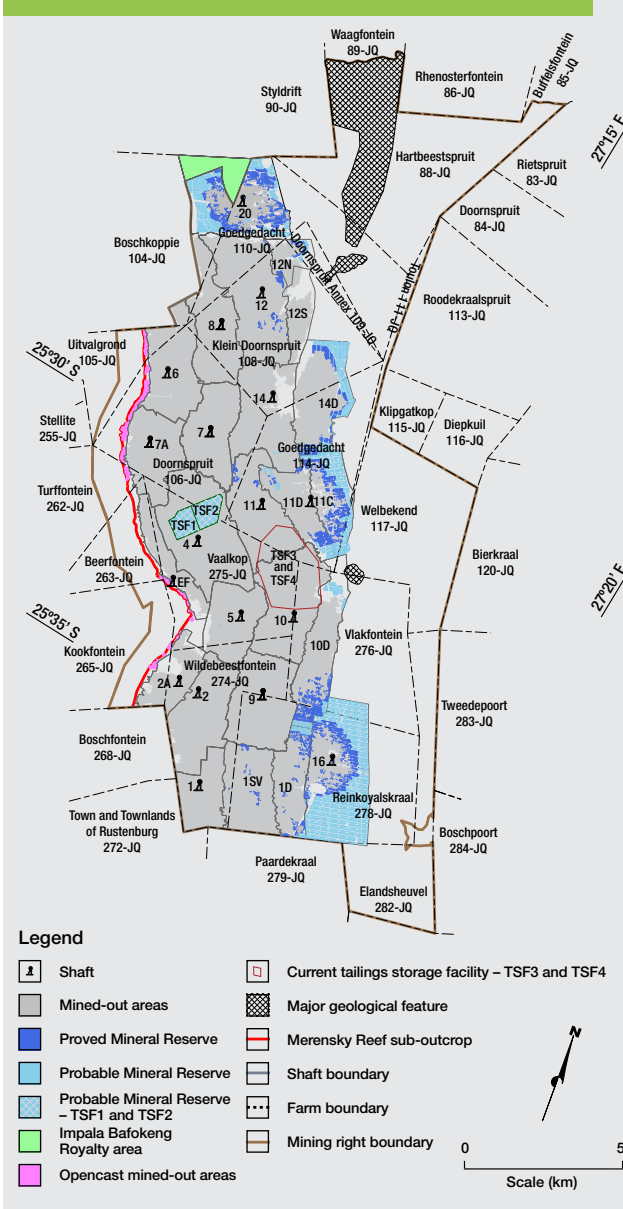
as at 30 June 2024 (Moz 6E)



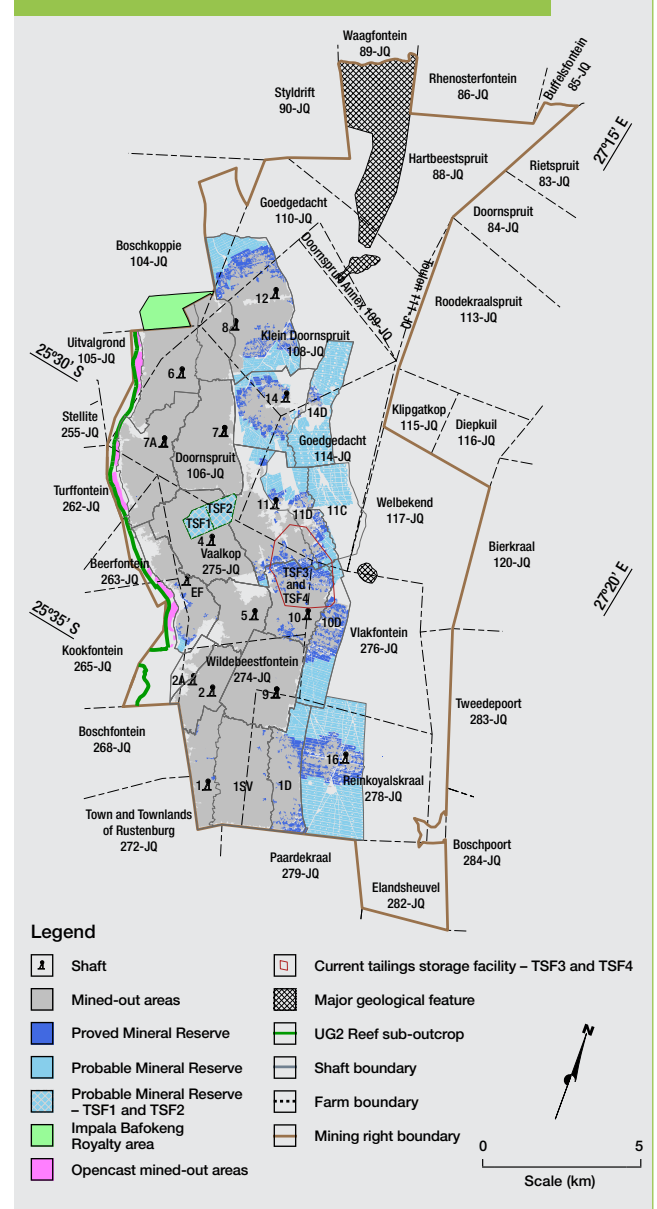
## PROCESSING

Mineral Processes receives ore from the shafts, which is allocated to either the UG2 Plant for the higher chromium grade material or the Central Concentrator for Merensky ore. Between 89% and 91% of the PGMs from the Merensky ore are recovered at mass pulls ranging from 5% to 7%, using 10 primary mills, and feeding two, nine-stage, tank cell flotation banks. Approximately 79% to 81% of the PGMs are recovered from the UG2 ore at a mass pull of 2% to 3%. The PGM recovery from UG2 ore is performed using a more complex circuit configuration to reduce chromium reporting

### Impala Rustenburg Merensky Reef Mineral Reserves



### Impala Rustenburg UG2 Reef Mineral Reserves



## Impala Rustenburg continued

to the concentrate stream. The MF2 Plant, also situated at the Central Concentrator, operates three primary mills that can accommodate any Merensky ore spillover and the old tailings from TSF1 and TSF2. This allows for flexibility in the ore split received from the mining operations, without significantly impacting the recovery of valuable material.

Tailings from both concentrators are further processed at the Tailings Scavenging Plant to improve overall recovery. The UG2 Plant tailings are also treated at two chromite recovery plants.

The smelter operation treats the concentrate from the Central Concentrator and UG2 plants as well as third-party material. The concentrate is dried to reduce moisture content and then treated through one of three electric arc furnaces to produce a copper, nickel, iron sulphide-rich molten matte at a mass pull of 8% to 10%. The remaining 90% produces a low-grade furnace slag. The furnace matte is then treated in the converter operation. Granulated converter matte is transported to the refinery operations. The refineries, comprising a base metal refinery and a precious metal refinery, are located in Springs, east of Johannesburg. Both furnace and converter slag are retreated at the Springs Slag Plant using a flotation process to enhance the recovery of valuable metals.

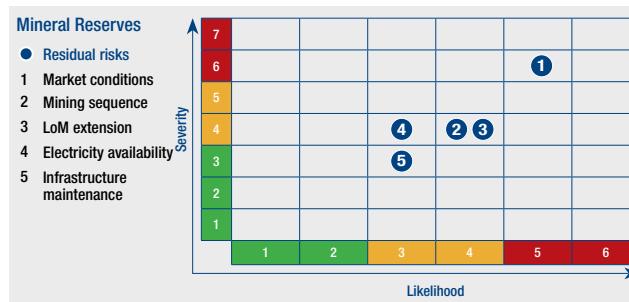
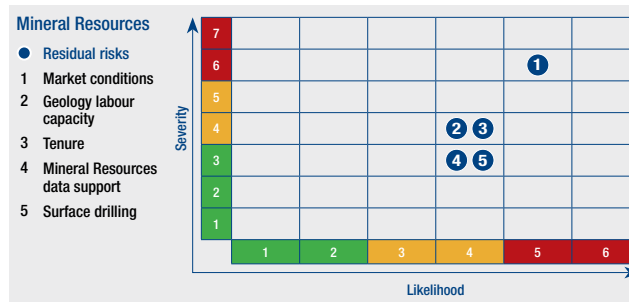
### RISK ASSESSMENT

The residual risk matrices for the Impala Rustenburg Mineral Resources and Mineral Reserves are illustrated to the right, highlighting the respective top five residual risks.

The top residual risks identified for the Impala Rustenburg Mineral Resources are (1) market conditions: basket metal price sensitivity; (2) geology: insufficient labour capacity; (3) tenure: ongoing third party conflicting applications over mining rights; (4) data support: constrained budget on resource drilling; and (5) surface drilling: unable to reach agreement with community to drill.

The top residual risks identified for the Impala Rustenburg Mineral Reserves are (1) market conditions: basket metal price sensitivity; (2) mining: poor mining sequence; (3) LoM extension projects: capital funding; (4) utilities: loss of electricity; and (5) infrastructure maintenance: retention of skills.

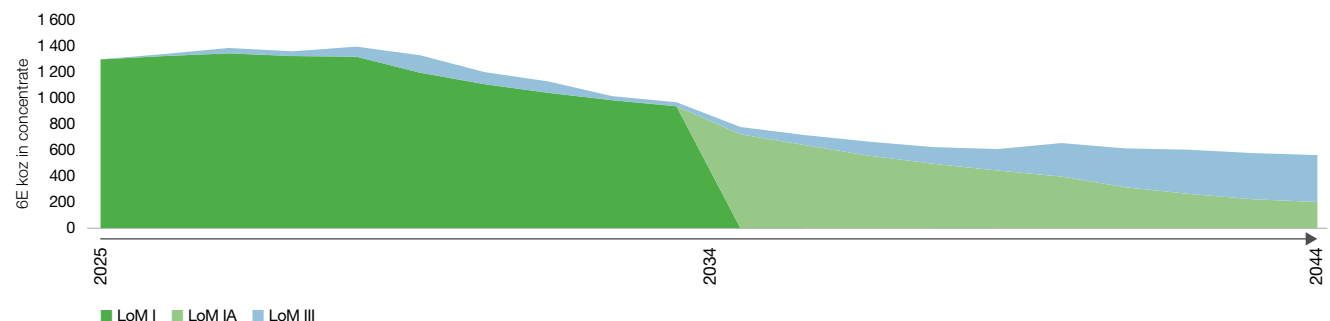
Management interventions are in place to mitigate these risks listed above. Further details regarding the formal risk management process are discussed on [page 19](#).



### LoM, VALUATION AND SENSITIVITY

The strategic outlook remains under review, given the declining LoM production outlook and cost pressures. Several studies are being undertaken to optimise the Mineral Resource and infrastructure assets to extend the LoM profile. An economic profitability test was conducted at each shaft, mainly to conduct tail-cutting at the

#### Impala Rustenburg estimated 20-year 6E LoM ounce profile as at 30 June 2024



end of a shaft's life, where a shaft cannot contribute to its overhead cost. The impact varies from shaft to shaft. On average, 30% of the Mineral Reserve estimates have been excluded based on such economic reviews. The effect of tail-cutting is more pronounced on the UG2 Reef Mineral Reserves estimates. The LoM I profile of Impala Rustenburg extends for 10 years until 2034.

The economic viability of Impala Rustenburg's Mineral Reserves is tested using net present value calculations over the LoM of the Mineral Reserve, determining the lowest real rand basket price which would still render the Mineral Reserve viable. These calculations generate cut-off basket prices based on the local 6E ratios, and differ from the overall Group basket prices. This is then tested against the internal Impala Rustenburg estimate of the real long-term basket price and the spot price as at 30 June 2024. These tests indicate that the Impala Rustenburg operation requires a real long-term basket price of between R27 000 and R31 000 per 6E ounce to be economically viable. The real spot basket price for Impala Rustenburg as at 30 June 2024 was R27 134 (US\$1 530), and its internal long-term real basket price per 6E ounce is R30 751 (US\$1 804).

To address the declining LoM outlook and associated overhead cost structures, the Group is considering investment in maintaining current production levels well into the future, through prudent capital allocation on selected projects from existing infrastructure within the mining right area. The commodity market remains fluid. Statistics relating to the historical production are shown on [pages 28 and 29](#).

# Impala Bafokeng

# South Africa



Impala Bafokeng (previously Royal Bafokeng Platinum – RBPlat), is the owner of the Styldrift, Bafokeng Rasimone Platinum Mine (BRPM), Maseve mine and two concentrators. Site establishment of the BRPM operation commenced in 1998 on the farm Boschkoppie 104 JQ. BRPM produced the first platinum concentrate in December 1999. In 2023 Impala Bafokeng became a majority-owned and managed subsidiary of Implats.

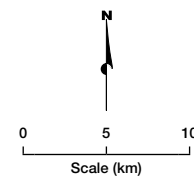
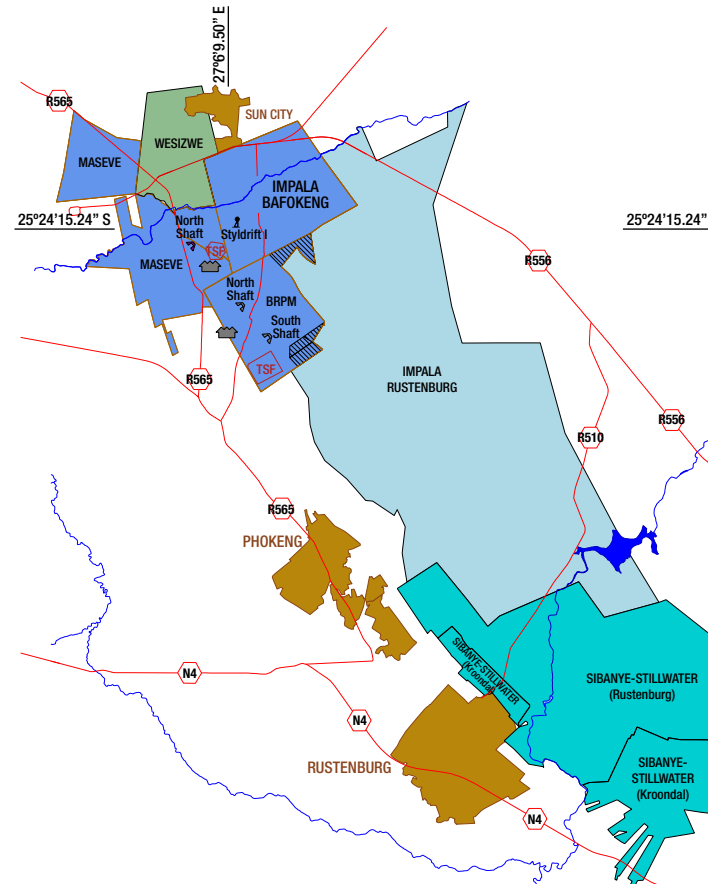
Mining right

**13 247ha**

Implats' interest

**87% managed**

Ore conveyance on surface at Impala Bafokeng



## Legend

- |                              |                                   |
|------------------------------|-----------------------------------|
| Town                         | Processing plant                  |
| Mining right                 | Dam                               |
| Tribute areas                | Public road                       |
| Shaft                        | River                             |
| Declines                     | Tailings storage facilities (TSF) |
| Care and maintenance decline |                                   |

## LOCATION

The Impala Bafokeng operations are situated on the Western Limb of the Bushveld Complex (BC), directly south of the Pilanesberg National Park and approximately 37km northwest of Rustenburg. Furthermore, the operations are 7km north-east of Boshhoek in the North West province. Impala Bafokeng is positioned north of the Impala Rustenburg operations and south of Wesizwe's Bakubung Mine.

## BRIEF HISTORY

Discussions of forming a joint venture between the Royal Bafokeng Nation (RBN) and Amplats started in the 1990s. Site establishment of the BRPM operation commenced in 1998 on the farm Boschkoppie 104 JQ. BRPM produced the first platinum concentrate in December 1999. A 50:50 joint venture between Amplats and the RBN formed the BRPM JV in 2002 and following restructuring in 2009, RBPlat at the time obtained a 67% undivided interest in the JV. Pre-sinking of the Main and Services shafts at Styldrift I started during 2010. Following the acquisition of the Maseve Mine in 2018, the operation remains on care and maintenance. During 2018, RBPlat purchased the remaining 33% from Amplats within the JV, resulting in 100% ownership of its operations. Mining rights are held in the name of Impala Bafokeng Resources Proprietary Limited.



## Impala Bafokeng continued

In October 2019 a gold streaming agreement was entered into with Triple Flag Mining Finance Bermuda Limited (Triple Flag). In terms of this agreement, the Company received an upfront cash payment of US\$145 million (US dollar) in exchange for the future delivery of gold from the Impala Bafokeng mining operations (excluding Styldrift II and the Impala lease areas), payable over the life-of-mine.

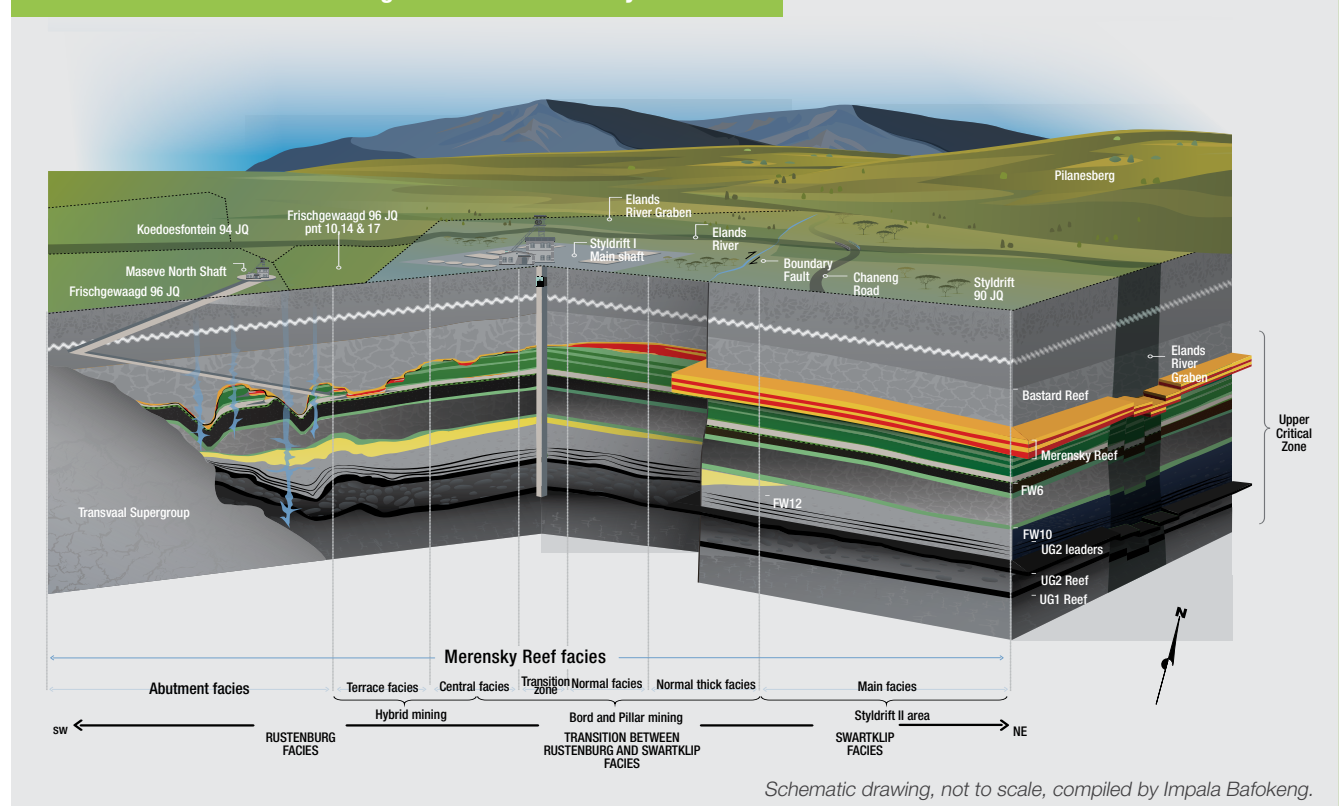
### GEOLOGICAL SETTING

**Impala Bafokeng lies immediately adjacent to Impala Rustenburg, exploiting the Merensky and UG2 Reefs within the Upper Critical Zone of the Rustenburg Layered Suite at its BRPM and Styldrift operations.**

Approximately 2.04 billion years ago, the Bushveld Complex formed on the stable geological base created by the Kaapvaal and Zimbabwe cratons in southern Africa, alongside other extensive mafic and ultramafic layered intrusions. For several decades, the Bushveld Complex has served as a crucial mining location, extracting high-value ore that makes a substantial contribution to the South African economy.

West of Impala Bafokeng operations lies the Magaliesberg formation of the Transvaal Supergroup, estimated to be 2.5 billion years old, featuring primarily quartzite sedimentary layers, against which the BC stratigraphy horizons abut within the Regional variations in the geological characteristics of the Merensky and UG2 Reefs. These are important in understanding the nature, genesis, and economic extraction of the reef. The Rustenburg Layered Suite is divided into two regional facies, namely the Rustenburg facies to the south and the Swartklip facies to the north of the Pilanesberg Alkaline Complex. Structurally, the Impala Bafokeng operations are located between the Regional Rustenburg and Swartklip reef facies.

### Three-dimensional view of the regional to local Merensky Reef facies

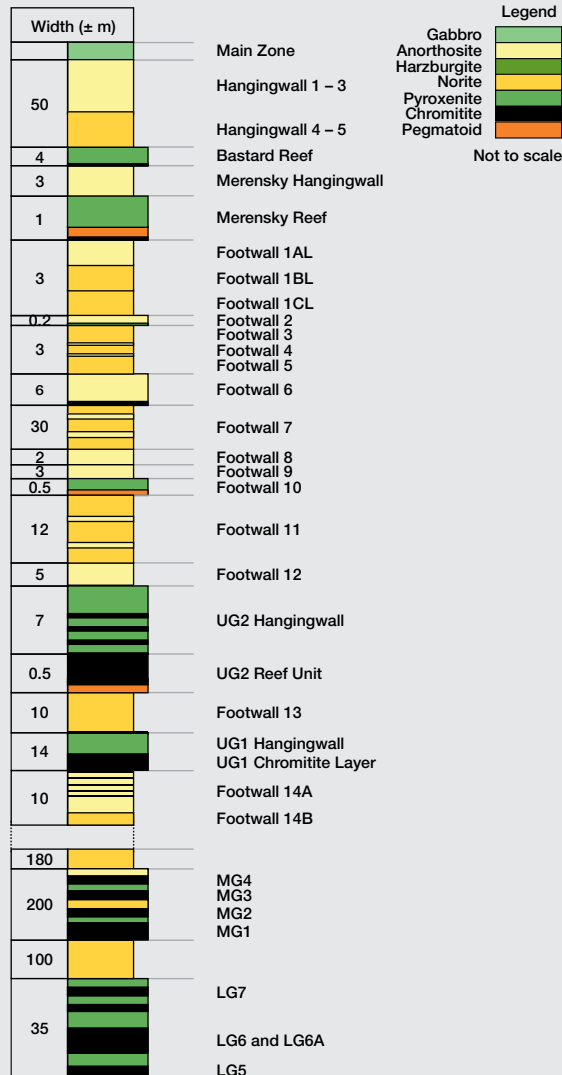


The transition of the Rustenburg facies to the Swartklip facies occurs on the Styldrift 90 JQ farm. This differentiation was established based on several factors, including the significantly reduced stratigraphic middling between the Merensky and UG2 Reefs, the mineralised envelope primarily associated with the Merensky Reef and the presence of olivine-bearing layers distinctive to the Swartklip facies. Impala Bafokeng facies are further subdivided per reef type into localised facies, which are based on unique lithological, geological, geochemical and mineralisation characteristics. The vertical grade distribution is depicted in the graphs on [page 43](#), showing peak values at reef contacts associated with chromitite layers.

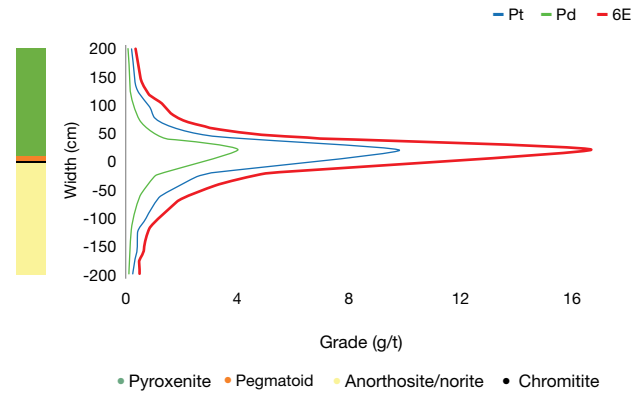


# Impala Bafokeng continued

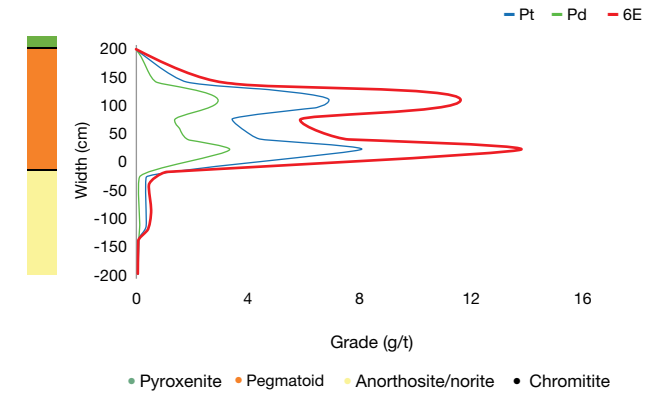
## Generalised geological succession of the upper Critical Zone: Impala Bafokeng – Rustenburg facies



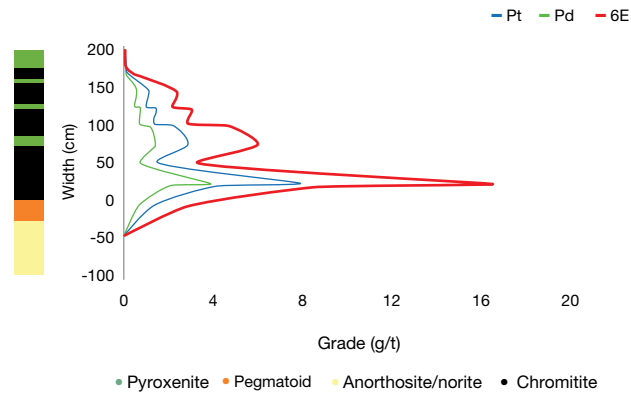
### Impala Bafokeng – Merensky Central Reef facies



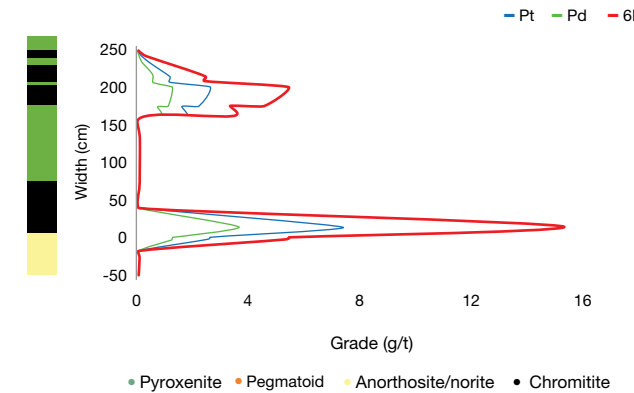
### Impala Bafokeng – Merensky Normal Reef facies



### Impala Bafokeng – UG2 Central high Reef facies



### Impala Bafokeng – UG2 General Reef facies

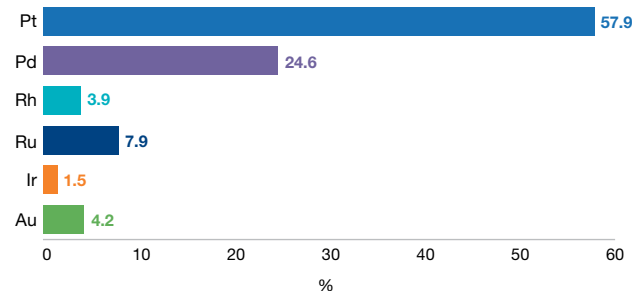


BRPM operation

# Impala Bafokeng continued

## Impala Bafokeng Merensky Reef 6E ratio

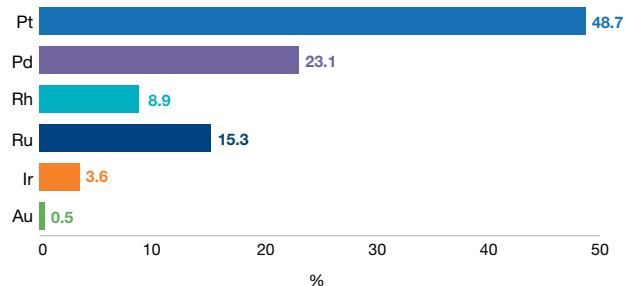
as at 30 June 2024 (%)



Merensky Reef metal ratios derived from Mineral Reserve estimate.

## Impala Bafokeng UG2 Reef 6E ratio

as at 30 June 2024 (%)

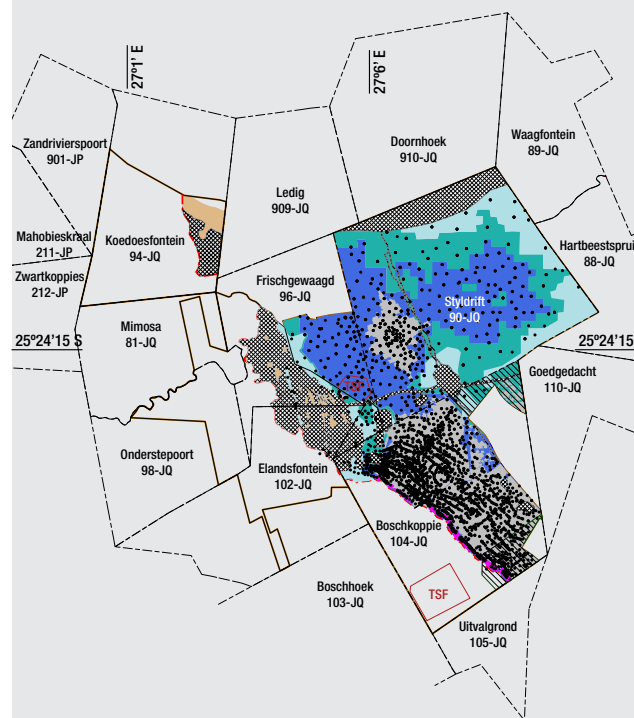


UG2 Reef metal ratios derived from Mineral Reserve estimate.



Core logging at Impala Bafokeng

## Impala Bafokeng Merensky Reef Mineral Resources



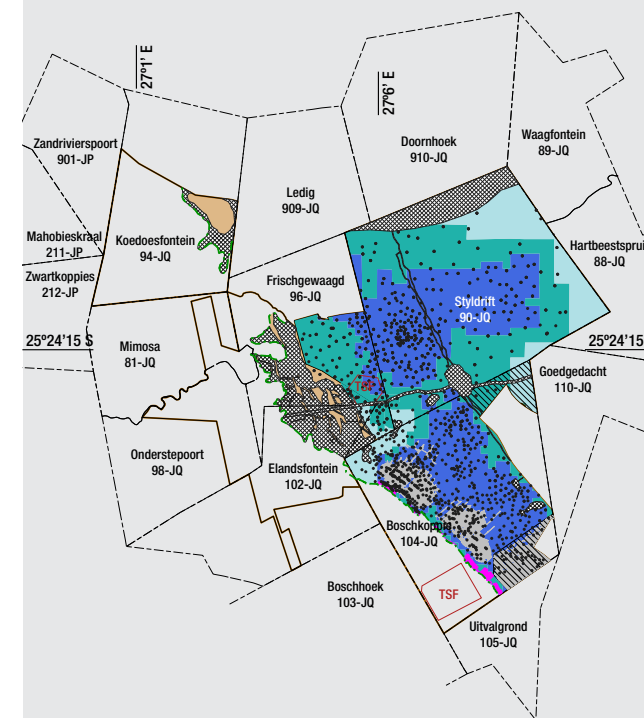
### Legend

- Drillholes
- Mined-out areas
- Opencast mined-out areas
- Measured Mineral Resource
- Indicated Mineral Resource
- Inferred Mineral Resource
- Excluded areas
- Tailings storage facilities (TSF)
- ▨ Tribute areas
- ▨ Major geological feature
- ▨ Merensky Reef sub-outcrop
- ▨ Farm boundary
- ▨ Mining right boundary



Scale (km) 0 5

## Impala Bafokeng UG2 Reef Mineral Resources



### Legend

- Drillholes
- Mined-out areas
- Opencast mined-out areas
- Measured Mineral Resource
- Indicated Mineral Resource
- Inferred Mineral Resource
- Excluded areas
- Tailings storage facilities (TSF)
- ▨ Tribute areas
- ▨ Major geological feature
- ▨ UG2 Reef sub-outcrop
- ▨ Farm boundary
- ▨ Mining right boundary



Scale (km) 0 5

# Impala Bafokeng continued

## EXPLORATION AND STUDIES

The Impala Bafokeng Geology Exploration Department ensures the ongoing development of the Mineral Resources within the Impala Bafokeng Mining right, in line with the Company's corporate strategy and investment requirements. Exploration drilling and sampling conforms to the SAMREC Code (2016) to ensure transparency and accountability of exploration results. Furthermore, surface exploration activities are guided by a comprehensive framework that includes Mineral Resource classification, regulatory requirements, structural interpretations, and considerations for mining engineering projects.

The FY2024 exploration programme at Impala Bafokeng focused on brownfields or near-mine exploration in two key areas: within the five-year mining footprint of Styldrift I Shaft and north of the Bafokeng Rasimone Platinum Mine (BRPM). At Styldrift I and north of BRPM, the drilling targets were primarily focused on developing the Inferred and Indicated Mineral Resource classifications for both the Merensky and UG2 Reef horizons and delineating reef continuity around structurally complex zones in these two key areas to support life-of-mine (LoM) excavations. The project located north of BRPM is still in the scoping and concept stage and has to undergo a feasibility study.

The drilling operations for the year remained in line with the planned metres and budget, with a total of 19 diamond core drillholes completed. Out of these, six drillholes were within the area north of BRPM, while 13 were around the Styldrift I Mine, totalling 14 279.79 metres drilled.

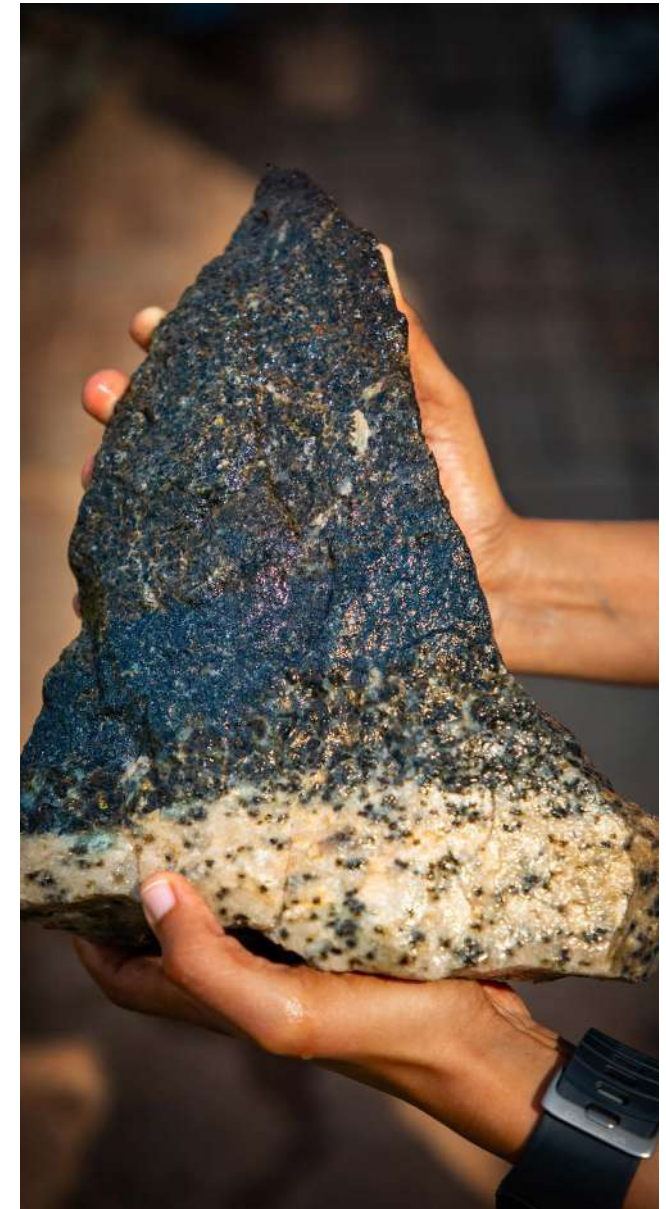
Future exploration drilling and scope will encompass several key objectives. This includes the ongoing development of Mineral Resource classification models for both the Merensky and UG2 Reefs and near-mine or infill drilling around life-of-mine (LoM) excavations to enhance the understanding of the geological structure patterns within these areas. The FY2025 exploration plan caters for four surface drillholes over Styldrift I aimed at Mineral Resource confidence upgrades, with an additional nine surface drillholes earmarked for bridging the gap between Styldrift II and Impala Rustenburg 20 Shaft.

A seismic re-interpretation is planned to be conducted within the current five-year business plan. This re-interpretation will specifically include the middle group chromitites (MG) and lower group chromitites (LG). These efforts are integral to ongoing exploration investigations and analysis aimed at further developing these Mineral Occurrences and expanding the knowledge base for future mining operations.

## GENERAL INFRASTRUCTURE

Infrastructure in and around the three mining operations is well-established. Tarred roads are found within the shaft areas and gravel roads connect the three mining operations. Mining infrastructure consists of shaft areas, offices and workshops, powerlines and related energy facilities, pipelines, concentrators, sewage facilities, a landfill site and waste rock and tailings storage facilities. Overland conveyors provide for the transportation of ore from the Styldrift and BRPM North and South Shafts to the BRPM Concentrator. Material is currently transported by means of interlink and articulated dump trucks to the Maseve Concentrator. The operations do not have smelting and refining facilities and concentrate is sold to Rustenburg Platinum Mines Limited for further processing.

Eskom supplies electricity to Impala Bafokeng through the three main point of supplies dedicated to different operational areas: the Boschoppie substation for BRPM, the Styldrift substation for the Styldrift Mine, and the Impofu substation for the Maseve Mine operations. The Boschoppie substation utilises four 20MVA transformers at 88kV/11kV, drawing power from two 88kV overhead lines originating from BAF-7 and SA Chrome Eskom supplies. This substation is integral to BRPM, supplying the concentrator, the North and South shafts, and additional facilities. The Styldrift substation, receiving a 132kV supply from the Ngwedi substation, operates with four 20MVA transformers at both 132/33kV and 132/11kV to serve the Styldrift Mine. Similarly, the Impofu substation is powered by Ngwedi substation at 132kV/11kV with two 40MVA transformers, providing electricity to the Maseve Mine, which includes a concentrator plant and North and South shaft operations. To ensure reliability, for each operation, diesel-powered emergency generation facilities are in place to provide uninterrupted power supply in the event of an outage.



Merensky Reef sample of Styldrift I



## Impala Bafokeng *continued*

All potable water is supplied from the Vaalkop Dam through Magalies Water Northern system to Mafenya and Nyee reservoirs which distribute water to the Impala Bafokeng operations via pipelines. In addition to potable water, water is obtained from the pollution control dams. The dams are also a source of 'top-up' water for mining. For that reason, it is pumped to the return water storage tanks.

The return water tanks hold water recovered from the underground, pollution control dam and sewage plants. A water treatment plant was established adjacent to the BRPM Concentrator plant which uses reverse osmosis technology to desalinate process water generated by the mining operations to reduce the quantity of water consumed by BRPM, as well as reduce the complications associated with poor process water quality, for example, scaling of machinery. Approximately 4.6Ml of the water stored by the return water dam will be pumped to the water treatment plant for treatment and subsequently reused in BRPM's mining operations.

### MINERAL RESOURCE ESTIMATION AND CLASSIFICATION

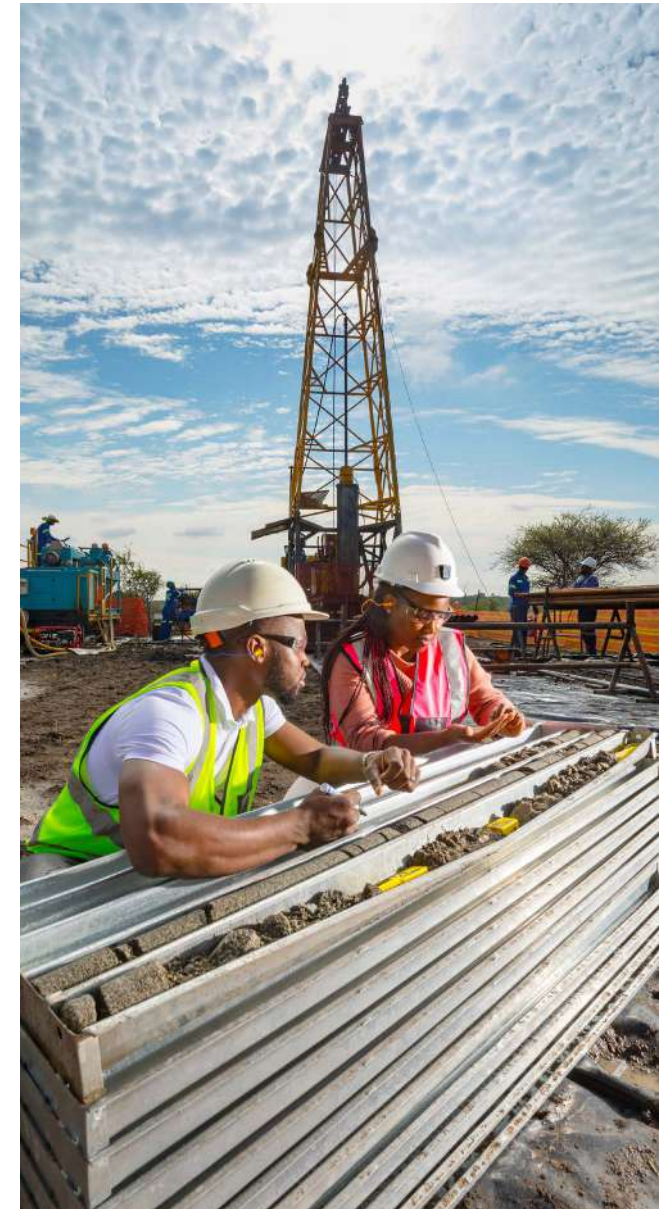
The Merensky Reef and UG2 Reef Mineral Resources are based on evaluation comprising an estimation of the 4E prill split (Pt, Pd, Rh and Au) accumulations, the base metal grade and density over the mineralised envelope. For the 6E prill split (Pt, Pd, Rh, Ir, Ru and Au) conversion factors are used based on drillhole assay data and historic go-belt data. The mineralised envelope for both Merensky and UG2 Reefs are modelled over a minimum Mineral Resource cut width of 90cm for reporting and a minimum 180cm is applied for business planning in areas scheduled for mechanised mining. The UG2 Reef Mineral Resource cut has a geotechnical consideration which ensures a 30cm safety beam above the UG2 Main Band top contact, therefore the resource cut will include the leader package if the UG2 to leader parting is less than 30cm.

The MG and LG chromitite layers are currently not classified as Mineral Resources as per SAMREC Code (2016) definition, but rather Mineral Occurrences. Mineral Occurrences are defined as 'any solid mineral of potential economic interest in any concentration found in bedrock or as float; especially a valuable (or potentially valuable) mineral in sufficient concentration to suggest further exploration' (SAMREC (2016)). These chromitites are targeted through exploration for systematic upgrade into Mineral Resource and eventually as Mineral Reserve, as a function of favourable metal price outlook.

Ordinary kriging is the estimation method applied with the continuity and variance of the data. The evaluation is conducted using on-reef development sampling and drillhole samples to establish a Mineral Resource estimate for short and long-term planning. Grade block models are developed using Datamine software.

The Mineral Resource classification method applied is a scorecard method. The procedure assesses the orebody geology, geometry and the estimation results by means of several statistical and non-statistical (geological) parameters. The result of the analysis is then assessed by the Competent Persons' team and signed-off accordingly. The Mineral Resource classification is based on the Group's standard (see [page 14](#)).

The Resource estimates are based on surveyed mining faces as of 31 April 2024 and scheduling extending until 30 June 2024. The Mineral Resource estimates have been spatially depleted per shaft and reef horizon for six months until 30 June 2024.



Core inspection at an exploration drill site of Impala Bafokeng



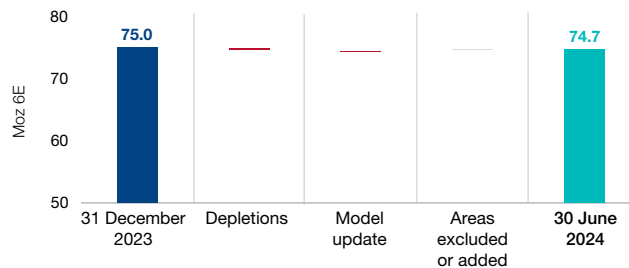
# Impala Bafokeng continued



Underground mining inspection at North Shaft, BRPM

## Total Impala Bafokeng 6E Mineral Resources

as at 30 June 2024 (variance Moz 6E)



## Impala Bafokeng Mineral Resource estimate (inclusive reporting)

As at 30 June 2024

Orebody Category	Units	Merensky				UG2				Total
		Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	
Tonnes	Mt	64.4	46.1	27.3	137.8	90.7	71.1	30.9	192.7	330.5
Width	cm	115	120	107	—	110	116	121	—	—
4E grade	g/t	7.47	6.98	7.46	7.30	5.20	5.03	5.01	5.11	6.02
6E grade	g/t	8.24	7.70	8.23	8.06	6.41	6.19	6.17	6.29	7.03
Ni	%	0.23	0.23	0.22	0.23	0.11	0.11	0.10	0.11	0.16
Cu	%	0.12	0.11	0.10	0.11	0.01	0.01	0.02	0.01	0.05
4E oz	Moz	15.5	10.3	6.6	32.4	15.2	11.5	5.0	31.6	64.0
6E oz	Moz	17.1	11.4	7.2	35.7	18.7	14.2	6.1	39.0	74.7
Pt oz	Moz	10.0	6.7	4.3	21.0	9.0	6.8	2.9	18.7	39.7
Pd oz	Moz	4.2	2.7	1.7	8.6	4.4	3.3	1.5	9.2	17.8

As at 31 December 2023

Orebody Category	Units	Merensky				UG2				Total
		Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	
Tonnes	Mt	65.1	46.2	27.3	138.6	91.5	71.1	30.8	193.4	332.0
Width	cm	117	121	107	—	110	117	121	—	—
4E grade	g/t	7.47	6.98	7.46	7.30	5.20	5.03	5.01	5.11	6.02
6E grade	g/t	8.24	7.70	8.23	8.06	6.41	6.19	6.17	6.29	7.03
Ni	%	0.23	0.23	0.22	0.23	0.11	0.11	0.10	0.11	0.16
Cu	%	0.11	0.11	0.10	0.11	0.01	0.01	0.02	0.01	0.05
4E oz	Moz	15.6	10.4	6.6	32.6	15.3	11.5	5.0	31.8	64.3
6E oz	Moz	17.2	11.4	7.2	35.9	18.9	14.1	6.1	39.1	75.0
Pt oz	Moz	10.1	6.7	4.3	21.1	9.1	6.8	2.9	18.8	39.9
Pd oz	Moz	4.2	2.7	1.7	8.7	4.5	3.3	1.5	9.3	17.9

## MINERAL RESOURCE RECONCILIATION

The year-on-year reconciliation for both the Impala Bafokeng Merensky and UG2 6E Mineral Resource estimates reduced marginally, based on depletion and mining losses in accordance with the annual cycle for input into the business planning process and Mineral Resource reporting.

# Impala Bafokeng continued

## MINING METHODS

### BRPM

Sinking of North and South Shaft declines started in 1998, providing access to the shallow dipping, narrow reef ore bodies, which sub-outcrops and extend to approximately 430mbs at South Shaft and 635mbs at North Shaft. Production commenced with opencast mining of the Merensky and UG2 Reefs to a depth of +/-30mbs.

The Merensky Reef, which was exploited first, is depleted at South Shaft and only the deeper section at North Shaft phase III remains. UG2 Reef mining is replacing the depleted Merensky Reef using the same infrastructure, with South Shaft now a UG2 Reef mine. The reserve extraction is divided into two mining areas by a northeast-southwest trending fault. The northern (BRPM North Shaft) and southern (BRPM South Shaft) areas are both accessed and serviced by a decline shaft complex consisting of a conveyor decline, a material decline and a chairlift decline, and vertical upcast and downcast ventilation shafts.

Two mining methods are being employed at BRPM, namely conventional and hybrid mining. The hybrid mining method, at North Shaft phase III, employs conventional stoping methods, replacing footwall development infrastructure and rail transport with on-reef conveyor and roadway drives and a combination of load haul dumper (LHD) and conveyor transport of ore to the main decline ore passes. Material is transported by utility vehicles (UV).

The decline system is connected to the reef horizon by means of an access drive. On the reef horizon, two drives are developed on strike. The upper drive is used for material transport and for initiating raise development. The lower drive is equipped with a conveyor belt which transports the ore back to the conveyor decline.

The ore from the stope panels is scraped down the raise into a muck bay from where a LHD loads and delivers the ore to the conveyor belt in the lower drive. The use of the hybrid method affords flexibility in reaching areas below the 11 and 15 levels, which would not have been mined with a conventional mining layout, thus achieving a greater total orebody extraction.

### Styldrift I mining

Due to the nature of the Merensky Reef ore body, the Styldrift I Shaft is designed to optimally extract the reef using two different mining methods. These consist of bord and pillar mining by means of trackless mechanised equipment for the flat dipping, stable, wide mineralised areas. Conventional scattered breast mining is currently planned for the more undulating Terrace Reef facies towards the western, shallower portions of the orebody.

However, hybrid mining and extra low profile (ELP) methods are under consideration for the Terrace Reef facies as Impala Bafokeng continually re-evaluates the optimisation of the mining methods to achieve maximum, efficient long-term extraction. Primary development is scheduled to be mined during the next two years to establish an Immediate Mineable Stope (IMS) ore reserve block to conduct the trial mining. Styldrift I Shaft is designed to hoist 230ktpm of reef and 20kt of waste at steady state production. The underground working areas are accessed via a vertical twin-shaft system, which comprises a main shaft and service shaft.

The shaft system hoisting capacity infrastructure is designed to allow for the possible co-extraction of the UG2 Reef in the future.

The main shaft, with a diameter of 10.5m sunk to a depth of 758mbs, is used for person, material, and rock hoisting. It also serves as an air-intake shaft. The services shaft, with a diameter of 6.5m, is sunk to a depth of 723mbs. The services shaft is used for services, a second egress and an air-intake shaft.

The ore handling and mining method at Styldrift comprises the use of trackless mechanised vehicles and mechanical conveyance installations.

Trackless mechanised vehicles include load haul dumpers (LHD), dump trucks, roof bolters, drill rigs and utility vehicles. The ore handling on 600 level utilises LHDs to load the broken ore on the face, which is then transported to the side tip facility feeding a strike conveyor belt installed from the start of the section extending up to the current workings.

Strike conveyors feed an ore pass system linked to 642 level where the ore from 600 level feeds onto a different conveyor belt used to convey the ore to the shaft silos. Ore is drawn from the silos on 708 level to feed the skips in the shaft enabling the hoisting of the ore to the surface. Through an overland conveyor belt system, ore is then conveyed to the concentrator for processing.



Splitting of exploration drill core for geochemical sampling at Impala Bafokeng

# Impala Bafokeng continued

## MINING PLANNING PROCESS

Mine design and scheduling of operational shafts are undertaken using CADSmine. Geological models are updated and validated using Sable and Datamine software. New orebody data is generated continuously through exploration, sampling and mining and is added to the geological database. The database is used to generate the structure models, grade models, improve understanding of the likely geological losses and ultimately generates a geological model and resource estimate. A geological model update is completed annually, and the geological resource model is then utilised in the CADSmine software to evaluate the scheduling to derive production outputs. The mine design for the first five years is monthly per crew. This is extended to an annual basis for the remainder of the LoM. The planning sequence allows for a cycle that starts with a comprehensive review of the LoM plan, followed by the detailed scheduling of a five-year development schedule, and a five-year detailed month-by-month stoping schedule. Reserves are estimated and published annually based on the approved life-of-mine plan for that year after ensuring capital allocation and tail cutting have been done.

## MINERAL RESERVE ESTIMATION AND CLASSIFICATION

The conversion and classification of Mineral Reserves at Impala Bafokeng are informed by:

- Feasible mine plan and project studies, board approval and available funding
- Economic testing at given market conditions (price check)
- Measured Mineral Resources are converted to Proved and Probable Mineral Reserves. In contrast, Indicated Mineral Resources are only converted to Probable Mineral Reserves, subject to confidence and economic viability
- Proved Mineral Reserves are those areas where the main development has been completed
- The 2024 Mine Plan was based on the survey faces of December 2023 with a spatial mine design and schedule forecast of six months until 30 June 2024.

The Mineral Resources and Mineral Reserves related to the royalty agreement with Impala Rustenburg are included in this report, as the ownership vests with Impala Bafokeng. This refers to the commercial transaction with Impala Rustenburg to access some of Impala Bafokeng's mining areas from 6 and 20 shafts. Although some of the areas in the tribute area have been developed, all Proved Mineral Reserves from the tribute areas are reported as Probable Mineral Reserves.

## MODIFYING FACTORS BRPM

The conversion of Mineral Resources to a Mineral Reserve is done in a CAD's schedule with the relevant resource evaluation applied to the mining area. The modifying factors and basic parameters used at BRPM are based on historical data. The schedule applies the mining dimensions planned and is depleted against the evaluation model. The current minimum mining cut is determined by in-stope bolting. Overbreak and scaling are added to the optimal resource cut at 0g/t to account for mining dilution taking into account the estimated loss in content related to reef-in-footwall and reef-in-hangingwall, and addition of off-reef mining. All other excavation tonnage is added to the stope cut, which includes planned on-reef horizon re-development based on the replacement rate and layout, including winch beds, strike gullies and primary on-reef development.

The table below summarises the significant modifying factors impacting on the Mineral Resource and Mineral Reserve estimates of BRPM (see [pages 15, 31, 51, 53 and 56](#) for further details).

BRPM Modifying factors	Merensky factors 2024	UG2 factors 2024
Mineral Resource area scheduled	0.7 million ca	7.5 million ca
Geological losses	18%	26%
Minimum mining cut (fixed cut)	110cm	100cm
Stoping width	126cm	120cm
Resource dilution	35%	24%
Mine call factor	100%	100%
In situ relative density	3.07	3.90

## Styldrift I mining

The conversion of the Mineral Resource to a Mineral Reserve is done in a CAD's schedule with the relevant resource evaluation applied to the mining area. The modifying factors and basic parameters used at Styldrift I Shaft take cognisance of the following factors:

- Mineralised envelope to exploit optimal content
- Minimum operating height of trackless mobile machinery (bolter)
- Geotechnical constraints.

The current minimum mining cut considers the mechanical bolting equipment. Additional overbreak on the 186cm resource cut, reef in hangingwall (RIH) and reef in footwall (RIF) content are discounted in the total content delivered. All other excavation tonnages are added to the stope cut as dilution, which includes planned on-reef redevelopment, which is aligned with the mining layout and replacement rate, tip excavations and primary on-reef development.

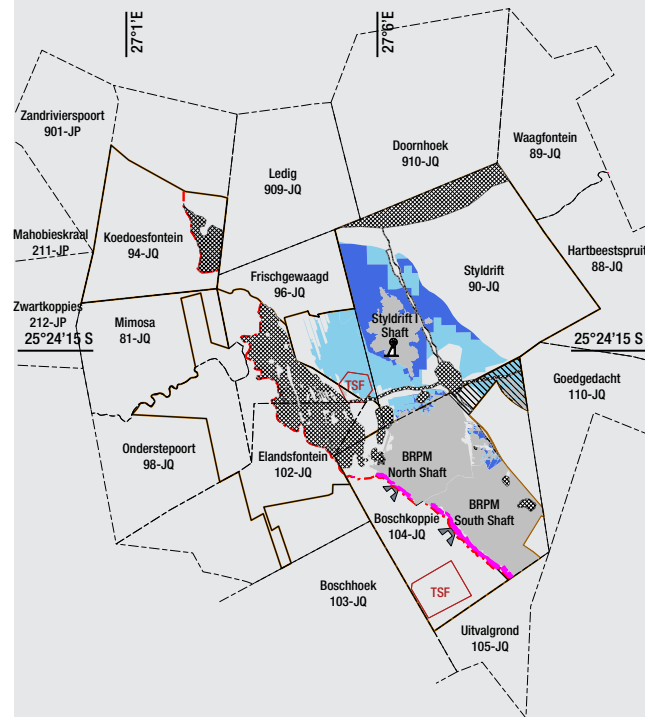
The table below summarises the significant modifying factors impacting on the Mineral Resource and Mineral Reserve estimates of Styldrift I (see [pages 15, 31, 51, 53 and 56](#) for further details).

Styldrift I Modifying factors	Room and pillar	Conventional/ hybrid
Mineral Resource area scheduled	5.3 million ca	3.6 million ca
Geological losses	22 – 26%	22 – 26%
Minimum mining cut	215cm	129cm
Stoping width	221cm	141cm
Resource dilution	21%	27%
Mine call factor	97%	100%
In situ relative density	3.17	3.17



# Impala Bafokeng continued

## Impala Bafokeng Merensky Reef Mineral Reserves

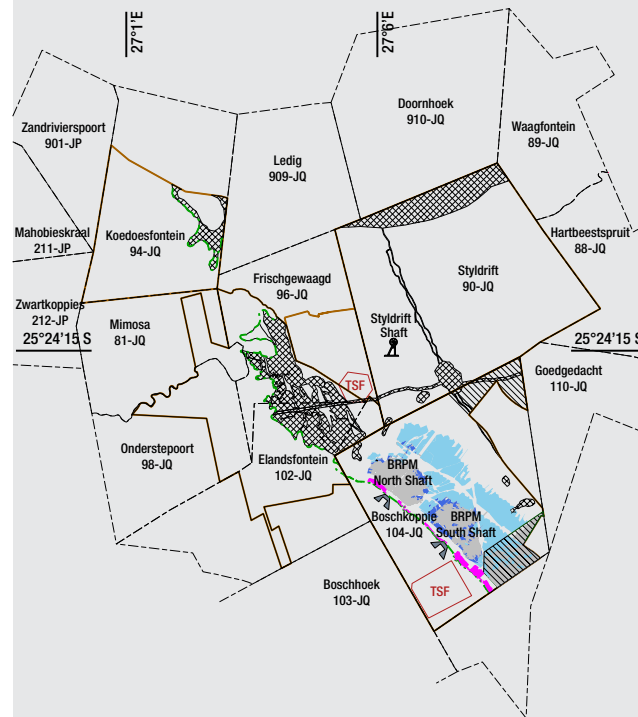


### Legend

- Shaft
- Portal
- Mined-out areas
- Proved Mineral Reserve
- Probable Mineral Reserve
- Opencast mined-out areas
- Tailings storage facilities (TSF)
- Tribute areas
- Major geological feature
- Merensky sub-outcrop
- Mining right boundary

0 5  
Scale (km)

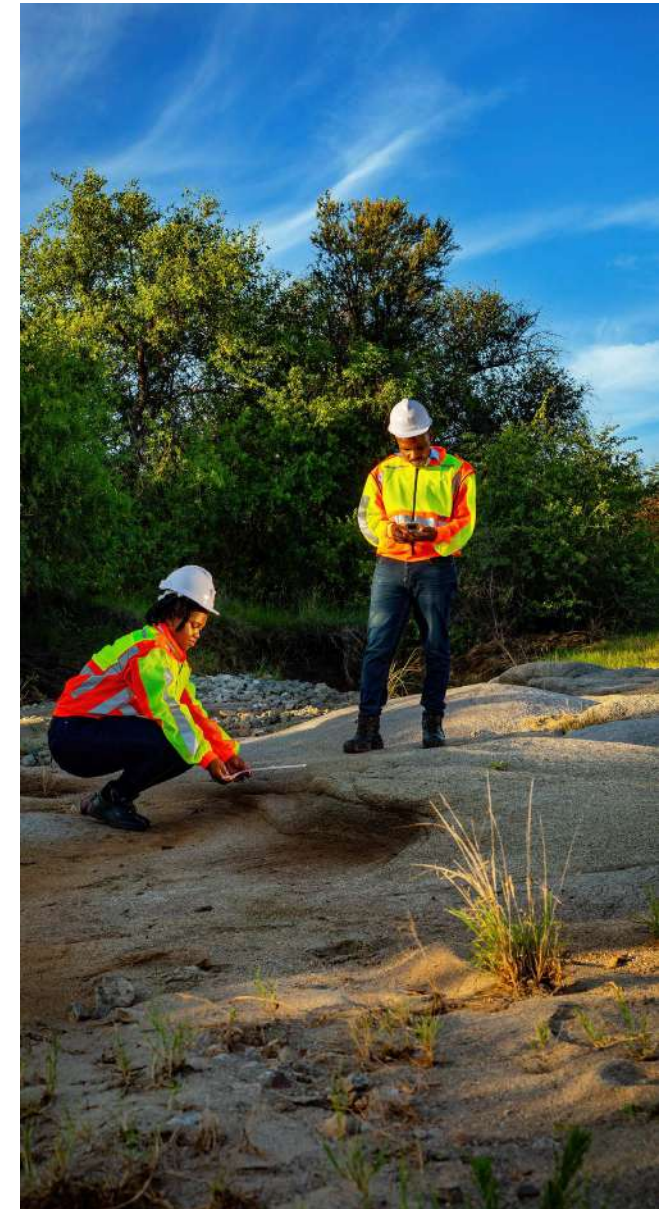
## Impala Bafokeng UG2 Reef Mineral Reserves



### Legend

- Shaft
- Portal
- Mined-out areas
- Proved Mineral Reserve
- Probable Mineral Reserve
- Opencast mined-out areas
- Tailings storage facilities (TSF)
- Tribute areas
- Major geological feature
- UG2 sub-outcrop
- Mining right boundary

0 5  
Scale (km)



Outcrop mapping by geologists at Impala Bafokeng



# Impala Bafokeng continued

## Impala Bafokeng Mineral Reserve estimate

As at 30 June 2024								
Orebody Category	Units	Merensky			UG2			Total
		Proved	Probable	Total	Proved	Probable	Total	
Tonnes	Mt	24.9	35.3	60.2	3.8	18.3	22.1	82.3
Width	cm	217	163	–	135	152	–	–
4E grade	g/t	3.84	4.22	4.06	3.70	3.90	3.86	4.01
6E grade	g/t	4.24	4.65	4.48	4.55	4.79	4.75	4.55
4E oz	Moz	3.1	4.8	7.9	0.5	2.3	2.7	10.6
6E oz	Moz	3.4	5.3	8.7	0.6	2.8	3.4	12.0
Pt oz	Moz	2.0	3.1	5.0	0.3	1.4	1.6	6.7
Pd oz	Moz	0.8	1.3	2.1	0.1	0.7	0.8	2.9

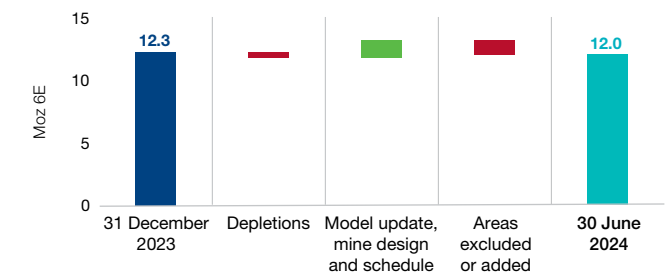
As at 31 December 2023								
Orebody Category	Units	Merensky			UG2			Total
		Proved	Probable	Total	Proved	Probable	Total	
Tonnes	Mt	26.1	34.7	60.8	3.0	20.2	23.2	84.0
Width	cm	211	153	–	116	156	–	–
4E grade	g/t	3.91	4.21	4.08	3.74	4.00	3.96	4.05
6E grade	g/t	4.33	4.66	4.52	4.35	4.65	4.61	4.54
4E oz	Moz	3.3	4.7	8.0	0.4	2.6	3.0	10.9
6E oz	Moz	3.6	5.2	8.8	0.4	3.0	3.4	12.3
Pt oz	Moz	2.1	3.0	5.1	0.2	1.5	1.7	6.8
Pd oz	Moz	0.9	1.3	2.2	0.1	0.8	0.9	3.0

## MINERAL RESERVE RECONCILIATION

For the six-month period the Mineral Reserves mainly decreased as a result of mining depletion for both BRPM and Styldrift mines.

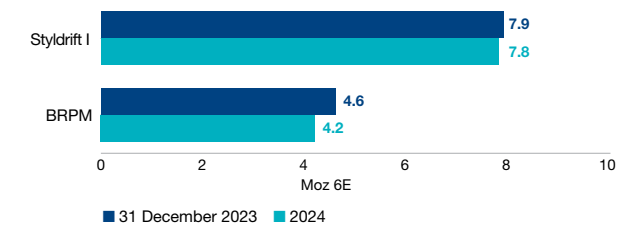
### Total Impala Bafokeng 6E Mineral Reserves

as at 30 June 2024 (variance Moz 6E)



### Impala Bafokeng Mineral Reserve distribution

as at 30 June 2024 (Moz 6E)



# Impala Bafokeng continued

## PROCESSING

Impala Bafokeng owns and operates the BRPM and Maseve concentrators. Provision is made for the processing of 410 000t/m (combined) which concentrate is sold and delivered to the Waterval Smelter for smelting and refining purposes. The BRPM plant design comprises a conventional process for a Merensky Platinum Concentrator which consists of comminution, flotation, concentrate and tailings handling.

The drill cores obtained to establish the geological criteria for the orebody have revealed that a variety of different facies exist. These, together with the proposed mining strategy, result in competent material reporting to the concentrator, which requires pre-crushing to achieve a size control of less than 80mm, ahead of the milling circuit.

The plant process includes:

- Surge storage silos
- Primary, secondary and tertiary crushing and screening
- Primary milling and flotation
- Secondary milling and flotation
- Concentrate thickening and filtration
- Tailings thickening and disposal.

The optimisation of the commissioned Maseve MF2 upgrade, to improve asset management, will ensure that the Maseve concentrator complex is well-positioned to support further volume growth and operational sustainability in the long term which will lead to improved processing flexibility and co-processing capacity capable of treating Merensky and UG2 ore at 430ktpm.

Tailings from both concentrators are deposited on the BRPM and Maseve tailings storage facilities (TSF). The BRPM TSF expansion was completed in 2022 which led to an increase in the footprint to 238 hectares and an additional 30-year life.

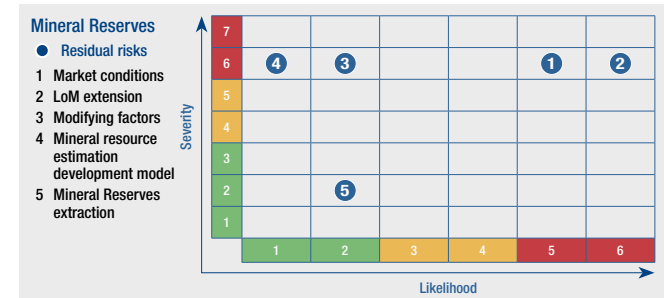
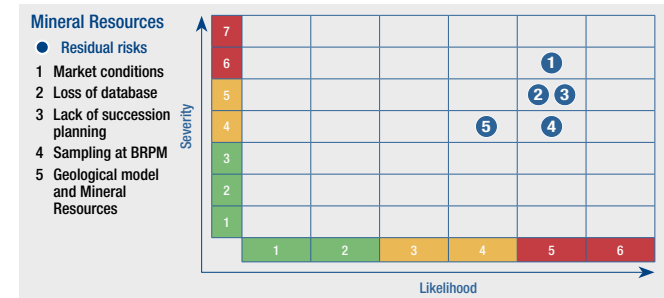
## RISK ASSESSMENT

The residual risk matrices for the Impala Bafokeng Mineral Resources and Mineral Reserves are illustrated to the right, highlighting the respective top five residual risks.

The top residual risks identified for the Impala Bafokeng Mineral Resources are (1) market conditions: basket metal price sensitivity; (2) loss of database due to lack of backup and IT recovery systems; (3) lack of succession planning for specialised roles; (4) delayed execution of underground sampling at BRPM; and (5) insufficient continuous development on geological model and Mineral Resources.

The top residual Impala Bafokeng Mineral Reserve risks are (1) market conditions: basket metal price sensitivity; (2) LoM: lack of capital allocation for extension projects; (3) modifying factors: incorrect application; (4) Mineral Resource estimation development model: lack of development; and (5) Mineral Reserves: inefficient extraction.

Management interventions are in place to mitigate these listed risks. Further details regarding the formal risk management process are discussed on [page 19](#).



Geologists modelling and evaluating the ore bodies at Impala Bafokeng

# Impala Bafokeng continued

## LoM, VALUATION AND SENSITIVITY

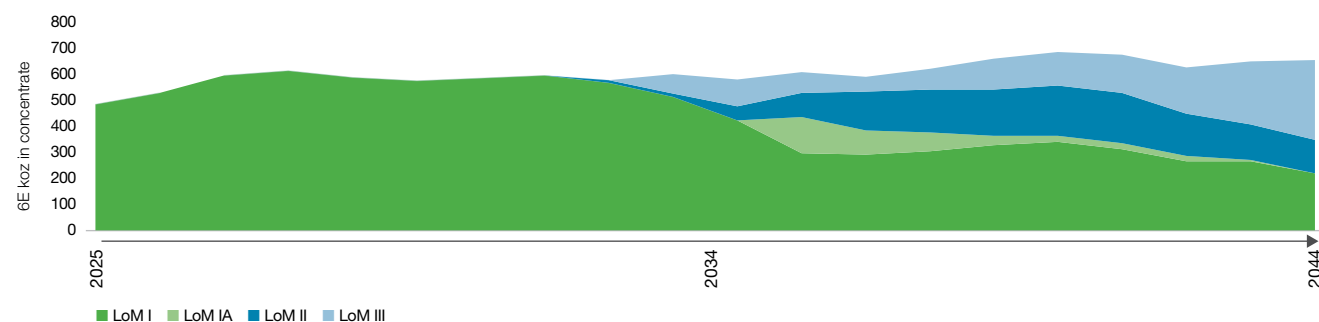
The strategic outlook remains under review, given the declining LoM production outlook and cost pressures. Several studies are being undertaken to optimise the Mineral Resource and infrastructure assets to extend the LoM profile. The LoM I of BRPM extends over 11 years until 2035 while the LoM I of Styldrift I extends for 26 years until 2050. An economic profitability test was conducted at each shaft, mainly to conduct tail-cutting at the end of a shaft's life, where a shaft cannot contribute to its overhead cost. The impact varies from shaft to shaft. On average, 7% of the estimates have been excluded based on such economic reviews. The effect of tail-cutting is more pronounced on the UG2 Reef estimates.

The economic viability of Impala Bafokeng's Mineral Reserves is tested using net present value calculations over the LoM of the Mineral Reserve, determining the lowest real rand basket price which would still render the Mineral Reserve viable. These calculations generate basket prices based on the local

6E ratios, and differ from the overall Group basket prices. This is then tested against the internal Impala Bafokeng estimate of the real long-term basket price and the spot price as at 30 June 2024. These tests indicate that the Impala Bafokeng operation requires a real long-term basket price of between R28 000 and R32 000 per 6E ounce of metal in concentrate to be economically viable. The real spot basket price for Impala Bafokeng as at 30 June 2024 was R28 075 (US\$1 584), and its internal long-term real basket price per 6E ounce is R31 661 (US\$1 858).

To address the declining LoM outlook and associated overhead cost structures, the Group is considering investment in maintaining current production levels well into the future, through prudent capital allocation on selected projects from existing infrastructure within the mining right area. The commodity market remains fluid. Statistics relating to the historical production are shown on [page 28](#) and [29](#).

## Impala Bafokeng estimated 20-year 6E LoM ounce profile as at 30 June 2024



Sample pulp preparation for laboratory submission at Impala Bafokeng core yard



# Marula

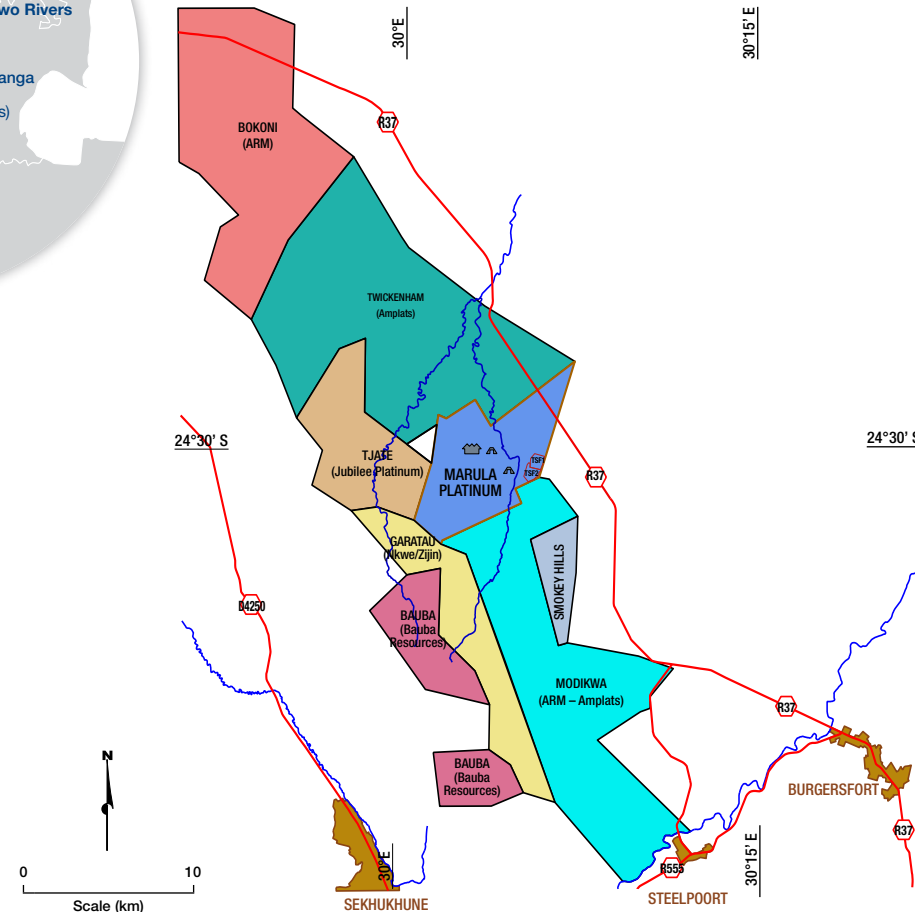
# South Africa

Renowned exploration geologist, Dr Hans Merensky, first recognised platinum from this area on the nearby farm Maandagshoek in 1924. In June 1998, Implats acquired the Winnaarshoek property from Platexco.

Mining right  
**5 494ha**

Implats' interest  
**73.26%** managed

Marula UG2 concentrator



## Legend

- Town
- Mining right boundary
- Public road
- Current tailings storage facility – TSF1 and TSF2
- River/stream
- Portal
- Processing plant

## LOCATION

Marula is located within the Greater Fetakgomo Tubatse Local Municipality of the Limpopo province of South Africa, approximately 35km northwest of Burgersfort. Marula is situated on the Eastern Bushveld Complex, located south of Anglo American Platinum Twickenham Mine and north of the Anglo American Platinum-ARM joint venture at Modikwa Mine. Jubilee Platinum and Garataau (Nkwe/Zijin) share the western (down-dip) boundaries.

## BRIEF HISTORY

Exploration activities in the region started in the 1920s, following the discovery of PGMs by Hans Merensky on the nearby Maandagshoek 254-KT (now Modikwa Mine). Most of the prospecting activities focused on the Merensky Reef rather than the UG2 Reef. This early work included trenching, excavating adits and sampling outcrops. In June 1998, Implats acquired the Winnaarshoek 250-KT property from Platexco, a Canadian-based company. The mineral rights to portions of the adjacent farms of Clapham 118-KT and Forest Hill 117-KT, and a sub-lease to Driekop 253-KT, were subsequently obtained from Anglo American Platinum in exchange for Hendriksplaats 281-KT (now part of Modikwa Mine). The establishment and development of the mine started in October 2002. Marula is a managed operation within the Implats portfolio.



## Marula continued

### GEOLOGICAL SETTING

The Merensky and UG2 Reefs are separated by a sequence of primarily anorthositic and noritic layered units of 400m in combined vertical thickness. The UG2 Reef is defined as the main chromitite layer, with most of the mineralisation confined to this unit, followed by a poorly mineralised pegmatoidal footwall. The Merensky Reef comprises the upper portion of a pyroxenite layer, with a chromitite stringer close to the hangingwall contact. Mineralisation peaks over the chromitite stringer and decreases into the hangingwall and footwall. Examples of typical vertical grade profiles at Marula are included on [page 57](#). The average 6E ratios show the differences between the Merensky and UG2 Reefs, particularly the high proportions of palladium and rhodium associated with the UG2 Reef at Marula.

**Both the Merensky and UG2 Reefs are present at Marula, but only the UG2 Reef is currently exploited.**

Both mineralised horizons sub-outcrop on the Marula mining rights area and dip in a west-southwest direction at 10° to 14°. The reefs are relatively undisturbed by faults and dykes, with one prominent dolerite dyke traversing the mining area. Potholes represent most of the geological losses encountered underground, while a small dunite pipe also disrupts the reef horizons. These geological features are accounted for in the Mineral Resource and Mineral Reserve estimates as geological losses.

### EXPLORATION AND STUDIES

Exploration activities that led to the discovery of PGMs at Marula started in the 1920s after Hans Merensky recognised PGMs in the region. Follow-up exploration in the 1960s and 1980s by Anglo American Platinum entailed exploration drilling targeting the Merensky and the UG2 Reefs.

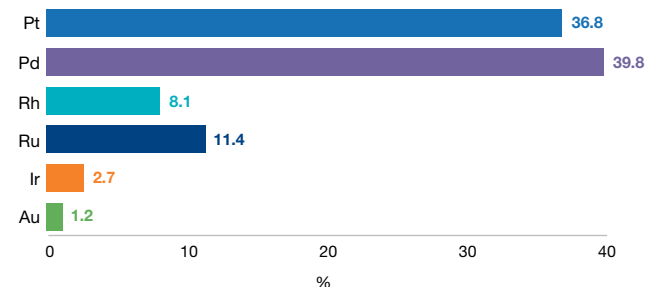
Several exploration techniques have been employed at Marula by historical explorers and Implats, with the most notable being surface geological mapping, aeromagnetic

surveys and surface exploration drilling. Core drilling is the primary drilling technique employed. Ongoing surface drilling is typically infill work to supplement the grid completed during feasibility stages, and is mainly targeted to assist with detailed structural interpretations. In addition, underground geotechnical core-recovering drilling activities are routinely undertaken. This forms part of a proactive safety strategy to detect flammable gas, gas pockets, water-bearing features, possible geological anomalies and related phenomena ahead of current mining operations. Summary statistics about the work conducted in the past year are reported in the exploration overview section of this report.

Eleven surface drillholes were completed during the past year to add to the geological confidence in the deeper extensions for the Marula Phase II project mining area. A total of 65 underground drillholes – mainly for water and gas intersection cover and geological delineation – were drilled at the Clapham and Driekop declines. An additional 10 surface drillholes are planned for the forthcoming year, aimed at increasing the geological confidence in the deeper Marula Phase II area. Results from the 2023 surface exploration campaign were integrated with the structural geology model, with density measurements and analytical sampling of those drillholes underway.

### Marula UG2 Reef 6E ratio

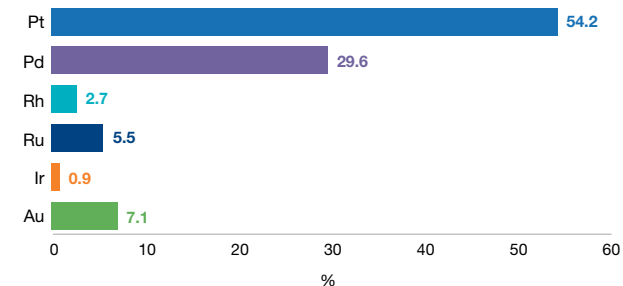
as at 30 June 2024 (%)



UG2 Reef metal ratios derived from Mineral Reserve estimate.

### Marula Merensky Reef 6E ratio

as at 30 June 2024 (%)



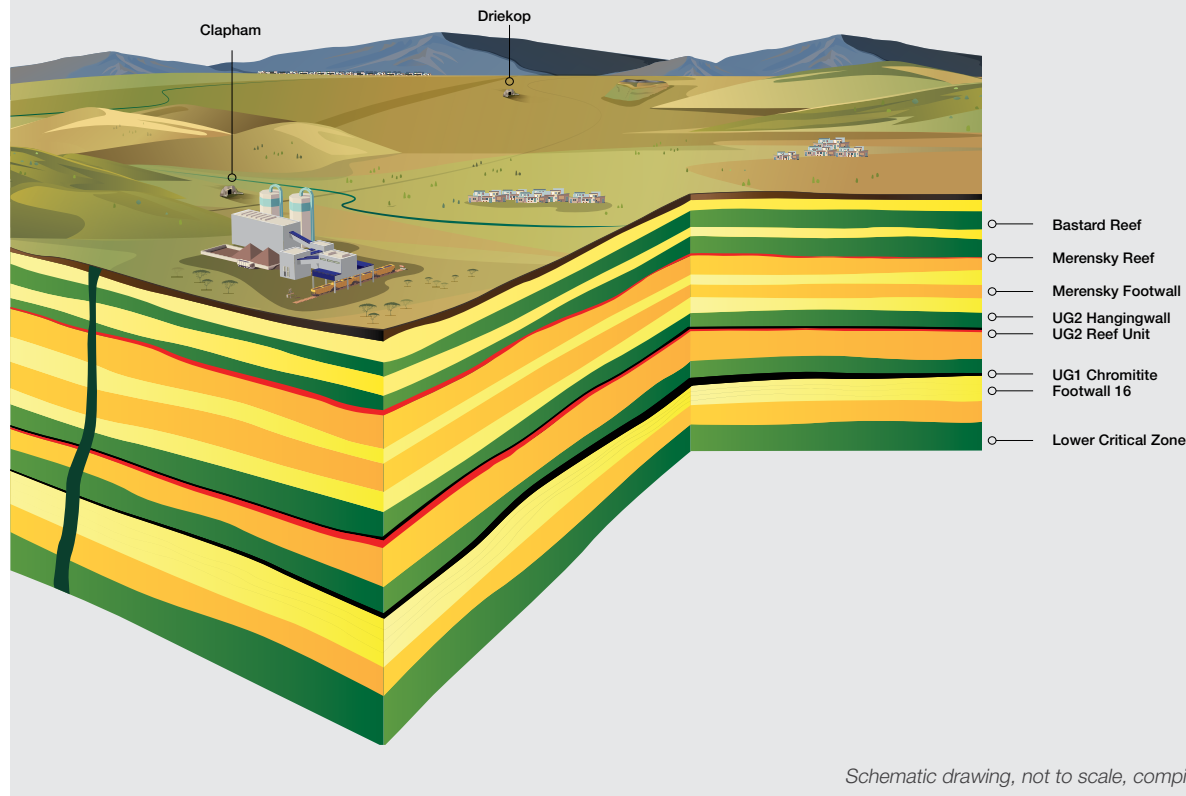
Merensky Reef metal ratios derived from Mineral Resource estimate.



The Marula operation

## Marula continued

### Generalised schematic section of the stratigraphic sequence at Marula



### GENERAL INFRASTRUCTURE

The region is well developed, partly due to other nearby mining activities. The R37 tarred road from Burgersfort to Polokwane passes through the area, while a secondary tarred road links the R37 to Marula's main office and other infrastructure. The existing mines and villages are supplied with electricity by Eskom. Marula has an adequate electricity supply and distribution network with two independent 132kV Eskom power lines providing electricity. Water is supplied through the Lebelelo Water Scheme, from which Marula has an allocation of 13.8MI per day, which is more than adequate for planned production levels. Mining

infrastructure includes two decline shafts, offices, stores, a concentrator plant, a chrome recovery plant, TSFs and overland ore conveyance.

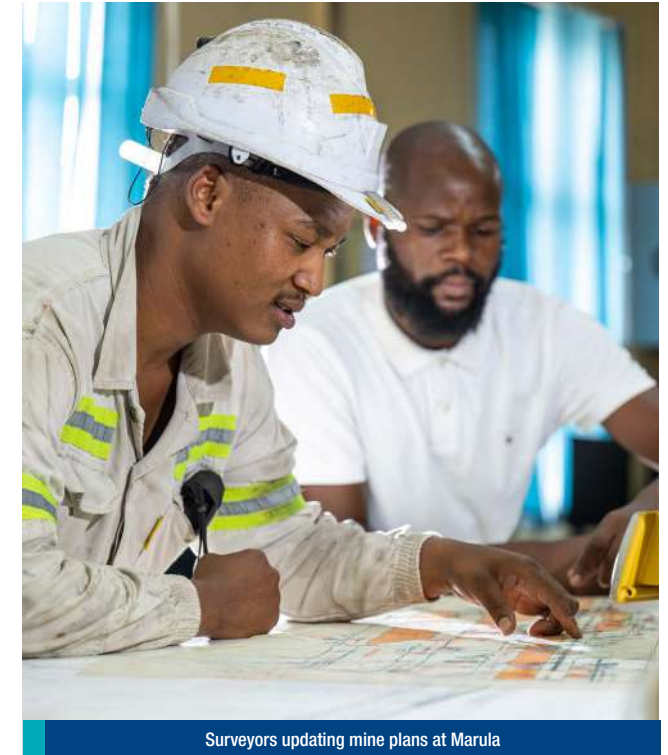
### MINERAL RESOURCE ESTIMATION AND CLASSIFICATION

The Mineral Resource estimates for the Merensky and UG2 Reefs are shown at a minimum mining width. The estimate has been conducted using the Datamine Studio RM. A multi-pass search was used for the estimation, and capping of extreme values was applied for UG2 Reef data. Estimated geological

losses have been accounted for in the Mineral Resource estimation varying from 20% to 25%, using the geological model constructed in CADSmine™ software as the basis.

The Mineral Resource classification is based on the Group standard practice (see [page 14](#)). In broad terms, confidence is derived from various aspects such as geophysical surveys, mapping, underground exposures and surface drillholes, sampling and QAQC assurance. The spacing of the economic reef intersections and the geostatistical confidence have the largest weighting on the classification of Mineral Resources at Marula.

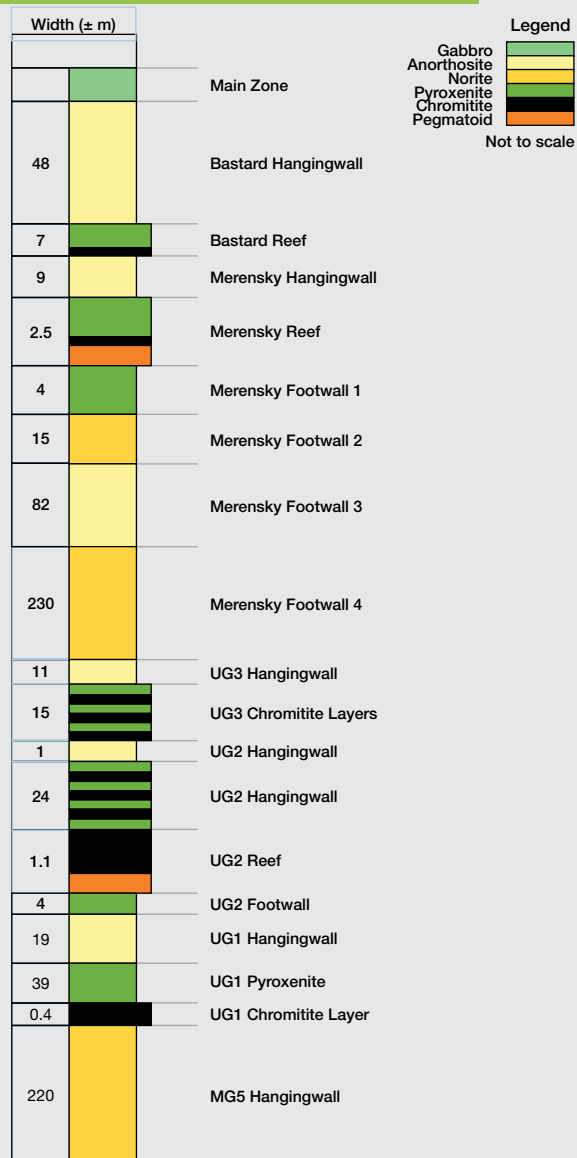
Mineral Resource estimates are based on mining faces at 31 December 2023 and have been non-spatially depleted per shaft for six months until 30 June 2024.



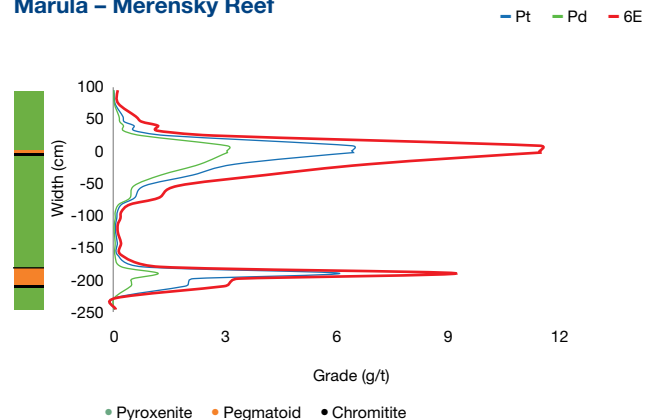
Surveyors updating mine plans at Marula

# Marula continued

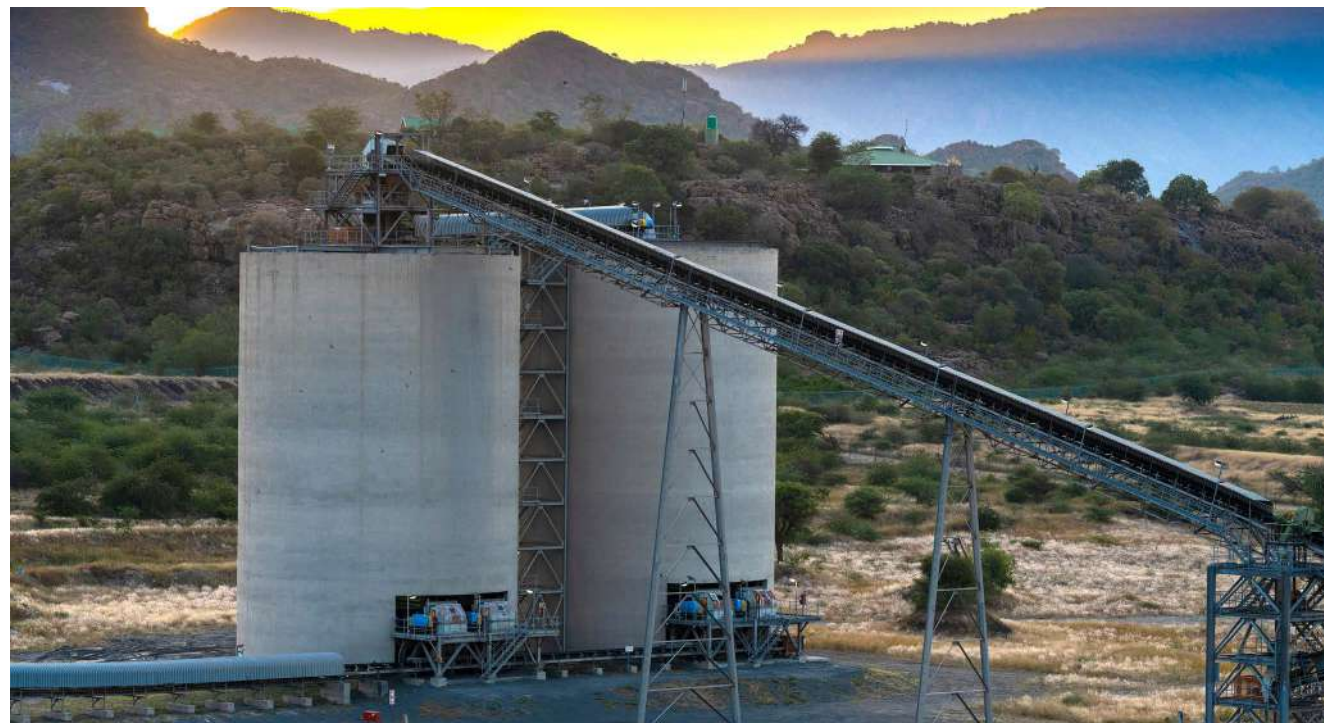
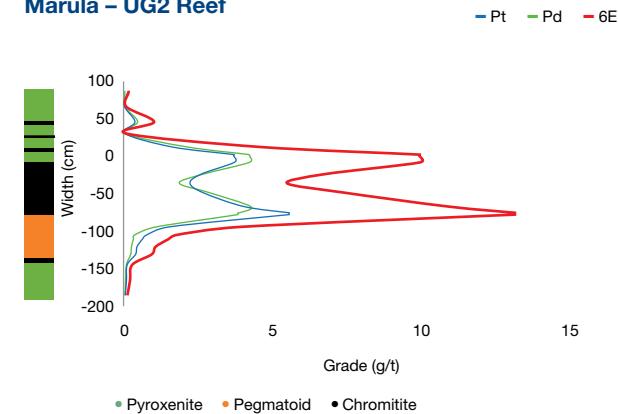
## Generalised geological succession of the upper portion of the Critical Zone: Marula



### Marula – Merensky Reef



### Marula – UG2 Reef



Surface silos at Marula



# Marula continued

## Marula Mineral Resource estimate (inclusive reporting)

As at 30 June 2024										
Orebody		Merensky				UG2				Total
Category	Units	Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	
Tonnes	Mt	34.3	7.6	5.2	47.0	37.4	21.0	5.8	64.2	111.2
Width	cm	100	100	100	–	96	97	96	–	–
4E grade	g/t	4.26	4.20	3.82	4.21	6.39	6.55	6.68	6.47	5.51
6E grade	g/t	4.56	4.50	4.10	4.50	7.43	7.63	7.78	7.53	6.25
Ni	%	0.20	0.19	0.19	0.20	0.05	0.05	0.06	0.05	0.11
Cu	%	0.11	0.11	0.10	0.11	0.02	0.02	0.02	0.02	0.06
4E oz	Moz	4.7	1.0	0.6	6.4	7.7	4.4	1.2	13.3	19.7
6E oz	Moz	5.0	1.1	0.7	6.8	8.9	5.1	1.4	15.5	22.3
Pt oz	Moz	2.7	0.6	0.4	3.7	3.3	1.9	0.5	5.8	9.4
Pd oz	Moz	1.5	0.3	0.2	2.0	3.6	2.0	0.6	6.2	8.2

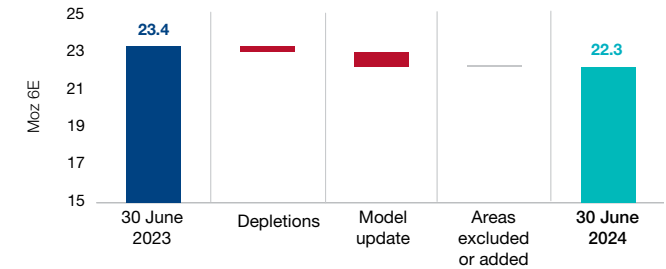
As at 30 June 2023										
Orebody		Merensky				UG2				Total
Category	Units	Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	
Tonnes	Mt	34.3	7.6	5.2	47.0	43.2	21.6	5.8	70.6	117.7
Width	cm	100	100	100	–	97	98	96	–	–
4E grade	g/t	4.26	4.20	3.82	4.21	6.26	6.32	6.33	6.29	5.45
6E grade	g/t	4.56	4.50	4.10	4.50	7.29	7.37	7.36	7.32	6.19
Ni	%	0.20	0.19	0.19	0.20	0.05	0.05	0.04	0.05	0.11
Cu	%	0.11	0.11	0.10	0.11	0.02	0.02	0.02	0.02	0.06
4E oz	Moz	4.7	1.0	0.6	6.4	8.7	4.4	1.2	14.3	20.6
6E oz	Moz	5.0	1.1	0.7	6.8	10.1	5.1	1.4	16.6	23.4
Pt oz	Moz	2.7	0.6	0.4	3.7	3.7	1.9	0.5	6.1	9.8
Pd oz	Moz	1.5	0.3	0.2	2.0	4.1	2.0	0.6	6.7	8.7

## MINERAL RESOURCE RECONCILIATION

The year-on-year reconciliation of Marula's Mineral Resource estimate shows marginal variance relative to the previous year, primarily due to depletion, some model updates and minor areas excluded.

## Total Marula 6E Mineral Resources

as at 30 June 2024 (variance Moz 6E)



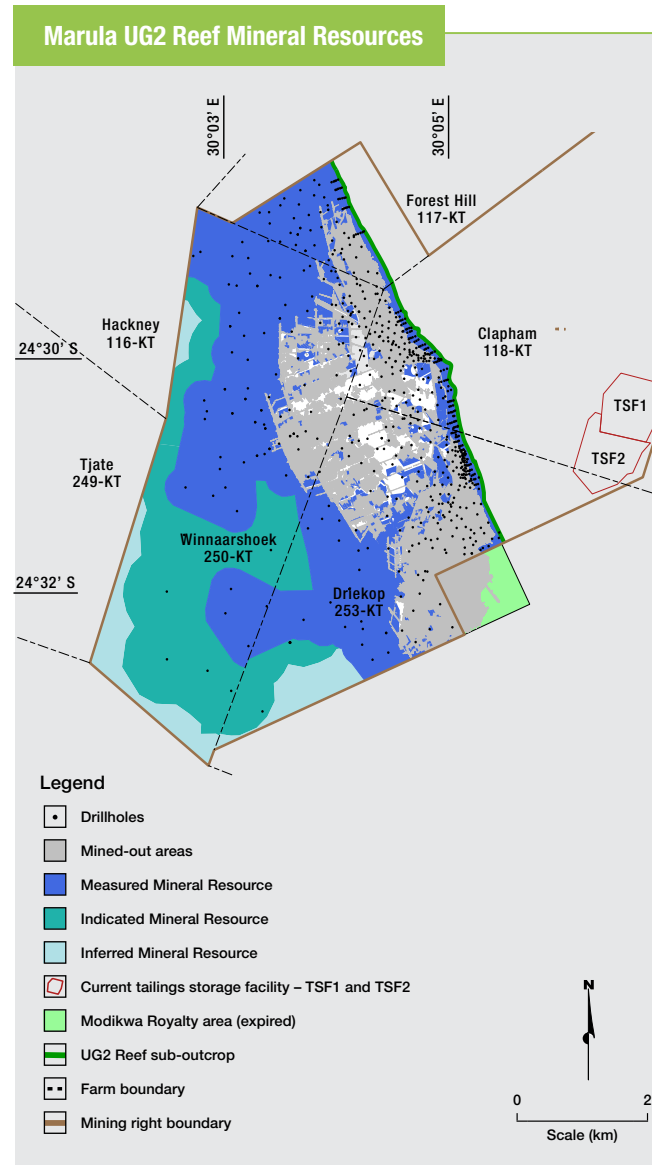
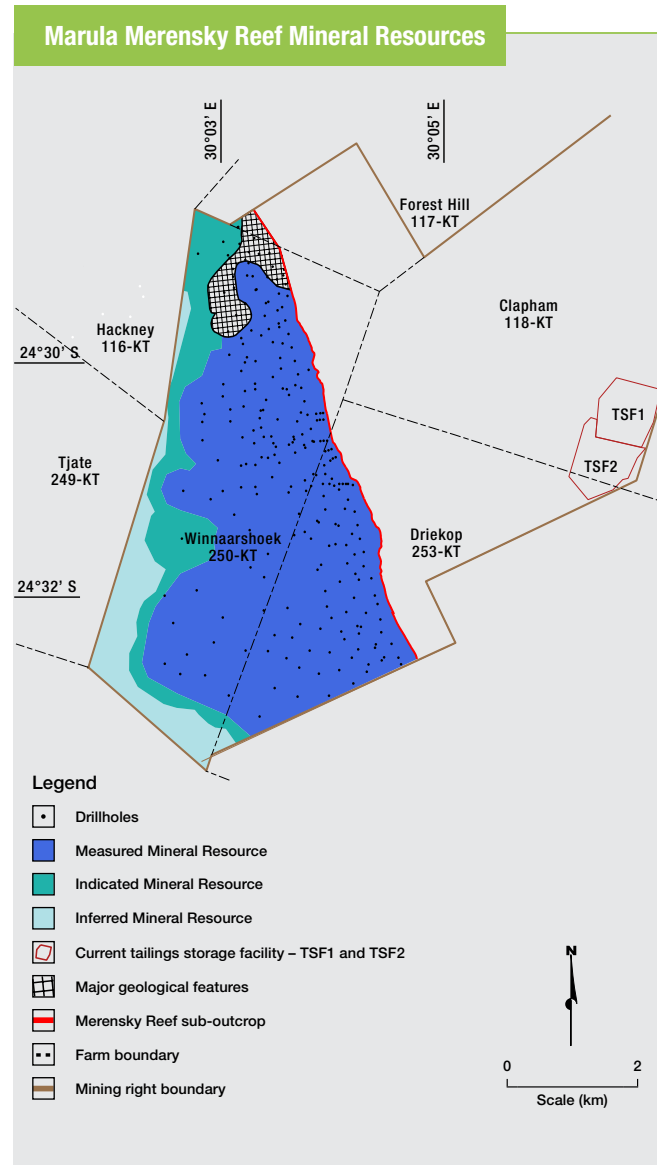
## MODIFYING FACTORS

The table below summarises the significant modifying factors impacting on the Mineral Resource and Mineral Reserve estimates (see [pages 15, 31, 60 and 61](#) for further details).

Mineral Resource Key assumptions	Merensky Reef	UG2 Reef
Geological losses	20 – 25%	20 – 25%
Area	16 million ca	18.7 million ca
Resource cut	100cm	96cm

Mineral Reserve Key assumptions	Merensky Reef	UG2 Reef
Dilution	–	10 – 12%
Pillars	–	10 – 12%
Mine call factor	–	94%
Relative density	–	3.4 – 3.9
Stoping width	–	120cm
Concentrator recoveries	–	86 – 88%

# Marula continued



## MINING METHODS

Marula Mine has two decline shaft systems exploiting the UG2 Reef. At Driekop Shaft, a hybrid mining method is used, while at Clapham Shaft, both hybrid and conventional mining methods are used. All main development is undertaken on-reef for the two hybrid sections, and the stoping is carried out through conventional single-sided breast mining from a centre gully. Panel face lengths are approximately 16m to 28m, with panels separated by 6m x 4m grid pillars with 2m ventilation holings. The stoping width averages 125cm. The footwall drives are developed on strike approximately 25m below the reef horizon, with cross-cut breakaways about 220m apart for the conventional operation. This development is undertaken with drill rigs and dump trucks. Stope face drilling takes place with hand-held pneumatic rock drills with airlegs.

## MINE PLANNING PROCESS

Mine design and scheduling are carried out using Studio UG software. Geological models and ore blocks are updated and validated using G-Blocks and boundaries in the MRM information system. Mineral Reserves are converted upon proved economic viability, board approval and secured funding, and not simply on the basis of Measured and Indicated Mineral Resource classification.

## MINERAL RESERVE ESTIMATION AND CLASSIFICATION

The updated Mineral Reserve estimate as at 30 June 2024 is tabulated on the following page. The modifying factors used in the UG2 Mineral Reserve estimate are based on the mine plan, which envisages hybrid and conventional breast mining operations. An economic profitability test was conducted at each shaft to verify the economic viability at the end of the shaft's life and the need for tail-cutting.

The conversion and classification of Mineral Reserves at Marula are informed by:

- Feasible mine plan and project studies, board approval and available funding
- Economic testing at given market conditions (price deck)

Marula continued

- Measured Mineral Resources are classified as Proved and Probable Mineral Reserves
- Proved Mineral Reserves are those areas where the main development has been completed
- The mine plan used for generating the Mineral Reserves was based on the survey faces of December 2022 with a spatial mine design and schedule forecast of six months until 30 June 2023.

Marula Mineral Reserve estimate

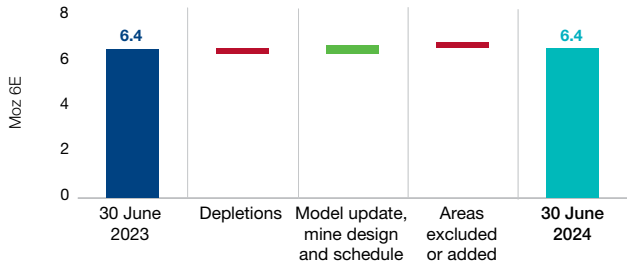
As at 30 June 2024				
Orebody Category	Units	Proved	UG2 Probable	Total
Tonnes	Mt	3.2	41.5	44.7
Width	cm	127	120	–
4E grade	g/t	4.11	3.78	3.80
6E grade	g/t	4.77	4.40	4.42
4E oz	Moz	0.4	5.0	5.5
6E oz	Moz	0.5	5.9	6.4
Pt oz	Moz	0.2	2.2	2.3
Pd oz	Moz	0.2	2.3	2.5

As at 30 June 2023				
Orebody Category	Units	Proved	UG2 Probable	Total
Tonnes	Mt	3.2	43.1	46.3
Width	cm	126	118	–
4E grade	g/t	4.35	3.67	3.71
6E grade	g/t	5.04	4.27	4.32
4E oz	Moz	0.4	5.1	5.5
6E oz	Moz	0.5	5.9	6.4
Pt oz	Moz	0.2	2.2	2.4
Pd oz	Moz	0.2	2.4	2.6

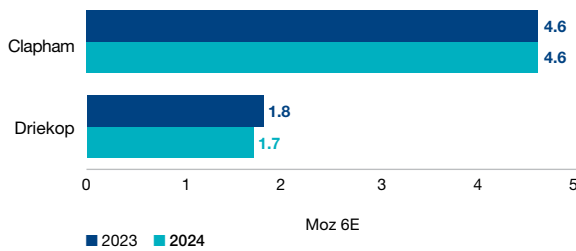
MINERAL RESERVE RECONCILIATION

The year-on-year reconciliation of Marula’s Mineral Reserves estimate shows marginal variance relative to the previous year. The changes are primarily due to depletion, tail-cutting, model updates and minor areas excluded.

Total Marula 6E Mineral Reserves as at 30 June 2024 (variance Moz 6E)

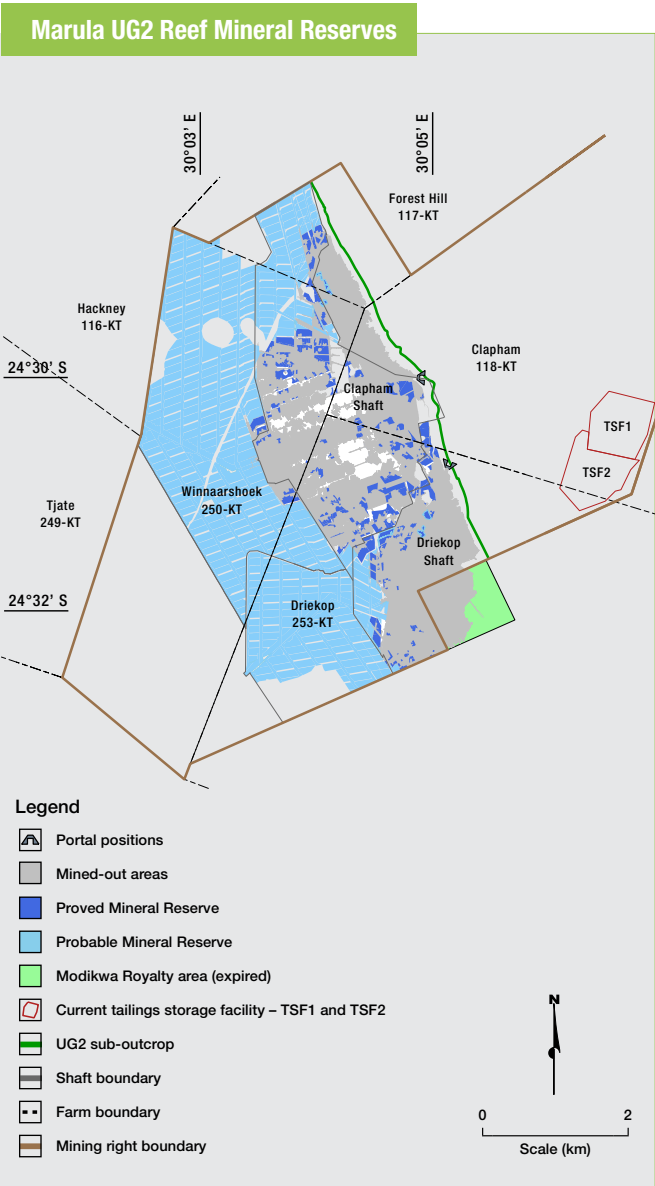


Marula Mineral Reserve distribution as at 30 June 2024 (Moz 6E)



PROCESSING

Marula has a concentrator plant where initial processing is conducted. The concentrate is transported by road to Impala’s Mineral Processes operation in Rustenburg in terms of a LoM offtake agreement with Impala Refining Services (IRS). A new TSF facility was commissioned in the past year.





## Marula continued

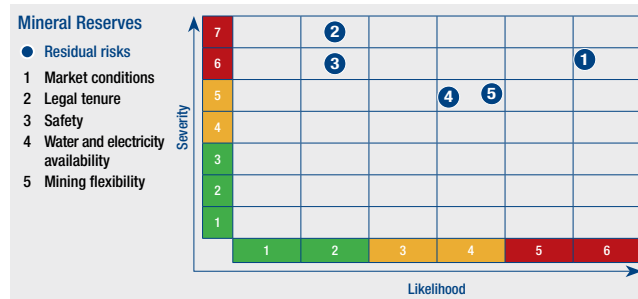
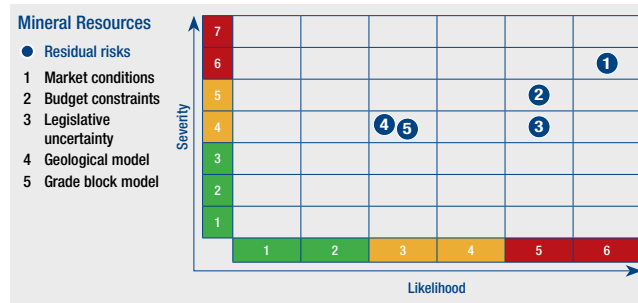
### RISK ASSESSMENT

The residual risk matrices for the Marula Mineral Resources and Mineral Reserves are illustrated below, highlighting the top five residual risks for both.

The top residual risks identified for the Mineral Resources at Marula are (1) market conditions: basket price sensitivity; (2) grade: the impact of QAQC on data; (3) geology: confidence in Mineral Resources; (4) geological model: version control; and (5) grade block model: version control.

The top residual Mineral Reserve risks identified at Marula are (1) market conditions: basket price sensitivity; (2) legal tenure: unable to operate; (3) safety: major incidents; (4) utilities: unavailability of water and electricity; and (5) half-level flexibility.

Management interventions are in place to mitigate these risks listed above. Further details regarding the formal risk management process are discussed on [page 19](#).



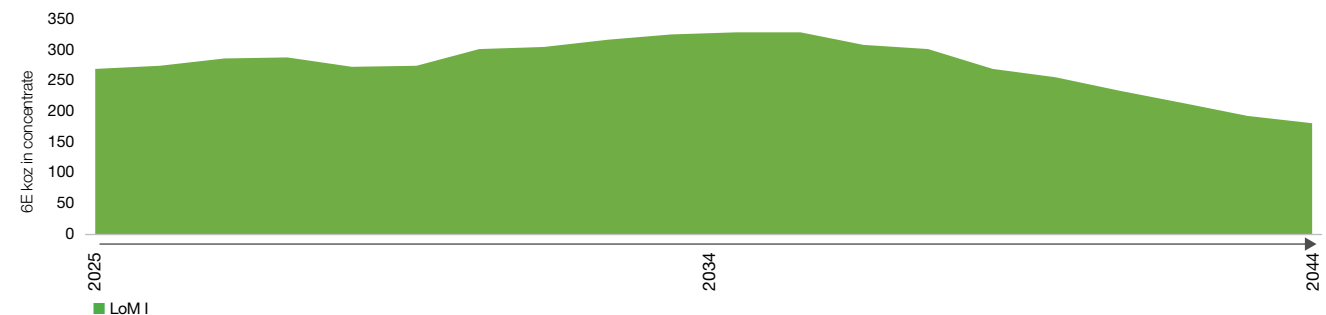
### LoM, VALUATION AND SENSITIVITY

The LoM I encompasses the UG2 Reef at the Clapham Shaft down to 11 level and the Driekop Hybrid areas. Note that the indicative LoM profile is based on a range of assumptions, which could change in future. An economic profitability test was conducted to determine at which year Marula's shafts cannot contribute to its overhead cost. On average, 5% of the estimates have been excluded based on such economic reviews – these are excluded from Mineral Reserves and re-classified as LoM IA. The LoM I of Marula extends for 24 years until 2048.

The economic viability of Marula's Mineral Reserves is tested using net present value calculations over the LoM of the Mineral

Reserve, determining the lowest real rand basket price which would still render the Mineral Reserve economically viable. These calculations generate basket prices based on the local 6E ratios and differ from the overall Group basket prices. This is then tested against the internal Marula estimate of the real long-term basket price and the spot price as at 30 June 2024. These tests indicate that Marula requires a real long-term basket price of between R25 000 and R29 000 per 6E ounce to be economically viable. The real spot basket price for the Marula operations as at 30 June 2024 was R25 779 (US\$1 454) per 6E ounce, and its internal long-term real basket price is R28 762 (US\$1 688). The commodity market remains fluid. Statistics relating to the historical production are shown on [pages 28 and 29](#).

**Marula estimated 20-year 6E LoM ounce profile**  
as at 30 June 2024



TSF at the Marula Mine

## Two Rivers

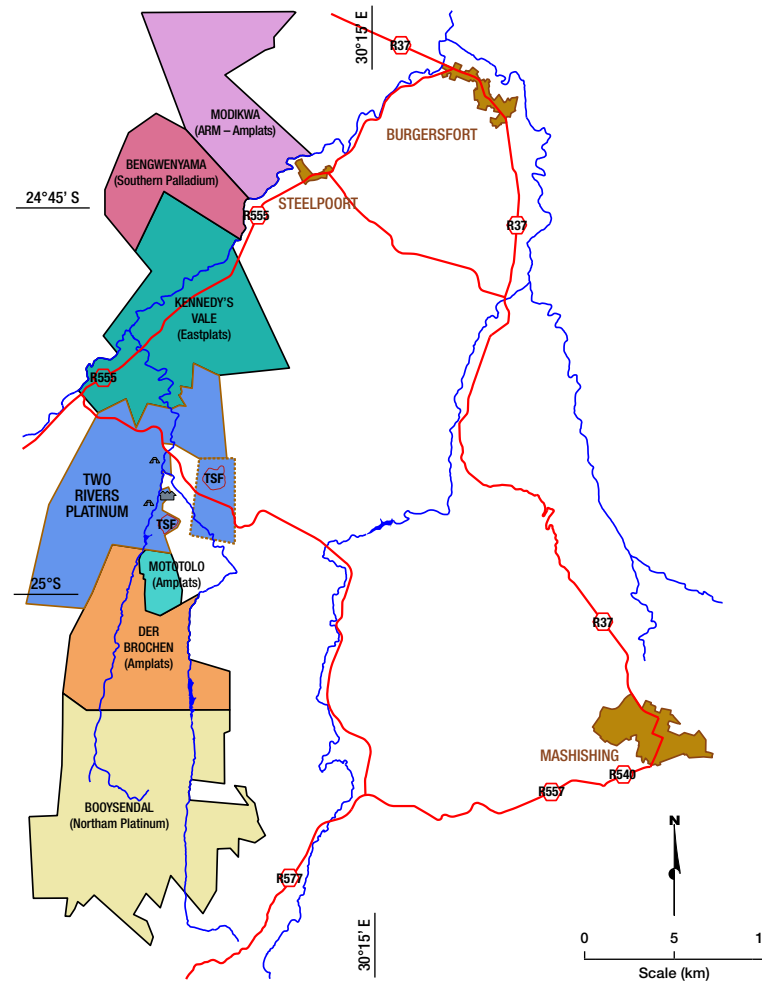


Two Rivers is located within the southern sector of the Eastern Limb of the Bushveld Complex.

Mining right  
**11 349ha**

Implats' interest  
**46%** non-managed

## South Africa



### Legend

Town	Public road	Portal
Mining right boundary	River	Processing plant
Surface right boundary	Dam	Tailings storage facilities

### LOCATION

Two Rivers is located on the farm Dwaarsrivier 372-KT and extends to the farm Kalkfontein 367-KT, as well as portions of the farms Tweefontein 360-KT and Buffelshoek 368-KT. The mine is situated in the Limpopo province, South Africa, approximately 30km from Steelpoort and 60km from Mashishing. Two Rivers is neighboured by Anglo American Platinum's Mototolo Platinum Mine, as well as the Dwaarsrivier, Tweefontein and Thorncliffe chrome mines.

### BRIEF HISTORY

During 2001, Assmang elected to dispose of its platinum interests at the Dwaarsrivier Chrome Mine. Two Rivers, which at that time was the incorporated joint venture between Avmin and Implats, secured the platinum rights in December 2001. Subsequent corporate activity involving Avmin, ARM and Harmony resulted in the transfer of Avmin's share in Two Rivers to a new, empowered platinum entity, ARM Platinum, a division of ARM. The joint venture partners began developing the Two Rivers project in June 2005. The concentrator plant was commissioned in 2006 and, in 2008, the mine successfully transitioned from a project to a mechanised operation. Two Rivers is a non-managed operation in the Implats portfolio.



## Two Rivers *continued*

### GEOLOGICAL SETTING

The Merensky and UG2 Reefs are separated by a sequence of primarily anorthositic and noritic layered units of some 140m to 160m in combined thickness. Both the Merensky and UG2 Reefs are present — however, no Merensky Reef is present on Tweefontein 360 KT, and the UG2 Reef only occurs on a small portion of this farm. The UG2 Reef outcrops in the Klein Dwarsrivier valley over a north-south strike of 7.5km and dips to the west at 7° to 10°. Due to the extreme topography, the Merensky Reef outcrops further up the mountain slope. Steelpoortpark granite, which is unique to this area, occurs in the southwest part of the project. Three distinct reef types have been defined for the UG2 Reef, namely the 'normal' reef with a thick main chromitite layer; a 'split' reef characterised by an internal pyroxenite/norite lens within the main chromitite layer; and a 'multiple-split' reef with numerous pyroxenite/norite lenses occurring within the main chromitite layer. The multiple-split reef predominates in the southern portion of the mining area. The Merensky Reef is a pyroxenite layer with a chromitite stringer close to the hangingwall contact and at the basal contact. Mineralisation is primarily associated with the upper and lower chromitite stringers. Typical vertical grade profiles are illustrated on [page 64](#).

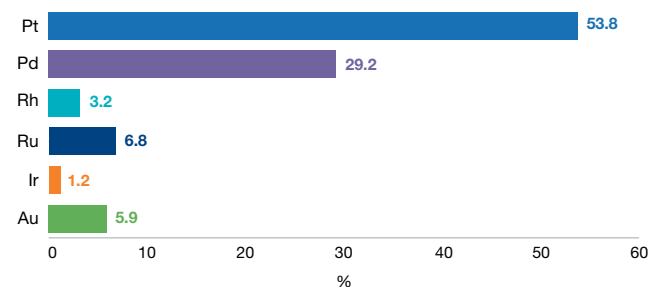
**The area's geological structure is dominated by the regional north-northeast to south-southwest trending Kalkfontein Fault, which has an apparent vertical displacement of 1 200m down thrown to the west. A series of sub-parallel faults occur to the southeast adjacent to the Kalkfontein Fault, which affect both the Merensky and UG2 Reefs. These faults exhibit variable apparent vertical displacements of between 20m and 110m.**

The schematic section for Two Rivers (see [page 65](#)) demonstrates the approximate 8km north-south striking Merensky and the UG2 orebodies dipping 7° to 10° towards

the west, relative to the extreme mountain topography of the Main Zone sequence. Surface exploration drilling and geological fieldwork were challenged by the mountainous terrain that overlays the two economic orebodies. A flatter area on the mountain's eastern side is used for the mine's general infrastructure and can be accessed from the tar road that connects with the R555 and R540. The mining area is bounded by the St George's Fault on the eastern side, where it cuts through a portion of the UG2 Reef that can be accessed and mined by Anglo American Platinum's Mototolo operation, where a royalty agreement is in place.

#### Two Rivers Merensky Reef 6E ratio

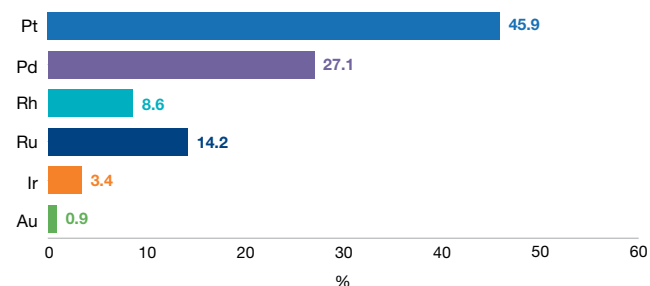
as at 30 June 2024 (%)



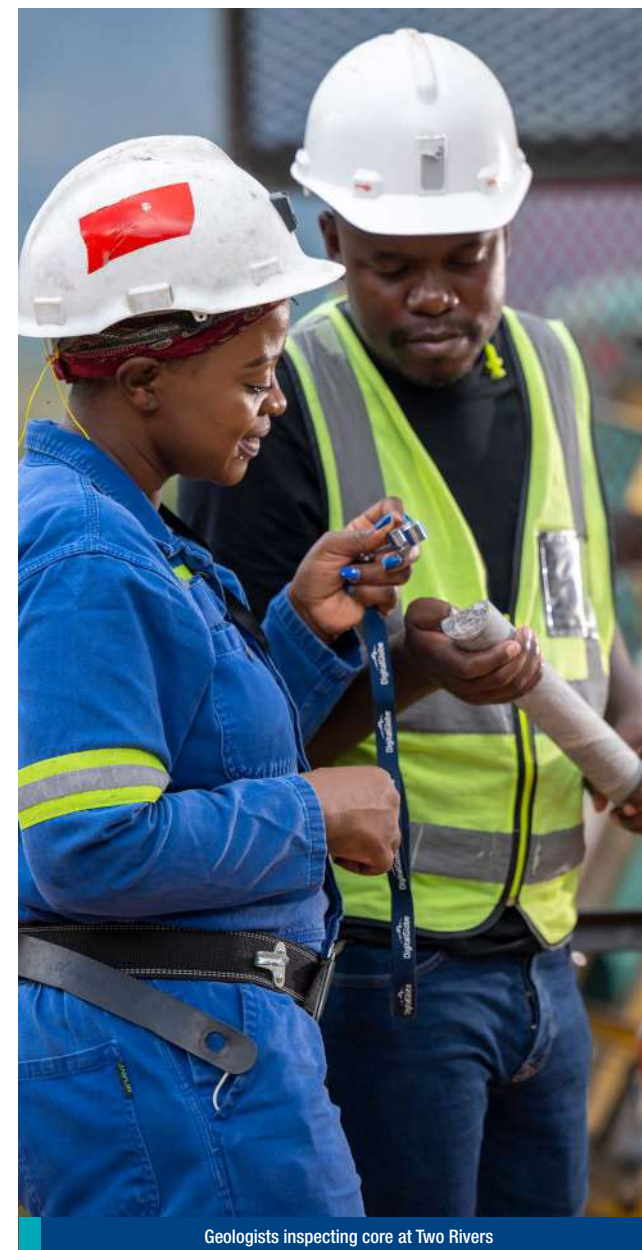
Merensky Reef 6E ratios derived from Mineral Resource estimate.

#### Two Rivers UG2 Reef 6E ratio

as at 30 June 2024 (%)



UG2 Reef 6E ratios derived from Mineral Reserve estimate.

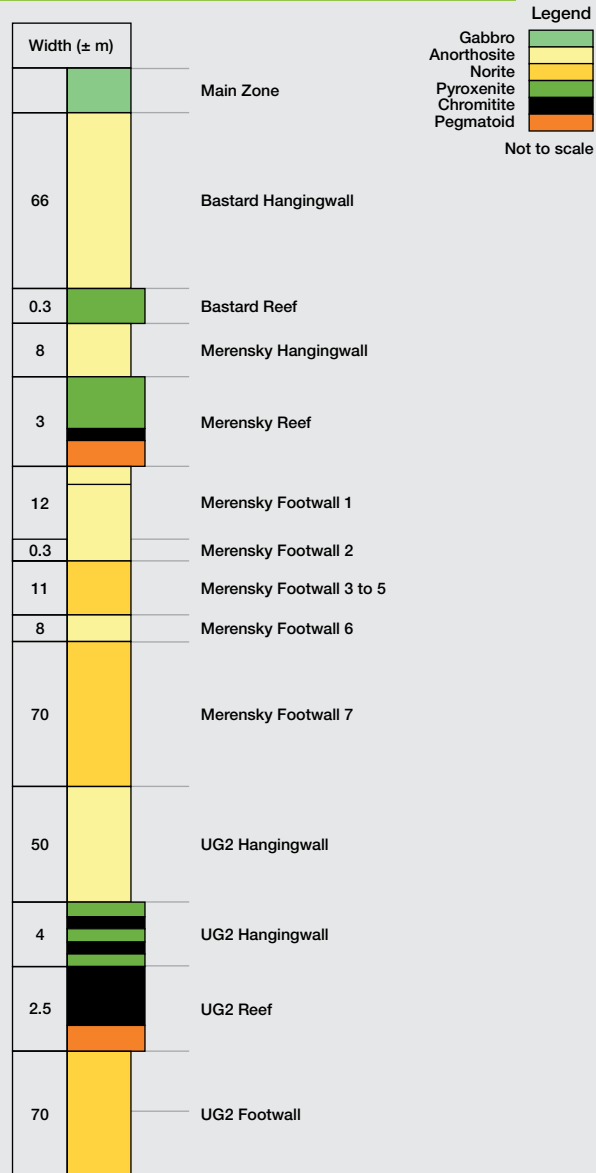


Geologists inspecting core at Two Rivers

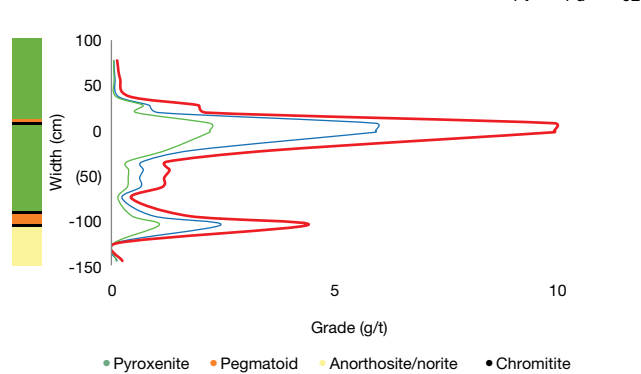


# Two Rivers continued

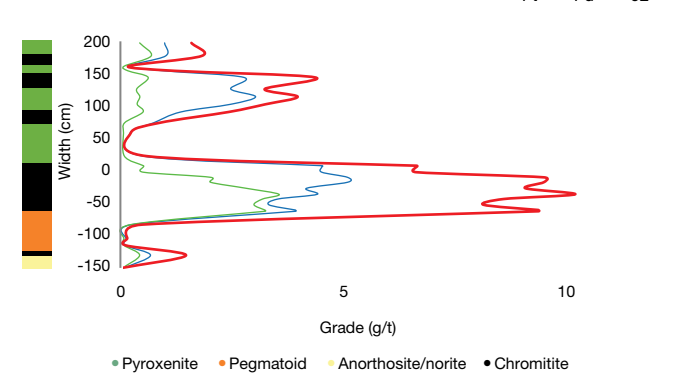
## Generalised geological succession of the upper portion of the Critical Zone at Two Rivers



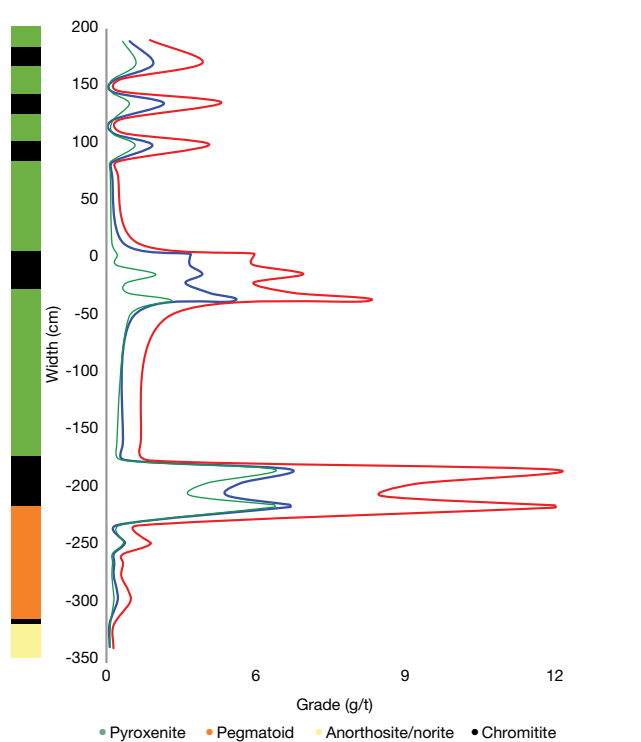
## Two Rivers – Merensky Reef



## Two Rivers – UG2 (normal) Reef



## Two Rivers – UG2 (split) Reef



Mine planning discussion at Two Rivers

## Two Rivers *continued*

### EXPLORATION AND STUDIES

Some 230 cover and geological delineation drilling activities were undertaken from underground to mitigate geological risks during the mining process.

### GENERAL INFRASTRUCTURE

A tar road provides access to Two Rivers, which has a water-use licence (WUL) to obtain its water from the Groot and Klein Dwars rivers and underground dewatering. Electricity is provided by Eskom via one of two 40MVA transformers at the Uchoba substation, with an allocation of 35MVA for Two Rivers fed from a 132kV line from the Merensky substation. Mining infrastructure includes three decline shafts, offices, stores, a concentrator plant, a chromite recovery plant, TSFs and overland ore conveyance.

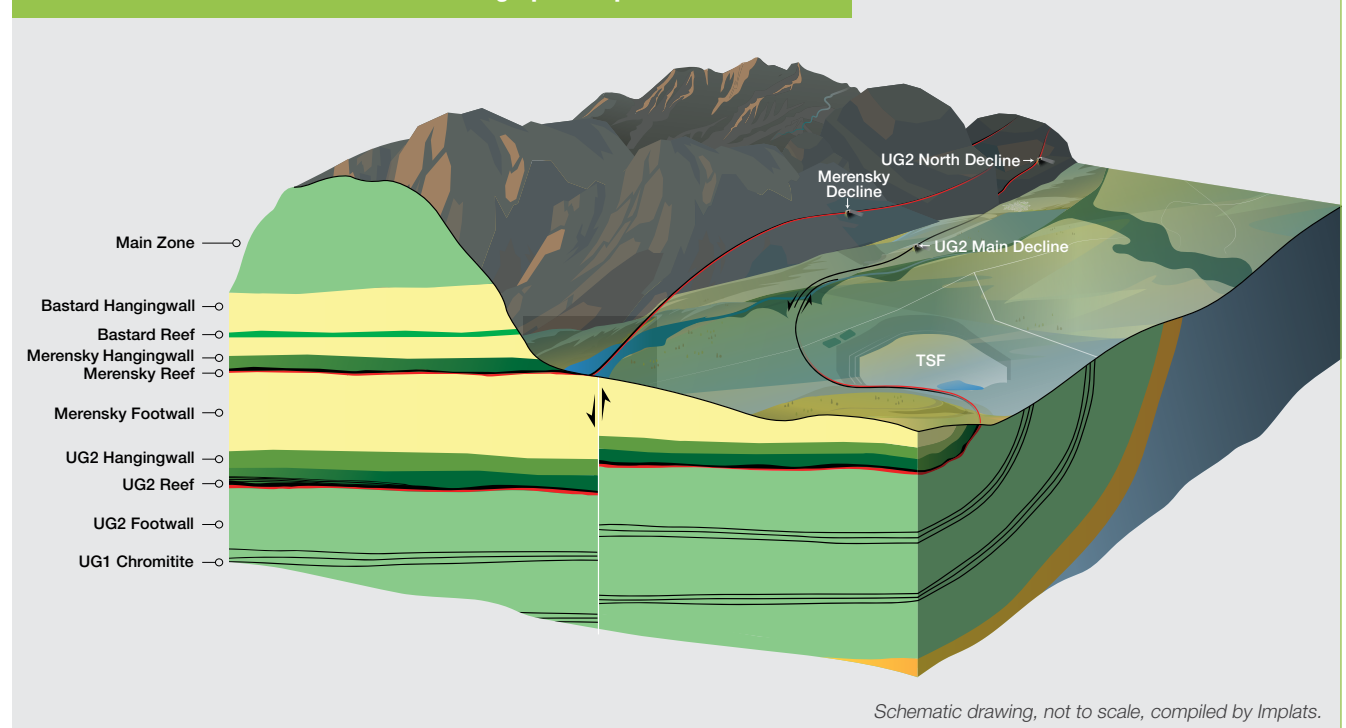
### MINERAL RESOURCE ESTIMATION AND CLASSIFICATION

Grade estimates were obtained using ordinary kriging of UG2 and Merensky Reef drillhole intersections. The UG2 Reef model was updated with additional data. Six underground sampling sections and the major geological structure changes observed on the UG2 Reef mining horizon were included in the Merensky Reef model revision. The Mineral Resource classification for UG2 and Merensky Reefs is based on geological and grade continuity, drillhole spacing, geostatistical parameters and historical classification.

The Mineral Resource estimate reflects the actual depletion as at 31 May 2024 and the non-spatial depletion to 30 June 2024 as per planned mining. More information regarding the Mineral Resources and Mineral Reserves can be found in the 2024 ARM annual report

([www.arm.co.za](http://www.arm.co.za)).

Generalised schematic section of the stratigraphic sequence at Two Rivers

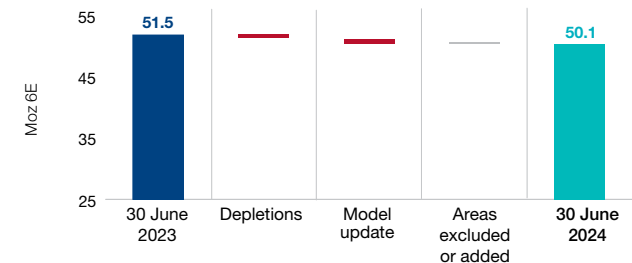


### MINERAL RESOURCE RECONCILIATION

The year-on-year reconciliation of Two Rivers' Mineral Resource estimate shows an increase in the Merensky Reef estimates relative to the previous year, primarily due to model updates and updating the geology for the Merensky Reef from 30% to 14%. The UG2 Mineral Resource estimate was impacted by depletion and model updates, resulting in a minor change since 2023.

### Total Two Rivers 6E Mineral Resources

as at 30 June 2023 (variance Moz 6E)



## Two Rivers continued

### Two Rivers Mineral Resource estimate (inclusive reporting)

As at 30 June 2024									
Orebody Category	Units	Merensky Reef			UG2 Reef				Total
		Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	
Tonnes	Mt	90.2	71.5	161.8	14.6	73.7	81.0	169.2	331.0
Width	cm	192	134	—	139	142	117	—	—
4E grade	g/t	3.05	4.06	3.50	4.64	4.79	4.50	4.64	4.08
6E grade	g/t	3.33	4.40	3.80	5.65	5.78	5.38	5.58	4.71
Ni	%	0.13	0.16	0.15	0.04	0.04	0.04	0.04	0.09
Cu	%	0.08	0.09	0.08	0.01	0.01	0.01	0.01	0.05
4E oz	Moz	8.9	9.3	18.2	2.2	11.3	11.7	25.2	43.4
6E oz	Moz	9.7	10.1	19.8	2.6	13.7	14.0	30.3	50.1
Pt oz	Moz	5.3	5.4	10.6	1.2	6.2	6.2	13.6	24.2
Pd oz	Moz	2.7	3.1	5.8	0.7	3.9	4.3	8.9	14.6

As at 30 June 2023									
Orebody Category	Units	Merensky Reef			UG2 Reef				Total
		Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	
Tonnes	Mt	91.1	77.0	168.2	15.3	75.5	81.0	171.7	339.9
Width	cm	192	137	—	142	142	117	—	—
4E grade	g/t	3.07	4.06	3.52	4.58	4.78	4.51	4.63	4.08
6E grade	g/t	3.35	4.40	3.83	5.56	5.77	5.38	5.57	4.71
Ni	%	0.13	0.17	0.15	0.04	0.04	0.04	0.04	0.09
Cu	%	0.08	0.09	0.08	0.01	0.01	0.01	0.01	0.05
4E oz	Moz	9.0	10.0	19.1	2.2	11.6	11.7	25.6	44.6
6E oz	Moz	9.8	10.9	20.7	2.7	14.0	14.0	30.7	51.5
Pt oz	Moz	5.4	5.8	11.1	1.3	6.3	6.2	13.8	24.9
Pd oz	Moz	2.7	3.3	6.0	0.7	4.0	4.3	9.0	15.0

### MODIFYING FACTORS

The table below summarises the significant modifying factors impacting on the Mineral Resource and Mineral Reserve estimates (see [pages 15, 31, 68](#) and [69](#) for further details).

Mineral Resource Key assumptions	Merensky Reef	UG2 Reef
Geological losses	14%	18%
Area	38.3 million ca	49.3 million ca
Average resource cut	167cm	129cm

Mineral Reserve Modifying factors	Merensky Reef	UG2 Reef
Dilution	—	23 – 30%
Pillars	—	15 – 25%
Mine call factor	—	95 – 96%
Relative density	—	3.6 – 3.8
Average stoping width	—	247cm
Concentrator recoveries	—	83%

### MINING METHODS

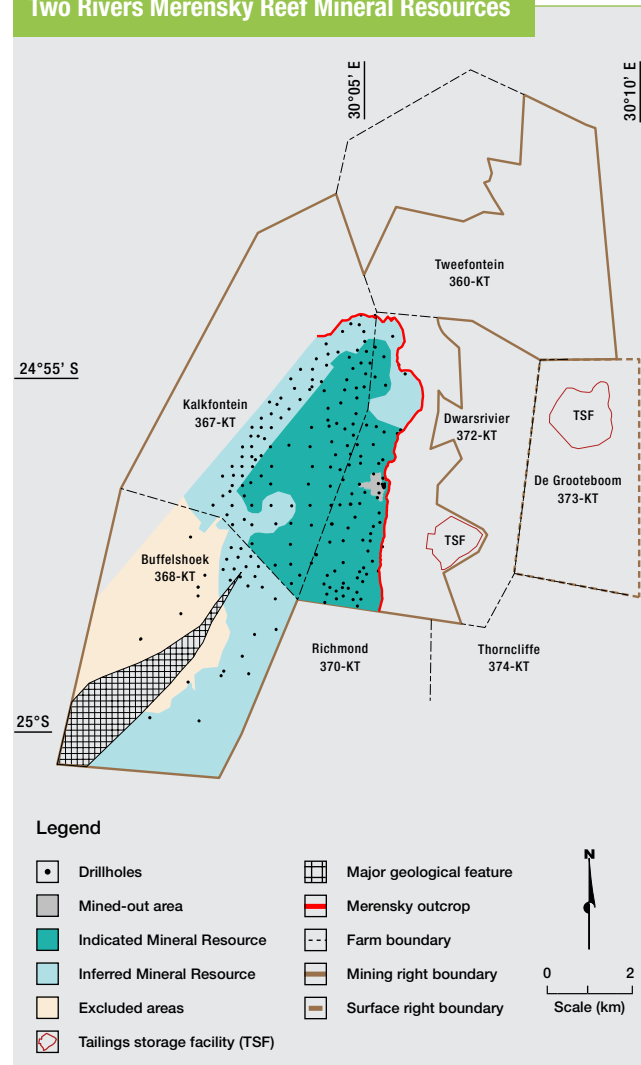
The UG2 Reef is accessed via two decline shaft systems situated 3km apart, namely the Main Decline and the North Decline. Production of the UG2 Reef is through a fully mechanised bord and pillar stoping method. A mining section consists of 6m, 8m and 10m bords, with pillar sizes increasing with depth below the surface. The pillars are 6m x 6m to 12m x 12m in size. The bords are mainly mined on strike.

Construction of the new Merensky mine has commenced and the mining method will be based on fully mechanised bord and pillar mining.

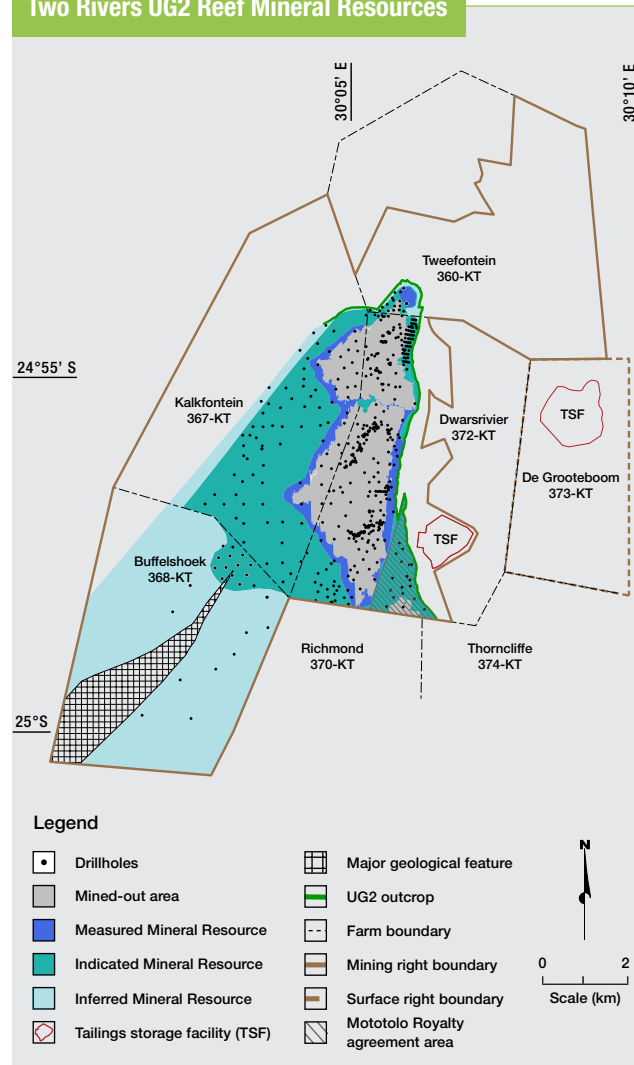


## Two Rivers continued

### Two Rivers Merensky Reef Mineral Resources



### Two Rivers UG2 Reef Mineral Resources



### MINE PLANNING PROCESS

A 3D geological model, with layer grades and widths per stratigraphic unit, is used in the mine planning. Mine scheduling is applied in Studio UG and the schedule is evaluated against the grade and thickness block model. The three distinct reef types, including normal, split reef and multiple-split reef facies, significantly impact the UG2 Reef mine plan. Dilution calculations are based on the specific reef type. Hangingwall and footwall overbreak, percentage off-reef, ore remaining (mining losses), geological losses (potholes, faults, dykes and replacement pegmatoid) and a shaft-call factor are applied to the planned areas to generate the tonnage and grade profiles.

### MINERAL RESERVE ESTIMATION AND CLASSIFICATION

The modifying factors used in the UG2 and Merensky Reef Mineral Reserve estimates are based on the mine plan, which envisages a mechanised bord and pillar layout. More details regarding the Mineral Resources and Mineral Reserves can be found in the 2024 ARM annual report ([www.arm.co.za](http://www.arm.co.za)).

The conversion and classification of Mineral Reserves at Two Rivers are informed by:

- Economic testing at given market conditions (price deck)
- Most of the Indicated Mineral Resources can be classified as Probable Mineral Reserves
- Most of the Measured Mineral Resources can be classified as Proved Mineral Reserves.

## Two Rivers continued

### Two Rivers Mineral Reserve estimate

As at 30 June 2024								
Orebody Category	Units	Merensky Reef			UG2 Reef			Total
		Proved	Probable	Total	Proved	Probable	Total	
Tonnes	Mt	0.6	–	0.6	11.4	53.9	65.3	65.9
Width	cm	–	–	–	247	247	–	–
4E grade	g/t	1.88	–	1.88	2.51	2.64	2.62	2.61
6E grade	g/t	2.05	–	2.05	3.06	3.20	3.18	3.17
4E oz	Moz	0.04	–	0.04	0.9	4.6	5.5	5.5
6E oz	Moz	0.04	–	0.04	1.1	5.5	6.7	6.7
Pt oz	Moz	0.02	–	0.02	0.5	2.5	3.1	3.1
Pd oz	Moz	0.01	–	0.01	0.3	1.5	1.8	1.8

As at 30 June 2023								
Orebody Category	Units	Merensky Reef			UG2 Reef			Total
		Proved	Probable	Total	Proved	Probable	Total	
Tonnes	Mt	0.5	55.9	56.4	11.2	58.0	69.2	125.6
Width	cm	–	258	–	247	246	–	–
4E grade	g/t	1.95	2.53	2.52	2.57	2.75	2.72	2.63
6E grade	g/t	2.12	2.75	2.75	3.13	3.33	3.30	3.05
4E oz	Moz	0.03	4.5	4.6	0.9	5.1	6.0	10.6
6E oz	Moz	0.03	4.9	5.0	1.1	6.2	7.3	12.3
Pt oz	Moz	0.02	2.7	2.7	0.5	2.9	3.4	6.1
Pd oz	Moz	0.01	1.4	1.4	0.3	1.7	2.0	3.4

### MINERAL RESERVE RECONCILIATION

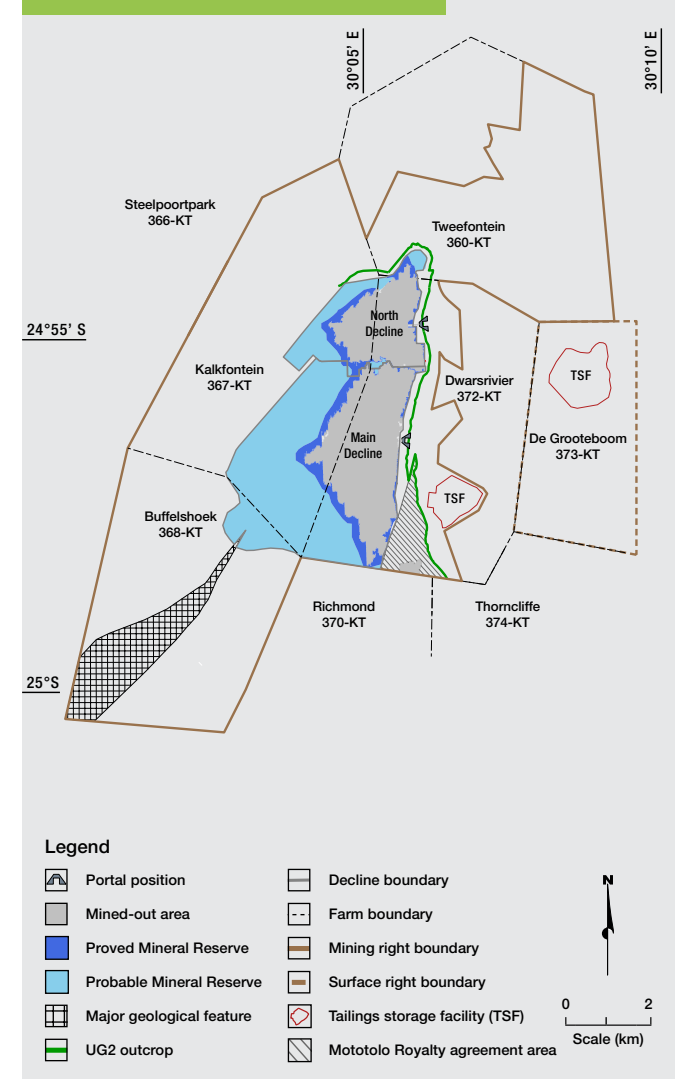
The UG2 Mineral Reserve estimate was impacted by depletion and model updates, resulting in a minor change since 2024. The Merensky project has been placed on care and maintenance due to the current market conditions and basket metal price sensitivity. Some 40% of the Two Rivers' 6E Mineral Reserves are from the Merensky Reef.

A 0.6Mt stockpile represents the Proved Mineral Reserves for Merensky Reef that will be processed at the UG2 concentrator.

### PROCESSING

Two Rivers has an on-site concentrator plant where initial processing is undertaken, comprising a standard MF2 design as generally used in the industry for UG2 Reef ore. The Merensky concentrator has been placed on care and maintenance. Concentrate is transported by road to Impala Mineral Processes in Rustenburg, where further processing occurs in terms of an agreement with IRS.

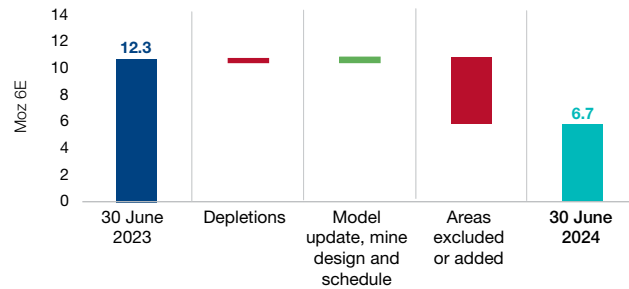
### Two Rivers UG2 Mineral Reserves



## Two Rivers continued

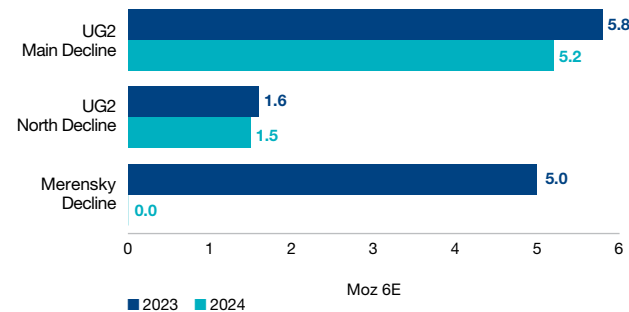
### Total Two Rivers 6E Mineral Reserves

as at 30 June 2024 (variance Moz 6E)



### Two Rivers Mineral Reserve distribution

as at 30 June 2024 (Moz 6E)



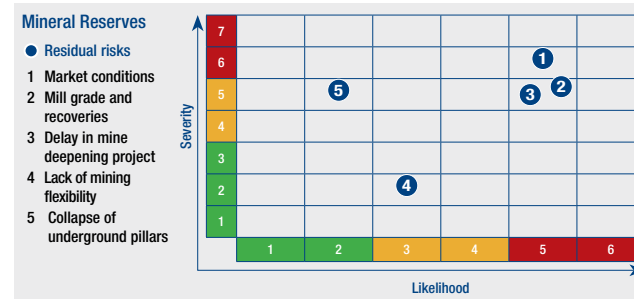
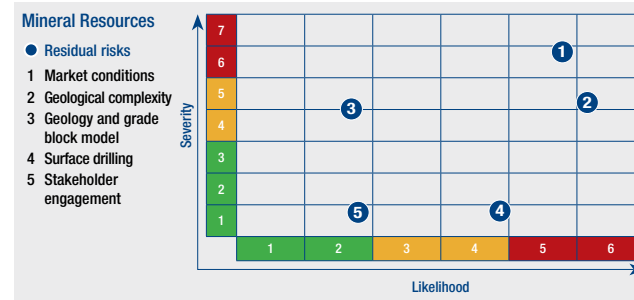
## RISK ASSESSMENT

The residual risk matrices for Two Rivers Mineral Resources and Mineral Reserves are illustrated below, highlighting the top five residual risks for both.

The top residual risks identified for the Mineral Resources at Two Rivers are (1) market conditions: basket price sensitivity; (2) geology: complexity; (3) surface drilling: challenging topography; (4) geology and grade block model; and (5) stakeholder engagement.

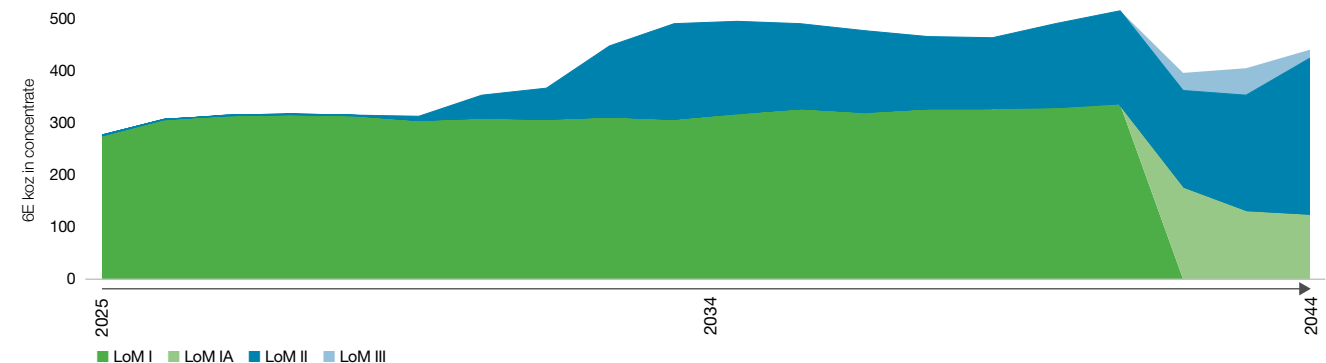
The top residual Mineral Reserve risks identified at Two Rivers are (1) market conditions: basket price sensitivity; (2) lack of mining flexibility (3) mill grade and recoveries; (4) delay in mine deepening project; and (5) the collapse of underground pillars.

Management interventions are in place to mitigate these risks listed above. Further details regarding the formal risk management process are discussed on [page 19](#).



### Two Rivers estimated 20-year 6E LoM ounce profile

as at 30 June 2024



## LoM, VALUATION AND SENSITIVITY

The estimated 20-year LoM profile for Two Rivers is shown below. LoM I constitutes production of the UG2 Reef from the Main and North Decline shafts and extends for 17 years until 2041. LoM II is an extension of the Main Decline infrastructure into the Kalkfontein RE and portions 1 and 2 of the UG2 Reef. The Merensky Reef Decline has been excluded from the Mineral Reserves statement and LoM I due to the current depressed metal prices. The Merensky Decline has been stopped and is on care and maintenance since July 2024 and is also included as LoM II below.

The economic viability of Two Rivers' Mineral Reserves is tested by Implats using net present value calculations over the LoM of the Mineral Reserve, determining the lowest real rand basket price that would still render the Mineral Reserve viable. These calculations generate basket prices based on the local 6E ratios and differ from the overall Group basket prices. This is then tested against the internal estimate of the real long-term basket price and the spot price as at 30 June 2024. These tests by Implats indicate that Two Rivers requires a real long-term basket price of between R25 000 and R30 000 per 6E ounce to be economically viable. While the real spot basket price for Two Rivers as at 30 June 2024 was R25 429 (US\$1 434) per 6E ounce, Two Rivers' internal long-term real basket price is R29 865 (US\$1 752). Statistics relating to the historical production are shown on [pages 28 and 29](#).



# Zimplats



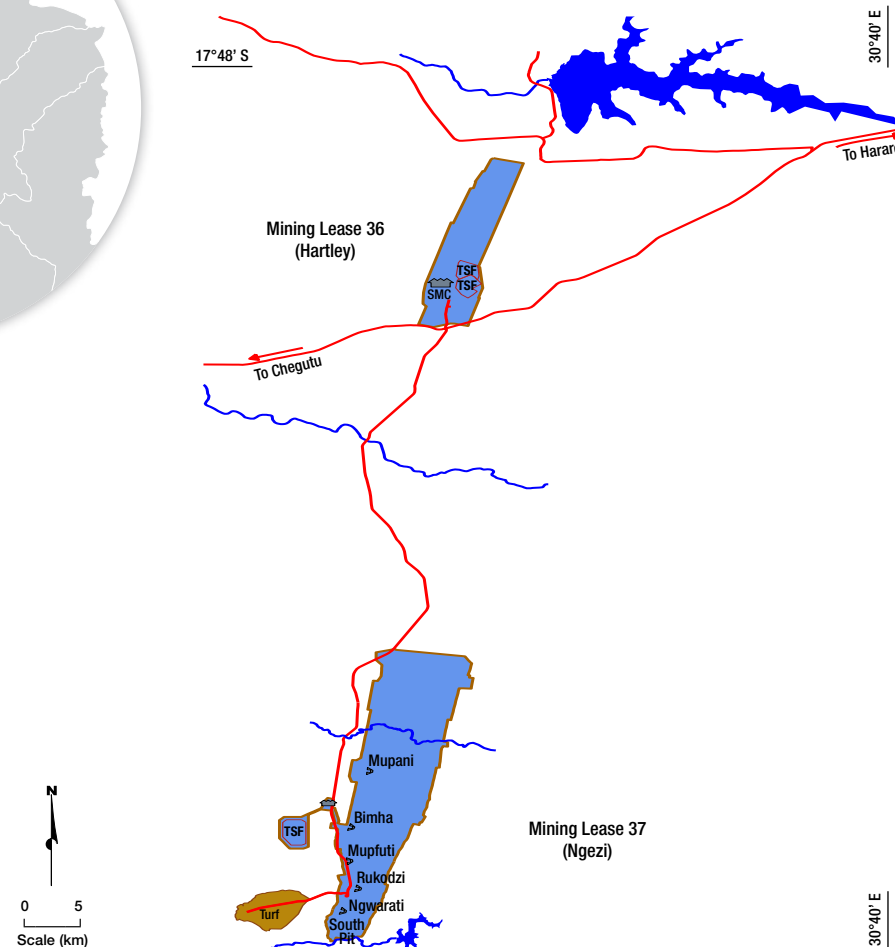
Zimplats' operations are located on the Hartley Complex of the Great Dyke, in Zimbabwe's Mashonaland West province.

Mining right  
**24 632ha**

Implats' interest  
**87%** managed

Ngezi concentrator

# Zimbabwe



## Legend

- Mining lease
- Tailings storage facility (TSF)
- Town
- Plant

- Rivers
- Lake
- Public road

## LOCATION

The Zimplats mines at Ngezi are located on Mining Lease 37, approximately 150km southwest of Harare, at the southern end of the Sebakwe sub-chamber of the Hartley Complex on the Great Dyke. Hartley Mine and the Selous Metallurgical Complex (SMC) are located on Mining Lease 36, in the Darwendale sub-chamber of the Great Dyke's Hartley Complex, approximately 80km west-southwest of Harare and 77km north of the Ngezi mines.

## BRIEF HISTORY

Development at Hartley Platinum Mine began in 1994 after Delta Gold brought BHP into a joint venture (66.7% BHP and 33.3% Delta Gold) to develop the asset. By 1998, Delta Gold had extended its cover to include interests in all the platinum Mineral Resources of the Hartley Complex. By 1999 it became apparent that Hartley Platinum Mine had failed to meet its development targets and BHP placed it on care and maintenance. Zimplats took over BHP's share in Hartley and the SMC and, in 2001, initiated the Ngezi/SMC project with assistance from Implats and ABSA Investment Bank. A 2.2 million tonnes per year open-pit mine was established at Ngezi.

Implats progressively increased its shareholding in Zimplats until 2003, when it successfully made an unconditional cash offer to Zimplats'

Zimplats continued

minority shareholders. In 2003, Zimplats began developing underground operations at Ngezi to replace the east and west open pits. Over the years, production volumes from the operations have increased to the current 7.9 million tonnes of ore per year from five underground mines, all of which feed the two concentrators namely SMC Concentrator and Ngezi Concentrator which has three modules. Zimplats is one of Implats' managed operations, with Implats holding 87% and minority shareholders holding the remaining 13%.

GEOLOGICAL SETTING

The Great Dyke has been sub-divided into five sub-chambers, namely the Wedza, Selukwe (Shurugwi), Sebakwe, Darwendale and Musengezi sub-chambers. The stratigraphic units in each sub-chamber are classified into the ultramafic (lower) and the mafic (upper) sequence. The ultramafic rocks are dominated from the base upwards by dunite, harzburgite and pyroxenite, while the mafic rocks consist mainly of gabbro and gabbronorite. Thin layers of chromitite occur at the bottom of cyclic units throughout the ultramafic sequences.

The Great Dyke of Zimbabwe developed as a series of initially discrete magma chamber compartments, which coalesced as the chambers filled.

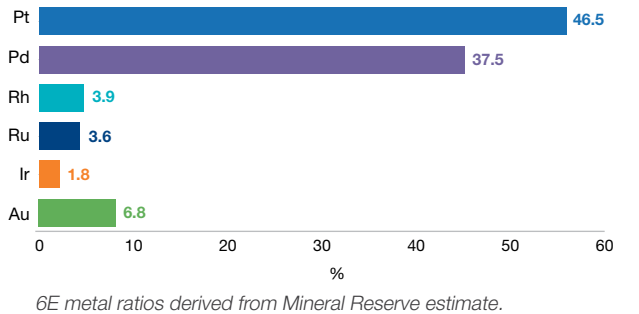
The PGM-bearing horizon is known as the Main Sulphide Zone (MSZ), which is part of the lower sequence and is located below the contact with the mafic sequence. The MSZ is located in the P1 pyroxenite, from 5m to about 50m below the ultramafic/mafic contact. The MSZ is a continuous layer, 2m to 10m thick, and forms an elongated basin. The zone strikes north-northeast, dips between 5° and 20° on the margins, and flattens towards the axis (centre) of the basin. Peak base metal and PGM values are offset vertically, with palladium peaking at the base, platinum

in the centre and nickel towards the top (see typical vertical grade profiles on [page 72](#)). Visual identification of the MSZ is difficult and systematic monitoring of the reef, using various sampling methods, is needed to guide mining.

Mining occurs in areas where the dip is less than 9°, referred to as the MSZ 'Flats', and areas with dips between 9° and 14°, which are referred to as the 'MSZ Upper Ores I' areas (UOR I). Currently no mining takes place in areas with a dip above 14°, which are referred to as the 'MSZ Upper Ores II' (UOR II).

The schematic of the Zimplats operation on [page 74](#) cuts obliquely across the 2m to 10m thick platinum-bearing MSZ orebody with an approximate north-northeast strike distance of 16km at Ngezi in the south, where the Mupani, Bimha, Mupfuti, Rukodzi and Ngwarati portals are located. Further to the north, at the Hartley Complex, the MSZ orebody extends over a 9km north-northeast strike distance. It is evident on the schematic that the MSZ orebody is a continuous layer within the Great Dyke. The general mining infrastructure at Ngezi is located on the western side of the Great Dyke, where the orebody is accessed by portals. East-west striking fault structures form natural boundaries between the portal areas at Ngezi.

Zimplats MSZ 6E ratio  
as at 30 June 2024 (%)



EXPLORATION AND STUDIES

During the year, no new surface exploration holes were drilled as a cash preservation measure in response to the negative impact of low metal prices. Exploration work focused on scanning, logging and interpretation of core drilled in the prior period, culminating in the updated Mineral Resource models used in the 2024 Mineral Resource and Mineral Reserve estimation exercise.

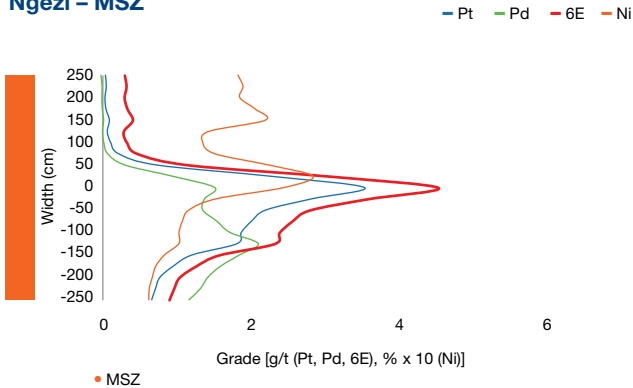
Routine underground core drilling continued throughout the year. This essential strategy is critical to improving the effectiveness of the short-term mining plan as it allows the mines to interpret smaller-scale geological structures, which would not be captured by the widely spaced surface drilling. All drillholes were sampled on the reef horizon and the half-core split was dispatched for analysis at external laboratories.

Underground core drilling for reef profiling and geotechnical assessment was completed in all the active mines. The information obtained from logging and sampling the holes has improved the characterisation of the orebody ahead of mining. Completed underground core drilling work during the past year is shown in the table below.

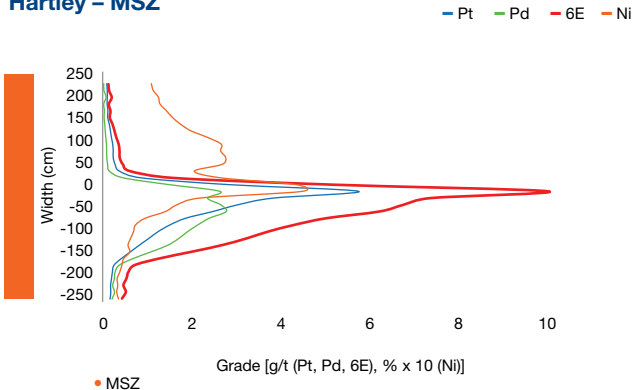
Operation	Underground drilling	
	Number of drillholes	Total drilling (m)
Ngwarati Mine	7	585
Mupfuti Mine	17	1 495
Bimha Mine	14	1 400
Mupani Mine	22	2 738
Portal 10	–	–
Hartley Mine	–	–
Total	60	6 218

Zimplats continued

Ngezi – MSZ

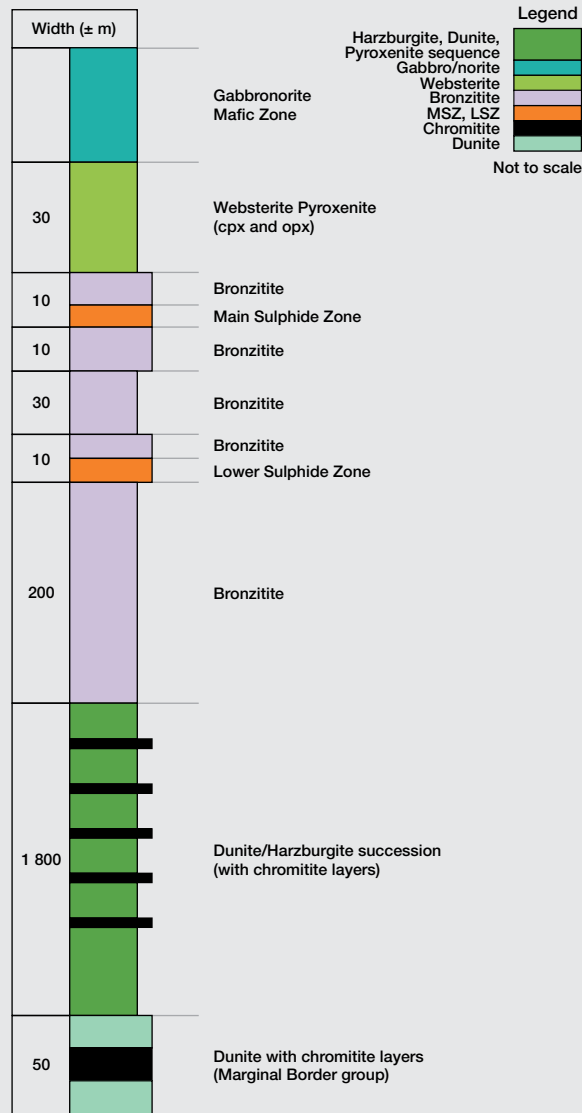


Hartley – MSZ



Transport of ore at Zimplats

Generalised geological succession of the upper portion of the Great Dyke at Zimplats



The recent Hartley exploration drilling was focused on the tailing storage facility (TSF) extension area which was drilled to the Measured confidence level ahead of commencement of tailings deposition. The additional data acquired from the drilling confirmed orebody continuity and clarified the general characteristics of the major geological structures in the area, mainly dolerite sills and faults.

Following approval of the Mupfuti replacement bankable feasibility study (BFS) in 2021, Bimha Mine's shaft capacity was increased from its original design capacity of 2Mtpa to 3.1Mtpa in FY2023. Mining and construction work to upgrade Mupani Mine's infrastructure from its design capacity of 2.2Mtpa to 3.6Mtpa is underway, with a target completion date of 2028. The development, aimed at creating more underground face-length to accommodate new teams at this mine, was incorporated into the business plan and production ramp-up will start while Mupfuti Mine is still on full production. Rukodzi Mine was depleted at the end of 30 June 2022 while Ngwarati Mine was depleted at the end of 30 June 2024.

GENERAL INFRASTRUCTURE

Infrastructure to support production consists of integrated road networks, five production declines, conveyor networks and ore load-out facilities for road trains. Ore processing infrastructure consists of the Ngezi Concentrator with three modules and an additional concentrator and a smelter at SMC. Construction of an expanded 38MW rectangular furnace at SMC is at an advanced stage, targeting commissioning at the end of the first quarter FY2025. Water for the Ngezi operations is drawn from the Ngezi and Chitsuwa dams. Zimplats' annual allocation from the two dams is 11 000MI, which exceeds current requirements. The SMC processing infrastructure includes a concentrator, a smelter, TSFs, stores and offices. Water for the SMC operations is abstracted from the Manyame Dam, where Zimplats has an annual allocation of 5 000MI. Power from the Zimbabwe Electricity Supply Authority's (ZESA) Selous substation is fed to the transformers at Ngezi and SMC via the 132kV overhead lines. These assets, and the wide network of information and communication technology equipment, provide services to the business.



# Zimplats continued

## MINERAL RESOURCE ESTIMATION AND CLASSIFICATION

The Mineral Resource and Mineral Reserve estimates for ML 37 (Ngezi) are based on external nickel sulphide collection fire assays with an ICP-MS finish. Since the conclusion of the twin drilling campaign in FY2022, the Mineral Resource estimates for ML 36 are now based entirely on only external nickel sulphide collection fire assays with an ICP-MS finish.

Oxide ores on the Great Dyke are defined as the weathered to semi-weathered material near the sub-outcrop of the MSZ. These oxide ores have lower metallurgical recoveries than unweathered sulphide ore using conventional extraction technology and are currently marginal to sub-economic.

Mineral Resources are estimated using kriging techniques on assay data derived from surface drillholes. Estimates are derived from composite widths, which are based on appropriate economic parameters. The classification of Mineral Resources at Zimplats is informed by a matrix of factors, which incorporate geological complexity and the confidence in the geostatistical estimation. In broad terms, confidence is derived from surface drillhole spacing, which has the largest weighting on the classification of Mineral Resources. For Ngezi (ML 37), the following applies:

- Drillhole spacing of 250m or less supports the Measured category of Mineral Resources
- Drillhole spacing between 250m and 1 000m supports the Indicated category of Mineral Resources
- Drillhole spacing greater than 1 000m supports the Inferred category of Mineral Resources.

For Hartley (ML 36), the drillhole density in the Measured Mineral Resources is generally tighter than that for ML 37 with 150m spacing being the target. The interpretation of drilling data at ML 36 shows geological continuity of the orebody as well as grade consistency. The modelling remains consistent with the known characteristics of the mined footprint at Hartley.

The Mineral Resource estimates reflects the actual spatial depletion as at 30 April 2024 and the non-spatial forecast depletion to 30 June 2024. More details regarding the Mineral Resources and Mineral Reserves can be obtained from the 2024 Zimplats annual report ([www.zimplats.com](https://www.zimplats.com)).

## Zimplats Mineral Resource estimate (inclusive reporting)

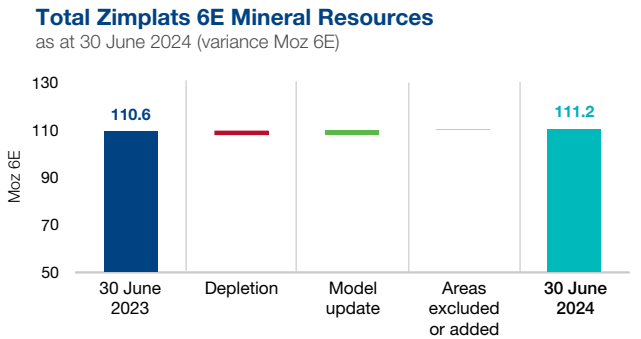
As at 30 June 2024													
Orebody		Ngezi Mines				Hartley				Oxides – all areas			Total
Category	Units	Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	Indicated	Inferred	Total	
Tonnes	Mt	231.8	334.6	122.0	688.4	19.3	139.9	53.2	212.3	29.9	35.8	65.7	966.4
Width	cm	244	227	208	–	180	180	180	–	250	240	–	–
4E grade	g/t	3.30	3.35	3.28	3.32	3.89	3.65	3.70	3.69	3.20	3.25	3.23	3.39
6E grade	g/t	3.48	3.53	3.47	3.50	4.08	3.84	3.89	3.88	3.38	3.43	3.41	3.58
Ni	%	0.10	0.11	0.09	0.11	0.13	0.12	0.11	0.12	0.10	0.11	0.10	0.11
Cu	%	0.08	0.08	0.08	0.08	0.10	0.09	0.10	0.09	0.08	0.09	0.08	0.08
4E oz	Moz	24.6	36.0	12.9	73.5	2.4	16.4	6.3	25.2	3.1	3.7	6.8	105.5
6E oz	Moz	26.0	38.0	13.6	77.6	2.5	17.3	6.7	26.5	3.3	4.0	7.2	111.2
Pt oz	Moz	12.3	18.2	6.8	37.3	1.2	8.6	3.3	13.1	1.5	1.9	3.4	53.8
Pd oz	Moz	9.54	13.6	4.5	27.6	0.9	5.9	2.3	9.1	1.2	1.5	2.7	39.5

As at 30 June 2023													
Orebody		Ngezi Mines				Hartley				Oxides – all areas			Total
Category	Units	Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	Indicated	Inferred	Total	
Tonnes	Mt	238.0	337.6	124.0	699.6	15.2	127.9	55.7	198.8	29.9	35.8	65.7	964.2
Width	cm	245	227	208	–	180	180	180	–	250	240	–	–
4E grade	g/t	3.33	3.35	3.29	3.33	3.89	3.53	3.72	3.61	3.20	3.25	3.23	3.38
6E grade	g/t	3.51	3.53	3.47	3.51	4.09	3.72	3.91	3.80	3.38	3.43	3.41	3.57
Ni	%	0.10	0.11	0.09	0.11	0.13	0.12	0.12	0.12	0.10	0.11	0.10	0.11
Cu	%	0.08	0.08	0.08	0.08	0.10	0.09	0.10	0.09	0.08	0.09	0.08	0.08
4E oz	Moz	25.5	36.3	13.1	74.9	1.9	14.5	6.7	23.1	3.1	3.7	6.8	104.8
6E oz	Moz	26.9	38.3	13.9	79.1	2.0	15.3	7.0	24.3	3.3	4.0	7.2	110.6
Pt oz	Moz	12.8	18.4	6.9	38.2	0.9	7.9	3.4	12.3	1.5	1.9	3.4	53.8
Pd oz	Moz	9.8	13.7	4.6	28.1	0.7	5.4	2.4	8.6	1.2	1.5	2.7	39.4

## MINERAL RESOURCE RECONCILIATION

There was a 2.2Mt (0.2%) year-on-year increase in the overall Zimplats Mineral Resources despite mining depletion at the operational Ngezi mines (which included pillar reclamation). This is as a result of the gain realised in the Mineral Resources at Hartley from the model update following a substantial drilling campaign in FY2023 in which the entire TSF extension area was upgraded from Inferred and Indicated to the Measured category. This upgrade enabled the downward revision of the geological loss factor from 20% in 2023 to 10% in the 2024 models. Marginal increases were realised correspondingly in the Pt and 6E ounces of the total Mineral Resources.

Zimplats continued



MODIFYING FACTORS

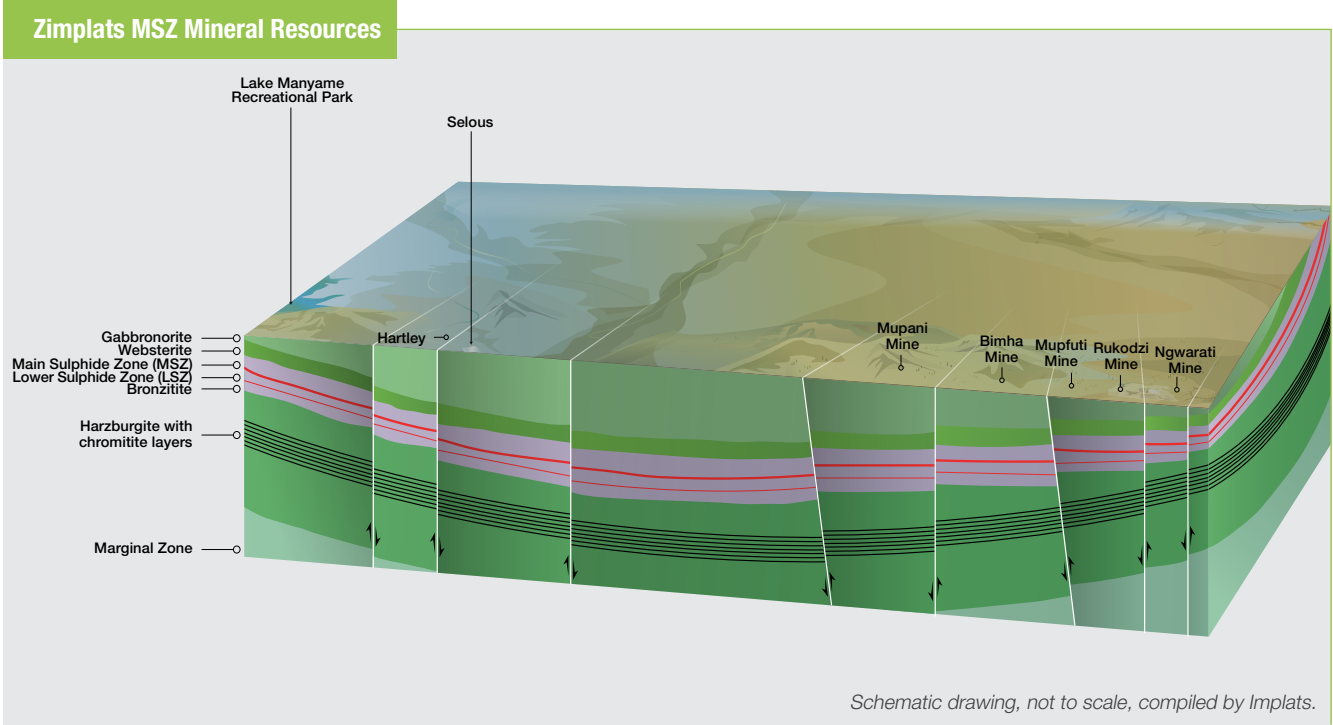
The table below summarises the significant modifying factors impacting the Mineral Resource and Mineral Reserve estimates (see [pages 15, 31, 73, 75](#) and [76](#) for further details).

Mineral Resource Key assumptions	Main Sulphide Zone
Geological losses	5 – 20%
Area	154 million ca
Resource cut	180 – 250cm

Mineral Reserve Modifying factors	Main Sulphide Zone
Dilution	5 – 8%
Pillars	19 – 35%
Mine call factor	97%
Relative density	3.18 – 3.25
Stoping width	265 – 270cm
Concentrator recoveries	78 – 81%

MINING METHODS

A mechanised bord and pillar mining method is employed to extract ore from stopes, whose nominal stope width is 2.5m. Mine access is through declines, which are generally located



centrally in each Mineral Resource block. Any asymmetry is accounted for in the mine production scheduling. The main production suite of equipment includes a single boom face rig for drilling, a roof bolter for support drilling and a 10t loader (LHD) and a dump truck, which are deployed into self-directed functional teams in each of the underground production sections.

The productivity per crew varies from approximately 16 500t to greater than 22 000t per month, depending on the particular mine, the dip of the reef and the existing pillar layout. The typical design comprises 7m panels with a minimum of 4m x 4m size in-stope pillars, which are determined by depth below surface, and these are surrounded by large barrier pillars which form paddocks. The paddocks are designed to arrest pillar unravelling in the event of a collapse. At all the mines, the room spans may decrease and pillar dimensions may increase in bad ground. Roof

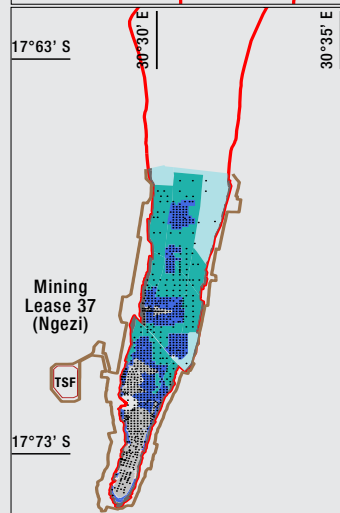
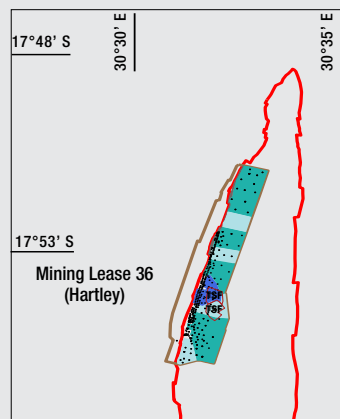
bolts and tendons are integral to the support design. Mining design for pillar reclamation at Rukodzi and Ngwarati is based on partial extraction whereby some pillars are blasted while other are left *in situ* to achieve the desired factor of safety.

MINE PLANNING PROCESS

Zimplats' planning function seeks to strategically plan and direct the mining operations' activities to maximise the Company's production efficiency and cost-effectiveness. While all MSZ 'Flats', Pillar reclamation tonnage from Ngwarati and Rukodzi, MSZ 'Upper Ores I and II' are included in the Mineral Resource estimate, only the MSZ 'Flats' pillar reclamation tonnage and MSZ 'Upper Ores I' in approved shafts are progressed to the Mineral Reserve estimate, based on the currently viable mining methods and economic considerations. The trial to determine a viable mechanised mining method for the 'Upper Ores II' has been

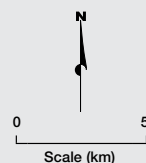
# Zimplats continued

## Zimplats MSZ Mineral Resources



### Legend

- Drillholes
- Mined-out areas
- Measured Mineral Resource
- Indicated Mineral Resource
- Inferred Mineral Resource
- Excluded areas
- MSZ outcrop
- Tailings storage facility (TSF)
- Mining right boundary



put on hold as a cash preservation strategy in response to the depressed metal prices. The OEM has engaged on further customer-recommended equipment design upgrades in preparation for finalisation of the trial at an appropriate time in the future.

Mine planning and scheduling for all operations at Ngezi are undertaken as per the Group cycle, using software such as Datamine and Vulcan.

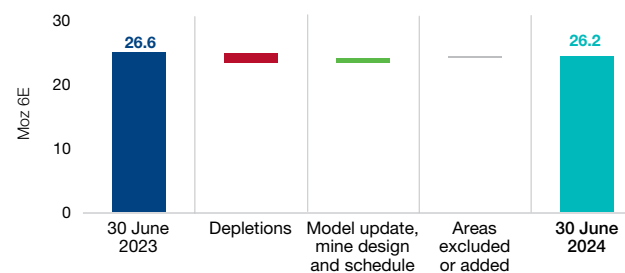
## MINERAL RESERVE ESTIMATION AND CLASSIFICATION

The Mineral Reserve estimates are based on the updated Mineral Resource estimates, mine design and modifying factors. The Mineral Reserves reported reflect anticipated feed grades delivered to the mill. The estimates align with the business plan by scheduling ore tonnages and grades at a 265cm – 270cm stoping width. The conversion and classification of Mineral Reserves at Zimplats are informed by:

- Feasible mine plan and project studies, board approval and available funding
- Economic testing at given market conditions
- Indicated Mineral Resources can be classified as Probable Mineral Reserves if the above conditions are met
- Similarly, Measured Mineral Resources can be classified as Proved Mineral Reserves
- In certain exceptional circumstances, the Competent Person may elect to convert Measured Mineral Resources to Probable Mineral Reserves based on low confidence levels in one or more of the modifying factors.

## Total Zimplats 6E Mineral Reserves

as at 30 June 2024 (variance Moz 6E)



## Zimplats Mineral Reserve estimate

As at 30 June 2024

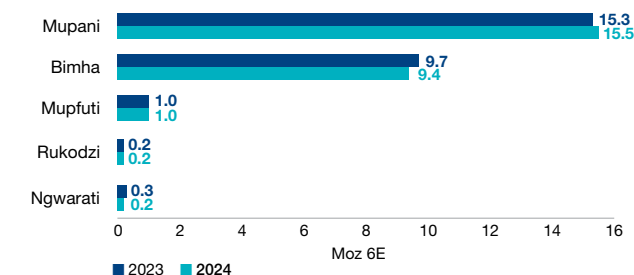
Orebody Category	Units	Ngezi		Total
		Proved	Probable	
Tonnes	Mt	126.6	120.7	247.3
Width	cm	267	269	–
4E grade	g/t	3.15	3.08	3.11
6E grade	g/t	3.33	3.25	3.29
Ni	%	0.10	0.10	0.10
Cu	%	0.07	0.07	0.07
4E oz	Moz	12.8	12.0	24.8
6E oz	Moz	13.5	12.6	26.2
Pt oz	Moz	6.3	5.9	12.2
Pd oz	Moz	5.1	4.7	9.8

As at 30 June 2023

Orebody Category	Units	Ngezi		Total
		Proved	Probable	
Tonnes	Mt	131.3	118.7	249.9
Width	cm	265	265	–
4E grade	g/t	3.17	3.10	3.13
6E grade	g/t	3.35	3.27	3.31
Ni	%	0.10	0.10	0.10
Cu	%	0.07	0.07	0.07
4E oz	Moz	13.4	11.8	25.2
6E oz	Moz	14.1	12.5	26.6
Pt oz	Moz	6.6	5.8	12.4
Pd oz	Moz	5.3	4.7	9.9

## Zimplats Mineral Reserve distribution

as at 30 June 2024 (Moz 6E)





# Zimplats continued

## MINERAL RESERVE RECONCILIATION

A 2.6Mt net decrease in Mineral Reserves is reported, mainly attributable to inclusion of additional MSZ Upper Ores I and adjustment in mining height. This was offset by mining depletion. The declared Mineral Reserves subsequently decreased by 0.4Moz 6E from 26.6Moz 6E to 26.2Moz 6E.

## PROCESSING

Concentrator facilities at Ngezi and SMC process ore from the mines. The Ngezi Concentrator consists of three modules, two of which have a capacity of 2.1Mtpa each, and a third module with a capacity of 1.0Mtpa, comprising a total of 5.2Mtpa. The SMC concentrator has an upgraded design capacity of about 2.4Mtpa.

Approximately 45% (3.4Mt) of the mined ore is transported via road trains to SMC concentrator and Ngezi third concentrator. An overland conveyor transports the rest of the ore to the Ngezi first and second concentrator modules. Concentrates from both the Ngezi and SMC concentrators are then smelted in an arc furnace and converted to matte at SMC. The resulting matte is dispatched to Impala's refinery in Springs under a LoM agreement with IRS.

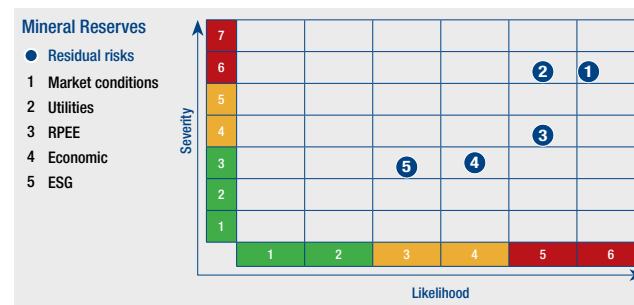
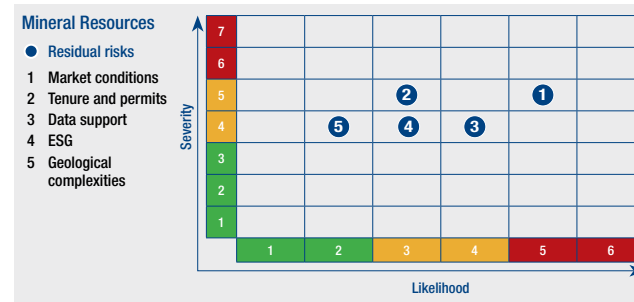
## RISK ASSESSMENT

The residual risk matrices for the Zimplats Mineral Resources and Mineral Reserves are illustrated to the right, highlighting the top five residual risks.

The top residual risks identified for the Mineral Resources at Zimplats are (1) market conditions: basket price sensitivity; (2) tenure and permits: loss of prospecting or mining rights; (3) data support: inadequate funding to support drilling; (4) ESG: loss of social licence to operate; and (5) geological complexities and version control of models.

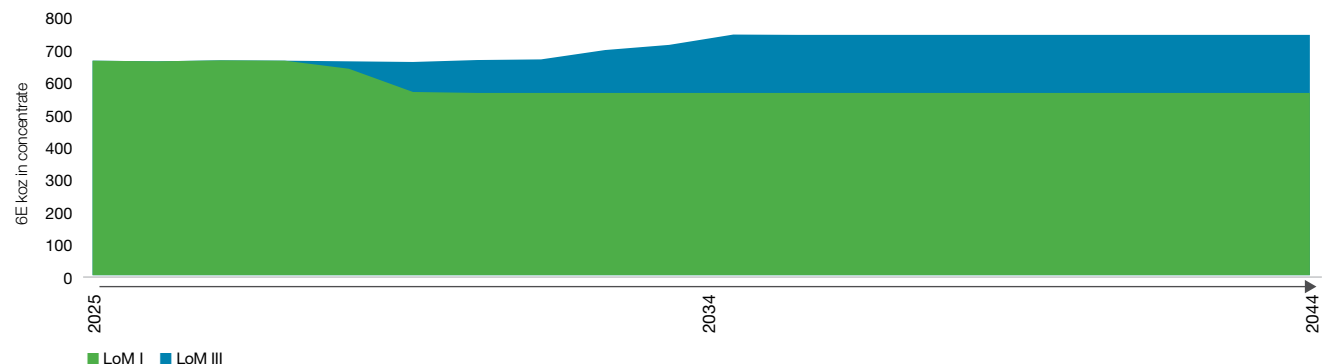
The top residual Mineral Reserve risks identified at Zimplats are (1) market conditions: basket price sensitivity; (2) utilities: unavailability of water and electricity; (3) RPEEE: pricing, marketing and governmental economic policies; (4) economic: global economic recession; and (5) ESG: loss of social licence to operate.

Management interventions are in place to mitigate these risks listed above. Further details regarding the formal risk management process are discussed on [page 19](#).



## Zimplats estimated 20-year 6E LoM ounce profile

as at 30 June 2024

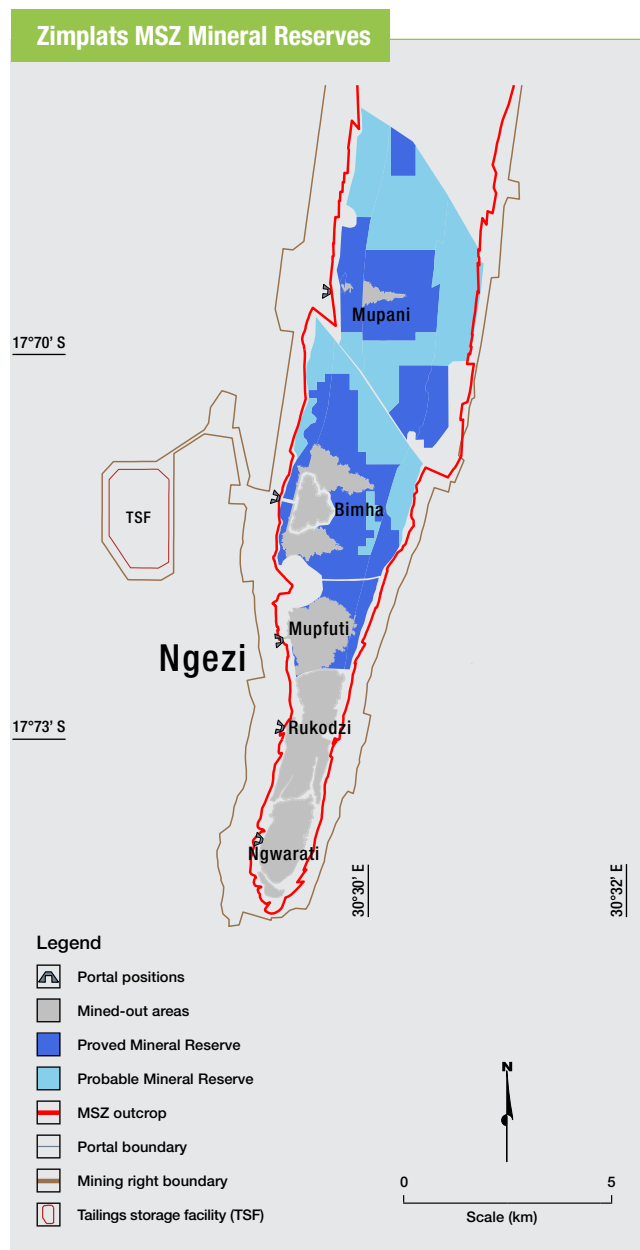


## LoM, VALUATION AND SENSITIVITY

The LoM plan for Zimplats is a design and costing study of an existing or future operation, in which the following aspects have been realistically assessed: geological, mining, metallurgical, engineering, operational, economic, marketing, legal, environmental, social, governmental, and all other modifying factors, to demonstrate that at the time of reporting, extraction is reasonably justified. The high-level LoM profile is depicted in the graph below. There is no uneconomic tail at Zimplats as the LoM I extends for 43 years until 2067.

The economic viability of Zimplats' Mineral Reserves is tested by Implats using net present value calculations of the Mineral Reserve, determining the lowest real rand basket price that would still render the Mineral Reserve viable. These calculations generate basket prices based on the local 6E ratios and differ from the overall Group basket prices. This is then tested against the internal Zimplats estimate of the real long-term basket price and the spot price as at 30 June 2024. These tests indicate that Zimplats requires a real long-term basket price of between R26 000 and R31 000 per 6E ounce to be economically viable. While the real spot basket price for Zimplats as at 30 June 2024 was R26 080 (US\$1 471) per 6E ounce, its internal long-term real basket price is R30 347 (US\$1 781). The commodity market remains fluid. Statistics relating to the historical production are shown on [pages 28 and 29](#).

# Zimplats continued

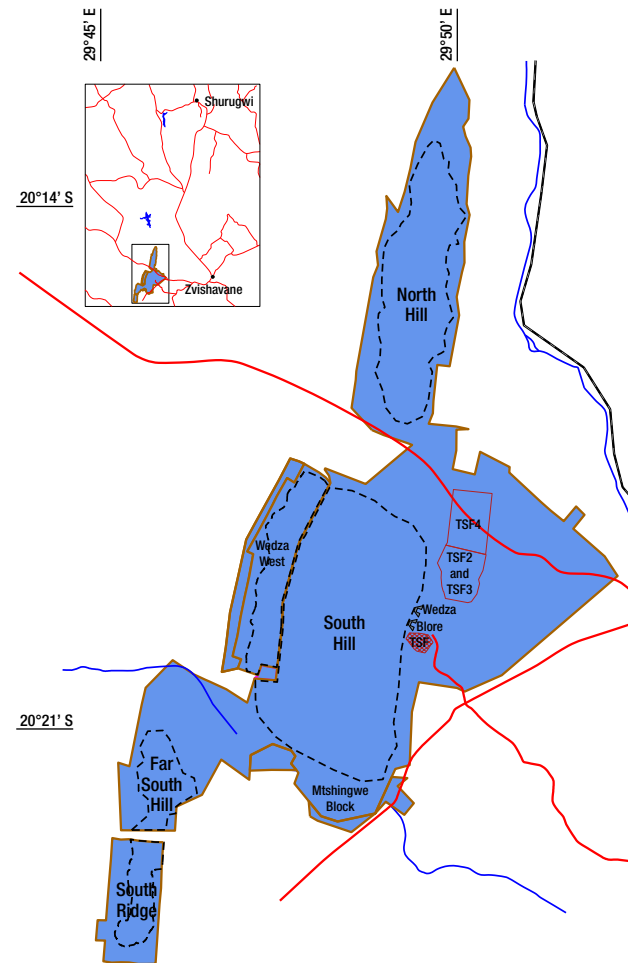


Inspection of the underground hangingwall at Zimplats



# Mimosa

# Zimbabwe



Mimosa is situated 32km west of Zvishavane town, approximately 340km southwest of Zimbabwe's capital city, Harare.

Mining right  
**7 757ha**

Implats' interest  
**50%** non-managed

## Legend

- |  |   |
|--|---|
| Town                                     | River                                     |
| Mining right boundary                    | Dam                                       |
| Public road                              | Portal                                    |
| Railway line                             | MSZ outline                               |
| Tailings storage facility – active (TSF) | Tailings storage facility – dormant (TSF) |

## LOCATION

Mimosa is located on the Wedza Geological complex of the Great Dyke, about 150km east of Bulawayo in the southern part of Zimbabwe's Midlands province. The mine is situated some 80km south-southwest of the Unki Platinum Mine, operated by Anglo American Platinum.

## BRIEF HISTORY

Mining operations started in 1926 at North Hill and lasted approximately two years, with some 60oz of platinum recovered. In 1962, Union Carbide Zimbabwe secured an Exclusive Prospecting Order (EPO) in the Wedza area over the Mimosa deposit and conducted periodic exploration and trial mining for 30 years. Zimasco acquired Mimosa in 1993 and piloted platinum mining in Zimbabwe by resuscitating Mimosa and steadily increasing production to 1 000t per day by 1998. In July 2001, Implats acquired 35% in Mimosa, increasing this stake to 50% the following year, with Aquarius acquiring the remaining 50% in Mimosa in the same year. In 2016, Sibanye-Stillwater acquired all the shares which formerly belonged to Aquarius. Mimosa is managed by Mimosa Investments Limited, a Mauritius-based company, held by Implats and Sibanye-Stillwater, and is a non-managed operation in the Implats portfolio.

Mimosa Surface infrastructure looking east

# Mimosa continued

## GEOLOGICAL SETTING

Each block is host to a pyroxenite layer known as the P1 pyroxenite layer, overlain by a gabbro layer. The platinum-bearing Main Sulphide Zone (MSZ) is located in the P1 pyroxenite, some 10m below the ultramafic/mafic contact. The MSZ is a continuous layer, 2m to 6m thick, and forms an elongated basin. The mineralised zone strikes in a north-northeasterly trend and dips at about 14° on the margins, flattening towards the central part of the mineralised body. The MSZ at Mimosa has a well-defined grade profile where peak base metal and PGM values are offset vertically, with palladium dominant towards the base, platinum in the centre and nickel towards the top (see typical grade profile on [page 80](#)). The MSZ is visually identified using pyroxene and sulphide mineralisation. Minor faults and dykes are present and although no potholes have been identified, low-grade areas and areas of no mineralisation, or ‘washout channels’, have been intersected.

PGM mineralisation at Mimosa is located in four isolated and fault-bounded blocks – from north to south they are the North Hill, South Hill, Mtshingwe Fault Block and Far South Hill mineralised bodies.

## EXPLORATION AND STUDIES

The mining titles holdings area has been explored by 625 exploration core-recovering drillholes, surface mapping and trenching. The drillholes were drilled and assayed over a series of campaigns spanning the life of the mine. The drill core is largely NQ size, though the upper unconsolidated part of the hole is drilled HQ size. All drillholes are logged lithologically and geotechnically, with borehole data verified for integrity before

being imported into the database. The exploration results assist with ongoing mining operations and contribute to the geological modelling of the various project areas and related feasibility studies. In the past year, 20 surface drillholes totalling 2 929 were completed. In addition, 56 underground drillholes totalling 5 874m, were drilled to provide coverage ahead of mining operations.

A bankable feasibility study was completed in 2021 for the exploitation of the North Hill Mineral Resource. The study demonstrated economic viability. This study was revalidated in the fourth quarter of FY2023, confirming economic viability. Project implementation is on hold due to obtaining low metal prices and other environmental factors.

## GENERAL INFRASTRUCTURE

The mining operation is well established with a mature infrastructure. The mine currently extracts 2 900Ml raw water per annum from the Khumalo Weir, which is served by the upstream Palawan Dam. Power supply to the mine is via a 132kV overhead powerline feeder teeing off the Mberengwa switching station some 15km south of the Mimosa consumer substation, which is equipped with two 20MVA, plus one 40MVA 132/11kV transformers for flexibility. The maximum load capacity of the line feeding the mine consumer substation is 118MVA, which is adequate to accommodate an additional load. A certified energy management system to ensure sustainable and responsible utilisation of power is in progress. The mine has initiated a programme to work towards certification to the energy management system ISO 50001:2018. The access surface tarred road to the mine is well maintained. The nearest railway station, Bannockburn, is 16km from the mine. General infrastructure includes offices, stores, canteen, two declines, workshops, a concentrator and a TSF facility.

## MINERAL RESOURCE ESTIMATION AND CLASSIFICATION

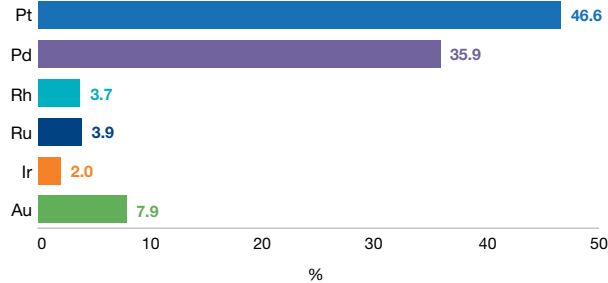
The Mineral Resource estimates are computed with Surpac™ software, using inverse distance techniques. The estimation block model cut-off for incorporating additional drillhole data was in December 2023. The Mineral Resource estimate reflects the actual spatial depletion as at 31 March 2024 and the non-spatial forecast depletion to 30 June 2024.

The classification of Mimosa's Mineral Resources is informed by a matrix considering geological complexity and the confidence in the geostatistical estimation. In broad terms, confidence is derived from surface drillhole spacing, and this has the largest weighting on the classification of Mineral Resources:

- Drillhole spacing less than 250m apart supports Measured Mineral Resources
- Drillhole spacing between 250m and 500m supports Indicated Mineral Resources
- Drillhole spacing greater than 500m supports Inferred Mineral Resources.

### Mimosa MSZ 6E ratio

as at 30 June 2024 (%)

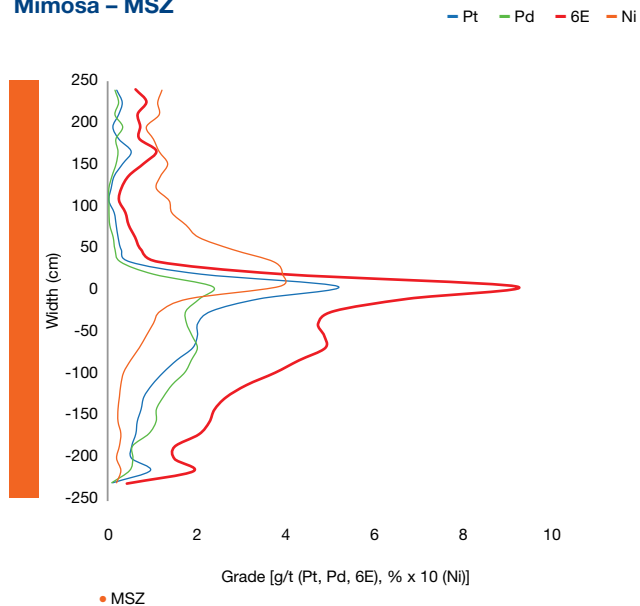


6E metal ratio derived from Mineral Reserve estimate.



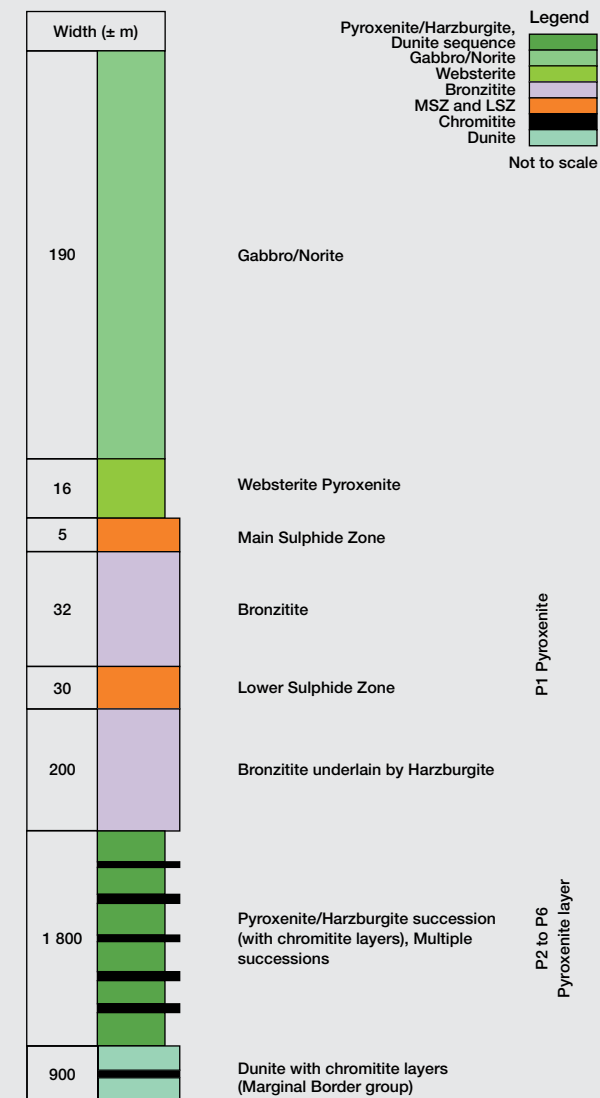
# Mimosa continued

## Mimosa – MSZ



Mimosa Mine aerial view

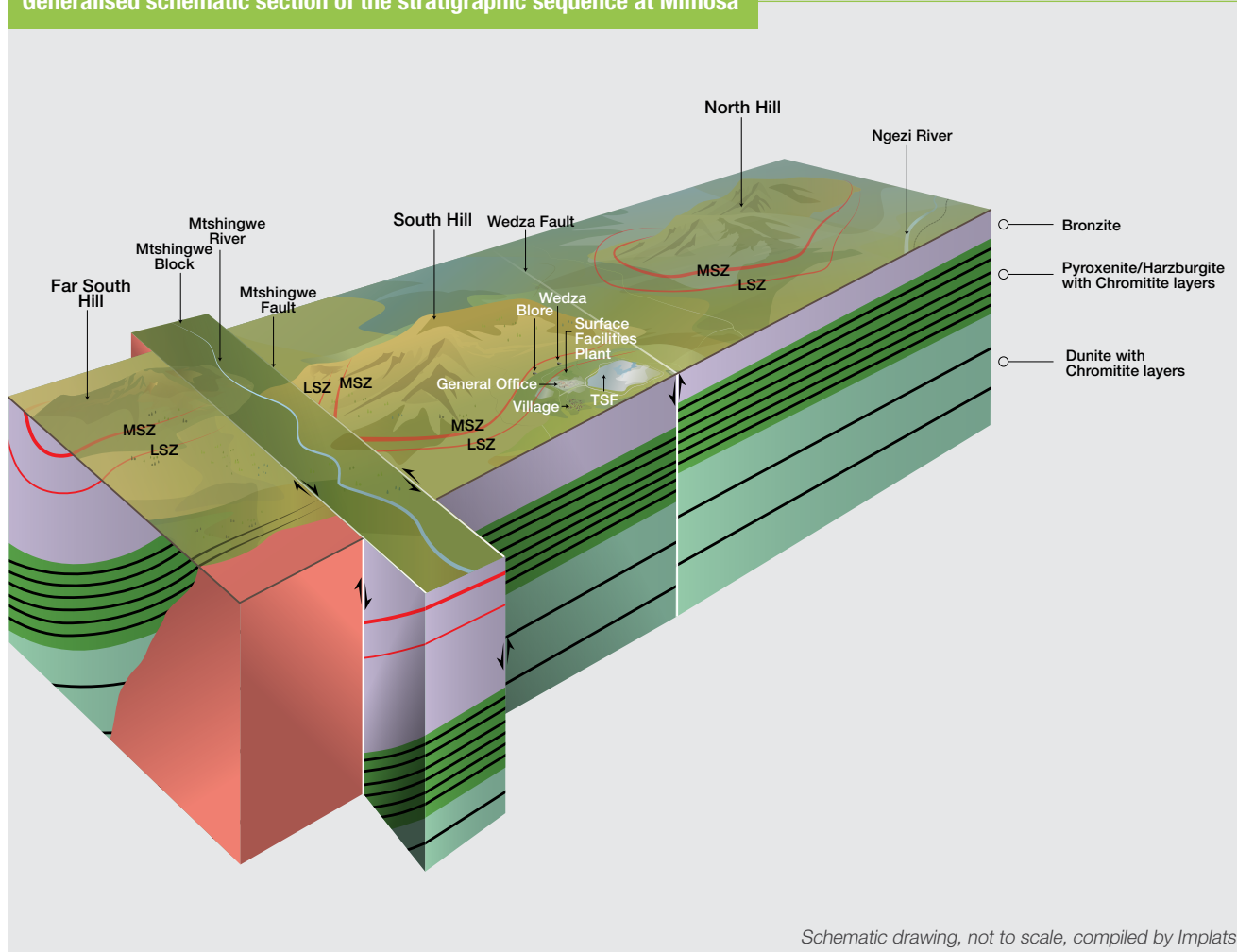
## Generalised geological succession of the upper portion of the Great Dyke at Mimosa



Surface exploration drilling at Mimosa

## Mimosa continued

Generalised schematic section of the stratigraphic sequence at Mimosa



The schematic section of Mimosa above demonstrates the geology of the north-north-easterly striking platinum-bearing MSZ relative to the four fault-bounded blocks – Far South Hill, Mtshingwe Block, South Hill and North Hill – in this area of the Great Dyke. The continuous elongated basin of the MSZ layer is 2m to 6m thick and dips about 14° on the margins and flattens towards the axis of the mineralised body. Mimosa's general mining infrastructure is located on the eastern side of the South Hill mineralised body, where the underground operation is accessed through the Wedza and Blore declines.



Underground ground penetrating radar survey at South Hill, Mimosa



# Mimosa continued

## Mimosa Mineral Resource estimate (inclusive reporting)

As at 30 June 2024													
Orebody Category	Units	South Hill MSZ				North Hill MSZ				Far South Hill MSZ			
		Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total
Tonnes	Mt	42.3	1.4	16.5	60.2	28.7	14.4	7.2	50.2	3.9	2.1	5.4	11.4
Width	cm	210	210	210	–	210	210	210	–	210	210	210	–
4E grade	g/t	3.58	3.49	3.48	3.55	3.43	3.55	3.45	3.46	3.49	3.72	3.30	3.44
6E grade	g/t	3.81	3.72	3.71	3.78	3.63	3.76	3.66	3.67	3.71	3.95	3.51	3.66
Ni	%	0.15	0.15	0.15	0.15	0.16	0.17	0.15	0.16	0.15	0.16	0.14	0.15
Cu	%	0.12	0.12	0.12	0.12	0.12	0.13	0.12	0.12	0.13	0.13	0.12	0.12
4E oz	Moz	4.9	0.2	1.8	6.9	3.2	1.6	0.8	5.6	0.4	0.2	0.6	1.3
6E oz	Moz	5.2	0.2	2.0	7.3	3.3	1.7	0.8	5.9	0.5	0.3	0.6	1.3
Pt oz	Moz	2.4	0.1	0.9	3.4	1.5	0.8	0.4	2.8	0.2	0.1	0.3	0.6
Pd oz	Moz	1.9	0.1	0.7	2.7	1.2	0.6	0.3	2.1	0.2	0.1	0.2	0.5

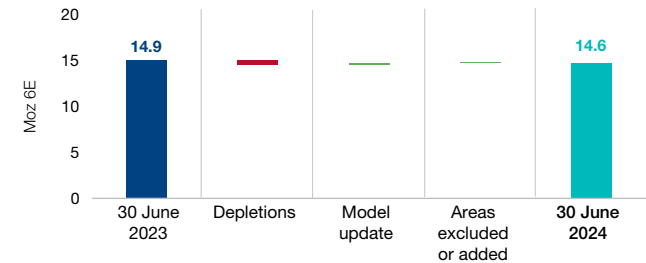
As at 30 June 2023													
Orebody Category	Units	South Hill MSZ				North Hill MSZ				Far South Hill MSZ			
		Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total
Tonnes	Mt	38.4	8.3	16.3	63.0	28.7	14.4	7.2	50.2	3.9	2.1	5.4	11.4
Width	cm	210	210	210	–	210	210	210	–	210	210	210	–
4E grade	g/t	3.59	3.37	3.44	3.53	3.43	3.55	3.45	3.46	3.49	3.72	3.30	3.44
6E grade	g/t	3.83	3.61	3.68	3.76	3.63	3.76	3.66	3.67	3.71	3.95	3.51	3.66
Ni	%	0.15	0.15	0.15	0.15	0.16	0.17	0.15	0.16	0.15	0.16	0.14	0.15
Cu	%	0.12	0.12	0.12	0.12	0.12	0.13	0.12	0.12	0.13	0.13	0.12	0.12
4E oz	Moz	4.4	0.9	1.8	7.1	3.2	1.6	0.8	5.6	0.4	0.2	0.6	1.3
6E oz	Moz	4.7	1.0	1.9	7.6	3.3	1.7	0.8	5.9	0.5	0.3	0.6	1.3
Pt oz	Moz	2.2	0.4	0.9	3.5	1.5	0.8	0.4	2.8	0.2	0.1	0.3	0.6
Pd oz	Moz	1.7	0.3	0.7	2.8	1.2	0.6	0.3	2.1	0.2	0.1	0.2	0.5

## MINERAL RESOURCE RECONCILIATION

The 30 June 2024 Mineral Resources were impacted by normal mining depletion. Model updates resulted in an increased estimated Measured Mineral Resource at North Hill.

## Total Mimosa 6E Mineral Resources

as at 30 June 2024 (variance Moz 6E)



## MODIFYING FACTORS

The table below summarises the more significant modifying factors impacting the Mineral Resource and Mineral Reserve estimates (see [pages 15, 31, 83 and 84](#) for further details).

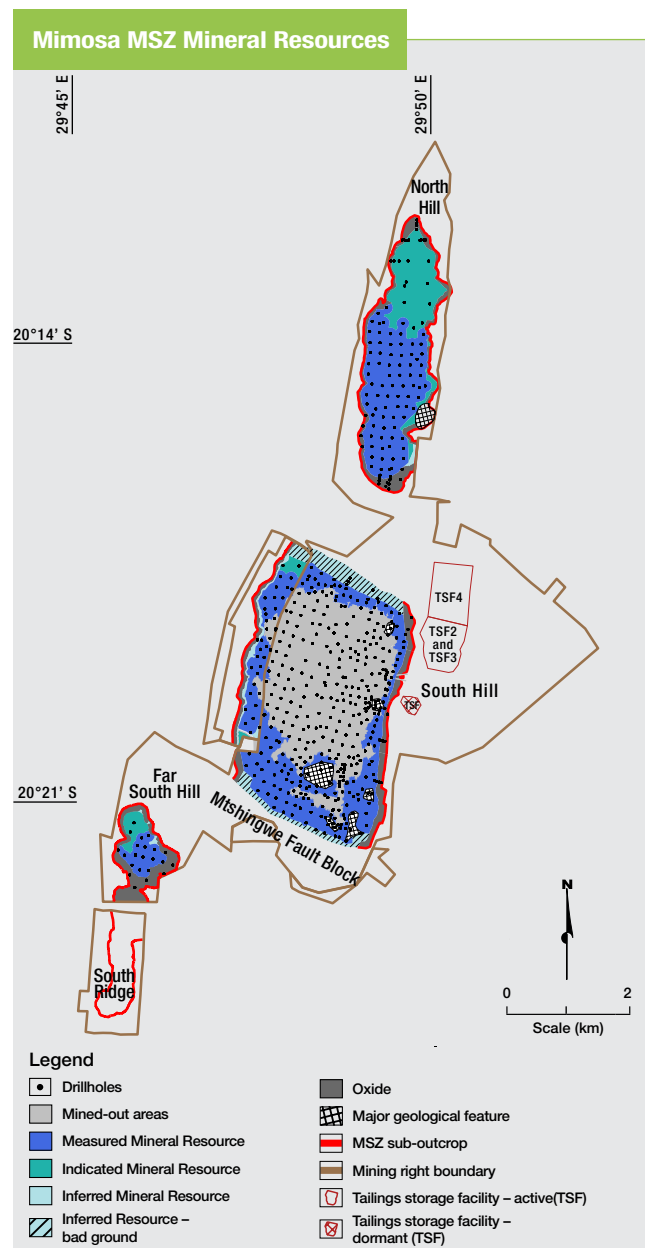
Mineral Resource Key assumptions	Main Sulphide Zone
Geological losses	7 – 26%
Area	18 million ca
Resource cut	210cm

Mineral Reserve Modifying factors	Main Sulphide Zone
Lashing losses	1 – 2.5%
Pillars	21 – 27%
Relative density	3.18
Stoping width	210cm
Concentrator recoveries	75 – 76%

## Mimosa Mineral Reserve estimate



# Mimosa continued

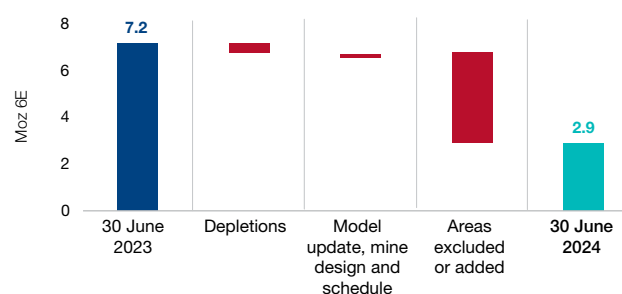


As at 30 June 2024								
Orebody		South Hill MSZ			North Hill MSZ			
Category	Units	Proved	Probable	Total	Proved	Probable	Total	Total
Tonnes	Mt	22.0	2.7	24.7	—	—	—	24.7
Width	cm	210	210	—	—	—	—	—
4E grade	g/t	3.37	3.39	3.37	—	—	—	3.37
6E grade	g/t	3.59	3.60	3.59	—	—	—	3.59
Ni	%	0.14	0.15	0.15	—	—	—	0.15
Cu	%	0.12	0.12	0.12	—	—	—	0.12
4E oz	Moz	2.4	0.3	2.7	—	—	—	2.7
6E oz	Moz	2.5	0.3	2.9	—	—	—	2.9
Pt oz	Moz	1.2	0.1	1.3	—	—	—	1.3
Pd oz	Moz	0.9	0.1	1.0	—	—	—	1.0

As at 30 June 2023								
Orebody		South Hill MSZ			North Hill MSZ			
Category	Units	Proved	Probable	Total	Proved	Probable	Total	Total
Tonnes	Mt	24.0	6.6	30.7	20.3	9.7	30.1	60.7
Width	cm	210	210	—	210	210	—	—
4E grade	g/t	3.54	3.33	3.50	3.36	3.49	3.40	3.45
6E grade	g/t	3.77	3.57	3.73	3.55	3.70	3.60	3.66
Ni	%	0.14	0.14	0.14	0.15	0.16	0.15	0.14
Cu	%	0.11	0.12	0.11	0.11	0.13	0.12	0.12
4E oz	Moz	2.7	0.7	3.4	2.2	1.1	3.3	6.7
6E oz	Moz	2.9	0.8	3.7	2.3	1.2	3.5	7.2
Pt oz	Moz	1.4	0.3	1.7	1.1	0.5	1.6	3.3
Pd oz	Moz	1.1	0.3	1.3	0.8	0.4	1.2	2.6

## Total Mimosa 6E Mineral Reserves

as at 30 June 2024 (variance Moz 6E)



## Mimosa continued

### RISK ASSESSMENT

The residual risk matrices for the Mimosa Mineral Resources and Mineral Reserves are illustrated below, highlighting the top five residual risks.

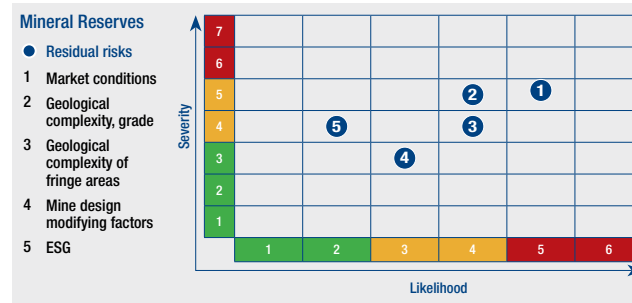
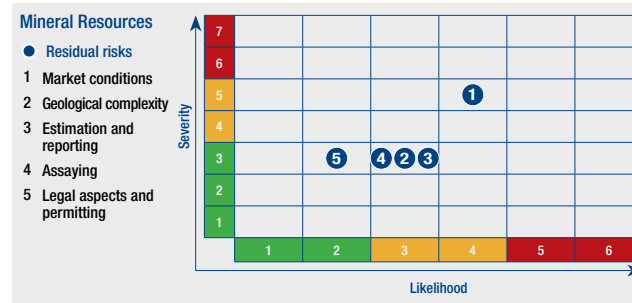
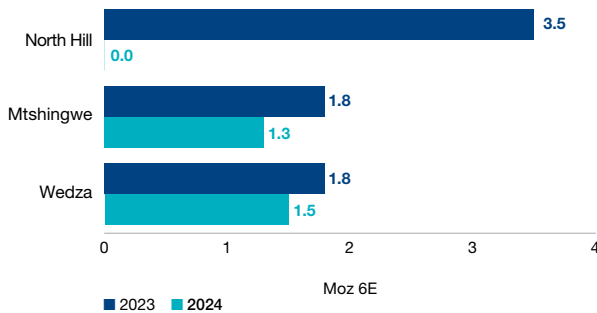
The top residual risks identified for the Mineral Resources at Mimosa are (1) market conditions: basket price sensitivity; (2) geological complexity (lithological and structural); (3) estimation and reporting of mineral resources; (4) assaying confidence; and (5) legal aspect and permitting.

The top residual risks identified for the Mineral Reserves at Mimosa are (1) market conditions: basket price sensitivity; (2) geological complexity: grade dilution and loss of Mineral Reserves; (3) geological complexity: mining in fringe areas; (4) mine design modifying factors: inaccurate reporting of mineral reserves; (5) environmental social and governance issues (ESG): loss of mining permits/licences.

Management interventions are in place to mitigate these risks listed above. Further details regarding the formal risk management process are discussed on [page 19](#).

### Mimosa Mineral Reserve distribution

as at 30 June 2024 (Moz 6E)



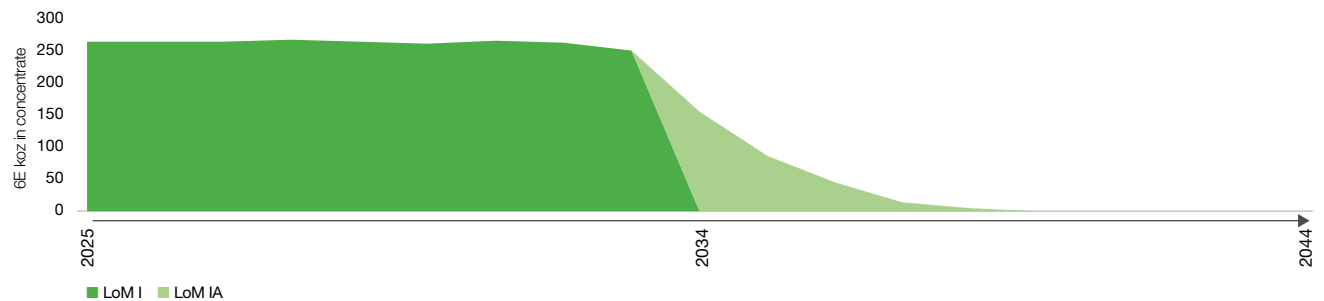
### LoM AND VALUATION AND SENSITIVITY

LoM I comprises the extraction from the Mineral Reserves at South Hill only at 2.1m at 237ktpm as at 30 June 2024. The economic valuation of the LoM in this reporting cycle considered a tailcut, deriving a LoM I of nine years, terminating in 2033. The three mining areas at South Hill comprise Wedza, Wedza West and Mtshingwe. Work will continue to assess various options to optimise extraction from different ore sources from Mimosa's remaining Mineral Resources.

The economic viability of the Mimosa Mineral Reserves is tested by Implats using net present value calculations over the LoM of the Mineral Reserve, determining the lowest real rand basket price that would still render the Mineral Reserve viable. These calculations generate basket prices based on the local 6E ratios and differ from the overall Group basket prices. This is then tested against the internal Mimosa estimate of the real long-term basket price and the spot price as at 30 June 2024. These tests by Implats indicate that Mimosa requires a real long-term basket price of between R29 000 and R35 000 per 6E ounce to be economically viable. In comparison, the real spot basket price for Mimosa as at 30 June 2024 was R29 991 (US\$1 750) per 6E ounce, and Mimosa's internal long-term real basket price is R34 879 (US\$2 047) per 6E ounce. The commodity market remains fluid. Statistics relating to the historical production are shown on [pages 28 and 29](#).

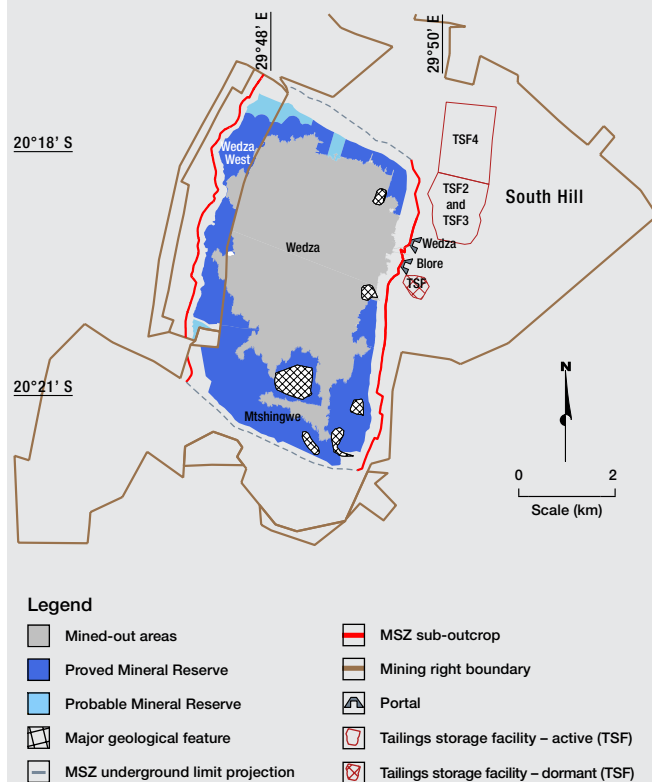
### Mimosa estimated 20-year 6E LoM ounce profile

as at 30 June 2024



# Mimosa continued

## Mimosa MSZ Mineral Reserves as at 30 June 2024



TSF4 at the Mimosa operation



# Impala Canada

# Canada



Impala Canada owns and operates the Lac des Iles Mine, has shareholding in exploration properties, and operates a corporate office in Toronto and an exploration and finance office in Thunder Bay, all in Canada's province of Ontario.

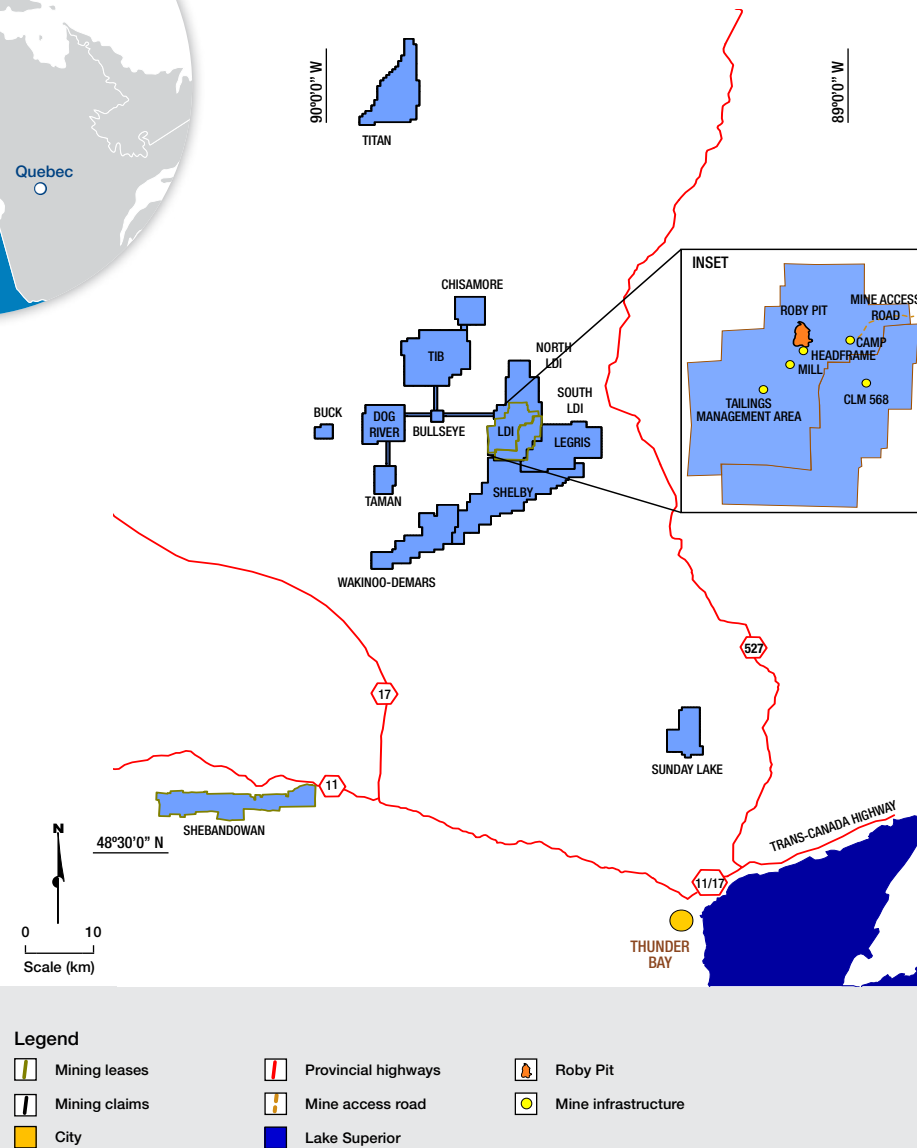
Mining leases and mining claims

**71 567ha**

Implats' interest

**100%** managed

Lac des Iles Mine site



## LOCATION

Lac des Iles is located 106km northwest of the city of Thunder Bay in Northwestern Ontario. The mine properties comprise approximately 71 567ha of mining leases and mining claims.

## BRIEF HISTORY

Geological investigations at Lac des Iles began with reconnaissance mapping in the early 1930s, and again in the late 1960s after discovering aeromagnetic anomalies in the late 1950s. Various exploration programmes by several companies were undertaken over the next 25 years. In 1993, the property became North American Palladium Limited and open-pit production commenced. Mining initially concentrated on the Roby Zone by open-pit methods. In 2006, underground mining started via ramp access. In 2010, a significant mine expansion began, including sinking a shaft and extending the ramp system to access the Offset Zone for underground mining. From 2016 to 2017, a transition from a longhole stoping to a sub-level shrinkage (SLS) mining method commenced in the main Offset Zone. From 2018 to 2022, a transition from remnant mining to a sub-level caving (SLC) mining method commenced in the main Roby Zone. Implats acquired North American Palladium in 2019 to form Impala Canada Limited (Impala Canada), a wholly owned subsidiary. In 2024, due to declining palladium

# Impala Canada continued

prices and finite tailings storage capacity, the annual production was decreased with mine production focusing on higher margin ore.

## GEOLOGICAL SETTING

These complexes include the South Lac des Iles Intrusive Complex (IC) – comprising the former Mine block, South Lac des Iles and Camp Lake intrusions – and the North Lac des Iles Intrusive Complex (IC). Intrusive contacts between the two complexes suggest that the southern part of the North Lac des Iles IC is younger than the northern margin of the South Lac des Iles IC.

The Lac des Iles property captures the known extents of two discrete intrusive complexes.



Underground portal at Lac des Iles Mine site

The North Lac des Iles IC consists of layered ultramafic rocks distributed within two types of cyclic units, including an orthopyroxene-bearing cyclic unit and an orthopyroxene-free cyclic unit. Historical surface prospecting, mapping, limited trenching and diamond drilling have identified several areas in the North Lac des Iles IC which host PGE occurrences exceeding 1.0g/t of combined Pd+Pt+Au. These PGM occurrences are interpreted to represent stratiform or reef-type magmatic PGM mineralisation.

The South Lac des Iles IC was emplaced into a predominantly intermediate composition of orthogneiss basement rocks. Four major intrusive sequences (series) are recognised in the complex. Mapping and drilling have shown that the central-east part of the South Lac des Iles IC is an upright, homoclinal sequence (south-facing igneous stratigraphy), with a general north-easterly strike direction and steep southerly dips. In contrast, the major units in the western end of the complex, which hosts most of the palladium mineralisation on the property, display a general northerly strike direction and steep easterly to vertical dips. Both domains are believed to reflect the influence of pre-Lac des Iles structures on magma emplacement. The Shelby Lake structure is visible as a linear, positive magnetic anomaly to the south of the property. It is visible in the Roby pit and underground workings as an intensely recrystallised schistose melanorite unit that hosts the mined-out and remaining higher-grade palladium Mineral Resources at Lac des Iles.

A second important pre-intrusion feeder structure to the South Lac des Iles IC has been inferred from geological and remote sensing data, drillhole logging, lineament analysis, and metal grade trends. It is referred to as the Roby Central Fault and has an east-northeast strike, moderate to steep south dip and bisects the northeastern part of the complex. The intersection of these two structures corresponds to the thicker, central parts of the Roby and Offset Zones.

The South Lac des Iles IC is one of several 2.68 billion-year-old mafic-ultramafic intrusions in the region, most of which are covered by mineral claims held by Impala Canada. In contrast to most of the Bushveld Complex PGE deposits, the Lac des

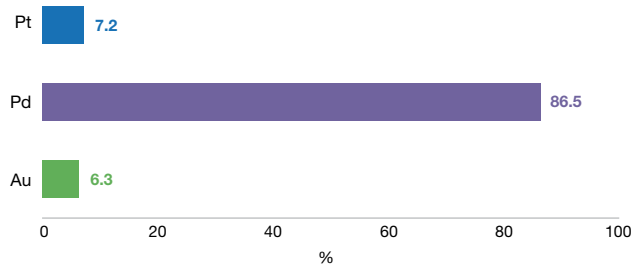
Iles orebodies show extreme palladium enrichment over platinum and appear to have formed within or directly adjacent to feeder structures, resulting in near-vertical orientations and true widths locally exceeding 100m. Mineral Resources on the property are classified as palladium-rich magmatic sulphide deposits, located in the northwestern part of the noritic South Lac des Iles IC.

The two principal ore zones at Lac des Iles are the Roby Zone and the Offset Zone, separated by the Offset Fault. Previous surface mining included production from the Roby and Twilight Zones, from the now-dormant Roby open pit. In late 2017, ongoing open-pit mining recommenced at surface in the area around the Twilight Zone. In 2006, underground mining started, focused on the central portions of the Roby Zone beneath the Roby pit, and in 2010 transitioned to the deeper Offset Zone Mineral Resources. A third similarly mineralised zone, the Camp Lake Zone, was recognised from deep drilling of the lower part of the Offset Zone. Camp Lake Zone is separated from the Offset Zone by the east-northeast striking and northwest dipping Camp Lake Fault and has been exploratory drilled.

The average ratio of Pt:Pd:Au, based on the combined 2024 Mineral Reserve estimate, is shown below. The dominance of palladium is clearly illustrated, representing approximately 86.5% of the combined average PGE grade. Historic internal reviews and academic studies show that the other PGE grades are negligible compared to Pd, Pt and Au.

### Lac des Iles 3E ratio

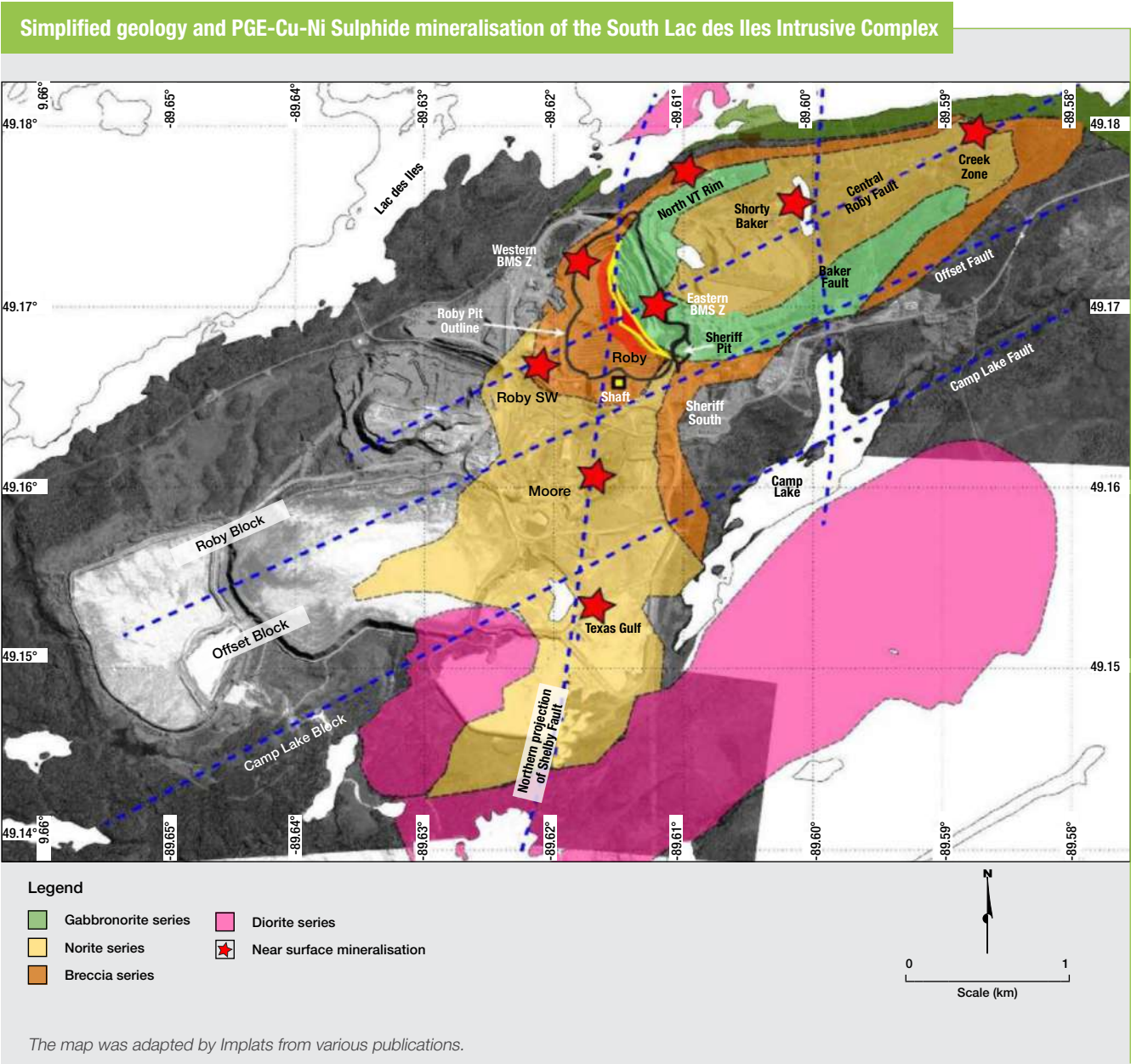
as at 30 June 2024 (%)



3E ratios derived from the Mineral Reserve estimate.



Impala Canada continued



EXPLORATION, DIAMOND DRILLING AND STUDIES

Exploration activities at Impala Canada focus on near-mine targets and key regional properties located within 50km of the Lac des Iles mill. Near-mine exploration continued to be the Company's primary vehicle to expand its Mineral Resources and extend the life of Lac des Iles to evaluate their growth potential.

Impala Canada's diamond drilling effort for the past year was focused on supporting the conversion of Mineral Resources to extend the LoM. Increased efforts to explore the deeper-seated Camp Lake Zone, along with the other brownfield targets, were conducted to discover areas that could generate additional LoM value.

A total of 42 632m of new exploration diamond drilling was included this year and was concentrated on the discovery and conversion of Sheriff South (Offset) Mineral Resources (12 478m) and exploratory Camp Lake drilling (25 378m). Exploratory drilling of the Camp Lake Target was further encouraging, with significant intersections. In addition, discovery drilling (4 776m) occurred on surface in the East Mine Block. Additional definition drilling occurred throughout the underground and on surface to support the life-of-mine plan.

The exploration diamond drilling expenditure for the past year is illustrated below.

Exploration diamond drilling 2024			
Location	Total number	Length m	Amount C\$m
Underground Lac des Iles	58	37 856	4.8
Surface Lac des Iles	32	4 776	0.9
<b>Total</b>	<b>70</b>	<b>42 632</b>	<b>5.7</b>

Metres during period October 2022 to September 2023 and utilised for MRMR, cost from July 2023 to June 2024.

Exploration diamond drilling 2023			
Location	Total number	Length m	Amount C\$m
Underground Lac des Iles	63	41 075	12.0
Surface Lac des Iles	4	2 556	0.7
<b>Total</b>	<b>67</b>	<b>43 631</b>	<b>12.7</b>



# Impala Canada continued

## GENERAL INFRASTRUCTURE

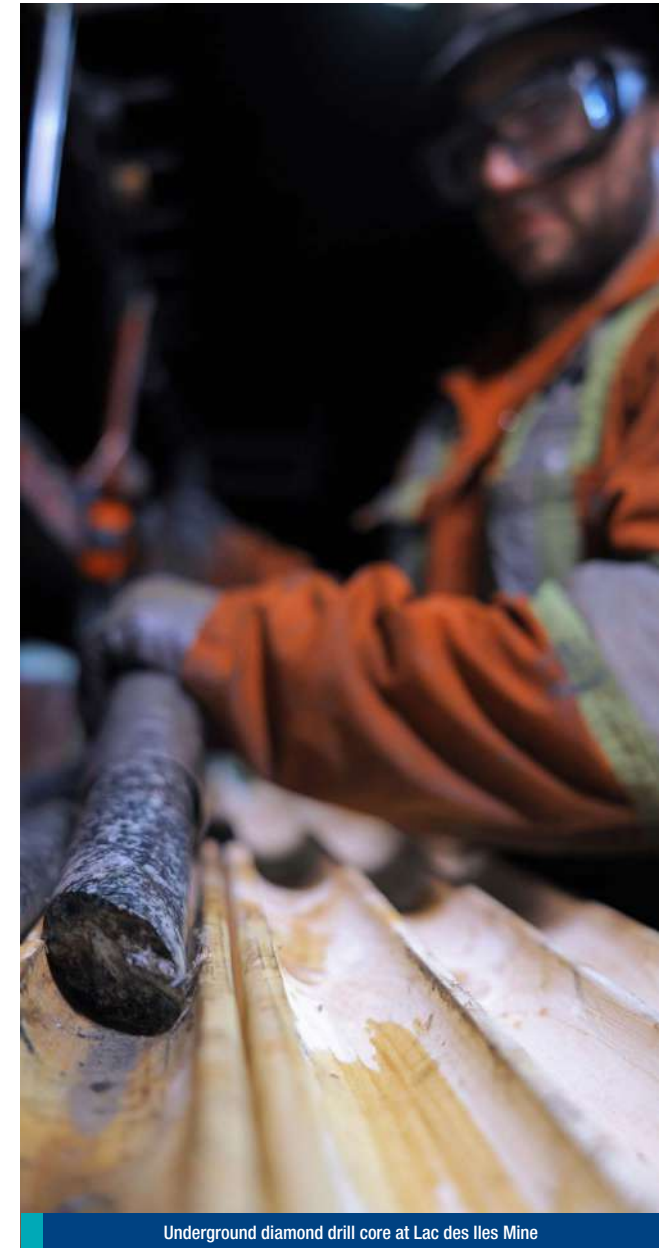
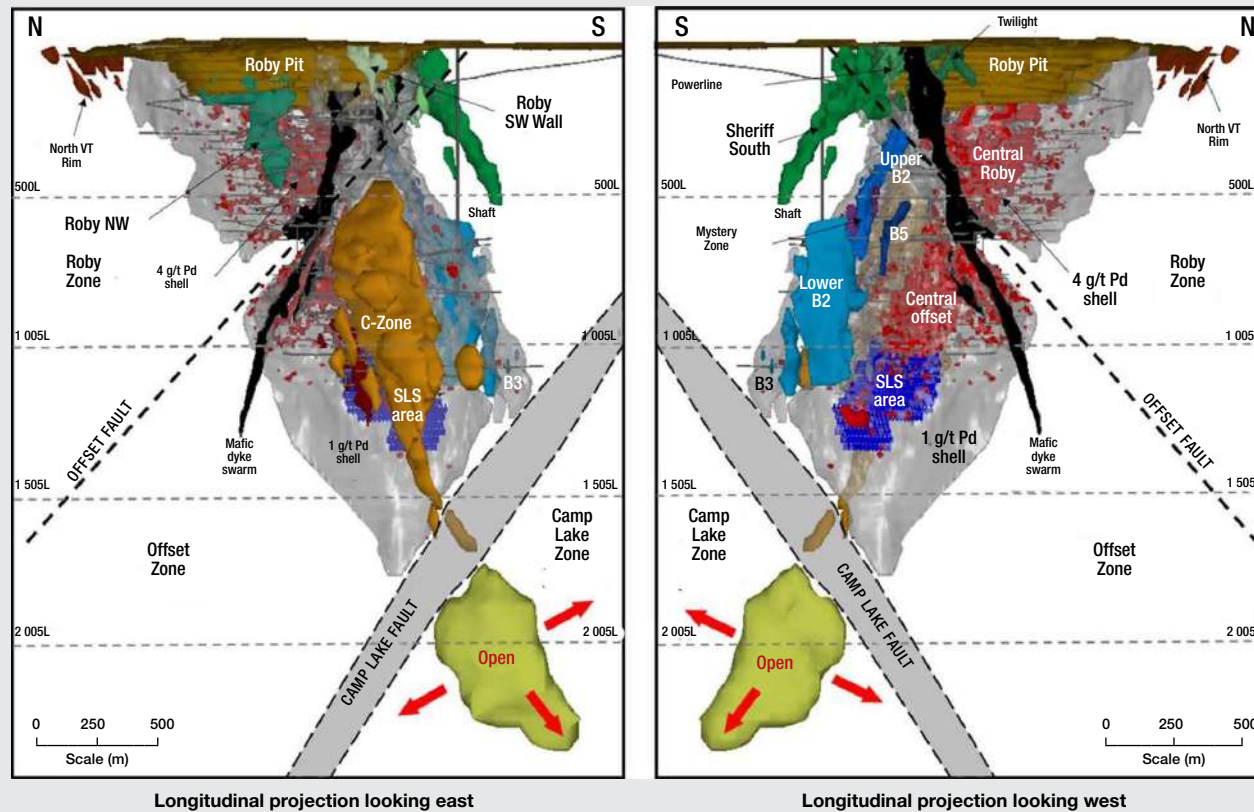
The Lac des Iles Mine has been in operation for many years and has well-established permanent infrastructure. Due to its distance from the nearest city, Thunder Bay, Ontario, the mine operates on a 'remote mine' basis, in which most employees work a '14 day in/14 day out' rotation.

Site infrastructure includes: 15km gravel access road; main camp accommodation and a separate construction camp; a potable

water treatment plant; an exploration office; a core storage area and core-shack; an open-pit maintenance facility and warehouse; a fuel farm; No 1 Shaft, headframe, hoist house, two workshops and compressor building; intake and exhaust fans; administration and mine dry buildings; the concentrator and mill complex; an assay lab and the Tailings Management Facilities (TMF).

The site has an electrical power capacity of 47MW supplied by Hydro One via a 115kV line.

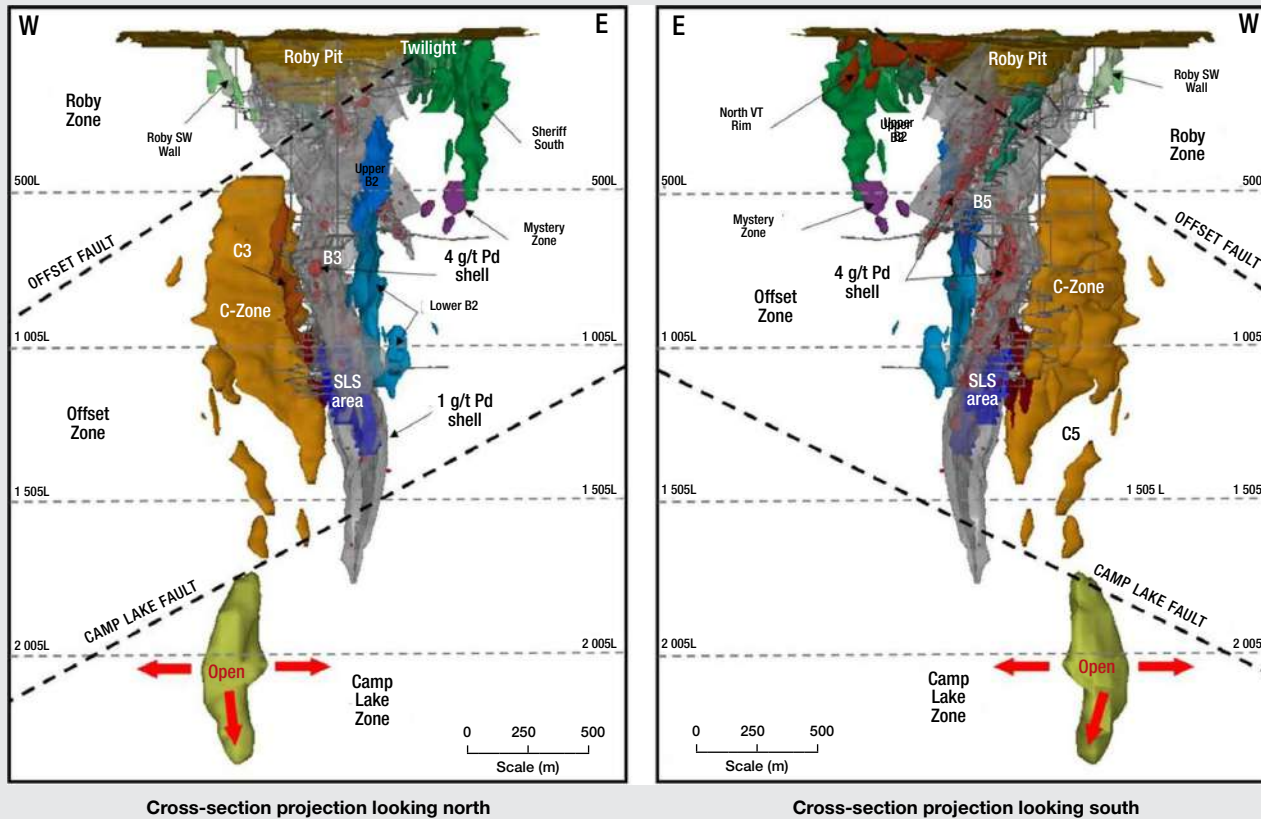
## East-looking and west-looking (inverted) cross-sections of Lac des Iles orebodies



Underground diamond drill core at Lac des Iles Mine

# Impala Canada continued

## North-looking and south-looking (inverted) cross-sections of Lac des Iles orebodies



## MINERAL RESOURCE ESTIMATION AND CLASSIFICATION

Mineral Resource estimates are reported for five metals at Lac des Iles – palladium, platinum, gold, copper and nickel. Base metal assays are based on four-acid digestion, using perchloric, nitric, hydrofluoric and hydrochloric acids. This procedure results in near-total digestion. The grades are estimated from block models interpolated using a combination of ordinary kriging and inverse distance squared estimation methods, where domains have inadequate data density

or inconclusive variography. Dynamic anisotropy has been applied in some domains to better control the search ellipse orientation based on the domain geometry. Data included in the block model-based estimation of Mineral Resources has been restricted to only diamond drilling data that meets the guidelines of the SAMREC Code (2016). However, boundaries of mineralisation domains have been created in consideration of the data from definition diamond drilling, underground chip and pit blast hole samples.

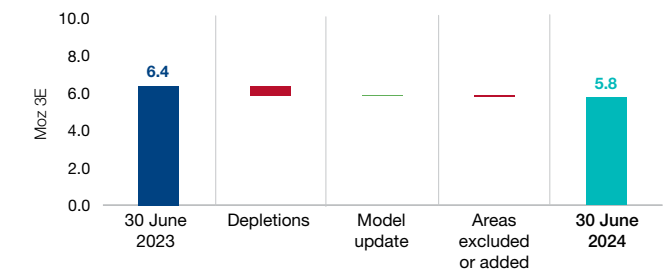
The selection of Mineral Resources was attained through a combination of engineering design shapes (including Deswik shells for surface Mineral Resources) and using Datamine RM Studio's 'Mineable Reserve Optimizer'® (MRO) to identify areas with sufficient grade and tonnage for potential mining. The Mineral Resources take into consideration, variable palladium grade cut-offs that reflect the identified mining method, and the consideration of existing underground excavations and other mining-related challenges. The cut-off grades range from 0.68g/t Pd for surface deposits and 1.0g/t Pd to 1.8g/t Pd for underground deposits. Evaluation is undertaken to ensure reasonable prospects for eventual economic extraction (RPEEE) of the estimated Mineral Resource.

The classification of Mineral Resources is directly tied to the estimation ellipse and search strategy for each domain and is based on the continuity of mineralisation and data density. In some domains, where interpretation of the geology is still in the early stages, classifications have been post-processed and downgraded, awaiting further information.

## MINERAL RESOURCE RECONCILIATION

The combined Measured, Indicated and Inferred Inclusive Mineral Resource estimate as at 30 June 2024 is 5.83Moz 3E and 4.98Moz Pd, net of depletion.

## Total Lac des Iles 3E Mineral Resources as at 30 June 2024 (variance Moz 3E)



# Impala Canada continued

## Lac des Iles Mineral Resource estimate (inclusive reporting)

As at 30 June 2024													
Orebody Category	Units	Surface Pit				Roby Underground				Offset Underground			
		Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total
Tonnes	Mt	2.8	3.8	0.1	6.7	7.1	14.2	1.1	22.3	16.4	21.1	3.0	40.5
3E grade	g/t	1.57	1.53	1.36	1.55	2.47	2.02	1.91	2.16	3.27	2.89	2.73	3.03
Ni	%	0.05	0.06	0.05	0.06	0.05	0.05	0.05	0.05	0.08	0.07	0.08	0.08
Cu	%	0.06	0.06	0.04	0.06	0.06	0.06	0.05	0.06	0.10	0.09	0.09	0.09
3E oz	Moz	0.14	0.19	0.01	0.34	0.56	0.92	0.07	1.55	1.73	1.95	0.26	3.94
Pt oz	Moz	0.01	0.02	0.00	0.03	0.05	0.09	0.01	0.14	0.13	0.16	0.02	0.31
Pd oz	Moz	0.12	0.16	0.01	0.28	0.48	0.77	0.06	1.31	1.49	1.68	0.22	3.39

As at 30 June 2023													
Orebody Category	Units	Surface Pit				Roby Underground				Offset Underground			
		Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total
Tonnes	Mt	1.7	3.6	0.1	5.4	8.9	17.5	1.1	27.5	14.0	25.0	4.3	43.3
3E grade	g/t	1.51	1.50	1.36	1.50	2.48	2.05	1.91	2.18	3.23	2.96	2.59	3.01
Ni	%	0.05	0.06	0.06	0.06	0.05	0.05	0.04	0.05	0.08	0.07	0.07	0.08
Cu	%	0.06	0.06	0.05	0.06	0.06	0.05	0.05	0.06	0.10	0.09	0.08	0.09
3E oz	Moz	0.08	0.17	0.00	0.26	0.71	1.15	0.07	1.93	1.45	2.39	0.36	4.20
Pt oz	Moz	0.01	0.02	0.00	0.03	0.06	0.11	0.01	0.18	0.11	0.18	0.03	0.32
Pd oz	Moz	0.07	0.14	0.00	0.22	0.61	0.97	0.06	1.64	1.25	2.05	0.30	3.61

## MODIFYING FACTORS

When determining the appropriate external dilution and mining recovery factors to apply, consideration was given to the size, sequence and whether the shape would be open or full of cave/unconsolidated backfill material during mucking operations. Consideration was also given to draw control strategy and where and how the cave material would enter into the shape – from one, two or multiple directions.

Power Geotechnical Cellular Automata® (PGCA®) software was used to estimate the recovered and diluted material from the Offset SLS production mining and the Roby SLC. Dilution for these cave mining areas was determined as part of the PGCA® flow modelling. The flow model for the Offset SLS Zone incorporates all Measured and Indicated Offset Mineral Resource blocks, less depletions, as well as an estimated ore blanket of rockfill and blasted pillar material. The Roby Central (SLC) Zone model incorporates all

Roby Block Measured and Indicated Mineral Resources and the estimated grades and tonnes for the historically backfilled stopes, less depletion of all mining before the start of sub-level caving. Any material in either of these two cave mining areas that is not rockfill from historical mining, is not part of the ore blanket or is not of the Measured or Indicated Mineral Resource category, has a default grade of zero for all metals.

A summary of the weighted average modifying factors for the various mining zones is shown below (see [pages 15, 31, 94 and 95](#) for further details).

## Weighted average modifying factors by mining zone

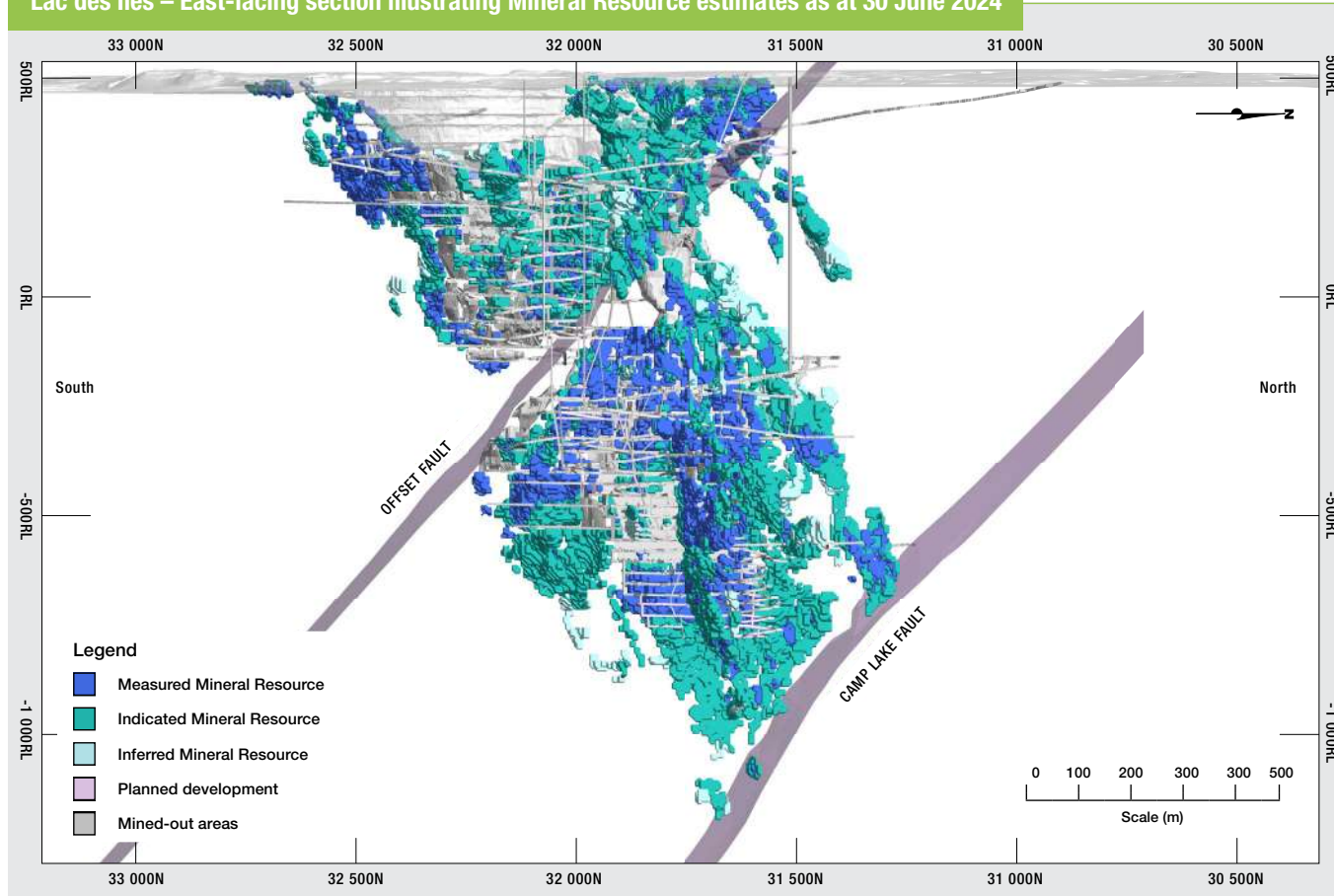
Mining zone	Dilution factor (%)	Recovery factor (%)
Roby SLC	20 <sup>1</sup>	80 <sup>1</sup>
Roby Central OHS	50	50
Roby SW Floor	9	85
Roby S	18	77
Roby NW	15	85
Roby NE	28	72
Offset SLS	20 <sup>1</sup>	80 <sup>1</sup>
Offset Central OHS	19	78
Offset NE	15	85
Offset S	15	85
Offset C-Zone	15	85
Sheriff S	15	85
B2	15	85

<sup>1</sup> Offset SLS and Roby SLC recovery and dilution are based on draw strategy estimations, reviewed annually.



# Impala Canada continued

Lac des Iles – East-facing section illustrating Mineral Resource estimates as at 30 June 2024



## MINING METHODS

Mining at Lac des Iles occurs from three areas: Surface Pit, Roby Zone and the Offset Zone. These areas are broken down further by mining method, mineralisation zone and/or spatial location.

Production from the Roby Zone includes production by open hole stoping (OHS) and sub-level caving (SLC) methods. Most of the Roby Zone's planned production involves sub-level caving (SLC) targeting ore below and southwest of the current dormant pit. Roby Zone production tonnes declined the most following the 2024 mine production decrease due to the lower margin material present in the upper mine. Ore tonnes from the Roby Zone are transported via haul truck, through a ramp, to the South portal.

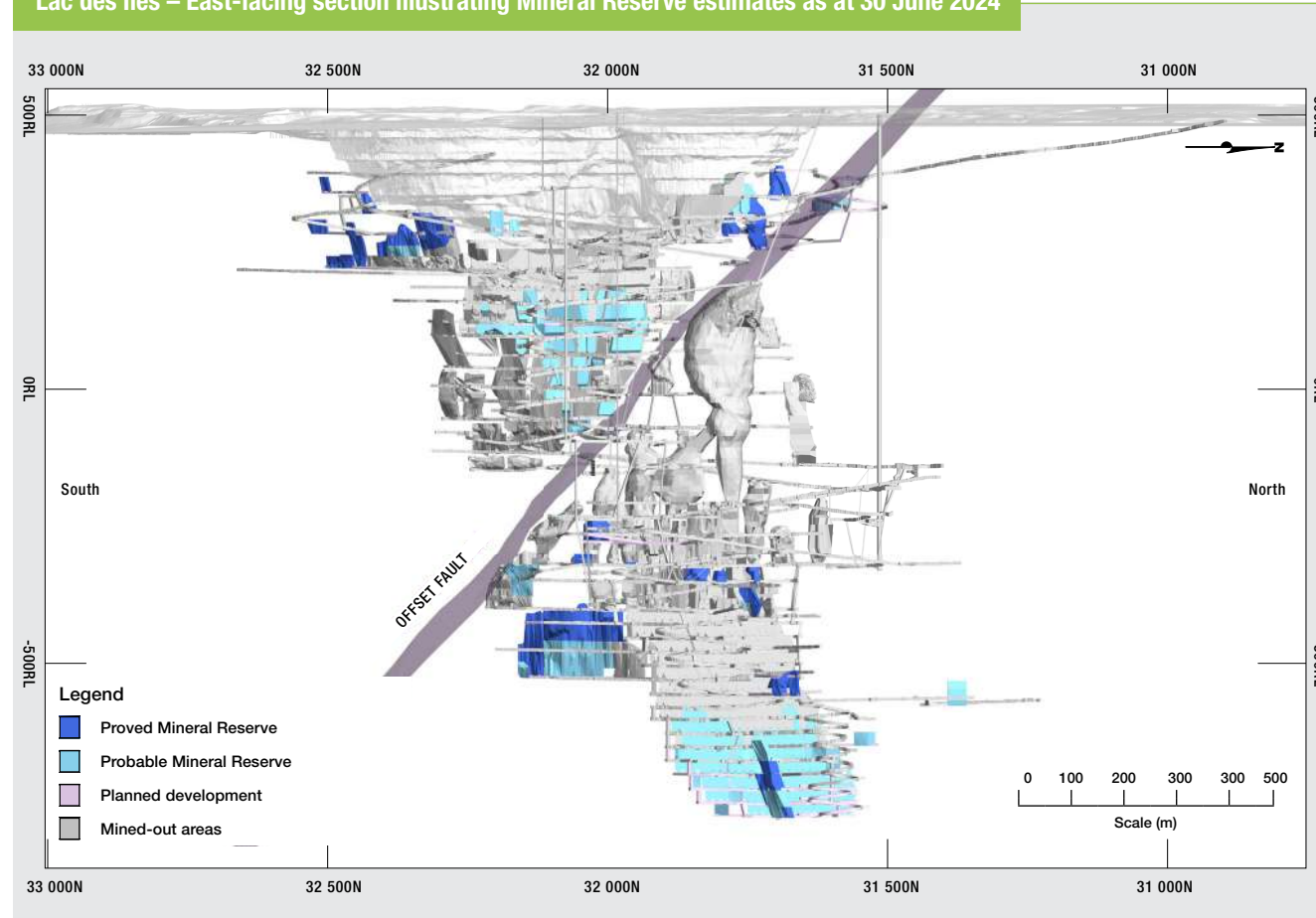
Production from the Offset Zone includes production by open hole stoping (OHS) and sub-level shrinkage (SLS) methods. The SLS production represents the bulk of the Offset Zone production. Production from each of the lower mine zones will remain relatively constant, as hoisting to the surface through the shaft is maximised. The ore is typically hoisted to the surface through the shaft.

## MINE PLANNING PROCESS

Mine design and scheduling are undertaken using Deswik.CAD® and Deswik.Sched® software, with all geological Mineral Resource block models generated using Datamine software. The planning sequence allows for a cycle that starts with a comprehensive review of the LoM mine plan, followed by detailed scheduling of a five-year development schedule and a two-year detailed month-by-month stoping schedule.

# Impala Canada continued

## Lac des Iles – East-facing section illustrating Mineral Reserve estimates as at 30 June 2024



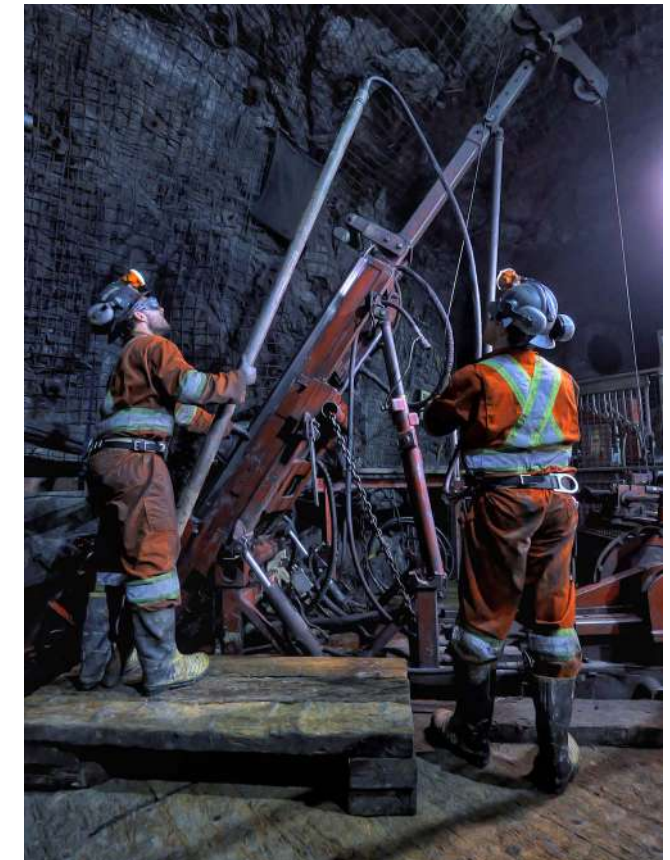
## MINERAL RESERVE ESTIMATION AND CLASSIFICATION

The updated Mineral Reserve estimates are tabulated below and reflect the total Mineral Reserve estimate for Lac des Iles (Impala Canada) as at 30 June 2024. Mineral Reserve grades are quoted after applying mine-to-mill modifying factors. Current Mineral

Reserve estimates include the latest drillhole information, assay results, revised mine design and updated modifying factors. The conversion and classification of Mineral Reserves at Lac des Iles (Impala Canada) are informed by:

- Feasible mine plan and project studies, board approval and available funding

- Economic testing at given market conditions (price deck)
- Due to the bulk nature of the SLS and SLC mining methods, all Measured Mineral Resources included in the caving zone/footprint are classified as Probable Mineral Reserves
- No Inferred Mineral Resources are converted to the Mineral Reserve category. Due to the disseminated nature of the orebody and the mass mining methods, some incidental Inferred Mineral Resources (mineralised waste) are contained within the stope designs but are treated as waste dilution material with all metal grades set to zero. This is deemed insignificant.



Underground diamond drilling at Lac des Iles Mine

# Impala Canada continued

## Lac des Iles Mineral Reserve estimate

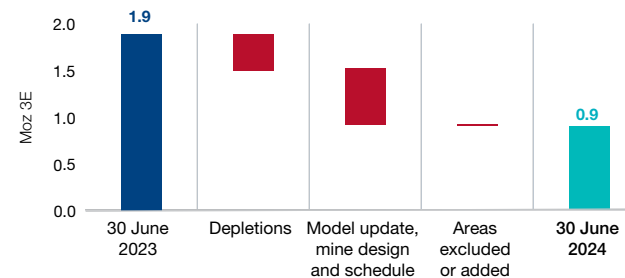
As at 30 June 2024											
Orebody Category	Units	Surface Pit			Roby Underground			Offset Underground			Total
		Proved	Probable	Total	Proved	Probable	Total	Proved	Probable	Total	
Tonnes	Mt	—	—	—	0.9	1.5	2.3	1.1	5.0	6.1	8.5
3E grade	g/t	—	—	—	3.34	2.66	2.91	3.93	3.66	3.71	3.48
Ni	%	—	—	—	0.05	0.06	0.06	0.08	0.09	0.09	0.08
Cu	%	—	—	—	0.07	0.06	0.06	0.10	0.11	0.11	0.09
3E oz	Moz	—	—	—	0.09	0.13	0.22	0.14	0.59	0.73	0.95
Pt oz	Moz	—	—	—	0.01	0.01	0.02	0.01	0.04	0.05	0.06
Pd oz	Moz	—	—	—	0.08	0.11	0.19	0.12	0.51	0.63	0.82

As at 30 June 2023											
Orebody Category	Units	Surface Pit			Roby Underground			Offset Underground			Total
		Proved	Probable	Total	Proved	Probable	Total	Proved	Probable	Total	
Tonnes	Mt	0.5	0.4	0.9	3.1	8.2	11.4	1.2	8.5	9.7	22.0
3E grade	g/t	1.23	1.24	1.24	2.51	2.09	2.20	3.42	3.28	3.29	2.64
Ni	%	0.04	0.04	0.04	0.04	0.05	0.05	0.07	0.08	0.08	0.06
Cu	%	0.05	0.05	0.05	0.05	0.05	0.05	0.09	0.10	0.10	0.07
3E oz	Moz	0.02	0.02	0.04	0.25	0.55	0.81	0.13	0.89	1.03	1.87
Pt oz	Moz	0.00	0.00	0.00	0.02	0.05	0.06	0.01	0.06	0.07	0.14
Pd oz	Moz	0.02	0.02	0.03	0.22	0.47	0.69	0.12	0.77	0.89	1.62

## MINERAL RESERVE RECONCILIATION

The reconciliation with the Mineral Reserve estimate as at 30 June 2024 is shown below. There was a decrease in the 3E Mineral Reserves, net of depletion, primarily driven by mining depletion and the updated mine plan.

**Total Lac des Iles 3E Mineral Reserves**  
as at 30 June 2024 (variance Moz 3E)



## PROCESSING

The Lac des Iles mill has a nominal capacity of 525t per hour and an 85% utilisation to produce at 3 910 000 tonnes per year. Due to the declining metal prices during the 2024 fiscal year and delayed permitting, Impala Canada cancelled plans for the Greenfields TMF site. This change necessitated a reduction of the milling rate to accommodate current brownfields TMF capacity. Starting in July 2024, the plant will be operated at a reduced capacity with additional downtime included monthly, while maintaining a throughput rate greater than 480 tonnes per hour. Annual plant production is estimated to go to approximately 2 815 000 tonnes per year for remainder of LoM.

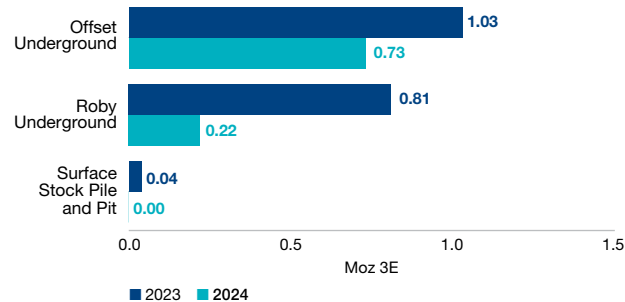


Lac des Iles underground headframe



# Impala Canada continued

## Lac des Iles Mineral Reserve distribution as at 30 June 2024 (Moz 3E)



High-grade polymetallic sulphide concentrate is produced and shipped via trucks. The concentrate's principal value is generated from palladium, with lesser values from platinum, gold and copper. The concentrate produced is currently sold under contract to Glencore. Nickel credits are forfeited as part of the off-take agreement with Glencore. This current off-take agreement will remain in effect through 31 December 2024 and includes an evergreen clause to extend the contract on mutual agreement.

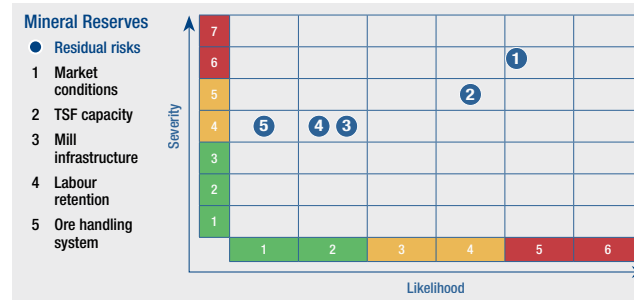
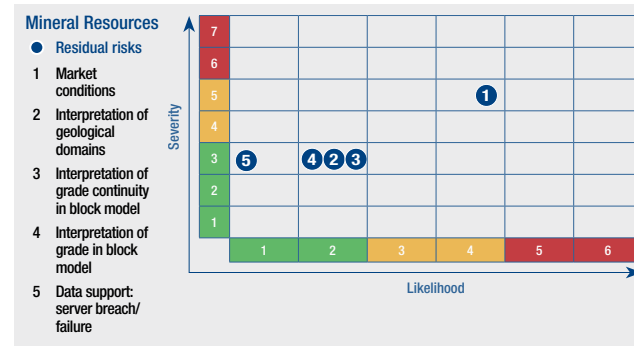
## RISK ASSESSMENT

The residual risk matrices for the Impala Canada Mineral Resources and Mineral Reserves are illustrated below, highlighting the respective top five residual risks.

The top residual risks identified for the Mineral Resources at Impala Canada are (1) market conditions: basket price sensitivity; (2) geology: interpretation of geological domains; (3) classification: interpretation of grade continuity in block model; (4) grade: interpretation of grade in block model; and (5) data support: server breach/failure.

The top residual Mineral Reserve risks identified at Impala Canada are (1) market conditions: basket price sensitivity; (2) TSF capacity: tight construction timeline and/or delayed permitting, inability to construct due to technical challenges; (3) mill infrastructure: ageing equipment requiring investment; (4) labour retention: high turnover due to reduced LoM; and (5) ore handling

system: failure of ore pass used for moving majority of underground material.



## Impala Canada estimated 3E LoM ounce profile as at 30 June 2024



Management interventions are in place to mitigate these risks listed above. Further details regarding the formal risk management process are discussed on [page 19](#).

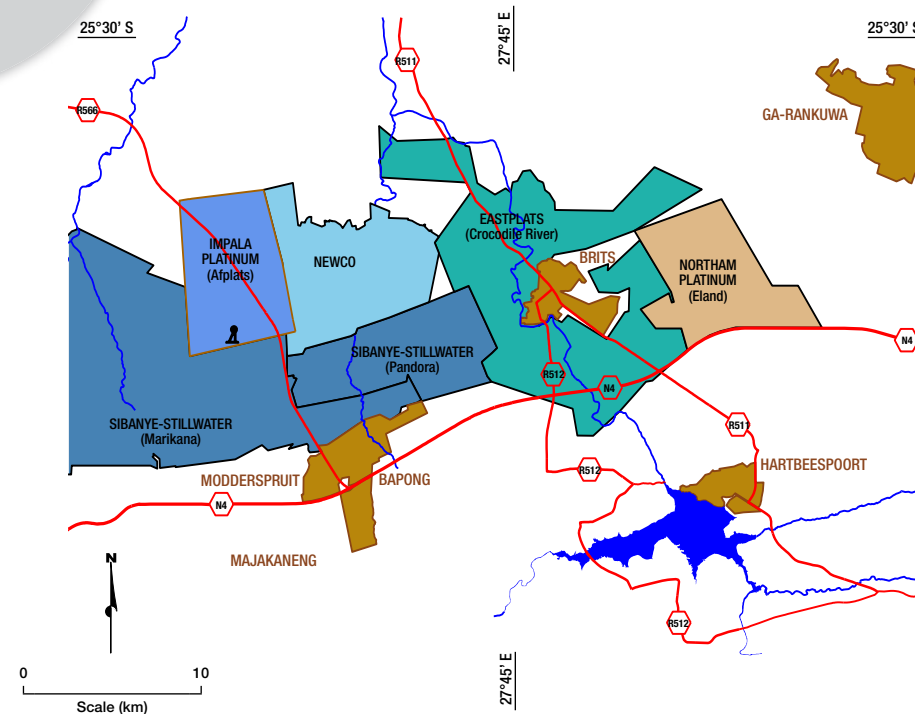
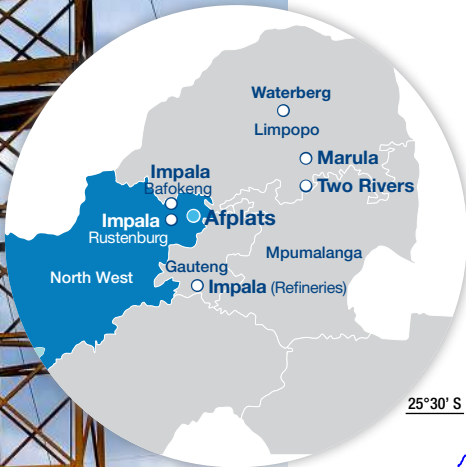
## LoM AND VALUATION AND SENSITIVITY

The Lac des Iles LoM I currently extends until the end of FY2027, supported by the available geological information, Mineral Resource estimates, mine design and schedule.

The economic viability of the Lac des Iles Mineral Reserves is tested by Implats using net present value calculations over the LoM of the Mineral Reserve, determining the lowest real rand basket price that would still render the Mineral Reserve viable. These calculations generate basket prices based on the local 3E ratios and differ from the overall Group basket prices. This is then tested against the internal estimate of the real long-term basket price and the spot price as at 30 June 2024. These tests by Implats indicate that Lac des Iles requires a real long-term basket price of between R14 000 and R17 000 per 3E ounce to be economically viable. While the real spot basket price for Lac des Iles as at 30 June 2024 was R14 289 (US\$834) per 3E ounce, its internal long-term real basket price is R16 627 (US\$976). The commodity market remains fluid. Statistics relating to the historical production are shown on [pages 28 and 29](#).

## Afplats project

## South Africa



### Legend

	Town		Shaft
	Mining right boundary		River
	Public road		Dam

The Afplats project is situated in the Bojanala Platinum district, in South Africa's North West province.

Mining claims

**4 602ha**

Implats' interest

**74%** managed

Exploration drilling

### LOCATION

The Afplats Leeuwkop project is located approximately 23km west of the town of Brits in the North West province and some 2km due west of the R566 road to Sun City. The area is bordered to the west and south by Sibanye-Stillwater's Marikana operation.

### BRIEF HISTORY

The Afplats project is situated on the farm Leeuwkop 402 JQ, and is jointly owned by Implats (74%) and the Bakwena community (Ba-Mogopa Platinum Investments (Pty) Ltd, 26%). In November 2010, the respective boards approved the commencement of a feasibility study with a conventional mine design. The early work to pre-sink the Leeuwkop Main Shaft started on 1 April 2011. In November 2013, a decision was made to conduct another feasibility study that would convert the conventional mining layout into a bord and pillar layout. This work was completed by December 2014, when the Main Shaft had been sunk to 1 198m below the surface, at which depth sinking was suspended due to the economic considerations negating viability at that time.

# Afplats project continued

## GEOLOGICAL SETTING

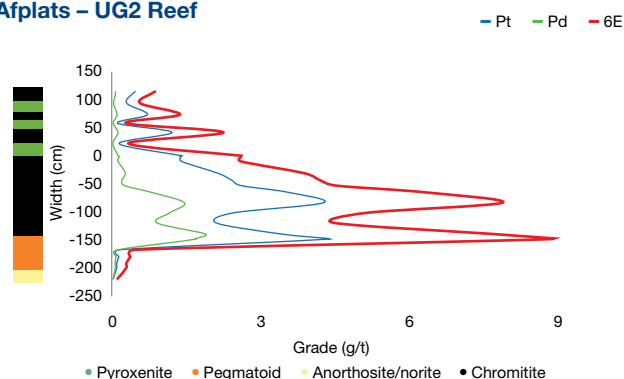
The Merensky Reef is the upper portion of the pyroxenite layer, with a very thin chromitite stringer close to the hangingwall contact. Mineralisation peaks over the chromitite stringer and decreases into the footwall. The UG2 Reef occurs about 1 050m below the surface at the southern boundary of the Leeuwkop farm. The vertical separation between the Merensky and UG2 Reefs averages 200m, and both reefs dip northwards at 9°. The UG2 Chromitite Layer at Afplats consists of two layers of chromitite, separated by thin layers of pyroxenite, and is on average 1.30m thick. The two UG2 Chromitite Layers were combined in the grade estimation and reported as the Mineral Resource width. The reefs are disrupted by faults, dolerite dykes, late-stage ultramafic replacement pegmatoid bodies and potholes. The global extraction rate for Afplats is estimated at 78%. An example of a typical UG2 Reef vertical grade profile of Afplats is included below.

The Merensky and UG2 Reefs have been explored at Afplats, but only the UG2 Reef is considered economically exploitable at the site.

## EXPLORATION AND STUDIES

During the past year, no exploration was undertaken.

### Afplats – UG2 Reef



## GENERAL INFRASTRUCTURE

Afplats' Leeuwkop Shaft is accessed by an existing tarred road from the R556 provincial road. The current infrastructure includes the shaft sinking headgear and winder houses, electricity supply from Eskom via the Big Horn substation, potable water supply from the Madibeng Municipality, offices, change houses for the sinking contractor and Afplats employees and the exploration core yard. All infrastructure is in a secured, fenced-off area. Due to the surface infrastructure being vandalised in recent times, salvaged core was moved to Impala Rustenburg for safekeeping.

## MINERAL RESOURCE ESTIMATION, CLASSIFICATION AND RECONCILIATION

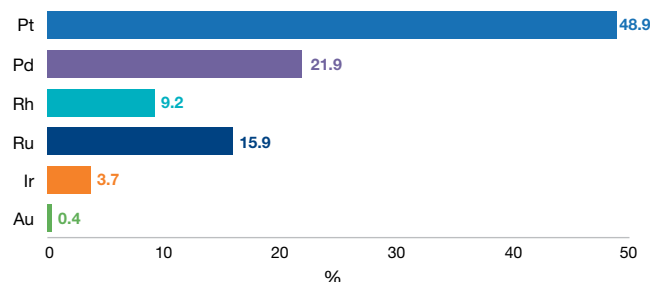
No data was added to the Mineral Resource estimation. The following notes should be read in conjunction with the Mineral Resource table:

- The statement below reflects the total estimate for Afplats
- The Mineral Resource estimate is based on the UG2 Chromitite Layer width, and this exceeds a practical minimum mining width
- The estimate has been conducted using the Isatis™ software
- The Mineral Resource estimate for Afplats as at 30 June 2023 remained unchanged from the previous year.

The Mineral Resource classification is based on a Group standard practice (see [page 14](#)). The drillhole spacing has the largest effective weighting at Afplats.

### Afplats UG2 Reef 6E ratio

as at 30 June 2024 (%)



UG2 Reef 6E ratios derived from Mineral Resource estimate.



Surface exploration drilling

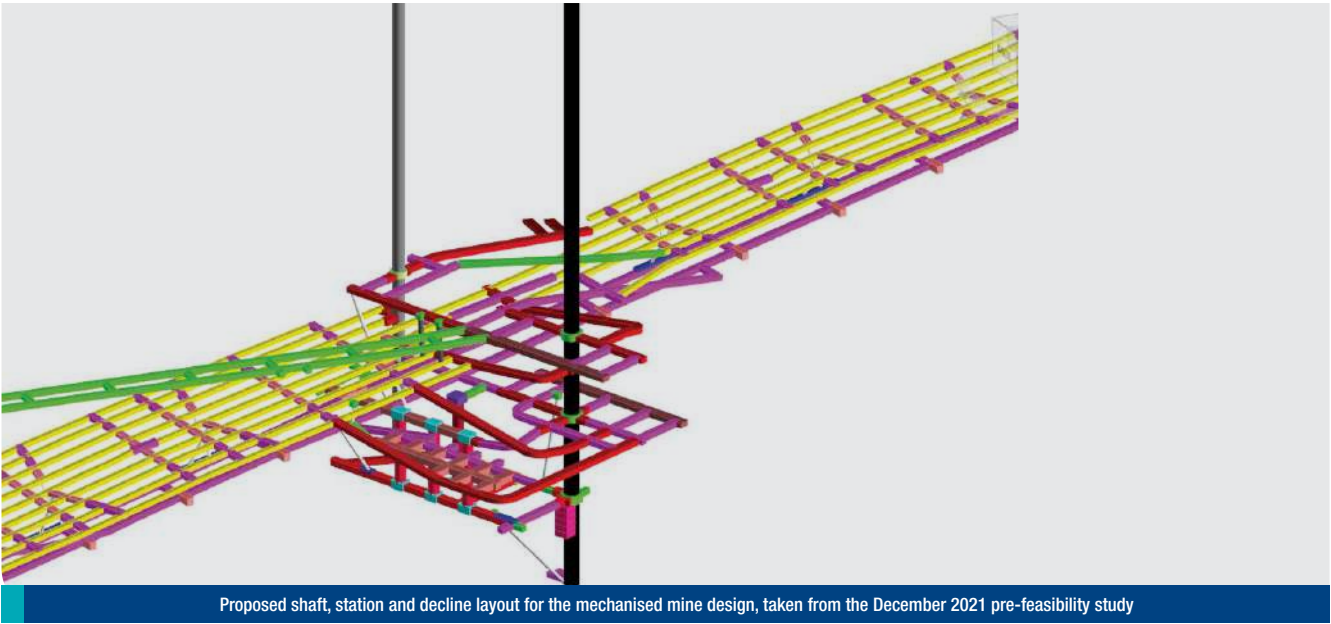


Afplats project continued

Afplats Mineral Resource estimate (inclusive reporting)

As at 30 June 2024					
Orebody		UG2 Reef			Total
Category	Units	Measured	Indicated	Inferred	
Tonnes	Mt	79.5	9.2	47.7	136.5
Width	cm	134	135	129	—
4E grade	g/t	5.29	5.22	5.15	5.24
6E grade	g/t	6.58	6.48	6.35	6.49
Ni	%	0.03	0.04	0.03	0.03
Cu	%	0.01	0.01	0.01	0.01
4E oz	Moz	13.5	1.5	7.9	23.0
6E oz	Moz	16.8	1.9	9.7	28.5
Pt oz	Moz	8.2	0.9	4.8	13.9
Pd oz	Moz	3.7	0.4	2.1	6.2

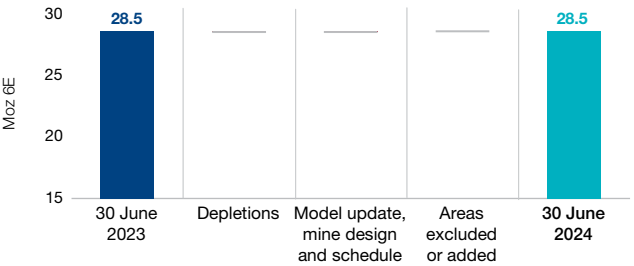
As at 30 June 2023					
Orebody		UG2 Reef			Total
Category	Units	Measured	Indicated	Inferred	
Tonnes	Mt	79.5	9.2	47.7	136.5
Width	cm	134	135	129	—
4E grade	g/t	5.29	5.22	5.15	5.24
6E grade	g/t	6.58	6.48	6.35	6.49
Ni	%	0.03	0.04	0.03	0.03
Cu	%	0.01	0.01	0.01	0.01
4E oz	Moz	13.5	1.5	7.9	23.0
6E oz	Moz	16.8	1.9	9.7	28.5
Pt oz	Moz	8.2	0.9	4.8	13.9
Pd oz	Moz	3.7	0.4	2.1	6.2



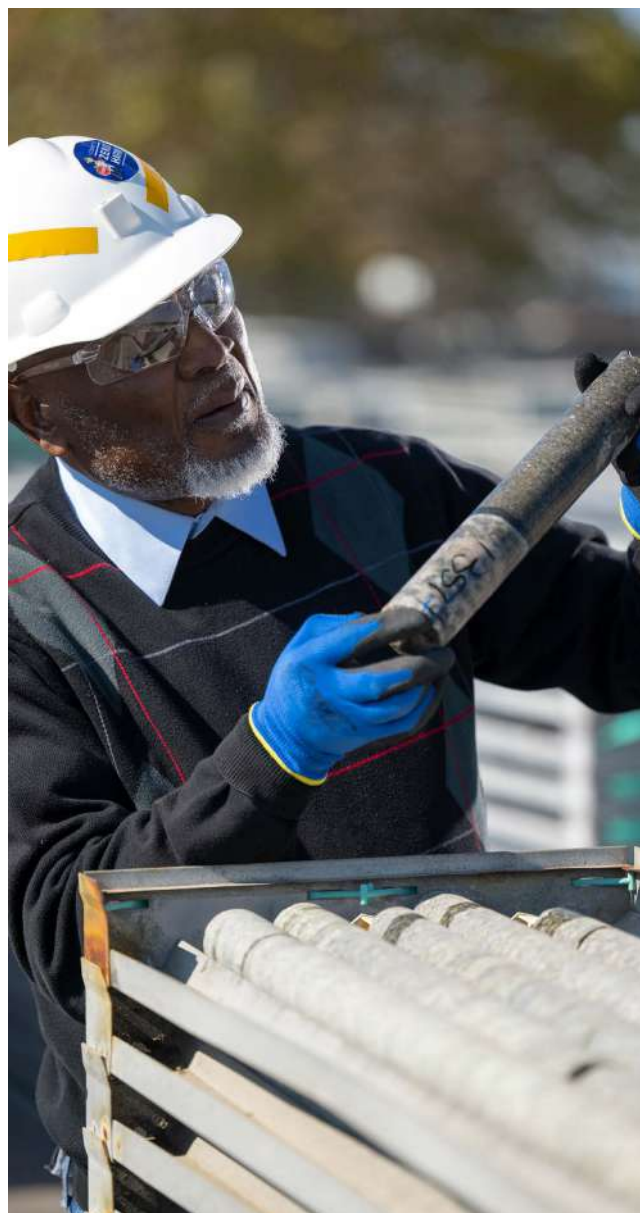
PROPOSED MINING METHODS AND MINE PLANNING

A feasibility study was completed in 2011, based on a conventional method layout, and approved by the Implats board. In November 2013, it was decided to conduct another feasibility study that would convert the conventional mining layout into a bord and pillar layout. The mine planning was completed in a 3D spatial environment and the shaft sinking layout was updated to suit the mining method and completed in December 2014, but was not approved by the Implats board. Therefore, the Mineral Resource estimate was not converted to the Mineral Reserve category pending full project approval and funding, in line with Implats' practice. The vertical shaft sinking project was stopped and the Leeuwkop project deferred while studies continue. By December 2014, the Main Shaft had progressed to a depth of 1 198m below surface, above the planned shaft bottom position of 1 396m below surface. The Main Shaft offers flexibility to function as a ventilation shaft, should circumstances or alternative planning considerations change.

Total Afplats 6E Mineral Resources as at 30 June 2024 (variance Moz 6E)

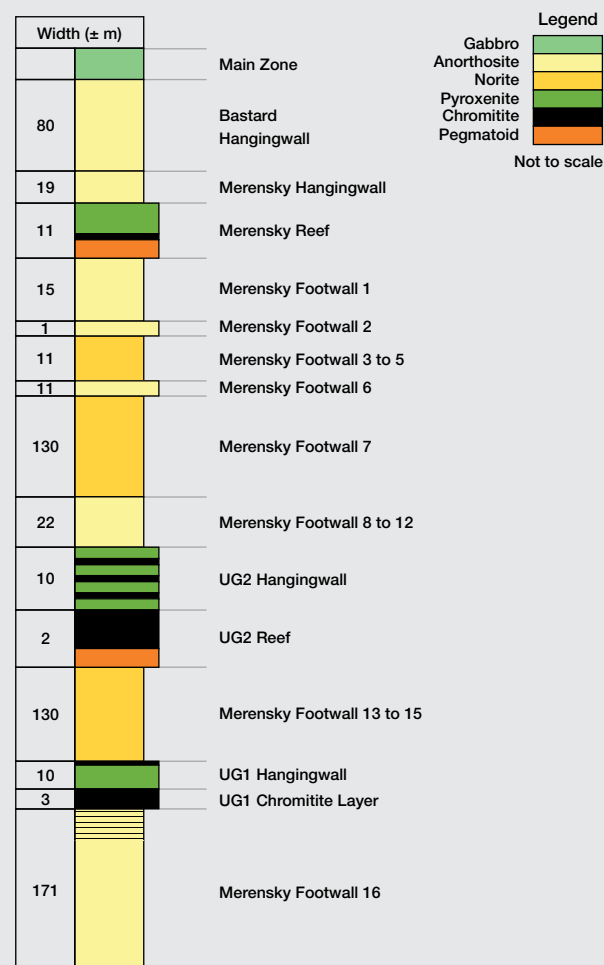


# Afplats project continued

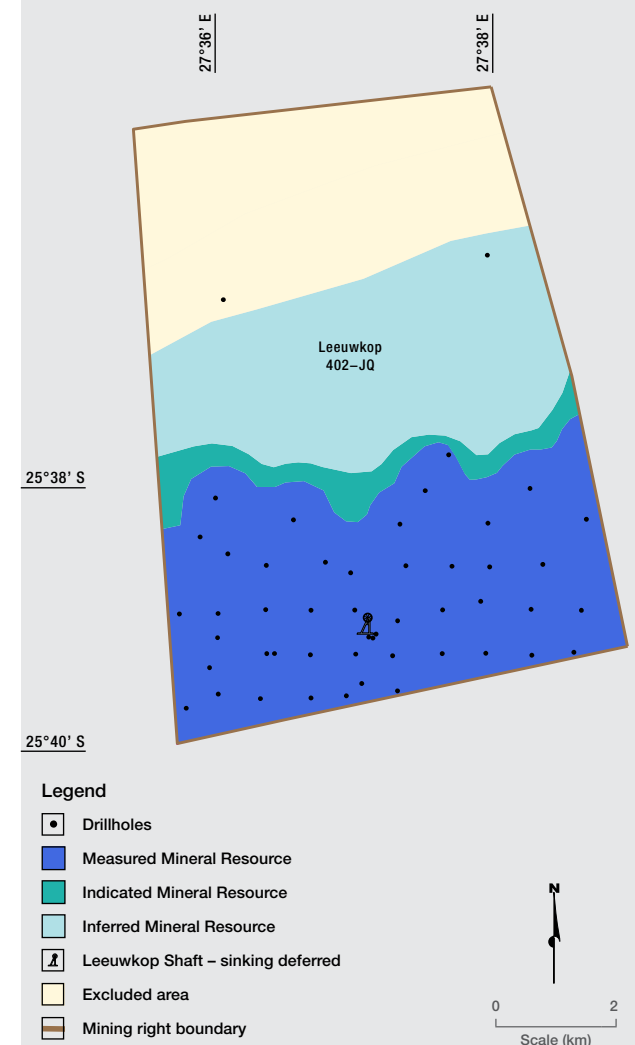


Core inspection by a geologist

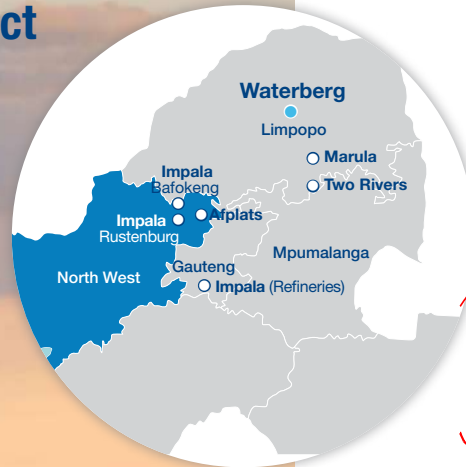
## Generalised geological succession of the upper portion of the Critical Zone at Afplats



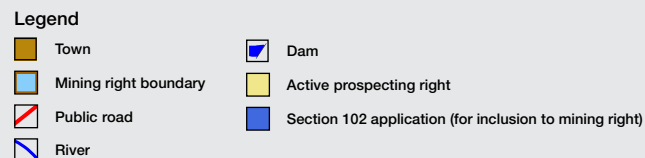
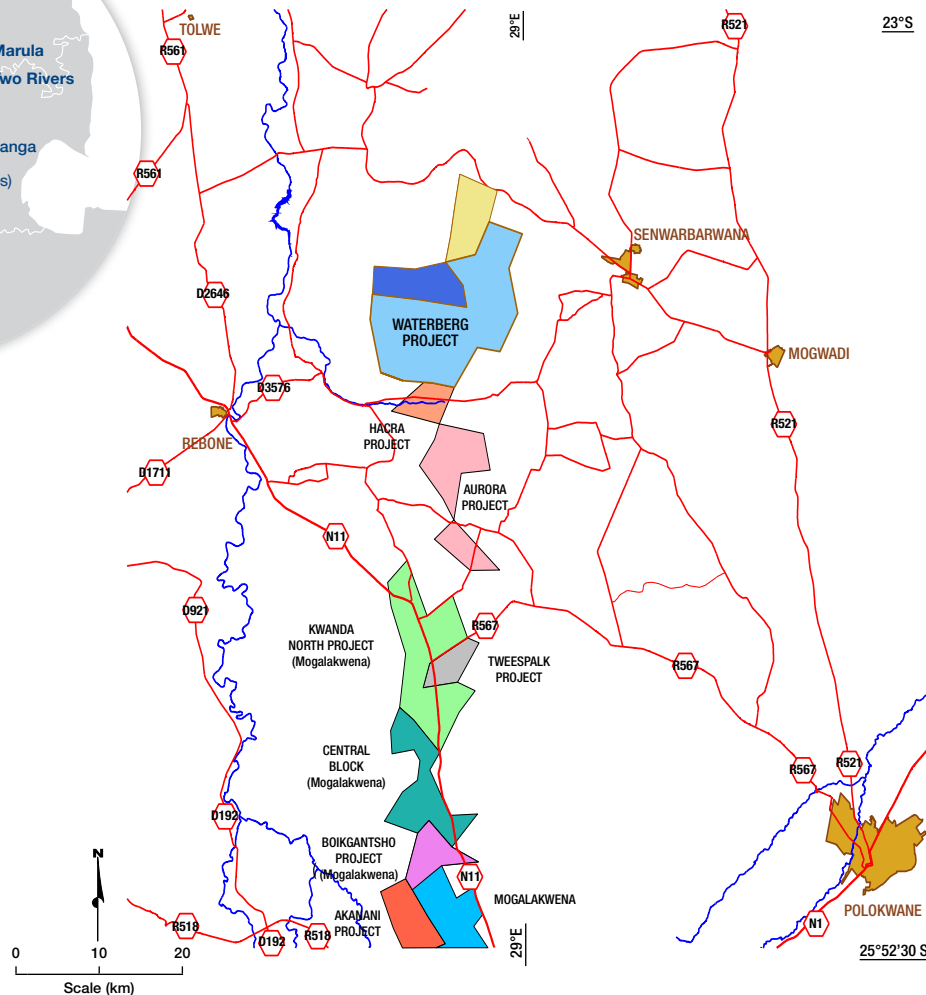
## Afplats UG2 Mineral Resources



## Waterberg project



## South Africa



A sub-level, highly mechanised longhole stoping mining method with backfilling is envisaged. Transverse and longitudinal longhole approaches are planned to extract Mineral Resources from the T-Zone and F-Zone. An updated bankable feasibility study is underway.

Mining claims

**20 532ha**

Implats' interest

**14.95%** non-managed

The Waterberg project

### LOCATION

The Waterberg project is located 85km north of the town of Mokopane in the Limpopo province, South Africa, approximately 330km north-northeast from Johannesburg. The total project area – comprising the active prospecting right, the mining right, and mining right application area – cover 29 161ha. The elevation ranges from approximately 880m to 1 365m above sea level.

### BRIEF HISTORY

The Waterberg project resulted from a regional target generation initiative by Platinum Group Metals (RSA) (PTM RSA). In 2007, PTM RSA targeted the area off the north end of the mapped Northern Limb of the Bushveld Complex, based on its own detailed geophysical, geochemical and geological work. The original prospecting area was enlarged over time, and PTM RSA entered into agreements with the Japan Organization for Metals and Energy Security (JOGMEC) and the B-BBEE entity, Mnombo Wethu Consultants (Pty) Ltd (Mnombo).

On 16 October 2017, definitive agreements were signed with Implats, which saw Implats purchase 15% of Waterberg JV shares from PTM RSA (8.6%) and JOGMEC (6.4%).



## Waterberg project continued

Implats also acquired a purchase and development option to increase its stake in the Waterberg JV to 50.01% through additional share purchases and earn-in arrangements. The agreement included a right of first refusal to smelt and refine Waterberg project concentrate. Current ownership of the Waterberg project is held by Implats (14.95%), JOGMEC (12.195%), Hanwa (9.755%) and PTM RSA (50.07%, inclusive of the interest held in Mnombo), and the remainder by Mnombo.

In June 2020, Implats decided not to exercise the option to increase its shareholding from 15% to 50.01% based on the prevailing economic, balance sheet and funding considerations. At the same time, Implats confirmed its support for the project. With a 15% equity stake in the project, this represents a non-managed project within the Implats portfolio.

In 2024, Implats elected to dilute its share equity stake to 14.95% in light of the prevailing outlook on metal prices, with the 0.05% equity stake being taken up by PTM.

Since the initial prospecting rights were acquired, significant exploration activities were undertaken by PTM RSA. These were supplemented by various Mineral Resource estimates as published by PTM RSA and available on ([www.sedarplus.ca](http://www.sedarplus.ca)). A definitive feasibility study (DFS) was completed in October 2019.

An updated DFS study is currently underway and is earmarked for conclusion and publication in FY2025. Implats shall publish an updated statement with its 2025 declaration.

### GEOLOGICAL SETTING

In the Waterberg project area, the Bushveld Complex has intruded across a pre-existing, craton scale lithological and structural boundary between two geological zones. The known Northern Limb has a north-south orientation to the edge contact that makes an abrupt strike change to the northeast, coincident with the projection of the east-west trending Hout River Shear system. This major shear marks the southern boundary of the South Marginal Zone (SMZ). The footwall to the Bushveld on the Waterberg project is interpreted to comprise facies of the SMZ.

**The Waterberg project is situated off the northern extent of the Northern Limb of the Bushveld Complex.**

The geology consists predominantly of the Bushveld Main Zone gabbros, gabbronorites, norites, pyroxenites and anorthositic rock types with more mafic rock material, such as harzburgite and troctolites, that partially grade into dunites towards the base of the package. The Bushveld succession strikes southwest to northeast with a general dip of 34° to 38° towards the west as observed from the drillhole core. The Bushveld Upper Zone is overlain by a 120m to 760m thick Waterberg Group, a sedimentary package predominantly comprised of sandstones, and within the project area where sedimentary formations known as the Setlaole and Makgabeng Formations constitute the Waterberg Group. The Waterberg package is flat-lying with dip angles ranging from 2° to 5° towards the west.

PGM mineralisation within the Bushveld package underlying the Waterberg project is hosted in two main layers: the T-Zone and the F-Zone. The T-Zone occurs within the Main Zone, just beneath the contact of the overlaying Upper Zone. Three potential economic layers were identified: TZ, T1, and T0. These are composed mainly of anorthosite, pegmatoidal gabbros, pyroxenite, troctolite, harzburgite, gabbronorite and norite. The F-Zone is hosted in a cyclic unit of olivine-rich lithologies near the base of the Main Zone, towards the bottom of the Bushveld Complex. This zone consists of alternating units of harzburgite, troctolite and pyroxenites. The 4E ratios differ significantly between the T- and F-Zones. Both zones show high palladium ratios. However, the T-Zone is relatively enriched in gold and copper compared to the F-Zone.

### EXPLORATION AND STUDIES

Waterberg is an advanced project, which has undergone extensive exploration, preliminary economic evaluations and a pre-feasibility study (PFS), with the definitive feasibility study completed in October 2019.

Data used in the Mineral Resource estimate was derived from a total of 362 293m of diamond drilling to inform the mineralised horizons structure model and estimated grade values. The drillhole dataset consists of 441 drillholes and 583 deflections at the date of drill data cut-off (1 December 2018).

During the past year, 33 additional surface drillholes and 15 geotechnical drillholes were completed as part of an optimisation study as well as a step-out drilling programme.

From an environmental and social perspective, the most significant impacts from potential mining are anticipated in the eastern (plant footprint) and southeast-central areas of the proposed mining right area. This delineates the area where surface infrastructure is planned, as it marks the shallowest access for underground mining and is topographically relatively flat. The Environmental Assessment Practitioner and specialists' assessments have found that the Waterberg project may result in both negative and positive impacts on the environment. Adequate mitigation measures are included in the Environmental Management Programme to reduce identified adverse effects.

### GENERAL INFRASTRUCTURE

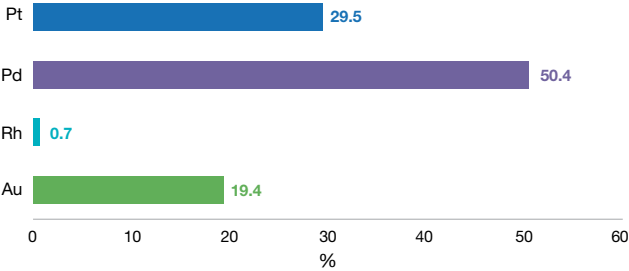
The Waterberg project is located 85km north of the town of Mokopane in Seshego and Mokerong, districts of the Limpopo province, and 56km from the N11 national road that links Mokopane with the Grobler's Bridge border post to Botswana. Current access to the project area from Mokopane and Polokwane includes approximately 34km of unpaved roads. The project is located in a rural area with limited existing infrastructure, apart from gravel roads, borehole water, and 22kV rural power distribution with limited capacity. Upgrades are planned for all existing infrastructure, including the 37km gravel (Matlala) road leading to the R567 regional road to Polokwane.

In addition to the three planned mining complexes and one processing facility, the infrastructure required for a successful Waterberg operation would include constructing a new 132kV electrical supply from the Eskom Burotho 400/132kV main transmission station 74km south of the site. This development, and equipping a local well field spread over 20km to provide water, is envisaged.

Waterberg project continued

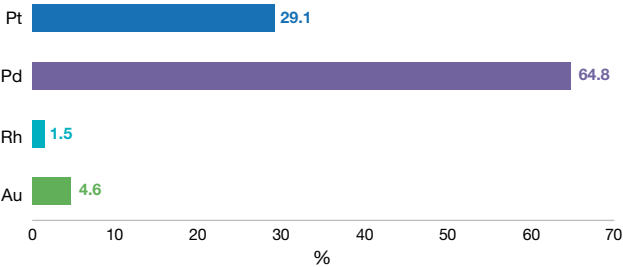
Waterberg T-Zone 4E ratio

as at 30 June 2024 (%)



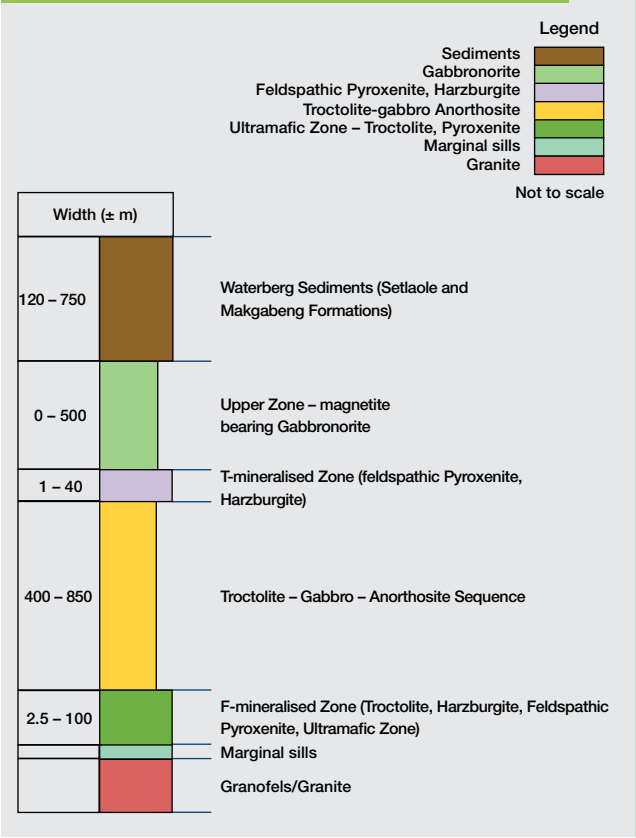
Waterberg F-Zone 4E ratio

as at 30 June 2024 (%)



T-Zone and F-Zone 4E ratios derived from the Mineral Resource estimate.

Generalised geological succession of the Bushveld Complex at the Waterberg project



MINERAL RESOURCE ESTIMATION AND CLASSIFICATION

Mineral Resources are reported inclusive of Mineral Reserves and are reflected on a 100% project basis. Mineral Resource grades are shown for 4E only, given the lack of available details about ruthenium and iridium. The nickel and copper estimates for the Waterberg project are based on the four-acid digestion method. This results in a near-total assay, while the nickel and copper reported for all Implats' other southern African operations and projects are based on a partial three-acid digestion method. Mineral Resources were estimated using ordinary kriging (OK) and simple kriging (SK) methods in Datamine Studio3. A process of geological modelling and the creation of grade shells using indicating kriging (IK) was applied in the estimation process.

The cut-off grade for the T-Zone and the F-Zone considered costs, smelter discounts and concentrator recoveries from the previous and ongoing engineering work completed on the property by the Waterberg JV and its independent engineers. Two Mineral Resource estimates were compiled based on cut-off grades of 2.0 and 2.5g/t 4E, respectively. A cut-off grade of 2.5g/t 4E was used for the Mineral Resource estimate shown below.

The Waterberg project Mineral Resources are currently classified according to the combined criteria for sampling (QA/QC), geological confidence, number of samples in each block, semi-variogram range, kriging efficiency and regression slope.

The Mineral Resource estimate comprises 19% Measured, 60% Indicated and 21% Inferred Mineral Resources.

MODIFYING FACTORS

The table below summarises the more significant modifying factor impacting the Mineral Resource estimates (see [page 15, 31,](#) and [103](#) for further details).

Mineral Resource Key assumptions	T- and F-Zones
Geological losses (in addition to known structures)	5 – 7%

# Waterberg project continued

## Waterberg Mineral Resource estimate (inclusive reporting)

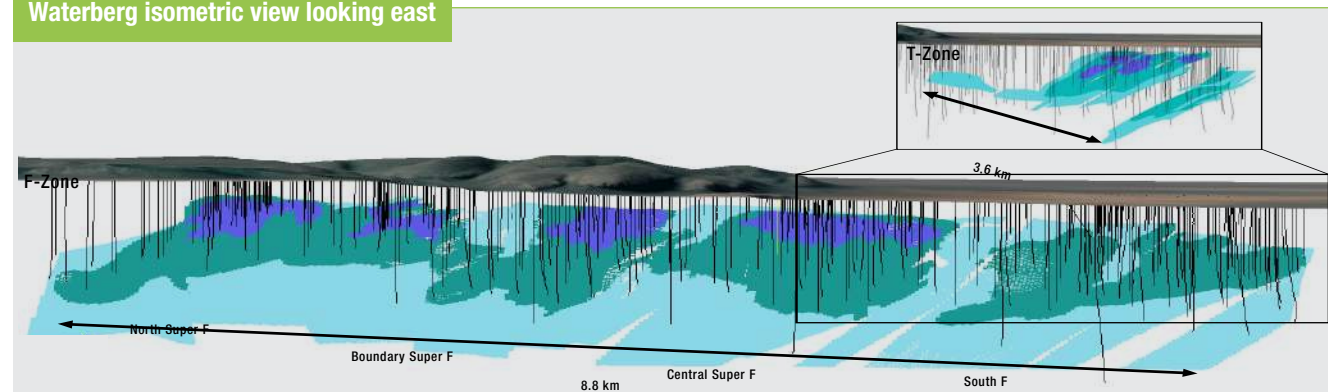
As at 30 June 2024

Orebody Category	Units	T-Zone				F-Zone				Total
		Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	
Tonnes	Mt	4.4	17.0	21.8	43.3	54.1	166.9	44.8	265.8	309.1
4E grade	g/t	4.20	4.61	3.86	4.19	3.36	3.24	2.98	3.22	3.36
Ni	%	0.08	0.09	0.10	0.09	0.20	0.19	0.17	0.19	0.17
Cu	%	0.15	0.20	0.20	0.19	0.09	0.09	0.06	0.08	0.10
4E oz	Moz	0.6	2.5	2.7	5.8	5.8	17.4	4.3	27.5	33.4
Pt oz	Moz	0.2	0.7	0.8	1.7	1.7	5.1	1.3	8.0	9.7
Pd oz	Moz	0.3	1.3	1.3	2.9	3.8	11.2	2.8	17.8	20.7

As at 30 June 2023

Orebody Category	Units	T-Zone				F-Zone				Total
		Measured	Indicated	Inferred	Total	Measured	Indicated	Inferred	Total	
Tonnes	Mt	4.4	17.0	21.8	43.3	54.1	166.9	44.8	265.8	309.1
4E grade	g/t	4.20	4.61	3.86	4.19	3.36	3.24	2.98	3.22	3.36
Ni	%	0.08	0.09	0.10	0.09	0.20	0.19	0.17	0.19	0.17
Cu	%	0.15	0.20	0.20	0.19	0.09	0.09	0.06	0.08	0.10
4E oz	Moz	0.6	2.5	2.7	5.8	5.8	17.4	4.3	27.5	33.4
Pt oz	Moz	0.2	0.7	0.8	1.7	1.7	5.1	1.3	8.0	9.7
Pd oz	Moz	0.3	1.3	1.3	2.9	3.8	11.2	2.8	17.8	20.7

## Waterberg isometric view looking east



### Legend

■ Measured Mineral Resource
 ■ Indicated Mineral Resource
 ■ Inferred Mineral Resource

## MINERAL RESOURCE RECONCILIATION

The Mineral Resource estimate for the Waterberg project was reported as at 4 September 2019 as part of the Waterberg DFS. This estimate remains in place and is valid as at 30 June 2024. An updated bankable feasibility study is underway.



Geologists inspecting core at the Waterberg project



# Waterberg project continued

## PROPOSED MINING METHODS AND MINE PLANNING

The Waterberg project, as per the DFS completed in October 2019, is planned as a 400ktpm mechanised underground mining operation accessed via declines. The DFS mine design is based on the sub-level longhole stoping (longhole) mining method and backfilling the mined voids with paste backfill. Additional mining methods could be considered in future.

A combination of transverse and longitudinal longhole approaches is currently planned to extract the Mineral Resource. Longhole stoping requires dividing the Mineral Resource targeted for production into individual stopes, and establishing mining sub-levels to access the stopes and position development to drill, blast and extract the blasted material from between the sub-levels. Once mining of a stope is complete, the stope will be backfilled with paste backfill.

A transverse approach, consisting of primary and secondary stopes, will be applied to areas where the average true thickness (perpendicular to the dip) of the Mineral Resource is 15m or greater. In the transverse approach, stopes are accessed and developed perpendicular to the strike of the orebody. A longitudinal system requiring less waste rock development will be used for areas where the true thickness is less than 15m. In the longitudinal approach, stopes are developed along (parallel to) the strike of the orebody.

The Waterberg project is divided into the following three mining complexes.

- The South Complex, which includes T-Zone and F-South
- The Central Complex, which includes F-Central
- The North Complex, which includes F-North, F-Boundary North and F-Boundary South.

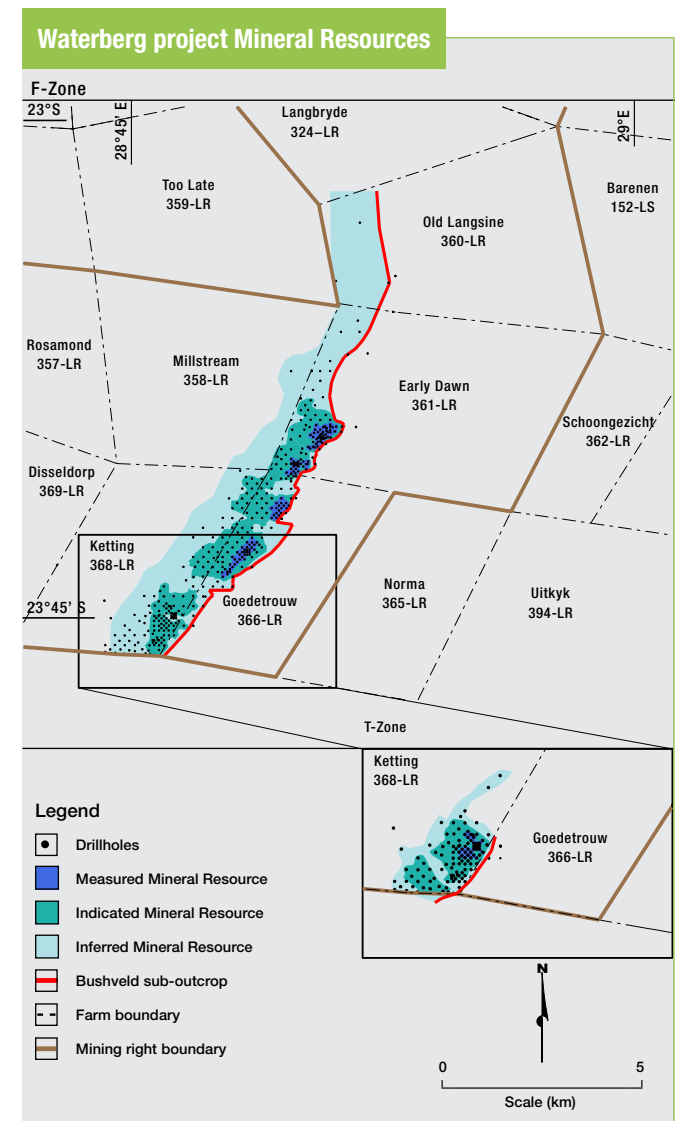
The mine plan includes a box cut and portal at each complex, each with twin declines (service decline and conveyor decline) developed to access and service the complex for the LoM.

## MINERAL RESERVE ESTIMATION, CLASSIFICATION AND RECONCILIATION

On completion of the DFS in October 2019, a Mineral Reserve estimate for the Waterberg project was published in a NI43-101 report entitled 'Independent Technical Report, Waterberg Project Definitive Feasibility Study and Mineral Resource Update, Bushveld Complex, South Africa, effective date 4 September 2019' ([www.sedarplus.ca](http://www.sedarplus.ca)). While the Mineral Reserve estimate is in the public domain, Implats has elected not to include the estimate in this report. In essence, the internal Implats' Group-wide protocol for the estimation, classification and reporting of Mineral Resources and Mineral Reserves requires, among others, that a mining right must be in place, that the board has approved the project and that funding is in place.

## PROCESSING

The process design for the Waterberg Concentrator Plant was developed based on the extensive metallurgical test work results and studies. The test work programme, developed during the PFS and the DFS, identified that the mill-float-mill-float (MF2) configuration following three-stage crushing is the most appropriate recovery technique for the PGE and base metals from the F-Zone and the T-Zone ores. The plant design provides for controlled blending of the two ore types in the crushing circuit. The ore blending does not require a conceptual change to the MF2 flowsheet, but controlled blending is considered advantageous in providing a consistent feed composition to the process. Further optimising reagent addition during operation, to achieve the optimal concentrate grade and recovery, can be completed. The tailings will be directed to either the backfill plant, to be placed as cemented fill underground, or to a potential TSF.



## Chromium ore

Chromium ore is produced from the mineral chromite (a chromium-iron oxide), which is found in rock called chromitite. Most of the world's chromium Mineral Resources are in South Africa's Bushveld Complex and Zimbabwe's Great Dyke, where it occurs as numerous thin and laterally continuous stratiform chromitite layers, interlayered with mafic and ultramafic rock.

Up to 11 chromitite layers are known in the Great Dyke, named from the top down as Seams 1 to 11. Thirteen chromitite layers are known in the Bushveld Complex, which are clustered into three groups; the lower, middle and upper groups. Named from the bottom up, these layers are termed LG1 to LG7, MG1 to MG4 and the UG1 and UG2. In places, individual chromitite layers may comprise multiple layers of subsidiary chromitite units, separated by intercalated silicate units.

Although some of the chromitite layers have been known since 1865, limited mining only started in 1916 in the Bushveld Complex and in 1919 on the Great Dyke. Chromium mining and use escalated after the Second World War, with approximately half of the world's chromium ore production mined from the Bushveld Complex.

In the Bushveld Complex, only the LG6, MG1 and UG2 chromitite layers are generally amenable to underground mining. The uppermost chromitite layer (UG2 Reef) occurs at a depth range of 50m and 400m below the Merensky Reef and hosts economically exploitable quantities of PGMs within the chromitite. The UG2 chromitite layer is mined at Implats' Impala Rustenburg, Marula and Two Rivers operations, principally for the PGMs. Chromium can consequently be seen as a by-product of the UG2 Reef in South Africa. The LG6 and MG1 layers, with an average  $\text{Cr}_2\text{O}_3$  grade of between 40% and 50%, occur more

than 250m below the UG2 Reef. As such, these units cannot be mined from Implats' existing infrastructure and are mined by other operators, close to the surface in opencast and underground mining operations, for the chromium content only.

The UG2 Reef at **Impala Rustenburg** has an average *in situ*  $\text{Cr}_2\text{O}_3$  grade of approximately 33%, and a mined grade of about 14%. The mined ore from the UG2 Reef is milled and processed to recover the PGMs at the mine's two PGM concentrator plants. The tailings from the central concentrator are pumped directly to the tailings dams, as they are predominantly Merensky Reef tailings. Some of the tailings generated by the UG2 PGM recovery plant are reprocessed at two metallurgical plants to recover the chromite.

Impala Rustenburg has an offtake agreement with Merafe Resources and sells approximately 150kt of chromite concentrate a year, recovered at one of the chromite recovery plants. The second chromite recovery plant, owned by Impala Chrome, is operated by Glencore Operations South Africa (Pty) Ltd.

Currently, 190kt chromite concentrate is produced per annum by Impala Chrome, and the remainder is pumped to the tailings dams. The retrieved chromite from the UG2 Reef tailings has an average  $\text{Cr}_2\text{O}_3$  grade of approximately 38%. The number 3 and number 4 tailings dams at Impala Rustenburg currently contain some 534Mt of milled and processed material, with an average  $\text{Cr}_2\text{O}_3$  grade of less than 8%.

At **Marula**, material from the UG2 Reef is milled and processed to retrieve the PGMs at the mine's concentrator. The Makgomo Chrome recovery plant subsequently reprocesses the UG2 Reef tailings generated by the concentrator to extract the chromite. The plant has been in operation since 2010 and is currently operated by Chrome Traders, which has an offtake agreement whereby all the concentrate produced is purchased on a free carrier basis. Makgomo Chrome is 50% owned by Marula Community Chrome (Pty) Ltd, 30% by Implats and 20% by Marula Platinum Mine. In recent years, some 248kt

of chromium concentrate has been produced per annum, and the remainder is pumped to the tailings dams. The *in situ* grade of the UG2 chromitite layer at Marula has not been determined, but the chromite concentrate has an average  $\text{Cr}_2\text{O}_3$  grade of approximately 41%. The tailings dams at Marula currently contain some 28.5Mt of milled and processed UG2 Reef material at an average  $\text{Cr}_2\text{O}_3$  grade of roughly 12%.

At **Two Rivers**, managed by ARM, material from the UG2 Reef is milled and processed to recover the PGMs at the mine's MF2 PGM concentrator. The chromite recovery plant then reprocesses the UG2 Reef tailings generated by the concentrator to recover the chromite. The chromite recovery plant was commissioned in 2013 and is owned and operated by Two Rivers, which has an offtake agreement with Chrome Traders whereby all concentrate produced is purchased on a free carrier basis from Two Rivers. Currently, some 200kt per annum of chromite is produced at a  $\text{Cr}_2\text{O}_3$  grade of 40.1% and a silica content of less than 3.9%, with the remainder pumped to the tailings dams. The tailings dams at Two Rivers currently contain some 54Mt of milled and processed material, at an average  $\text{Cr}_2\text{O}_3$  grade of 15%. The UG2 Reef in this area has an average *in situ*  $\text{Cr}_2\text{O}_3$  grade of 20.7%.

No mining has taken place at **Afplats**. The UG2 Reef in this area has an average *in situ*  $\text{Cr}_2\text{O}_3$  grade of 31%.

At **Zimplats**, the uppermost chromitite layer (Seam 1) occurs 220m below the MSZ and outcrops in a few places within Zimplats' mining leases (ML 36 and ML 37). It cannot be mined from Zimplats' existing infrastructure but is mined by other operators and artisanal miners, close to the surface outcrop, for its chromium content only. The lower seams do not outcrop within Zimplats' mining leases. This is also the case at Mimosa.

The available information is insufficient to support a comprehensive Mineral Resource or Mineral Reserve Statement for Implats' chromium ore production. Where relevant, chromium is accounted for in the financial valuation.

# Mineral Resource and Mineral Reserve definitions

SAMREC Code (The South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves) – The Code sets out a required minimum standard for the Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves. References in the Code to Public Report or Public Reporting pertain to those reports detailing Exploration Results, Mineral Resources and Mineral Reserves and which are prepared as information for investors or potential investors and their advisers. SAMREC was established in 1998 and is modelled on the Australasian Code for reporting of Mineral Resources and Ore Reserves (JORC Code). The first version of the SAMREC Code was issued in March 2000 and adopted by the JSE in its Listings Requirements later that same year. The Code has been adopted by the SAIMM, GSSA, SACNASP, ECSA, IMSSA and SAGC, and it is binding on members of these organisations. For background information and the history of the development of the code, please refer to the SAMREC Code, March 2000. A second edition of the SAMREC Code was issued in 2007 with an amendment issued in 2009 and the latest edition was released in May 2016. This supersedes the code's previous editions.

A Competent Person (CP) is a person who is registered with SACNASP, ECSA or SAGC, or is a Member or Fellow of the SAIMM, the GSSA, IMSSA or a Recognised Professional Organisation (RPO). These organisations have enforceable disciplinary processes, including the powers to suspend or expel a member. A complete list of recognised organisations will be promulgated by the SAMREC/SAMVAL Committee (SSC) from time to time. The CP must comply with the provisions of the relevant promulgated acts. A CP must have a minimum of five years' relevant experience in the style of mineralisation or type of deposit under consideration and in the activity that person is undertaking. If the CP is estimating, or supervising the estimation of Mineral Resources, the relevant experience must

be in the estimation, assessment and evaluation of Mineral Resources. If the CP is estimating, or supervising the estimation of Mineral Reserves, the relevant experience must be in the estimation, assessment, evaluation and assessment of the economic extraction of Mineral Reserves. Persons being called upon to sign as a CP 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 situation under consideration.

A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Mineral Resources are subdivided, and must be so reported, in order of increasing confidence in respect of geoscientific evidence, into Inferred, Indicated or Measured categories. Geological evidence and knowledge required for the estimation of Mineral Resources must include sampling data of a type, and at spacings, appropriate to the geological, chemical, physical, and mineralogical complexity of the mineral occurrence, for all classifications of Inferred, Indicated and Measured Mineral Resources.

An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An Inferred Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that

the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing, and is sufficient to assume geological and grade or quality continuity between points of observation. An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve. An Indicated Mineral Resource has a higher level of confidence than that applying to an Inferred Mineral Resource.

A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation. A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proved Mineral Reserve or to a Probable Mineral Reserve.

A Mineral Reserve is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted, and is defined



## Mineral Resource and Mineral Reserve definitions continued

by studies at pre-feasibility or feasibility level, as appropriate, that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.

The reference point at which Mineral Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.

A Probable Mineral Reserve is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Mineral Reserve is lower than that applying to a Proved Mineral Reserve.

A Proved Mineral Reserve is the economically mineable part of a Measured Mineral Resource. A Proved Mineral Reserve implies a high degree of confidence in the Modifying Factors.

**SAMVAL Code** – The South African Code for the reporting of Mineral Asset Valuation – sets out minimum standards and guidelines for Reporting of Mineral Asset Valuation in South Africa. The process for establishing the SAMVAL Code was initiated through an open meeting at a colloquium convened by the Southern African Institute of Mining and Minerals (SAIMM) in March 2002. The first edition of the SAMVAL Code was released in April 2008, with further amendments in July 2009. After various discussions it became apparent that a review process was required, and this was initiated in September 2011 at an open meeting at which participants were invited to express their opinions on matters that were unclear, or that required inclusion/exclusion or modification in the 2008 edition.

This process resulted in the SAMVAL Code update, released in May 2016.

A Competent Valuator (CV) is a person who is registered with ECSA, SACNASP, or SAGC, or is a Member or Fellow of the SAIMM, the GSSA, SAICA, or a Recognised Professional Organisation (RPO) or other organisations recognised by the SSC on behalf of the JSE Limited. A CV is a person who possesses the necessary qualifications, ability, and relevant experience in valuing mineral assets. A person called upon to sign as a CV shall be clearly satisfied in their own mind that they are able to face their peers and demonstrate competence in the valuation undertaken.

The respective codes and related details can be found at the SAMCODES website ([www.samcode.co.za](http://www.samcode.co.za)).



Core logging at Impala Canada

## Acronyms and glossary of terms

<b>3E (equivalent to 2PGE+Au)</b>	Refers to the sum of platinum, palladium and gold content
<b>4E (equivalent to 3PGE+Au)</b>	Refers to the sum of platinum, palladium, rhodium and gold content
<b>6E (equivalent to 5PGE+Au)</b>	Refers to the sum of platinum, palladium, rhodium, ruthenium, iridium and gold content
<b>A2X</b>	A2X Markets, stock exchange in South Africa
<b>AA</b>	Atomic absorption spectroscopy
<b>Anorthosite</b>	Igneous rock composed almost entirely of plagioclase feldspar
<b>ASX</b>	Australian Securities Exchange
<b>AusIMM</b>	Australasian Institute of Mining and Metallurgy
<b>B-BBEE</b>	Broad-based black economic empowerment
<b>BFS</b>	Bankable Feasibility Study
<b>BMR</b>	Base Metal Refinery
<b>Bord and pillar</b>	Underground mining method in which ore is extracted from rectangular shaped rooms, leaving parts of the ore as pillars to support the roof
<b>Bronzite</b>	Igneous rock composed mainly of orthopyroxene
<b>Ca</b>	Centiare is a metric unit of area measurement, equal to one square metre
<b>Chromitite</b>	A rock composed mainly of the mineral chromite
<b>CIMA</b>	Chartered Institute of Management Accountants
<b>CRIRSCO</b>	Committee for Mineral Reserves International Reporting Standards
<b>CY</b>	Calendar year (1 January – 31 December)
<b>Dfs</b>	Definitive Feasibility Study
<b>DMR</b>	Department of Mineral Resources, Republic of South Africa

<b>Diorite</b>	Igneous rock composed of amphibole, plagioclase feldspar, pyroxene and small amounts of quartz
<b>Dip</b>	The inclination of a planar surface, measured in the vertical plane perpendicular to its strike
<b>Dunite</b>	Igneous rock consisting predominantly of olivine
<b>Dyke</b>	A wall-like body of igneous rock that intruded (usually vertically) into the surrounding rock in such a way that it cuts across the stratification (layering) of this rock
<b>ECSA</b>	Engineering Council of South Africa
<b>ERM</b>	Enterprise Risk Management framework
<b>EPO</b>	Exclusive Prospecting Order (Zimbabwe)
<b>ESG</b>	Environmental, social and governance
<b>Felsic rock</b>	Igneous rock composed mainly of a light-coloured minerals such as feldspar (or plagioclase) and usually quartz, which is more than 60% by volume
<b>FSAIMM</b>	Fellow of the South African Institute of Mining and Metallurgy
<b>FGSSA</b>	Fellow of the Geological Society of South Africa
<b>FY</b>	Financial year (1 July – 30 June)
<b>Gabbro</b>	Igneous rock composed predominantly of plagioclase feldspar and clinopyroxene occurring in approximately equal proportions
<b>g/t</b>	Metric grams per metric tonne. The unit of measurement of metal content or grade, which is equivalent to parts per million
<b>GSSA</b>	Geological Society of South Africa
<b>ha</b>	Hectare is a metric unit of area measurement, equal to 10 000 square metres
<b>Harzburgite</b>	Igneous rock composed mainly of olivine and pyroxene
<b>HQ drill core size</b>	Diamond drill core outer diameter of 63.5mm

## Acronyms and glossary of terms continued

<b>IBR ESOT</b>	Impala Bafokeng Rasimone Employee Share Ownership Trust
<b>IC</b>	Intrusive Complex
<b>ICL</b>	Impala Canada Limited
<b>ICP-MS</b>	Inductively Coupled Plasma Mass Spectrometry
<b>IMSSA</b>	Institute of Mine Surveyors of Southern Africa
<b>in situ</b>	In its natural position or place
<b>IRS</b>	Impala Refining Services
<b>ISO 31000:2018</b>	International Organisation for Standardisation sets the international standards for risk management
<b>ISO 14001:2015</b>	International Organisation for Standardisation sets the international standards for environmental management
<b>JOGMEC</b>	Japan Organization for Metals and Energy Security
<b>JORC Code</b>	The Australasian Code for Reporting of Mineral Resources and Ore Reserves. This was updated and reissued as the JORC Code (2012)
<b>JSE Limited</b>	The South African securities exchange based in Johannesburg. Formerly the JSE Securities Exchange and prior to that the Johannesburg Stock Exchange
<b>koz</b>	Thousand troy ounces. All references to ounces are troy ounces with the factor being 31.10348 metric grams per ounce
<b>Kriging</b>	A geostatistical estimation method which determines the best unbiased linear estimates of point values or of averages
<b>LoM</b>	Life-of-mine
<b>Mafic</b>	Igneous rock composed mainly of dark ferromagnesium minerals which is less than 90% by volume
<b>Merensky Reef</b>	A horizon in the Critical Zone of the Bushveld Complex often containing economic grades of PGM and associated base metals. The 'Merensky Reef' as it is generally known, refers to that part of the Merensky unit which is economically exploitable, regardless of the rock type

<b>MGSSA</b>	Member of the Geological Society of South Africa
<b>Mill grade</b>	The value, usually expressed in parts per million, or grams per tonne, of the contained material delivered to the mill
<b>Moz</b>	Million troy ounces. All references to ounces are troy ounces with the factor being 31.10348 metric grams per ounce
<b>MPRDA</b>	Mineral and Petroleum Resources Development Act of South Africa
<b>MSAIMM</b>	Member of the South African Institute of Mining and Metallurgy
<b>MSZ</b>	Main Sulphide Zone is the PGM bearing horizon hosted by the Great Dyke
<b>MSZ 'Flats'</b>	Main Sulphide Zone at dips ranging 0° to 9°
<b>MSZ 'Upper Ores I'</b>	Main Sulphide Zone at dips ranging 9° to 14°
<b>MSZ 'Upper Ores II'</b>	Main Sulphide Zone at dips greater than 14°
<b>Mt</b>	Million metric tonnes
<b>Norite</b>	Igneous rock composed mainly of plagioclase feldspar and orthopyroxenes in approximately equal proportions
<b>NQ drill core size</b>	Diamond drill core outer diameter of 47.6mm
<b>OHS</b>	Open hole stoping mining method
<b>Pegmatoid</b>	Igneous rock which has the coarse crystalline texture of a Pegmatite but lacks graphic intergrowths
<b>PEO</b>	Professional Engineers Ontario (the licensing and regulating body for professional engineering in the province of Ontario, Canada)
<b>PFS</b>	Pre-Feasibility Study
<b>PGE</b>	Platinum Group Elements, comprising the six elemental metals of the platinum group namely, platinum, palladium, rhodium, ruthenium, iridium and osmium
<b>PGM</b>	Platinum Group Metals, being the metals derived from PGE



## Acronyms and glossary of terms continued

<b>PGO</b>	Professional Geoscientists Ontario
<b>Pyroxenite</b>	Igneous rock composed predominantly of pyroxene and minor feldspar
<b>QAQC</b>	Quality Assurance and Quality Control
<b>RBPlat</b>	Royal Bafokeng Platinum
<b>Reef</b>	A local term for a tabular metalliferous mineral deposit
<b>RPEEE</b>	Reasonable Prospects for Eventual Economic Extraction, applicable to Mineral Resources
<b>RPEE</b>	Reasonable Prospects for Economic Extraction, applicable to Mineral Reserves
<b>RPO</b>	Recognised Professional Organisation
<b>SACNASP</b>	South African Council for Natural Scientific Professions
<b>SAICA</b>	South African Institute of Chartered Accountants
<b>SAGC</b>	South African Geomatics Council
<b>SAIMM</b>	Southern African Institute of Mining and Metallurgy
<b>SAMESG Guideline</b>	The South African guideline for the reporting of environmental, social and governance (ESG) parameters within the solid minerals and oil and gas industries (The SAMESG Guideline, 2017)
<b>SAMREC</b>	The South African Mineral Resource Committee
<b>SAMREC Code</b>	The South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves 2016 Edition
<b>SAMVAL Code</b>	The South African Code for the Reporting of Mineral Asset Valuation 2016 Edition
<b>Seismic surveys</b>	A geophysical exploration method whereby rock layers can be mapped based on the time taken for wave energy reflected from these layers to return to surface

<b>SLC</b>	Sub-level caving mining method
<b>SLS</b>	Sub-level shrinkage mining method
<b>SLP</b>	Social and Labour Pan
<b>SSC</b>	SAMREC/SAMVAL Committee
<b>Stratigraphy</b>	Study of stratified rocks in terms of time and space
<b>Strike</b>	The direction of a horizontal straight line constructed on an inclined planar surface, at a direction of 90° from the true dip direction
<b>TSF</b>	Tailings storage facility
<b>UG2 Reef</b>	A distinct chromitite horizon in the Upper Critical Zone of the Bushveld Complex, usually containing economic grades of PGE and limited associated base metals
<b>Ultramafic rock</b>	Igneous rock composed mainly of dark ferromagnesium minerals which constitutes more than 90% by volume
<b>VRT</b>	Virgin rock temperature
<b>Websterite</b>	Igneous rock composed almost entirely of clinopyroxene and orthopyroxene
<b>WUL</b>	Water-use licence
<b>XLP</b>	Extra low profile
<b>ZESA</b>	Zimbabwe Electricity Supply Authority

# Appointed Competent Persons and recognised professional organisations' details

Mine/Project	Competent Person's (CP) name	Employment	Title	Appointment	Qualifications	Registration RPO	Membership number	Years' experience	Contact details – Address (investor@implats.co.za)
Implats	Johannes du Plessis	Full-time Implats	Group Head Mineral Resources	Lead CP Mineral Resources	MSc (Geology)	SACNASP, FGSSA, MSAIMM	400284/07	23	Private Bag X18, Northlands, 2116, Gauteng, South Africa
	Mark Munroe	Full-time Implats	Implats Chief Technical Officer	Lead CP Mineral Reserves	NHD (Metalliferous Mining, Mining and Mineral Engineering), BComm	ECSA, FSAIMM, AMMSA	201380028	35	Private Bag X18, Northlands, 2116, Gauteng, South Africa
	Nico Strydom	Full-time Implats	Group Manager – Project Finance	Lead CV (Valuation)	CA(SA), ACMA	SAICA, CIMA	03141381	31	Private Bag X18, Northlands, 2116, Gauteng, South Africa
	Louise Fouché	Full-time Implats	Group Head Mineral Resource Estimation	CP Geostatistics and databases	MSc (Geology), Post-grad Dipl (MRM)	SACNASP, FGSSA, MSAIMM	400026/99	27	Private Bag X18, Northlands, 2116, Gauteng, South Africa
Impala Rustenburg	David Sharpe	Full-time Impala Rustenburg	Group MRM Manager	CP Mineral Resources	BSc (Hons) (Geology), BComm	SACNASP, MGSSA	400018/91	35	Private Bag X18, Northlands, 2116, Gauteng, South Africa
	Emmanuel Acheampong	Full-time Impala Rustenburg	Executive: Technical Services	CP Mineral Reserves	MSc Mining Engineering, MBA	ECSA, MSAIMM	980778	31	Private Bag X18, Northlands, 2116, Gauteng, South Africa
	Philip Fouché	Full-time Impala Rustenburg	Geology Manager Exploration	CP Exploration	MSc (MRM), BCompt	SACNASP, MGSSA	400254/05	22	Private Bag X18, Northlands, 2116, Gauteng, South Africa
Impala Bafokeng	Jaco Vermeulen	Full-time Impala Bafokeng	Group Geologist	Lead CP Mineral Resources	BSc (Hons) (Geology)	SACNASP	400232/12	20	Private Bag X18, Northlands, 2116, Gauteng, South Africa
	Lucky Mojolwane	Full-time Impala Bafokeng	Technical Services Manager (Acting)	CP Mineral Reserves BRPM	NHD (Mineral Resources Management), MRM Advanced Mine Planning	IMSSA	1329	24	Private Bag X18, Northlands, 2116, Gauteng, South Africa
	Sybrandt Byleveldt	Full-time Impala Bafokeng	Technical Services Manager	CP Mineral Reserves Styldrift	BTech Mineral Resource Management	MSAIMM	706557	22	Private Bag X18, Northlands, 2116, Gauteng, South Africa
	Emil Burger	Full-time Impala Bafokeng	Exploration Manager	CP Exploration	BSc (Hons) Geology, MBA	SACNASP	116619	10	Private Bag X18, Northlands, 2116, Gauteng, South Africa
Marula	Louise Fouché	Full-time Implats	Group Head Mineral Resource Estimation	CP Geostatistics and databases	MSc (Geology), Post-grad Dipl (MRM)	SACNASP, FGSSA, MSAIMM	400026/99	27	Private Bag X18, Northlands, 2116, Gauteng, South Africa
	Sifiso Mthethwa	Full-time Marula	Technical Services Manager	CP Mineral Reserves	BSc (Hons) (Geology)	SACNASP, MGSSA	400163/13	21	Private Bag X18, Northlands, 2116, Gauteng, South Africa
Two Rivers	Juan Coetzee	Full-time Two Rivers	Senior Resource Geologist	CP Mineral Resources	BSc (Hons) (Geology)	SACNASP, MGSSA, MSAIMM	114086	21	PO Box 786136, Sandton, 2146, Gauteng, South Africa
	Tobie Horak	Full-time Two Rivers	Chief Surveyor	CP Mineral Reserves	NHD (Mine Surveying), GDE (Mining Engineering)	IMSSA	1113	25	PO Box 786136, Sandton, 2146, Gauteng, South Africa
Zimplats	Tarisai Marazani	Full-time Zimplats	Resource Evaluation Manager	CP Mineral Resources	BSc (Geology)	MSAIMM	709092	20	Private Bag X18, Northlands, 2116, Gauteng, South Africa
	Wadzanayi Mutsakanyi	Full-time Zimplats	General Manager Technical Services	CP Mineral Reserves	BSc (Hons) (Mining Engineering)	MSAIMM, MAusIMM	709309	28	Private Bag X18, Northlands, 2116, Gauteng, South Africa
Mimosa	Dumisayi Mapundu	Full-time Mimosa	Geology and Survey Manager	CP Mineral Resources	BSc (Geology)	SACNASP	200021/05	30	Private Bag X18, Northlands, 2116, Gauteng, South Africa
	Paul Man'ombe	Full-time Mimosa	Senior Manager Mining Technical Services	CP Mineral Reserves	BSc Eng (Hons) Mining, MBA (UZ), MMCC (Zim)	MSAIMM	705146	29	Private Bag X18, Northlands, 2116, Gauteng, South Africa
Lac des Iles	Stuart Gibbins	Full-time Impala Canada	Chief Mine Geologist	CP Mineral Resources	MSc (Geology)	PGO	0754	25	Private Bag X18, Northlands, 2116, Gauteng, South Africa
	Kris Hutton	Full-time Impala Canada	Technical Services Manager	CP Mineral Reserves	B Applied Science and Engineering (Mineral Engineering)	PEO	100195677	18	Private Bag X18, Northlands, 2116, Gauteng, South Africa
Afplats	Louise Fouché	Full-time Implats	Group Head Mineral Resource Estimation	CP Geostatistics and databases	MSc (Geology), Post-grad Dipl (MRM)	SACNASP, MGSSA, MSAIMM	400026/99	27	Private Bag X18, Northlands, 2116, Gauteng, South Africa
Waterberg project	Charles Muller	Independent Consultant	Director	CP Mineral Resources	BSc (Hons) Geology	SACNASP, MGSSA, MGASA	400051/05	35	CJM Consulting, Ruimsig Office Estate, 199 Hole-in-one Road, Ruimsig, Roodepoort, 1724 South Africa

# Appointed Competent Persons and recognised professional organisations' details *continued*

## OPERATIONAL MANAGERS RESPONSIBLE FOR BUSINESS PLAN PROCESS

Name	Area of responsibility	Years' relevant experience
Emmanuel Acheampong	Executive Technical Services Impala	31
Amogelang Ngobeni	General Manager Impala Rustenburg 1, 10 and EF Shaft	21
Riaan Swanepoel	General Manager Impala Rustenburg 11 Shaft	34
Karabo Katake	General Manager Impala Rustenburg 6 and 12 Shaft	31
Kevin Wynman	General Manager Impala Rustenburg 14 Shaft	18
Nonkululeko Mabuza	General Manager Impala Rustenburg 16 Shaft	15
Rodney Opperman	General Manager Impala Rustenburg 20 Shaft	33
John Jeffrey	General Manager Impala Bafokeng BRPM	34
Chris Setuke	General Manager Impala Bafokeng Styldrift I	20
David Gerson	General Manager Marula Mine (Acting)	31
Simbarashe Goto	Senior General Manager Mining Ngezi Mine	27
Allison Henstridge	Vice President Technical Services and Projects, Impala Canada	21
Lloyd Shamu*	Head Technical Services Mimosa Mine	30
Kennedy Sengani*	Business Leader: Two Rivers Mine	19
Cindi Henderson*	Mineral Resource Leader Two Rivers Mine	21

\* Non-managed operations.

## RECOGNISED PROFESSIONAL ORGANISATIONS

### Addresses and contact details

<b>AusIMM</b>	The Australasian Institute of Mining and Metallurgy PO Box 660, Carlton South, Victoria 3053, Australia Telephone: +61 (3) 9658 6100 Facsimile: +61 (3) 9662 3662 www.ausimm.com
<b>ECSA</b>	Engineering Council of South Africa Private Bag X691, Bruma, 2026, Gauteng, South Africa Telephone: +27 (11) 607 9500 Facsimile: +27 (11) 622 9295 www.ecsa.co.za
<b>GSSA</b>	The Geological Society of South Africa PO Box 91230, Auckland Park, 2006, Johannesburg, South Africa Telephone: +27 (11) 358 0028 www.gssa.org.za
<b>IMSSA</b>	The Institute for Mine Surveyors of Southern Africa PO Box 62339, Marshalltown, 2107, Johannesburg, Gauteng, South Africa Telephone: +27 (11) 498 7682 www.ims.org.za
<b>PGO</b>	Professional Geoscientists Ontario 25 Adelaide Street East, Suite 1100 Toronto, Ontario, Canada M5C 3A1 Telephone: +1 416-203-2746 Facsimile: +1 416-203-6181 www.pgo.ca
<b>PEO</b>	Professional Engineers Ontario 40 Sheppard Ave W, Suite 101 Toronto, Ontario, Canada M2N 6K9 Telephone: +1 416-224-1100 www.peo.on.ca
<b>SACNASP</b>	South African Council for Natural Scientific Professions Private Bag X540, Silverton, 0127, Gauteng, South Africa Telephone: +27 (12) 748 6500 Facsimile: +27 (86) 206 0427 www.sacnasp.org.za
<b>SAIMM</b>	The Southern African Institute of Mining and Metallurgy Postnet Suite #212 Private Bag X31, Saxonwold, 2132, Gauteng, South Africa Tel: +27 (11) 538 0231 www.saimm.co.za
<b>SAICA</b>	The South African Institute of Chartered Accountants Private Bag X32, Northlands, 2116, Gauteng, South Africa Telephone: +27 (86) 1072422 www.saica.co.za



## Contact details and administration

### REGISTERED OFFICE

2 Fricker Road  
Illovo, 2196  
Private Bag X18  
Northlands, 2116  
Telephone: +27 (11) 731 9000  
Telefax: +27 (11) 731 9254  
Email: investor@implats.co.za  
Registration number: 1957/001979/06  
Share codes: JSE: IMP ADRs: IMPUY  
ISIN: ZAE000083648  
ISIN: ZAE000247458  
Website: <http://www.implats.co.za>

### IMPALA PLATINUM LIMITED AND IMPALA REFINING SERVICES

#### Head office

2 Fricker Road  
Illovo, 2196  
Private Bag X18  
Northlands, 2116  
Telephone: +27 (11) 731 9000

#### Impala Rustenburg

PO Box 5683  
Rustenburg, 0300  
Telephone: +27 (14) 569 0000

#### Marula

2 Fricker Road  
Illovo, 2196  
Private Bag X18  
Northlands, 2116  
Telephone: +27 (11) 731 9000

#### Impala Refineries

PO Box 222  
Springs, 1560  
Telephone: +27 (11) 360 3111

### Impala Bafokeng

2 Fricker Road  
Illovo, 2196  
Private Bag X18  
Northlands, 2116  
Telephone: +27 (11) 731 9000

#### Zimplats

First Floor South Block  
Borrowdale Office Park  
Borrowdale Road  
Harare  
Zimbabwe  
PO Box 6380  
Harare  
Zimbabwe  
Telephone: +26 (34) 886 878/85/87  
Email: [info@zimplats.com](mailto:info@zimplats.com)

### Impala Canada

69 Yonge Street  
Suite 700  
Toronto, ON, Canada  
M5E 1K3  
Telephone: +1 (416) 360 7590  
Email: [info@impalacanada.com](mailto:info@impalacanada.com)

### Impala Platinum Japan Limited

Uchisaiwaicho Daibiru, room number 702  
3-3 Uchisaiwaicho  
1-Chome, Chiyoda-ku  
Tokyo  
Japan  
Telephone: +81 (3) 3504 0712

### SPONSOR

Nedbank Corporate and Investment Banking,  
a division of Nedbank Limited  
135 Rivonia Road  
Sandton, 2196  
Johannesburg

### COMPANY SECRETARY

Tebogo Llale  
Email: [tebogo.llale@implats.co.za](mailto:tebogo.llale@implats.co.za)

### UNITED KINGDOM SECRETARIES

St James's Corporate Services Limited  
Suite 31, Second Floor  
107 Cheapside  
London EC2V 6DN  
United Kingdom  
Telephone: +44 (020) 7796 8644  
Email: [phil.dexter@corpserv.co.uk](mailto:phil.dexter@corpserv.co.uk)

### PUBLIC OFFICER

Ben Jager  
Email: [ben.jager@implats.co.za](mailto:ben.jager@implats.co.za)

### TRANSFER SECRETARIES

Computershare Investor Services (Pty) Ltd  
Rosebank Towers  
15 Biermann Avenue, Rosebank  
Private Bag X9000, Saxonwold, 2132  
Telephone: +27 (11) 370 5000

### AUDITORS

Deloitte & Touche  
Johannesburg Office  
5 Magwa Crescent  
Waterfall City  
Johannesburg, 2090  
Telephone: +27 (11) 806 5000

Cape Town Office  
The Ridge  
6 Marina Road  
Portwood District  
V&A Waterfront  
Cape Town, 8000  
Telephone: +27 (21) 427 5300

### CORPORATE RELATIONS

Johan Theron  
Investor queries may be directed to:  
Email: [investor@implats.co.za](mailto:investor@implats.co.za)



**Impala Platinum Holdings Limited**

Tel: +27 (11) 731 9000, Email: [investor@implats.co.za](mailto:investor@implats.co.za)  
2 Fricker Road, Illovo, 2196, Private Bag X18, Northlands, 2116

**[www.implats.co.za](http://www.implats.co.za)**