01 February 2024

ASX:SPD, JSE:SDL

ACN: 646 399 891

Corporate Directory

Chairman
Roger Baxter

Managing Director
Johan Odendaal

Non-Executive Directors
Mike Stirzaker
Rob Thomson
Daan van Heerden
Geoff Hiller

Company Secretary
Andrew Cooke

Top 5 Shareholders

Nicholas Daniel Resources Pty ltd
Nurinox Investments Pty Ltd
Citicorp Nominees Pty Ltd
Legacy Platinum Corporation
UBS Nominees Pty Ltd

Company Overview

Dual-listed platinum group metal (PGM) company developing the advanced Bengwenyama PGM project, particularly rich in palladium/rhodium, located in South Africa's prolific Bushveld Complex.

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Bengwenyama Project Scoping Study

THE NEXT SIGNIFICANT PGM PRODUCER ON THE EASTERN LIMB

Key Study Parameters

- **Scoping Study completed for the 70% owned Bengwenyama project shows very attractive economics, with results justifying the prefeasibility study (PFS) which has already commenced.**
- **The life of mine on the UG2 reef only is estimated at 36 years with a total of approximately 52 million tonnes mined (~10.9 Moz 7E*) for an average annual production rate of 330 Koz PGM (6E basis*) with cash costs firmly at the low end of the global cost curve.**
- **Strategically situated amongst major mining operations with all the necessary infrastructure (water, power, roads, services, and skilled labour force) already in place. Mining and processing are amenable to proven technology.**

Physical Parameters

- **Development of a ~2 Mtpa UG2 reef underground mining operation using the hybrid mining with mill feed head grade of 6.55g/t (7E)**
- **Conventional flotation and spiral plant to deliver a marketable PGM concentrate (~85% recovery for the major metals) and a chrome concentrate for sale to export markets.**

Operating Costs & Capital Costs

- **Initial Capital of ~USD408 million (including a 15% contingency)**
- **Low LOM cash costs of operations of ~USD717/6E oz (~ZAR2,318/t)**
- **LOM AISC of ~USD836/6E oz**
- **High LOM EBITDA Margin of ~43%**

Financial Returns

- **Post-tax NPV_8 (real) of ~USD700 million based on conservative commodity price assumptions (Pt US$1200/oz, Pd US$1100/oz, Rh US$5000/oz)**
- **Post-tax IRR of ~21%**
- **Post-tax capital payback of ~4.5 years from first concentrate production**
- **Life of mine EBITDA totalling ~USD5.2 billion.**

Cautionary Statements

The Scoping Study referred to in this announcement has been undertaken for the purpose of initial evaluation of a potential development of the Bengwenyama PGE Project ("Bengwenyama", the "Project" or the "Study") in the Eastern Limb of the Bushveld Complex in South Africa. It is a preliminary technical and economic study of the potential viability of the Bengwenyama Project. The Study has been undertaken by Minxcon Pty Ltd, a Johannesburg-based mining consulting company. The full report is attached to this announcement.

The Scoping Study outcome, production target and forecast financial information referred to in this announcement are based on low accuracy level, technical and economic assessments that are insufficient to support estimation of Ore Reserves. These include assumptions about the availability of funding. This Scoping Study inputs and assumptions have been assessed to have a level of accuracy of +/- 30%.

While each of the modifying factors contained in the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ("JORC Code (2012)") were considered and applied, there is no certainty of eventual conversion to Ore Reserves or that the production target itself will be realised. Further exploration and evaluation work and appropriate studies are required before Southern Palladium Limited ("SPD" or "the Company", ASX: SPD; JSE:SDL) will be in a position to estimate any Ore Reserves or to provide any assurance of an economic development case.

Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Scoping Study.

The Mineral Resources and Exploration Target underpinning the production target in the Scoping Study have been prepared by competent persons in accordance with the requirements of the JORC Code (2012). The Competent Person's Statement is found at the end of this announcement. The Company has concluded that it has reasonable grounds for disclosing a production target which includes an amount of Inferred Mineral Resources and Exploration Target.

The JORC compliant Mineral Resource Estimate and Exploration Target was updated before the time of the Bengwenyama Scoping Study ASX Release, on 7 December 2023 (refer ASX Announcement, 7 December 2023).

For the production target, after applying the modifying factors, Indicated Resources used comprise ~54%, Inferred Resources comprise ~38% and Exploration Target ~8% of the production schedule over the 36 years modelled Life of Mine (LOM). Approximately 79% of the tonnes in the payback period is in the Indicated Mineral Resource category with the remainder in inferred. There is still a total of 4.8 Moz 7E indicated (~80% of the indicated mining inventory) in the mine plan after the payback period. The payback period based exclusively on indicated resources would be ~17 months longer than the current payback period.

Accordingly, SPD has concluded that it is satisfied that the financial viability of the project in the Scoping Study is not dependent on the inclusion of Inferred Resources or Exploration Target early in the production schedule given an estimated payback period (from commencement of production) of ~7 years. In addition, the inferred Mineral Resources and Exploration Target does not feature as a significant proportion early in the mine plan.

There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Measured and/or Indicated Mineral Resources or that the production target itself will be realised.

The potential quantity and grade of an Exploration Target is conceptual in nature, there has been insufficient exploration to determine a Mineral Resource and there is no certainty that further exploration work will result in the determination of mineral resources or that the production target itself will be realised.

However, due to the consistent characteristics of the ore body (tabular with a uniform width and low-grade variability) and the high success rate in exploration and conversion to higher confidence categories, SPD is confident in reporting a production target within a small portion of the Exploration Target.

This announcement has been prepared in compliance with the JORC Code (2012) and the ASX Listing Rules. All material assumptions, including sufficient progression of all JORC Code (2012) modifying factors, on which the production target and forecast financial information are based have been disclosed in this announcement.

This announcement contains forward-looking statements. Generally, the words "expect", "potential", "intend", "estimate", "will" and similar expressions identify forward-looking statements. By their very nature forward-looking statements are

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subject to known and unknown risks and uncertainties that may cause actual results, performance, or achievements, to differ materially from those expressed or implied in any of our forward-looking statements, which are not guarantees of future performance. Statements in this announcement regarding SPD's business or proposed business, which are not historical facts, are forward-looking statements that involve risks and uncertainties, such as Mineral Resource estimates, market prices of palladium, platinum, rhodium, ruthenium, gold, nickel, copper and chrome, capital and operating costs, changes in project parameters as plans continue to be evaluated, continued availability of capital and financing and general economic, market or business conditions, and statements that describe SPD's future plans, objectives or goals, including words to the effect that SPD or SPD's management expects a stated condition or result to occur.

Forward-looking statements are based on estimates and assumptions that, while considered reasonable by SPD, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies. Since forward-looking statements address future events and conditions, by their very nature, they involve inherent risks and uncertainties. Actual results in each case could differ materially from those currently anticipated in such statements. Investors are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date they are made.

Environmental permitting and Mining Right approvals are the main determining factors to first production. On 29 September 2023, Southern Palladium officially submitted its application for a Mining Right. On 17 October 2023, the company received notification from the Department of Mineral Resource and Energy (DMRE) that its application for the Mining Right has been accepted. This approval marked the commencement of extensive expert studies and consultations, laying the groundwork for a final decision by the Department of Mineral Resources and Energy (DMRE) anticipated in 2025. The key document for the environmental approval process is the Environmental Impact Assessment (EIA) and this is due to be lodged by the end of June 2024. Delays in the environmental approval process or any other development approval could result in a delay to the commencement of construction (planned for 2026). This could lead to a delay to first production. These dates are indicative only.

To achieve the range of outcomes indicated in the Scoping Study, a peak funding requirement of USD403million will likely be required. Investors should note that there is no certainty that SPD will be able to raise that amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of SPD's existing shares. The project development schedule assumes the completion of a Pre-Feasibility Study (PFS) – fully funded - by the second half of 2024 followed by the Feasibility Study and Final investment decision in 2025. The Board considers the Company has sufficient cash on hand to complete the PFS and continued metallurgical testing and ongoing exploration of the project area.

Southern Palladium (ASX: SPD; JSE: SDL, "Southern Palladium" or the "Company") is pleased to announce the outcome of its Scoping Study of its 70% owned Bengwenyama project. SPD has concluded that it has a reasonable basis for providing these forward-looking statements and the forecast financial information included in this announcement. This includes the assumption that there is a reasonable basis to expect that it will be able to fund the development of the Project upon successful delivery of key development milestones when required. To achieve the range of outcomes indicated in the Scoping Study, it is estimated that a peak funding requirement of USD403m for the project development may be required. There is no certainty that SPD will be able to source that amount of funding when required. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of SPD's shares. It is also possible that SPD could pursue other value realisation strategies such as a sale, partial sale or joint venture of the Project. This could materially reduce SPD's proportionate ownership of the Project. Other detailed reasons for these conclusions are outlined throughout this announcement (including the Project Funding Sources and Strategy, Risks, and Key Opportunities sections of this announcement).

Managing Director Johan Odendaal, said: "*We are thrilled to announce a significant milestone in the journey of Southern Palladium. The recently concluded Scoping Study represents a pivotal moment for our company, made possible by the AUD19 million raised in June 2022 for the drilling program and associated study work.*

The Bengwenyama project, now recognised to be of world class stature, has been systematically evaluated and successfully delivered on schedule. Our commitment to exploring every avenue to maximize value and optionality for all stakeholders has been underscored by the study's impressive outcomes: a NPV_8 of USD700 million, an Internal Rate of Return (IRR) of 21%, and a noteworthy annual Free Cash Flow (Pre-tax, real terms) of approximately USD180 million at steady state over a 36-year mine life. These compelling figures make a strong case for the continued development of the orebody.

Our exploration efforts have resulted in the identification of a significant resource totalling 26.22 million ounces (7E). Notably, the Scoping Study has focused on the UG2 reef only, comprising 15.72 million ounces, with 6.52 million ounces classified as Indicated Resource. Importantly, this study acknowledges the substantial remaining resource in the Merensky*

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reef (MR) and UG2 and MR Exploration target areas, which were not included in the current assessment of the 36-year mine life.

The Scoping Study underscores that we possess a potential world-class Platinum Group Metal mine, fortified by a substantial resource within an established mining area, effectively mitigating associated risks. Recent geotechnical studies and metallurgical assays confirm the suitability of well-established mining methods and processing techniques for the orebody located in the Steelpoort area. This location offers various advantages, including energy accessibility from the national grid, potential for alternative green energy sources, well-developed transportation infrastructure, and a skilled workforce from established mining communities.

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Southern Palladium, through its subsidiary Miracle Upon Miracle ("MUM"), is committed to developing a sustainable and impactful shared value, guided by responsible Environmental, Social, and Governance (ESG) practices. This commitment, ingrained in our current activities, lays a robust foundation for the forthcoming mine development and operation. This extends to ensuring sustainable and responsible practices, industry-leading approaches to environmental and cultural heritage management and fostering long-term positive impacts for local communities.

To further enhance our commitment, we are actively exploring more efficient and lower carbon intensity sources, including renewable energy options and innovative technologies. Energy specialists have been engaged to conduct a comprehensive carbon-neutral energy study, which includes investigating the feasibility of a solar PV project. Carbon intensity forecasts, evaluating greenhouse gas emissions per production factor, will be refined in the pre-feasibility stage. This proactive approach enables Southern Palladium to assess both the impacts of the future operation on climate change and the potential impacts of climate change on the operation.

In summary, this Scoping Study represents a significant step forward for Southern Palladium, reinforcing our commitment to sustainable development, responsible practices, and delivering lasting value to all stakeholders.

The Key Assumptions underpinning the Scoping Study and the key financial results from the study are summarised below:

Scoping Study summary

***Note:**
7E or 6E+Au in this document refers to platinum, palladium, rhodium, ruthenium, iridium, osmium and gold.
6E or 5E+Au refers to platinum, palladium, rhodium, ruthenium, iridium and gold and;
4e or 3E+Au refers to platinum, palladium, rhodium and gold

PROJECT SETTING

The 70% owned Bengwenyama Project is situated in the Limpopo Province, South Africa in the Eastern Limb of the world-renowned Bushveld Complex. The Project targets platinum group metals ("PGM") from the UG2 and Merensky Reefs representing one of the very few remaining portions of the Bushveld Complex where economical PGM mineralisation remains unexploited.

The Project Area occurs on a tenement area centred on the coordinates 30°6'30"E and 24°44'0"S some 360 km northeast of Johannesburg and 9 km west of the town of Steelpoort. The Bengwenyama-ya-Maswazi Community inhabits the land area, and actively supports project development. They are actively involved in project decision making process.

Surrounded by numerous Eastern Limb operation, power, water and other infrastructure are available. Access is available via tarred regional roads and district roads. The figure on the next page illustrates the proximity of the Bengwenyama Project to other PGMs operation in the Bushveld Complex.

The figure below illustrates the proximity of the Bengwenyama Project to other PGMs operation in the Bushveld Complex and location for refining.

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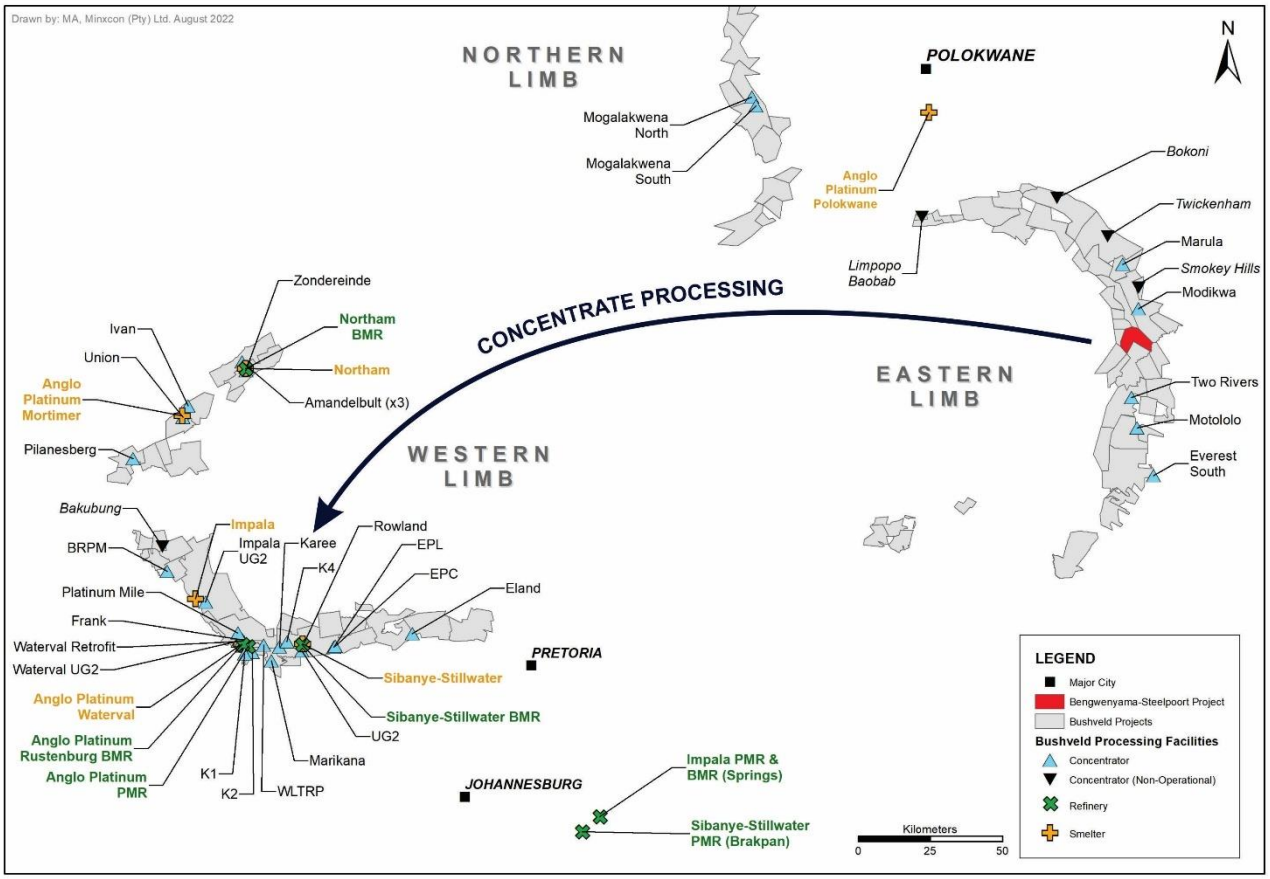
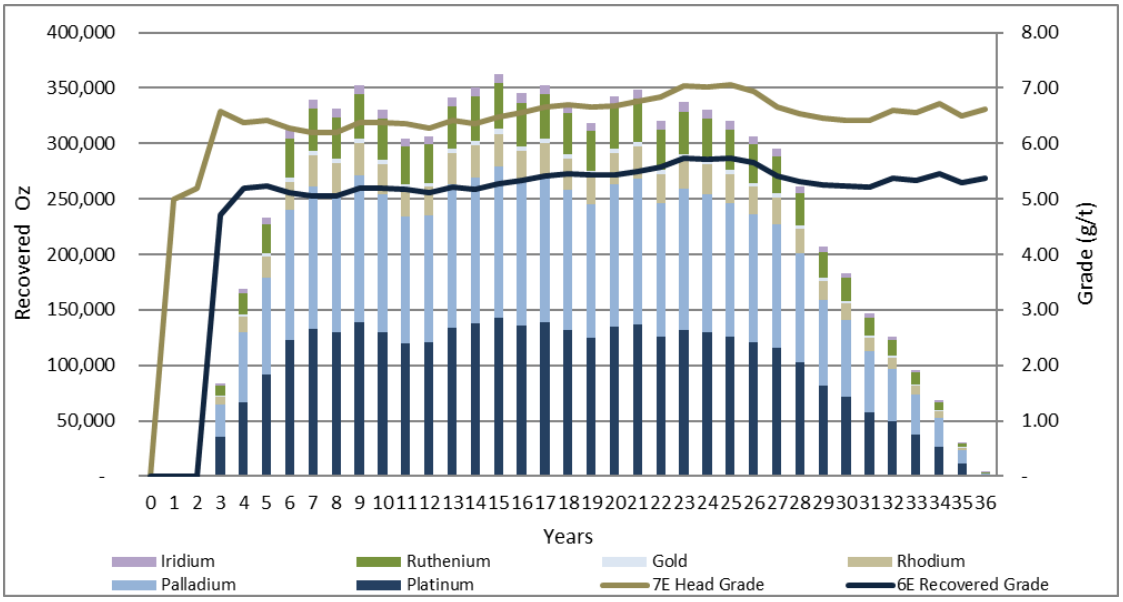


PROJECT FEATURES

The following aspects for the proposed mining project have been technically assessed:-

- Development of a ~2 Mtpa UG2 reef underground mining operation utilising hybrid mining with conventional stoping supported by on-reef mechanised development and ore clearance. The life of mine on the UG2 reef only is estimated at 36 years with a total of approximately 52 million tonnes mined (~10.9 Moz 7E) for an average annual production rate of 330 Koz PGM (6E basis) ignoring residual value beyond modelled life or any exploration upside.
- Shallow early ounces from two decline systems accessing the UG2 Reef

Annual Saleable Product - 6E



Source: Minxcon Scoping Study Update, February 2024

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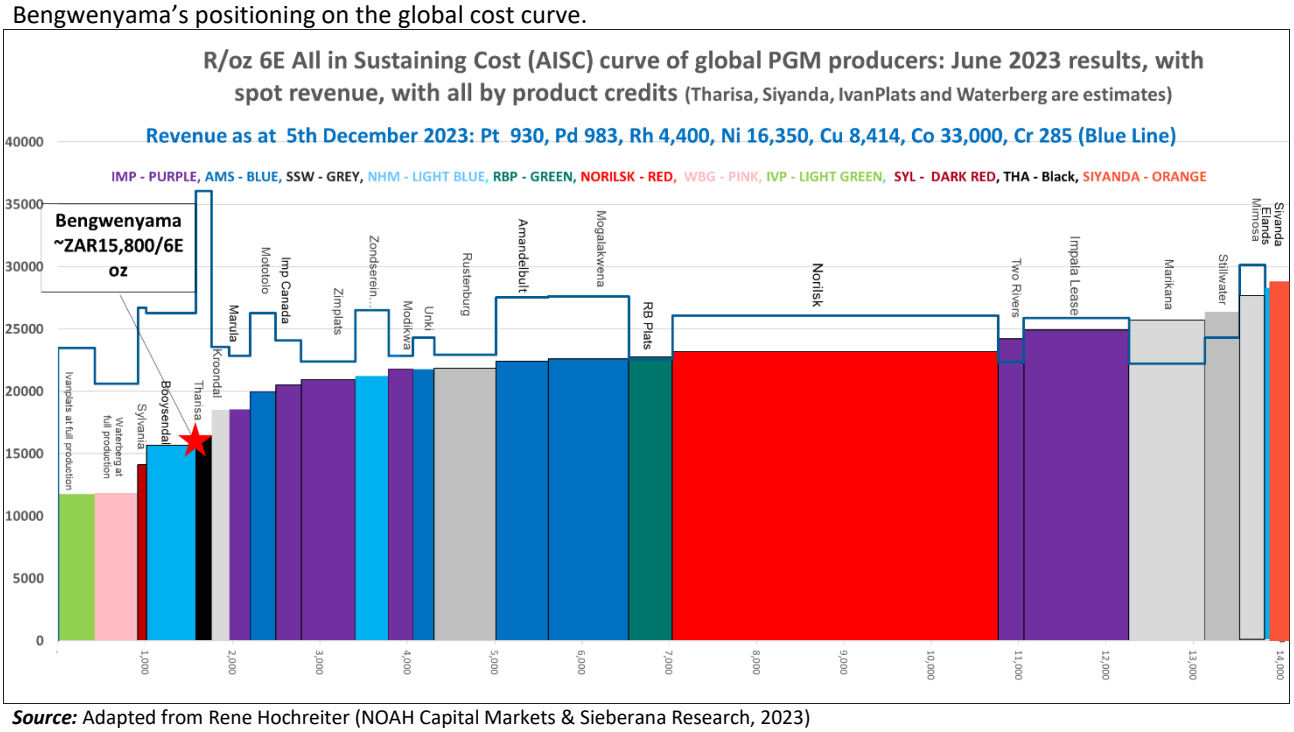
- UG2 Reef grades of the mining inventory are relatively high for the Eastern Limb, averaging 6.55g/t (7E) over a 1.1 metre mining width.

Mining Inventory

Mining Inventory	Tonnes	Grade 4E	Grade 7E	Content 4E	Content 7E	Contribution
	Mt	g/t	g/t	Koz	Koz	%
Indicated	28.04	5.36	6.47	4,837	5,830	54%
Inferred	19.69	5.50	6.66	3,481	4,215	38%
Exploration Target	4.17	5.43	6.59	724	883	8%
Total	**51.90**	**5.42**	**6.55**	**9,042**	**10,928**	**100%**

- Construction of a flotation and spiral plant to deliver PGM and chrome concentrates from a conventional plant with a monthly ~200 ktpm ore feed design capacity. A 75 micron grind size is envisaged.
- Construction of a dry-stack tailings storage facility ("TSF") conforming to GISTM requirements.
- Connection to the nearby national grid power substation and construction of a 132 kV overhead powerline to supply (based on initial indications) ~43 MVA peak demand.
- Connection to an existing licenced, bulk water supply pipeline, located at the entrance road to the project. Water supply will be supplemented with available ground- and surface water.
- Comprehensive integration of all on-site infrastructure, encompassing site access roads, office and administrative buildings, engineering workshops, stores, guardhouse, surface water storage facilities and other supporting facilities.
- Relatively low capital intensity, with initial capital estimated at US$408m (including a 15% contingency) assisted by the shallow nature of the UG2 orebody in this area and with well-located power and water infrastructure.
- The project is forecast to offer low cash costs (US$717/oz, 6E basis) assisted by high UG2 grades and, again, the shallowness of the orebody. (Cost curve is presented below).
- There is a well-established downstream smelting and refining process for PGM concentrates within South Africa. Well-established commercial terms are in place for UG2 and Merensky concentrates. Most smelters processing the concentrate from the Eastern and Western Limbs are situated in Rustenburg, with almost all the concentrator product in the area being transported by truck to Rustenburg. The Project PGM concentrates are believed to be suitable for these facilities. Completion of the scoping study will allow the company to commence discussions with potential offtake parties.

Bengwenyama's positioning on the global cost curve.



Source: Adapted from Rene Hochreiter (NOAH Capital Markets & Sieberana Research, 2023)

- The chrome ore concentrate, for the purpose of the Scoping Study, will be trucked to either Maputo or Durban port and sold on the open export market. There is potential to treat the chrome ore concentrate at a local chrome smelter as there are several in close proximity to the Project. This option will be investigated in the next phase of study.

- Study completed to an overall accuracy of ±30%. This includes mine design and schedule, process design, infrastructure design, TSF design, capital estimates and operating cost estimates.

KEY PROJECT METRICS

The financial model assumptions are detailed in the table to follow, indicating the real long-term commodity prices and exchange rate, tax rate, royalty rate, real discount rate, as well as project physicals.

Financial Model Assumptions

Financial	Unit	Bengwenyama
Basket Price UG2	USD/4E oz	1,529
Basket Price UG2	USD/6E oz	1,495
Platinum	USD/oz.	1,200
Palladium	USD/oz.	1,100
Rhodium	USD/oz.	5,000
Gold	USD/oz.	1,800
Ruthenium	USD/oz.	470
Iridium	USD/oz.	5,000
Osmium	USD/oz.	No value attached
Copper	USD/tonne	8,200
Nickel	USD/tonne	18,500
Chrome	USD/tonne	285
Exchange rate	ZAR/USD	18.9
Corporate Tax Rate	%	27%
Royalty Rate	%	0.5% - 7%; Avg 5%
Discount Rate Real	%	8%
Physicals		
Total Mill Feed over LoM	Mt	51.9
Mill Feed per Annum	Mtpa	2.0
Total Contained 7E in Mill Feed	Moz	10,900
Mill Feed Head Grade	6E + Au g/t	6.55
Total Recovered 6E to Concentrate	Moz	8,900
Average Recovery of 6E metals to Concentrate	%	81.4%
Total Recovered Ni in Concentrate	kt	20,000
Total Recovered Cu in Concentrate	t	9,400
Total Recovered Chrome 42% Concentrate	kt	3,767

The key study results are detailed in the table to follow. The results indicate an economically viable project with a post-tax $NPV_{8\%}$ of USD700 million and a post-tax IRR of 21%. The payback period has been calculated as 7.5 years from start of construction and 4.5 years from the first plant throughput. The Project has an AISC USD836/6E oz. Project cashflows are assessed on a real, pre-finance basis.

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Key Project Results

Key Results	Units	Bengwenyama
Capital Costs		
Initial Capital*	USDm	408
Sustaining and Ongoing Capital	USDm	510
Operating Costs (100% payable basis)		
Cash Costs	USD/6E oz	717
Royalties	USD/6E oz	68
Total Operating Costs	USD/6E oz	785
Sustaining Capital	USD/6E oz	46
Reclamation & Off-Mine Overheads	USD/6E oz	6
All-in Sustaining Costs (AISC)	USD/6E oz	836
Initial & Ongoing Direct Capital	USD/6E oz	58
All-in Costs	USD/6E oz	894
Financial Metrics		
Total Net Revenue	USDm	12,241
EBITDA	USDm	5,213
Project Cashflow - Pre-Tax	USDm	4,295
NPV- Pre-Tax (8% discount rate)	USDm	1,043
IRR - Pre-Tax	%	24%
Tax Paid	USDm	1,163
Project Cashflow - Post Tax	USDm	3,132
NPV - Post Tax (8% discount rate)	USDm	698
IRR - Post Tax	%	21%
Peak Funding Requirement	USDm	403
Payback Period (Start of Construction) - Post Tax	Years	7.5
Payback Period (Start of Mining) - Post Tax	Years	6.5
Payback Period (Start of Plant Production) - Post Tax	Years	4.5

Note: Initial capital is defined as all direct project capital for first four years up to and including the first metal is produced.

The table below details a range of Project values at fluctuating PGM prices, with the $NPV_{8\%}$ post tax ranging between USD380 million and USD1,013 million and the post tax IRR ranging between 16% and 25%.

Range of Values at Various Prices

Change in 6E PGM Price	**-15%**	**-10%**	**-5%**	**Base**	**+5%**	**+10%**	**+15%**
Pt Price (USD/oz)	1,020	1,080	1,140	**1,200**	1,260	1,320	1,380
Pd Price (USD/oz)	935	990	1,045	**1,100**	1,155	1,210	1,265
Rhodium Price (USD/oz)	4,250	4,500	4,750	**5,000**	5,250	5,500	5,750
Gold Price (USD/oz)	1,530	1,620	1,710	**1,800**	1,890	1,980	2,070
Ruthenium (USD/oz)	400	423	447	**470**	494	517	541
Iridium (USD/oz)	4,250	4,500	4,750	**5,000**	5,250	5,500	5,750
Basket PGM 6E Price (USD/oz)	1,271	1,345	1,420	**1,495**	1,570	1,644	1,719
NPV8% - Pre Tax (USDm)	595	744	894	**1,043**	1,193	1,342	1,491
IRR - Pre Tax (%)	18%	20%	22%	**24%**	25%	27%	29%
NPV8% - Post Tax (USDm)	380	486	592	**698**	803	908	1,013
IRR - Post Tax (%)	16%	17%	19%	**21%**	22%	24%	25%
Payback Period (Start of Plant Production)	5.9	5.3	4.9	**4.5**	4.2	4.0	3.8
Project Cashflow - Post Tax	2,081	2,432	2,782	**3,132**	3,482	3,832	4,182

NEXT STEPS

A preliminary development schedule has been compiled for the Project. The main activities forming part of the schedule includes:-

- Pre-Feasibility Study ("PFS");
- Environmental Authorisation ("EA");
- Issue of Mining Right;
- Completion of required drilling (resource infill, metallurgical testwork, geotechnical and hydrogeological);
- Feasibility Study ("FS") & Final Investment Decision ("FID");
- Mine development;
- Construction; and
- Commissioning and Ramp-Up

The completion of the PFS and associated resource drilling is planned to be completed during the second half of calendar 2024 and is fully funded.

JORC Competent Persons Statement

Uwe Engelmann
The information in this report that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Uwe Engelmann (BSc (Zoo. & Bot.), BSc Hons (Geol.), Pr.Sci.Nat. No. 400058/08, FGSSA). Mr Engelmann is a director of Minxcon (Pty) Ltd and a member of the South African Council for Natural Scientific Professions. Minxcon provides geological consulting services to Southern Palladium Limited. Mr. Engelmann has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to **qualify** as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr. Engelmann consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. Mr Engelmann has a beneficial interest in Southern Palladium through a shareholding in Nicolas Daniel Resources Proprietary Limited.

Daan van Heerden
The scientific and technical information contained in this announcement has been reviewed, prepared, and approved by Mr Daan van Heerden (B Eng (Min.), MCom (Bus.Admin.), MMC, Pr.Eng. No. 20050318, AMMSA, FSAIMM). Mr van Heerden is a director of Minxcon (Pty) Ltd and a Registered Professional Engineer with the Engineering Council of South Africa, a Member of the Association of Mine Managers South African Council, as well as a Fellow Member of the South African Institute of Mining and Metallurgy. Mr. van Heerden has sufficient experience relevant to the styles of mineralisation and activities being undertaken to qualify as a Competent Person, as such term is defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr van Heerden has a beneficial interest in Southern Palladium through a shareholding in Nicolas Daniel Resources Proprietary Limited.

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SOUTHERN PALLADIUM

Southern Palladium Limited

Scoping Study Update

Summary Report

Minxcon Reference: M2023-046a Summary
Effective Date: 1 January 2024
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Issue Date: 31 January 2024

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DISCLAIMER AND RISKS

This Report was prepared by Minxcon (Pty) Ltd ("Minxcon"). In the preparation of the Report, Minxcon utilised information relating to operational methods and expectations provided to them by various sources. Where possible, Minxcon has verified this information from independent sources after making due enquiry of all material issues. Minxcon and its directors accept no liability for any losses arising from reliance upon the information presented in this Report. The authors of this report are not qualified to provide extensive commentary on legal issues associated with rights to the mineral properties and relied on the information provided to them by the issuer. No warranty or guarantee, be it express or implied, is made by the authors with respect to the completeness or accuracy of the legal aspects of this document.

OPERATIONAL RISKS

The business of mining and mineral exploration, development and production by their nature contain significant operational risks. The business depends upon, amongst other things, successful prospecting programmes and competent management. Profitability and asset values can be affected by unforeseen changes in operating circumstances and technical issues.

POLITICAL AND ECONOMIC RISK

Factors such as political and industrial disruption, currency fluctuation and interest rates could have an impact on future operations, and potential revenue streams can also be affected by these factors. The majority of these factors are, and will be, beyond the control of any operating entity.

FORWARD LOOKING STATEMENT

Certain statements contained in this document other than statements of historical fact, contain forward-looking statements regarding the operations, economic performance or financial condition, including, without limitation, those concerning the economic outlook for the mining industry, expectations regarding commodity prices, exchange rates, production, cash costs and other operating results, growth prospects and the outlook of operations, including the completion and commencement of commercial operations of specific production projects, its liquidity and capital resources and expenditure, and the outcome and consequences of any pending litigation or enforcement proceedings.

Although Minxcon believes that the expectations reflected in such forward-looking statements are reasonable, no assurance can be given that such expectations will prove to be correct. Accordingly, results may differ materially from those set out in the forward-looking statements as a result of, among other factors, changes in economic and market conditions, changes in the regulatory environment and other State actions, success of business and operating initiatives, fluctuations in commodity prices and exchange rates, and business and potential risk management.

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UNITS OF MEASUREMENT AND ABBREVIATIONS

UNITS OF MEASUREMENT: The following units of measurement are used in this Report, and are in metric terms:-

Unit	Definition
%	Per cent
/	Per, Or
± or ~	Approximately
°	Degrees
cm	Centimetre
g/t	Grammes per tonne
ha	Hectares
km	Kilometre (1,000 m)
koz	Kilo ounces (1,000 oz)
kt	Kilotonnes (1,000 t)
ktpm	Kilotonnes per month
kV	Kilovolt (1,000 volts)
kWh	Kilowatt hour
m	Metre
mm	Millimetre
Moz	Million ounces (1,000,000 oz)
Mt	Million tonnes (1,000,000 t)
Mtpa	Million tonnes per annum
MVA	Megavolt ampere
oz	Troy Ounces
t	Tonne

ROUNDING: It is noted that throughout the Report, tables may not compute due to rounding.

ACRONYMS AND ABBREVIATIONS: The following acronyms and abbreviations are used in this Report:-

Item	Description
002PPR	LP30/5/1/1/3/2/1/002PPR
3E	Platinum, palladium and rhodium
4E	Platinum, palladium, rhodium and gold
6E	Platinum, palladium, rhodium, ruthenium, iridium and gold
7E	Platinum, palladium, rhodium, ruthenium, iridium, osmium and gold
ASG	Articulated Strike Gulleys
BC	Bushveld Complex
Bengwenyama or Project	Bengwenyama Project
CZ	Critical Zone
DCF	Discounted Cash Flow
DMRE	Department of Mineral Resources and Energy
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
Eerstegeluk	Farm Eerstegeluk 327 KT
EIA	Environmental Impact Assessment
EPCM	Engineering, Procurement and Construction Management
FCFE	Cash Flow to Equity
FCFF	Free Cash Flow to the Firm
FEED	Front-end Engineering Design
FID	Final Investment Decision
FS	Feasibility Study
GISTM	Global Industry Standards on Tailings Management
IMF	International Monetary Fund
LHD	Load and Haul Dumpers

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Item	Description
LZ	Lower Zone
Minxcon	Minxcon (Pty) Ltd
MF2	2 x Mill Float
MUM	Miracle Upon Miracle Investments (Pty) Ltd
MZ	Main Zone
NEMA	National Environmental Management Act, No. 107 of 1998
Nooitverwacht	Farm Nooitverwacht 324 KT
PFS	Pre-Feasibility Study
PGE	Platinum Group Element
PGM	Platinum Group Metal
PPP	Public Participation Process
RLS	Rustenburg Layered Suite
RoM	Run of Mine
RPEEE	Reasonable Prospects for Eventual Economic Extraction
SBM	Selective Blast Mining
SLP	Social and Labour Plan
SPD	Southern Palladium Limited
SUDP	Social Upliftment and Development Plan
Tailex	Tailex Management Services (Pty) Ltd
TSF	Tailings Storage Facility
UCZ	Upper Critical Zones
USD	United States Dollar
ZAR	South African Rand

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1 INTRODUCTION

Minxcon (Pty) Ltd ("Minxcon") was mandated by Southern Palladium Limited ("SPD") to complete an updated scoping study on the Bengwenyama Project ("Bengwenyama" or "Project"). The Project is an exploration property situated in the Limpopo Province, South Africa and targets platinum group metals ("PGM") from the UG2 and Merensky Reefs of the Bushveld Complex.

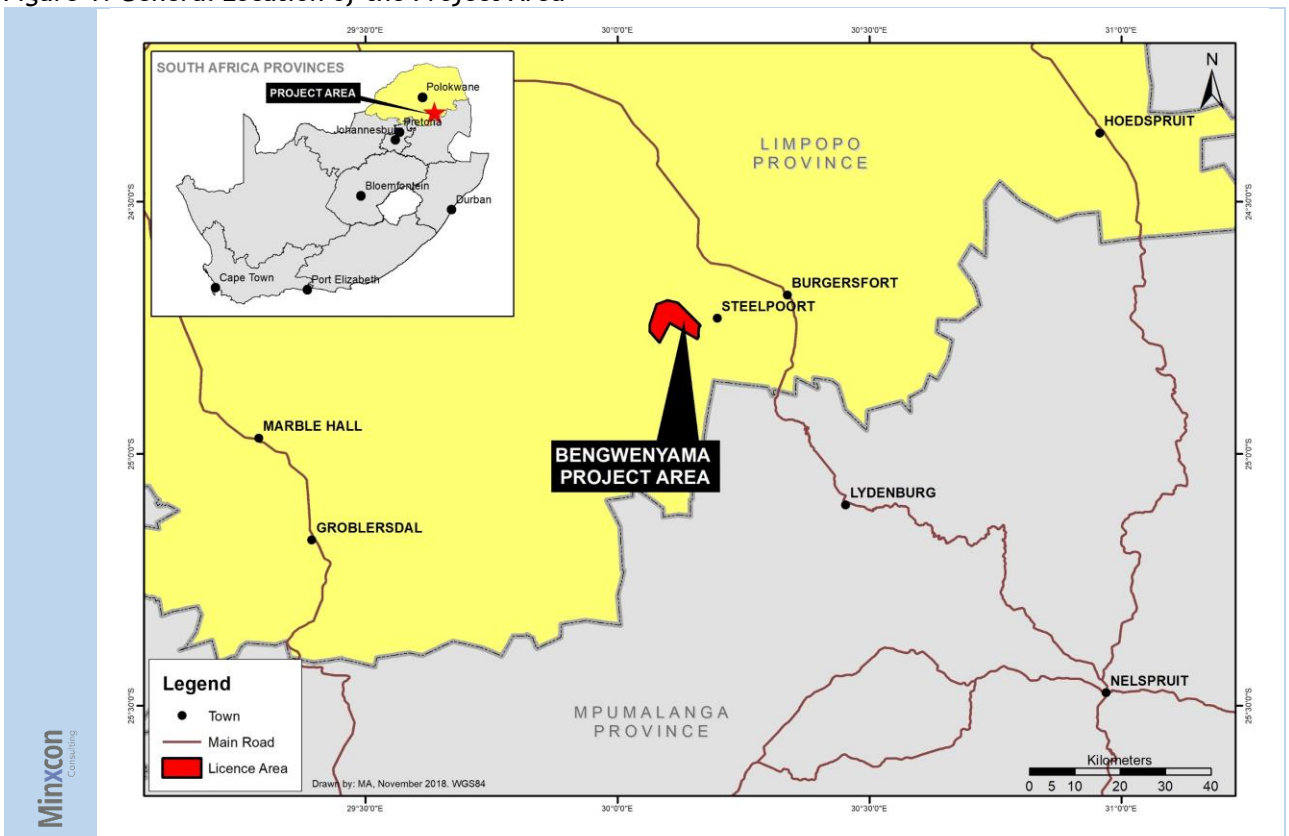
Minxcon previously completed a scoping study on the Project with an effective date of 1 August 2022. This update incorporates changes to the following key items:-

- updated Mineral Resources;
- geotechnical study completed;
- metallurgical tests received;
- second access point to the orebody; and
- change in mining method.

The term PGM as utilised in this Report is considered as recovered metal. The term platinum group elements ("PGE") is utilised for *in situ* element occurrences. The term "7E" refers to the grouping of platinum, palladium, rhodium, ruthenium, iridium, osmium and gold, while "6E" refers to platinum, palladium, rhodium, ruthenium, iridium and gold. The term "4E" refers to the grouping of platinum, palladium, rhodium and gold, while "3E" refers to platinum, palladium and rhodium.

The Project Area encompasses the farms Nooitverwacht 324 KT ("Nooitverwacht") and Eerstegeluk 327 KT ("Eerstegeluk") covering an area of 5,281ha. The Project is located approximately 9 km west of the town of Steelpoort and 20 km southwest of Burgersfort.

Figure 1: General Location of the Project Area



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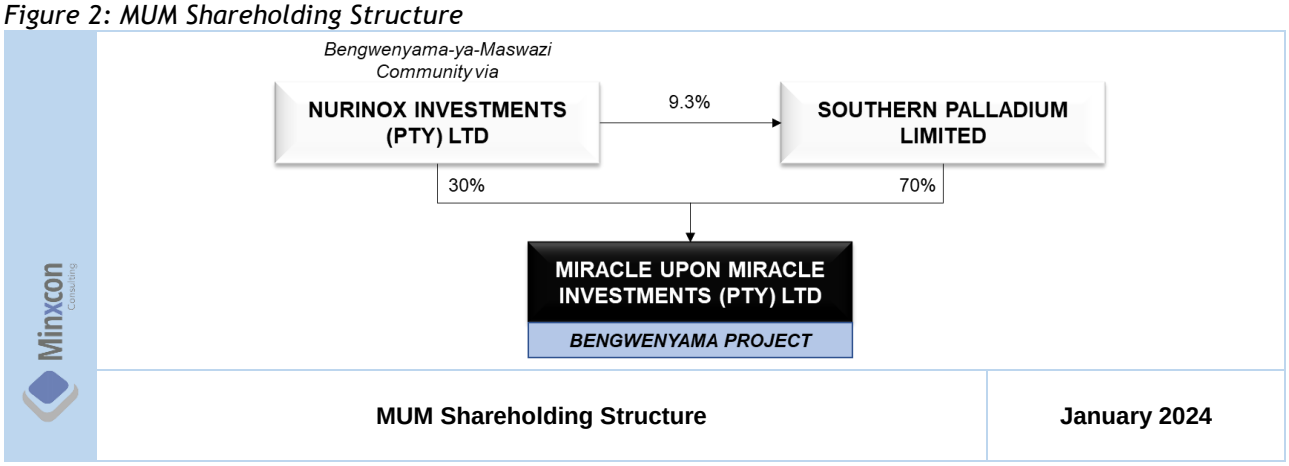
The mineral right to the properties is held in the name of MUM which is held 70% in the name of Southern Palladium Limited ("SPD"), and 30% by Nurinox Investments (Pty) Ltd ("Nurinox"). Nurinox is fully represented by the Community.

The shareholding structure as it relates to the Project is illustrated in Figure 2.

Figure 2: MUM Shareholding Structure



The following consultants and service providers have been involved in the completion of the technical work that informs the scoping study:-

- New Resolution Geophysics - Geophysical Survey;
- Geomechanics - Diamond Core Drilling;
- Aero Geomatics - Drillhole Collar Survey;
- Wireline Workshop - Wireline Logging;
- ALS Minerals (part of ALS Limited) - Assaying;
- ExplorMine Consultants - Mineral Resource Estimate 3rd Party Review;
- Open House Management Services – Geotechnical considerations and recommendations;
- SGS South Africa - Bond Ball Work Index testwork (communition), initial rougher and cleaner kinetic testwork (floatation);
- Suntech Geomet Laboratories - Milling curve testwork, rougher kinetic and locked cycle testwork (floatation) and mineralogical analysis;
- Tailex Management Services (Pty) Ltd ("Tailex") – Tailings storage facility design and costing; and
- Minxcon (Pty) Ltd – Mineral Resource estimate, ESG aspects, mine design and scheduling, infrastructure and processing designs, operating and capital cost estimates and financial modelling.

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2 GEOLOGY AND MINERAL RESOURCES

2.1 Regional, Local and Property Geology

2.1.1 Regional Geology

The Project Area is located in the Bushveld Complex ("BC"), the largest layered igneous complex in the world, dated between 2.06 billion years and 2.058 billion years. Located in the north-central Kaapvaal Craton, the BC comprises a mafic-ultramafic succession of layered and massive rocks known as the Rustenburg Layered Suite ("RLS"), granitic rocks called the Lebowa Granite Suite, and felsic extrusive rocks of the Rooiberg Group. The BC was intrusively emplaced within and exhibits a transgressive relationship to the Transvaal Supergroup sequence. It outcrops in three main arcuate complexes, or limbs: Western, Eastern, and Northern Limbs. The magmatic layering of the ultramafic-mafic rocks is consistent and can be traced over hundreds of kilometres of strike.

The BC likely formed through multiple overlapping lopolith-shaped intrusions. The similarity of geology across large areas within each limb suggests simultaneous differentiation and replenishment of basaltic magma under identical conditions. This is particularly evident in the sequence of igneous layering, which includes both the Merensky Reef and the UG2 Reef. The Eastern and Western Limbs of the BC form a broad ellipse, with granites and felsic volcanics occupying the central area. Post BC sedimentary successions of the Waterberg Group and Karoo Supergroup, as well as Holocene-age alluvial deposits, cover large parts of the BC.

The Marginal Zone, Lower Zone ("LZ"), Critical Zone ("CZ"), Main Zone ("MZ"), and Upper Zone are the five main units that make up the RLS stratigraphy (Figure 3), which hosts the mineralized reefs. The Lower and Upper Critical Zones ("UCZ") make up the Critical Zone, which hosts the Merensky Reef and the UG2 Reef, which is home to the world's greatest concentrations of PGEs and chromium. The extent and regional geology of the Eastern Limb of the BC is illustrated graphically in *Figure 3*.

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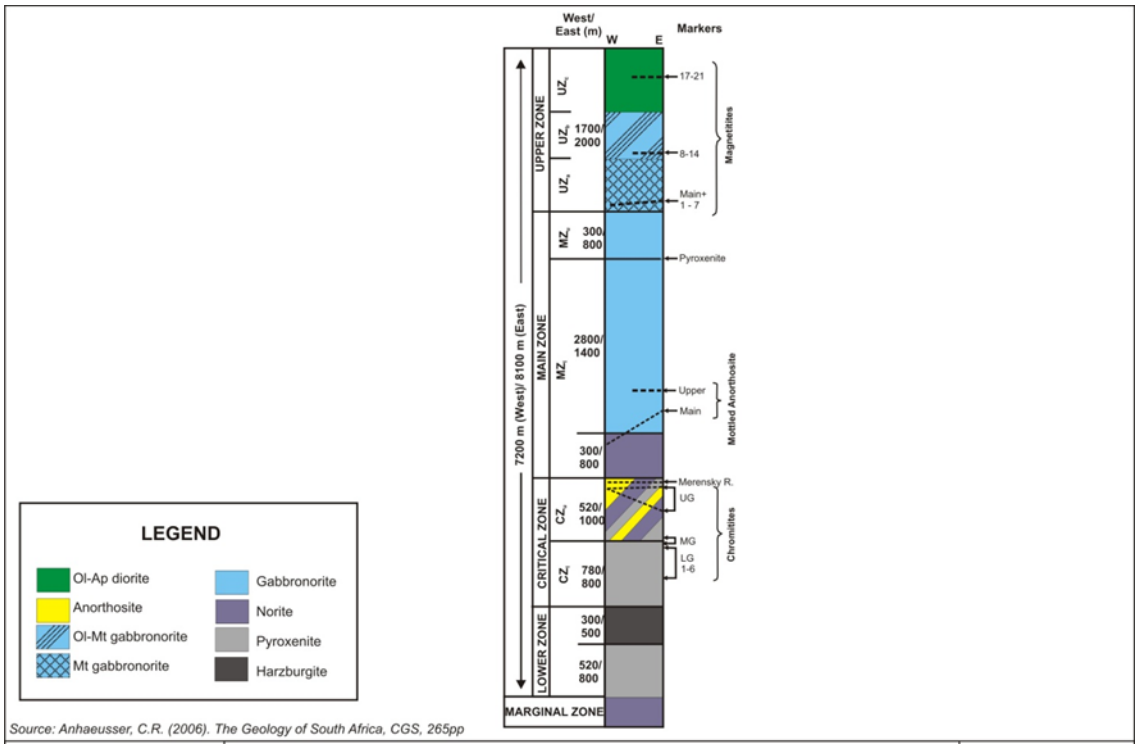
Figure 3: Generalised Stratigraphy of the Bushveld Complex



Generalised Stratigraphy of the Bushveld Complex	**January 2024**

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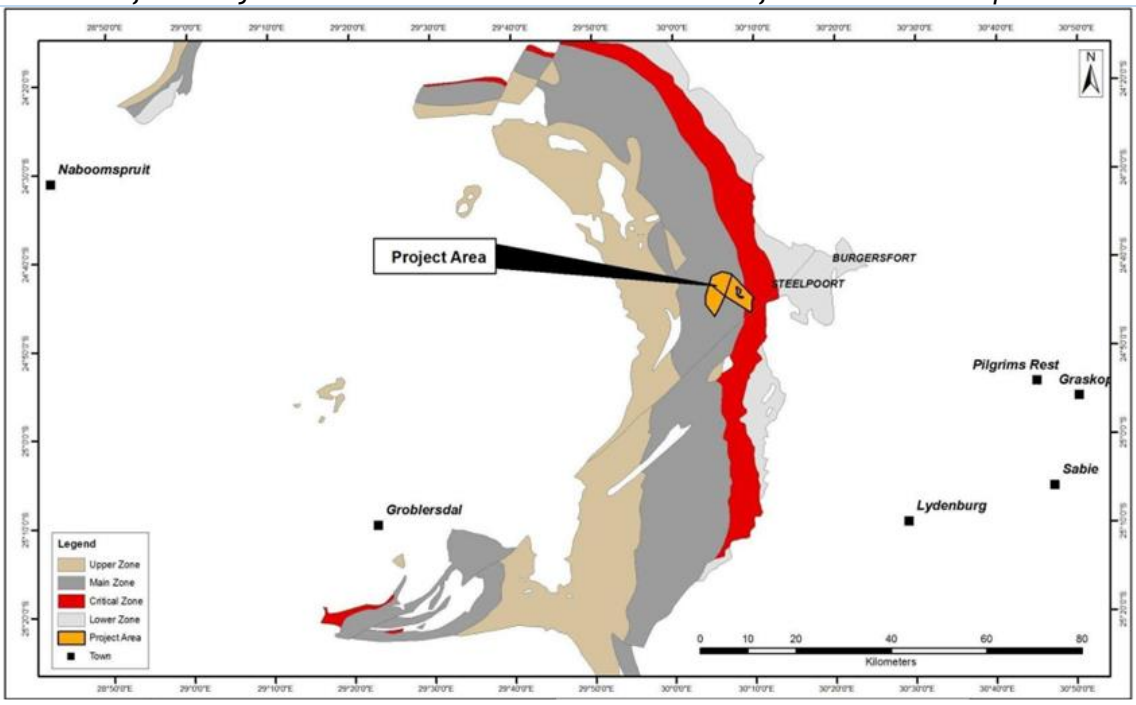
Figure 4: Location of the Project Area in Relation to the Eastern Limb of the Bushveld Complex



Location of the Project Area in Relation to the Eastern Limb of the Bushveld Complex	January 2024

2.1.2 Local and Project Geology

The towns of Zebedelia in the north and Bethal in the south define the Eastern Limb of the BC, which is further subdivided into the Western, Central, and Southern geographical sectors from north to south. The Central and Southern Sectors are demarcated by the Steelpoort Fault Zone, a prominent linear feature. The Project Area is situated on the Central Sector side of the border separating the two sectors, as illustrated in Figure 5.

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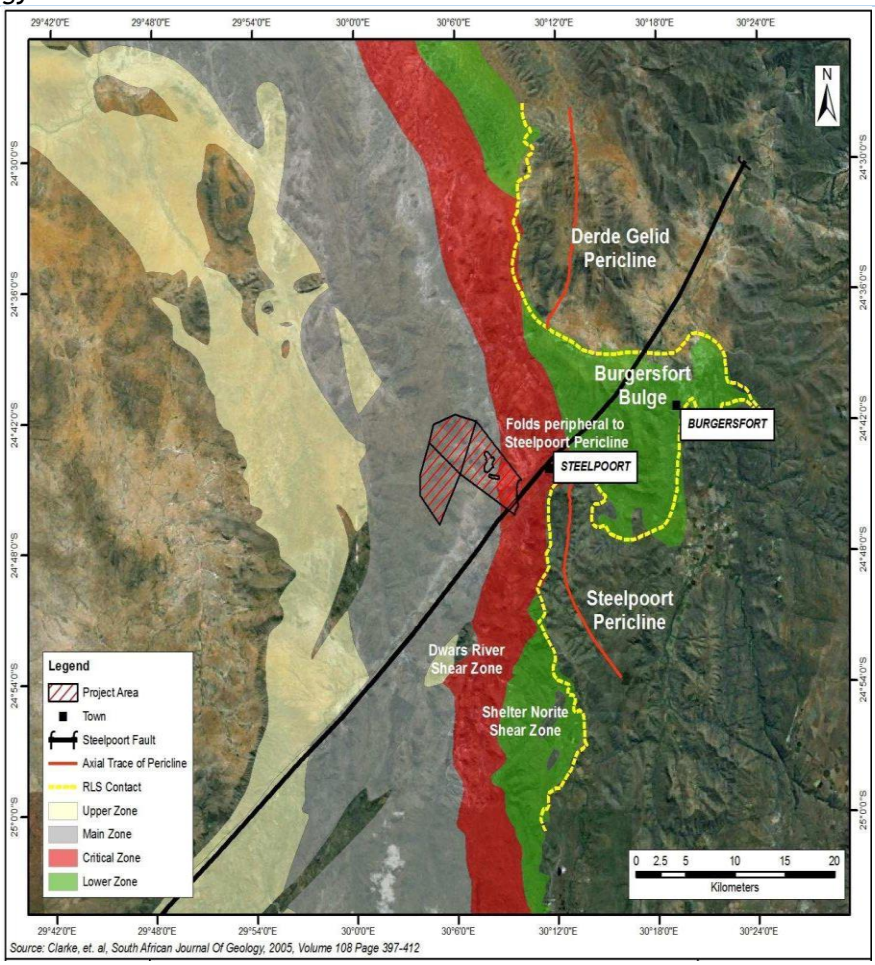
Figure 5: Local Geology & Structure Plan



Local Geology & Structure Plan	January 2024

North of the town of Steelpoort, the RLS intruded subconcordantly into the Pretoria Group, which lies directly above the Magaliesberg Formation; both units belong to the Transvaal Supergroup. In contrast to the strata north of Steelpoort, the rocks south of Steelpoort are in contact with increasingly younger Transvaal Supergroup formations. The Project Area is located in the Central Sector/Southern Sector of the Eastern Limb of the BC which is more geologically and structurally complex compared to the Western Limb. The Project Area is underlain by MZ lithologies. The CZ and LZ outcrop east of the Project Area.

A project stratigraphy has been developed for the Bengwenyama Project based on the completed drillholes to date (Figure 6). Figure 6 shows the drillholes completed and in progress in the SPD drilling campaign to effective date. The focus of the drilling has been in the eastern portion of Eerstegeluk where the UG2 reef is the shallowest and dips in a westerly direction at about 6 degrees. The Merensky Reef Hangingwall stratigraphy is being finalised based on additional drilling being completed further west at drillhole E100 in the deeper portion of the project, in the northwestern corner of Eerstegeluk. Figure 7 shows the Bengwenyama Project stratigraphy of the Merensky Reef and the UG2 Reef down to the LG6 Chromitite Seams.

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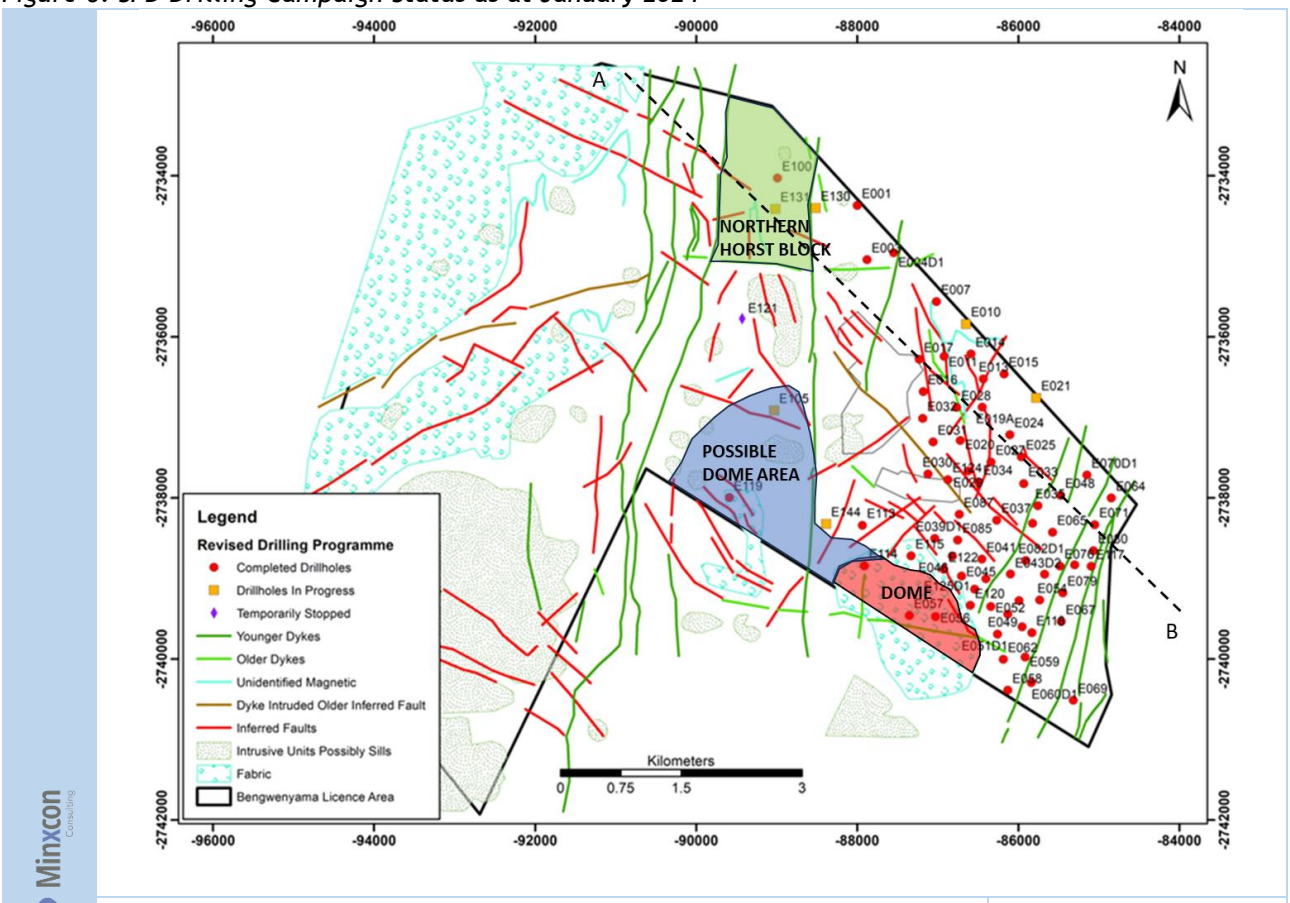
Figure 6: SPD Drilling Campaign Status as at January 2024



Drilling Status as at January 2024	January 2024

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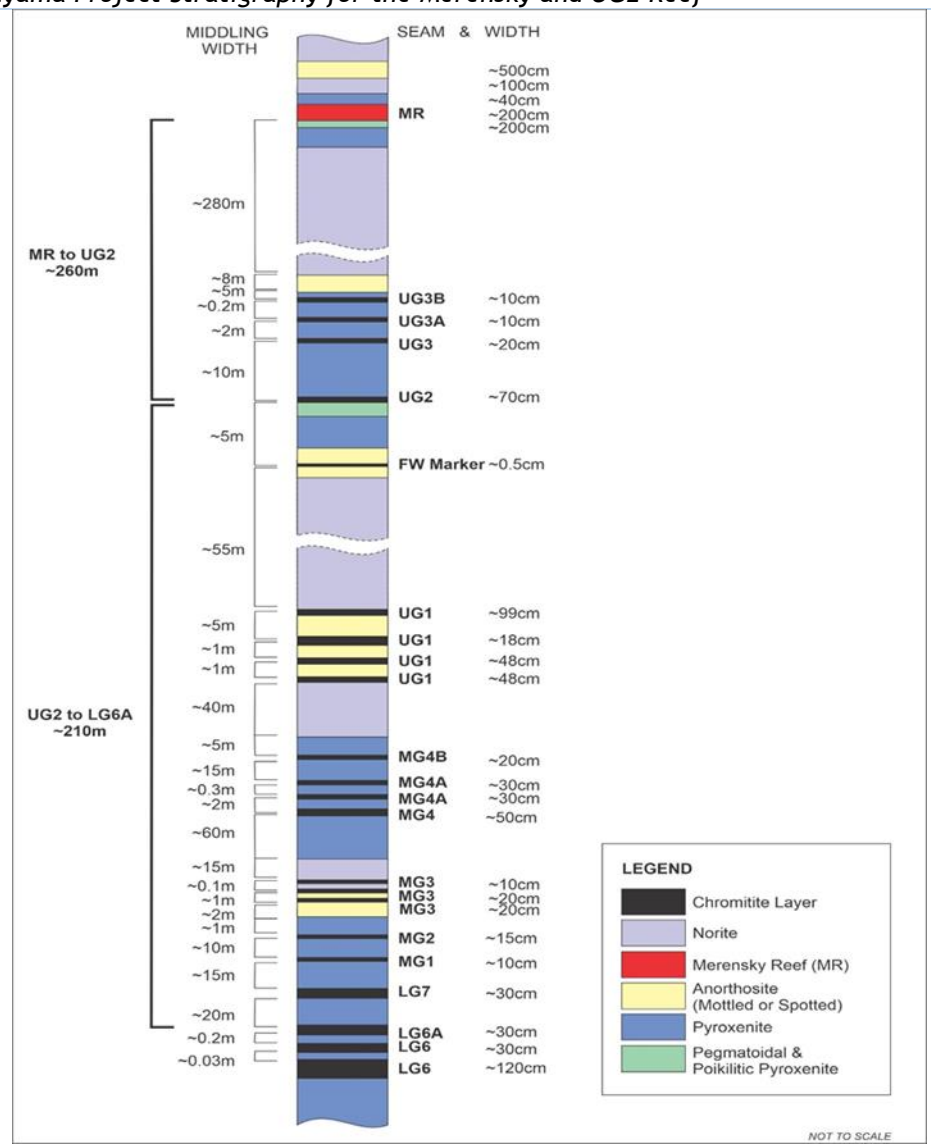
Figure 7: Bengwenyama Project Stratigraphy for the Merensky and UG2 Reef



Bengwenyama Project Stratigraphy for the Merensky and UG2 Reef | **January 2024**

The focus of the Scoping Study is the UG2 Reef which is a chromitite seam of the upper group within the critical zone and has an average reef width of approximately 73 cm (Figure 8). The hanging wall contact is an approximately 3 cm thick Leuconorite Parting Plane (LPP) overlain by a feldspathic pyroxenite unit. The UG2 stringers that often appear regionally in the hangingwall of the UG2 are not present in the Project Area bar a small area in the northeastern corner of the project on the farm Eerstegeluk. The LPP is not always present resulting in a sharp contact between the feldspathic pyroxenite and the Chromitite seam. The UG2 is predominantly a massive chromitite seam with pyroxenite oikocrysts. The footwall contact is either a sharp contact or gradational disseminated chromite contact. The footwall of the UG2 is generally a pegmatoidal or poikilitic feldspathic pyroxenite, with low and variable PGE grades, grading into a medium grained massive feldspathic pyroxenite. Various UG2 facies are being logged and a facies plan is being developed.

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Figure 8: UG2 Intersection (yellow box) in Drillhole E062

UG2 Intersection (yellow box) in Drillhole E062	**January 2024**

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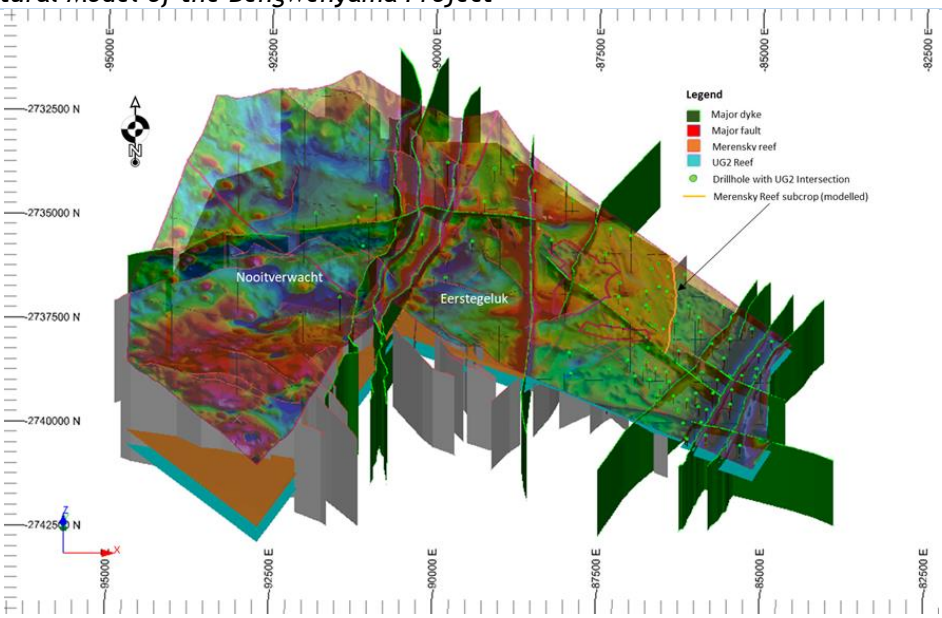
A high-definition helicopter borne Total Magnetic Field (TMF) gradient and gamma-ray spectrometry survey was completed in January of 2022 which highlighted the major structural features that could be expected. These structures were utilised in the development of the 3D structural model in conjunction with the MR and UG2 Reef intersections. Figure 9 shows the 3D structural model with the geophysics draped over the DTM. The Project Area is bisected (close to the Nooitverwacht and Eerstegeluk Farm boundaries) by a series of parallel north-northeast to south-southwest faults and dykes, which displace the Merensky and UG2 reef up to the west. The presence of sub-parallel west-northwest to east-southeast faults and dykes has also been interpreted. The Merensky Reef and UG2 outcrop north of the Nooitverwacht farm on the Modikwa mining lease. The Merensky Reef is interpreted to subcrop on Eerstegeluk, while the UG2 is interpreted to have limited exposure.

Figure 9: 3D Structural Model of the Bengwenyama Project



3D Structural Model of the Bengwenyama Project	**January 2024**

The UG2 and Merensky Reef are the primary economic units in the UCZ, with UG2 being the primary orebody. They subcrop and dip gently to the west at between 6° and 12°, with local dips exceeding this, and stratigraphic distances between them ranging from 213 m to 315 m. Both are oxidised at surface and have

persistent down-dip economic horizons. Historical drillholes on Nooitverwacht have indicated depths of approximately 700 m below surface for the Merensky Reef and the equivalent 1,100 m below surface for the UG2. The strike of the RLS is typically NNW-SSE. There is a horst block located in the northwestern corner of Eerstegeluk (Figure 6) which is because of the westerly up throw along the major north south striking dyke swarm in that area. This is the area that is being targeted for the second access point.

Figure 10: Generalised East / West Cross Section through Eerstegeluk

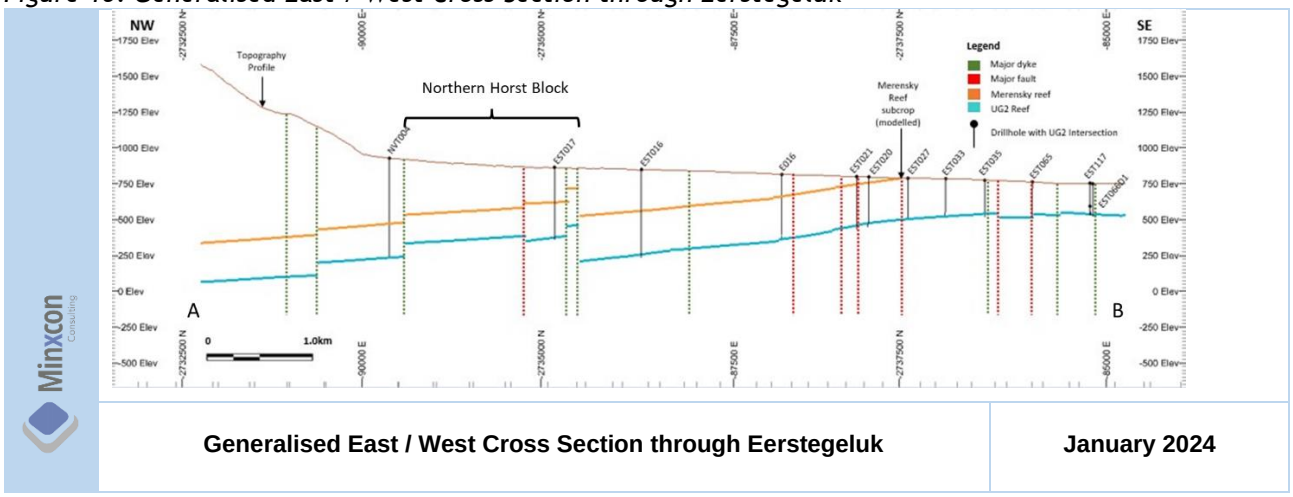


Figure 10 shows the generalised east / west cross section through Eerstegeluk north of the domal structures in the area not affected by the dome. The section shows the MR located on average 279m, above the UG2 reef.

The contact aureole of the Eastern Limb of the BC is characterised by strongly deformed domal structures that penetrate upwards into the RLS, significantly impacting the development of the Late Cretaceous Zone (LZ) and Central Zone (CZ). The Burgersfort "bulge" east of the Project Area is a trough-like body bordered by the Derde Gelid Pericline and the Steelpoort Pericline. Both periclines represent updomed Transvaal Supergroup floor units (Clarke, B.M., et al, 2005). The formation of domal structures has been attributed to diapirism, a process involving the heating of floor rocks due to the intrusion of the RLS. This heating resulted in the formation of topographic floor highs, which facilitated the upward movement of plasticised and partially molten floor rocks into the crystallizing RLS magma. The economic significance of these domal or upwarped floor rocks lies in their ability to attenuate the LZ and CZ above the floor domes, potentially disrupting the continuity of laterally continuous economic horizons (Clarke, B.M., et al, 2005).

This updoming is present at the Bengwenyama project on the southern border of the farm Eerstegeluk (Figure 6). Drilling has delineated an area of updoming that has affected the UG2 reef which has been removed from the Mineral Resource (red polygon in Figure 6). Additional drilling is currently underway to improve the current understanding of the dome structure and its extent to the west, toward Nooitverwacht (blue polygon in Figure 6). This doming is not presented in the 3D model in Figure 9. The margins to the north and east of the initial dome area (red polygon) have been drilled to determine the extent of the dome structures influence, on the UG2 reef. This doming has resulted in loss of reef but also for the UG2 reef to be pushed up, closer to surface, for easier mining access.

Iron-rich ultramafic pegmatites (IRUPS) have been identified in the Modikwa, Spitskop, and Kennedy's Vale areas. These replacement bodies either completely replaced or highly disrupted the economic layers of either the UG2 or the Merensky Reef. To date no IRUPs have been intersected on the MR or UG2 Reef horizons. IRUPs have however been intersected in the Main Zone in the drillholes completed in the dome structure (blue polygon). Potholes in the area represent local changes in the strike and dip of the economic

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units, forming depressions into the footwall stratigraphy. The depth-to-width ratio of potholes in this region of the Central Sector is 1:2. Potholes have been intersected and logged in the drilling completed to date and contribute ~one third of the 21% geological losses.

2.1.3 Mineralisation

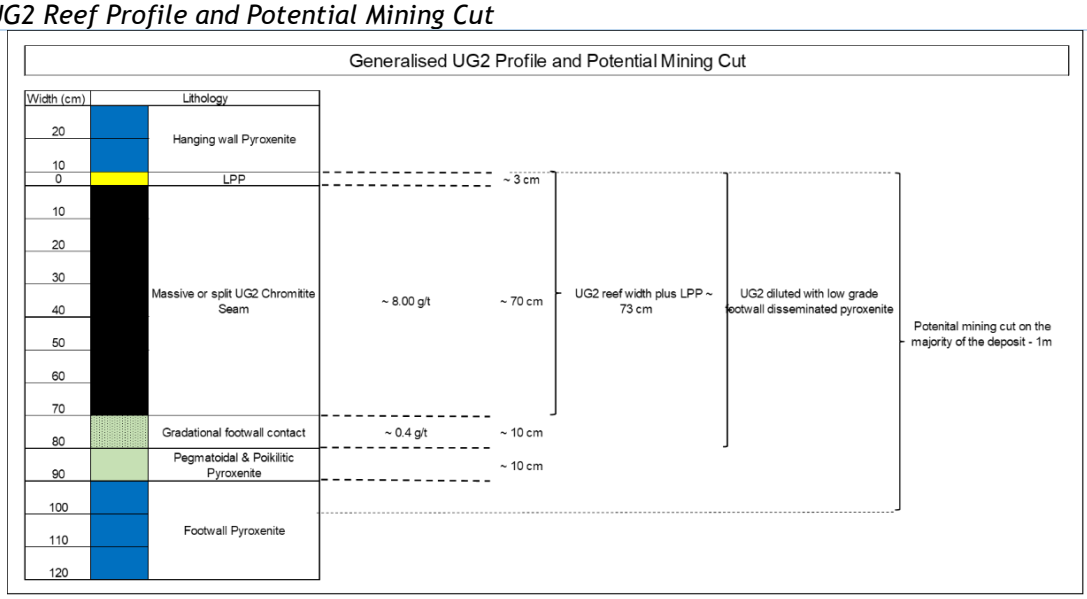
The UG2 occurs as either a pure chromite or a cumulate framework of chromite with interstitial plagioclase and/or orthopyroxene. The bulk of the PGE mineralisation associated with the UG2 is hosted within the main chromitite layer as disseminated sulphides attached to the chromite grains. Typically, the sulphides form embayments in the chromite grains or at triple junctions. Less commonly, the sulphides may be occluded within the chromite grains. The typical sulphides which host the PGE are pyrrhotite, pentlandite and chalcopyrite. The UG2 in this area of the BIC is characterised by a Pt and Pd telluride assemblage and Pt-Rh-Co-Cu sulphide assemblage. The PGE grades are typically elevated at the top and basal contacts of the chromitite seam. The disseminated mineralisation may extend into the footwall units and is typically related to disseminated chromite and chromitite stringers.

The Merensky Reef is a pyroxenitic unit characterised by enclosing chromitite stingers. The economic portion of the Merensky Reef is typically demarcated by the chromitite stringers. The PGE mineralisation of the Merensky Reef is typically associated with base metal sulphides and silicates. The base metal sulphides are interstitial together with plagioclase feldspar within cumulate orthopyroxene. The PGE mineralisation typically occurs in combination with sulphides, sulpharsenides, arsenides, tellurides and alloys.

2.2 Geotechnical

Exploration drilling and core analysis was done to determine the location of reef parallel structures in the hanging wall in relation to the top of the UG2 reef contact. The data shows that there are no reef parallel structures present within 6 m of the top of reef contact and a beam thickness of 6 m was considered. There is a small area in the NE corner of Eerstegeluk which has stringers in the hanging wall of the UG2 which deviates from this. Figure 11 shows the UG2 reef profile as well as the potential mining cut.

Figure 11: UG2 Reef Profile and Potential Mining Cut



UG2 Reef Profile and Potential Mining Cut	**January 2024**

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2.3 Mineral Resources

2.3.1 Structural Model

The structural model utilises data from 23,838 m of drilling through 88 drillholes. This significant increase in size of the dataset in comparison to data informing historic models aids further understanding of structurally complex southern sections of the orebody in the vicinity of the Eerstegeluk Dome. A complex fault and dyke system traverses both the Merensky and UG2 reefs dividing the deposit into 12 fault blocks through the Merensky Reef and a total of 31 fault blocks through the UG2 reef creating conspicuous horst and graben structures through both reefs in the northern sections of the deposit. Structural interpretation of the central and western sections of the deposit is of lower confidence with current drilling focussed on improving lateral and down-dip geological confidence in the graben and horst structures. The complexity of the fault and dyke systems and the presence of potholes forms basis and justification for geological losses ascribed during reporting of Mineral Resources.

2.3.2 Grade Estimation

The Merensky reef PGE grade estimates are informed by data from 18 drillholes with base metal grade data only available for 7 drillholes. The UG2 PGE grade estimates are informed by data from 59 drillholes with base metal grades data available for 49 drillholes. The dataset was examined for outliers which could impact subsequent grade estimation processes. Although localised elevated PGE grades within both Merensky and UG2 reefs are noted, overall, the deposit exhibits low PGE grade variability, supported by coefficients of variation of 0.43 and 0.24 for the Merensky and UG2 reefs respectively. Accordingly, no capping was applied. PGE grade variography study indicates ranges in the range of 1,100 M to 2,500 m for the Merensky reef and in the range of 900 to 1,800m for the UG2 reef. Quantitative Kriging Neighbourhood analysis (QKNA) determined optimal estimation at a block size of 350 m x 350 m, minimum and maximum number of samples of 5 and 15 respectively through a 3-pass search via the Ordinary Kriging (OK) grade interpolation method.

2.3.3 Reasonable Prospects for Eventual Economic Extraction

Consideration of Reasonable Prospects for Eventual Economic Extraction ("RPEEE") was undertaken using a financial assessment which considers extraction via underground mining methods driven by the mining assumptions provided in Table 1. The RPEEE assessment established a 4E grade cut-off of 1.6 g/t and 1.9 g/t for the Merensky and UG2 reefs. As the Bengwenyama drill data indicates minimum grades of 1.57 g/t and 4.40 g/t for the Merensky and UG2 reefs respectively, there is prospect for economic extraction of all mineralised material under current economic conditions.

Table 1: Economic Constraints Applied during the RPEEE Test

Parameter	Unit	UG2	MR	Comment
Metal basket price	R/g	1,506	1,071	Based on the 90th percentile of the individual metal price & prill splits
Operating cost	R/t	1,625	920	MR is mechanised mining and UG2 conventional* mining
Treatment cost	R/t	291	219	No smelter and refinery costs
Mine call factor	%	95%	95%	
Payability	%	86%	86%	Discount for the concentrate
Recovery	%	85%	85%	On-site plant recovery

Note: Operating cost based on original scoping study which considered conventional mining. To be updated in next Mineral Resource update.

2.3.4 Mineral Resource Classification

The Mineral Resource classification criteria utilises qualitative and quantitative criteria incorporating:-

- Variogram range limits, drill spacing and geological confidence in structural interpretation;
- Number of samples and sample search volume utilised to interpolate a grade estimate;

- The slope of regression; and the
- Guidance of classification as per kriging efficiency thresholds by Mwasinga, 2001.

Preliminary results are moderated through an override by the CP to present practicality of mining while retaining accuracy of lateral and down-dip geological confidence. The final result for each reef (Figure 12 and Figure 13) is coded into the Bengwenyama blockmodel for utilisation in subsequent mine planning tasks.

Figure 12: Mineral Resource Classification - Merensky Reef

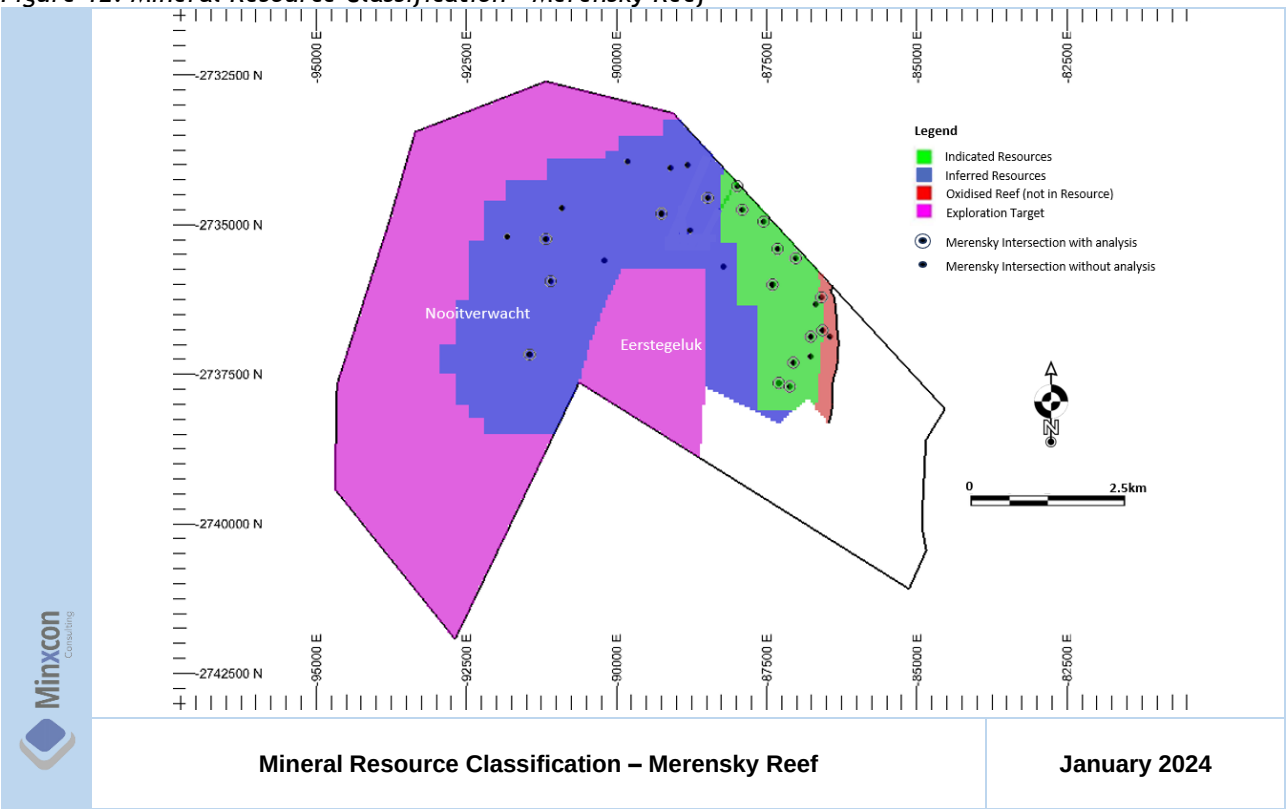

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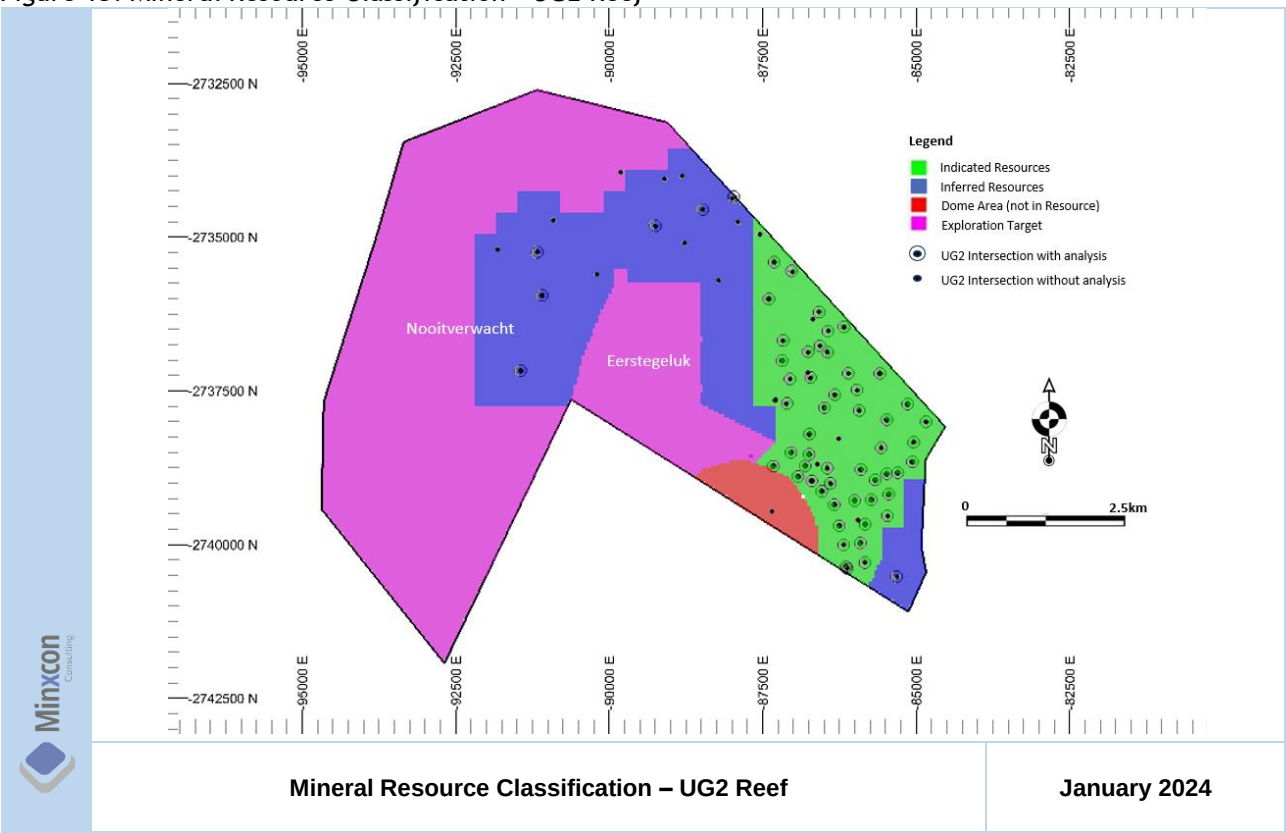
Figure 13: Mineral Resource Classification – UG2 Reef



2.3.5 Mineral Resource Estimate

The resultant Mineral Resource estimate as at 1 December 2023 is provided in Table 2.

Table 2: Combined UG2 and MR Mineral Resource as at 1 December 2023

Reef	Resource Category	Tonnes	Thickness	Pt	Pd	Rh	Au	Ir	Os	Ru	4E	7E	Cu	Ni	Moz (4E)	Moz (7E)
		Mt	(m)	(g/t)	(g/t)	(g/t)	(g/t)	(g/t)	(g/t)	(g/t)	(g/t)	(g/t)	(%)	(%)		
Merensky	Indicated	21.59	2.05	1.59	0.65	0.10	0.12	0.03	0.03	0.21	2.48	2.75	0.038	0.125	1.72	1.91
Merensky	Inferred	77.90	1.97	2.01	0.81	0.13	0.15	0.04	0.04	0.25	3.10	3.43	0.035	0.119	7.77	8.60
Total		**99.49**	**1.99**	**1.92**	**0.78**	**0.12**	**0.14**	**0.04**	**0.04**	**0.24**	**2.97**	**3.28**	**0.035**	**0.120**	**9.49**	**10.50**
UG2	Indicated	20.80	0.73	3.60	3.61	0.75	0.12	0.25	0.17	1.24	8.08	9.75	0.033	0.162	5.40	6.52
UG2	Inferred	29.99	0.74	3.63	3.37	0.77	0.10	0.26	0.17	1.25	7.87	9.54	0.038	0.165	7.58	9.20
Total		**50.79**	**0.73**	**3.62**	**3.47**	**0.76**	**0.11**	**0.26**	**0.17**	**1.25**	**7.95**	**9.63**	**0.036**	**0.164**	**12.99**	**15.72**
Total		**150.28**	**1.57**	**2.49**	**1.69**	**0.34**	**0.13**	**0.11**	**0.08**	**0.58**	**4.65**	**5.43**	**0.04**	**0.13**	**22.48**	**26.22**

Notes:

1. All elements have been estimated individually and their combined grade will vary slightly from the estimated composite 4E and 7E modelled grades.
2. Geological losses have been applied.
3. A pay limit has been applied, albeit the entire Mineral Resource falling above the pay limit.
4. The Mineral Resource is inclusive of the Mineral Reserve.
5. The Mineral Resource is 100% attributable.

2.3.6 Upside Potential

Over and above the Mineral Resource declared, there is additional upside potential in the Exploration Target Range for the area that has not been declared as indicated or inferred Mineral Resources. Table 3 provides a

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summary of the UG2 Exploration Target as at 1 December 2023. The UG2 Exploration Target is based on the estimated kriged value of the drillhole database with a 20% range applied.

The potential quantity and grade of the Exploration Target is conceptual in nature and there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

Table 3: UG2 Exploration Target as at 1 December 2023

Category	Reef	Minimum tonnes (Mt)	Maximum tonnes (Mt)	Minimum grade (4E g/t)	Maximum grade (4E g/t)
Exploration Target	UG2	38	58	6.4	9.6

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3 PRODUCTION TARGETS AND MINE

3.1 Mining Strategy

The mining philosophy for the UG2 reef is underground mining to exploit the orebody by developing the necessary development and extracting the ore with narrow tabular underground mining methods. The underground mining method is dependent on various parameters such as orebody width, operating cost and NPV. The underground mine limiting or governing factors, determined by Minxcon, define the extent of the underground workings. These factors are listed below:-

- 170 ktpm ore; and
- Conventional Stoping with a 1.1 m stoping width

3.2 Access Strategy

The main access development will consist of a two-barrel 6m x 4m decline cluster sunk at a maximum angle of 10 degrees to allow for optimal manoeuvrability of trackless equipment and extended tyre life. The position of the primary decline was meticulously planned to split the mining area into two areas to allow for similar production rates. Each level is divided into two half-levels by the decline, classified as North and South.

Early access will be provided to block 6 to 10 by developing breakaways from the primary decline situated in the hanging wall of the orebody as illustrated in figure below. Once the decline intersects the reef, the decline will be maintained in the footwall to a depth of 50 m below the reef to provide sufficient space for level tipping arrangements. The declines will provide access to the UG2 reef through conventional level developments with intermittent breakaway access points along the declines as illustrated in Figure 14.

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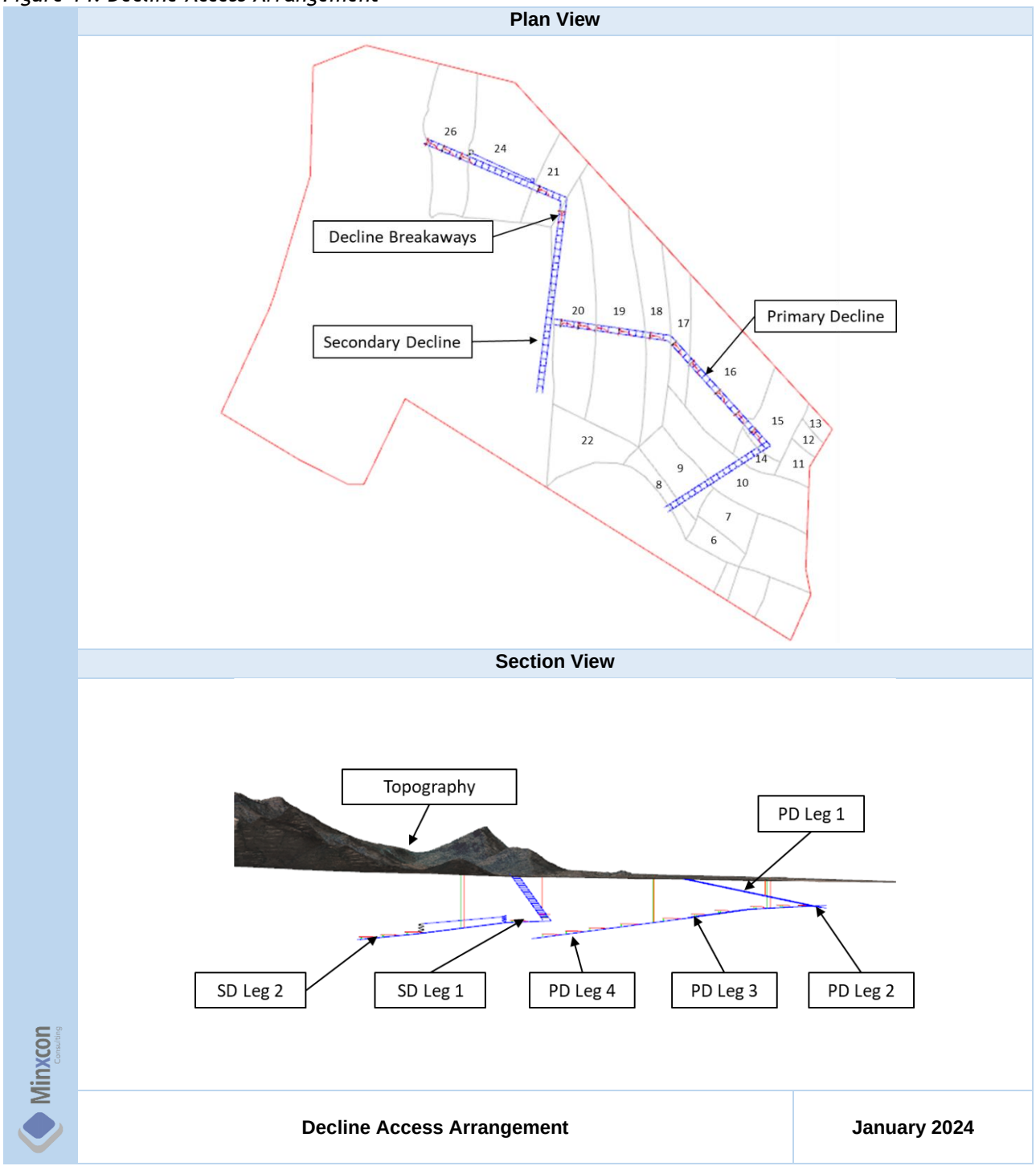
Figure 14: Decline Access Arrangement



Due to the nature of the deposit, a variation of the dip inclination is observed throughout its entirety. As a result, the decline is classified into sections to define the different dimensions. Two stand-alone declines defined as the primary decline and secondary decline are required to access the entire orebody. The existence of a fault displacement at block 21, 24 and 26 resulted in a significant elevation difference which is inaccessible from the primary decline, hence the need for secondary decline to access the mining blocks. Table 4 illustrates the different length and dip inclination dimensions for the respective decline sections.

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Table 4: Decline Sectional Dimensions

Decline Sections	Length	Dip
	m	Degrees
Primary decline		
PD Leg 1	1766	-10.0
PD Leg 2	1165	-2.0
PD Leg 3	948	-5.4
PD Leg 4	1703	-7.4
Secondary decline		
SD Leg 1	2797	-10.0
SD Leg 2	2315	-5.2

3.3 Mining Parameters

3.3.1 Mining Method

The mining method selected for the underground operations at Bengwenyama, is hybrid mining applied to a narrow reef orebody which provides a safe combination of mechanised development and conventional stoping to maximise the overall ore extraction with limited dilution. To extract the ore successfully, the mining method requires pre-development of a mining block which includes on-reef haulage drives and centre gulleys, also commonly known as raises. Pneumatic handheld drills are used in the stopes to drill production holes with a face advance limited by the drill rod length.

The mining advance direction is determined by the strike dimension of the orebody and stoping will be done in a double-sided configuration or alternatively known as breast mining. A double-sided mining layout was selected to increase the number of available faces to work on simultaneously. Men and material will access a panel through the raises which are holed through to the subsequent level to allow for through ventilation.

Blasted ore will be removed with a scraper winch from the face along a strike gully where the material will subsequently be scraped down into a loading bay arrangement at the bottom of the centre gully. Load and haul dumpers ("LHD") will be utilised to load the broken ore from a muckpile and tip into dump trucks positioned within the haulage drives.

3.3.2 Access Development

A twin-decline system from surface will be utilised to provide access to the UG2 reef horizon. The decline cluster will consist of a material decline and a conveyor decline. The decline layout is illustrated in Figure 15.

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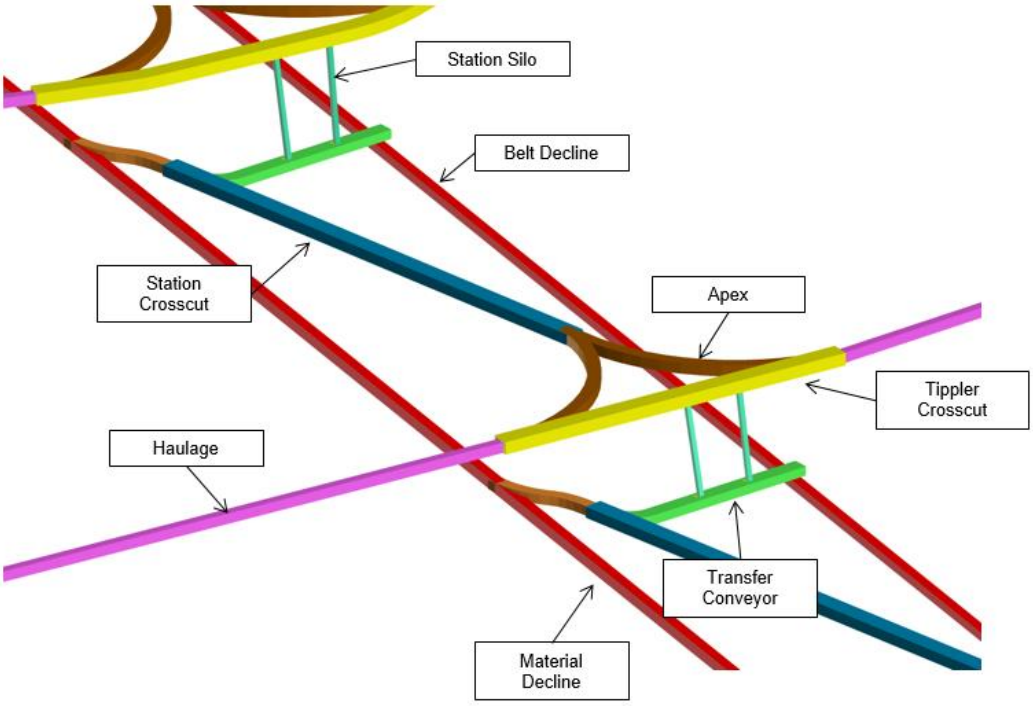
Figure 15: Oblique View of the Decline Development



Oblique View of the Decline Development	**January 2024**

3.3.2.1 Development Method

Selective blast mining ("SBM") was selected for development ends for allowing separate extraction of the ore and waste cuts. Development is conducted with mechanised development drill rigs. By implementing SBM in on-reef development, significantly less dilution is expected and fewer diluted tonnes at an improved grade are delivered to the plant.

Development ends are developed to carry the reef close to the footwall, including a portion of waste above and below the orebody. The waste portion included is determined by the minimum stoping width of 110 cm.

The first blast involves blasting only the waste portion of the development end. The blasted rock is cleaned via LHD and transferred onto a haul truck and dumped at the waste pass. The second blast involves blasting of the reef, with minimal waste dilution, which is also cleaned via LHD.

3.3.3 Stoping

The UG2 reef is accessed through raises from on-reef haulage drives which are developed on strike in relation to the orebody. Panels are serviced by the raise developed on the dip of the UG2 reef. Raises are spaced at 160 m centre to centre to allow for a strike length of 80 m on either side of the raise. Dip pillars of 6 m are accounted for between the stoping blocks in the mine design to allow for a maximum panel strike length of 80 m.

Articulated strike gulleys ("ASG") are mirrored on either side of the raise at an angle of 5 degrees above strike to allow for water drainage from the panel face. Strike cleaning will be conducted with scraper winches from the face along the ASG into the raise which will subsequently be scraped down into a loading bay at the bottom of the raise.

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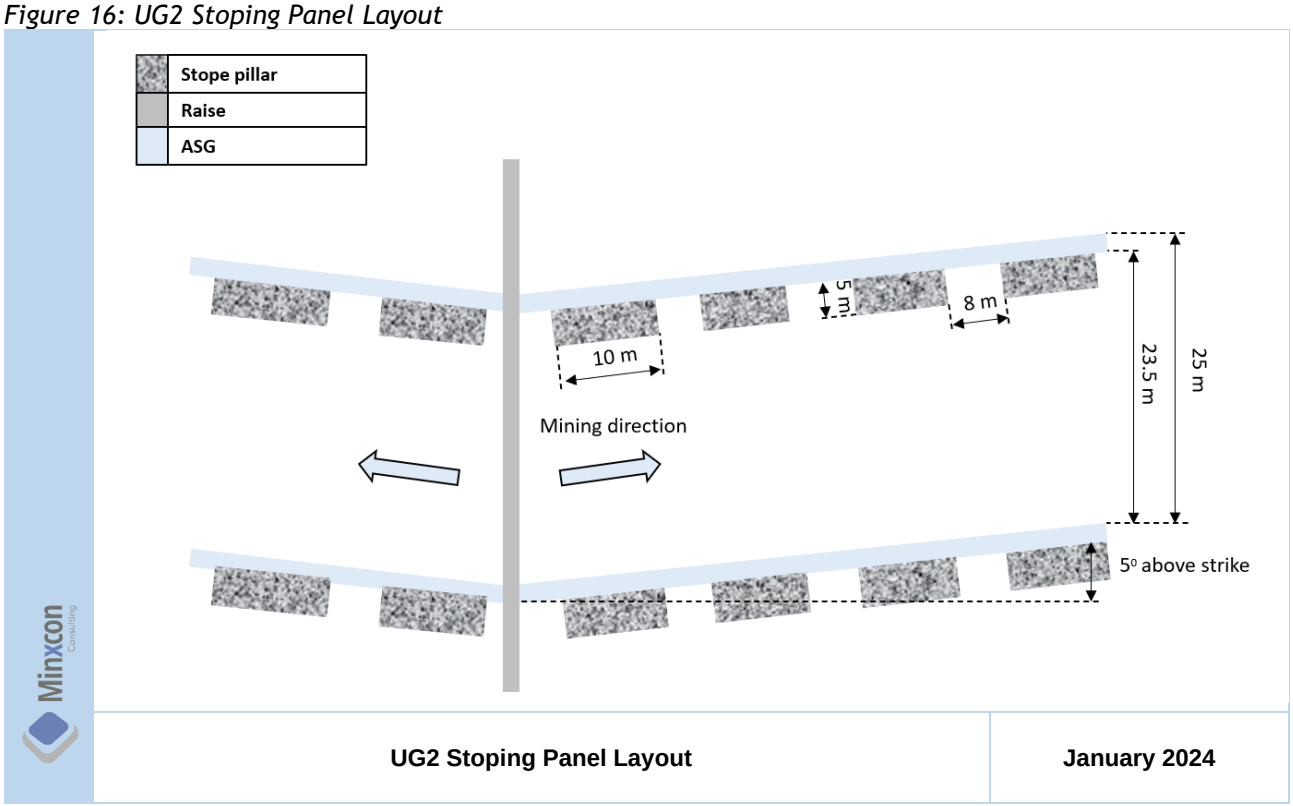
The backlength of 250 m was selected according to design principles to fit 10 panels of 25 m each consisting of a 20 m wide face and accommodated by in-stope pillars on the up-dip side of each panel. The pillars are designed on strike, 5 m wide by 10 m long and spaced 2 m apart to support each panel respectively. Level spacing between haulages will vary from level to level depending on the reef dip to accommodate desired design criteria of 10 panels per raise line.

Conventional breast stope faces will be mined from centre raises advancing in both directions and stope panels drilled using handheld rock drills and blasted using Anfex packaged explosives and shock tube initiation system.

Figure 16 illustrates the conventional stoping panel layout used for design purposes.

Figure 16: UG2 Stoping Panel Layout



3.4 Mine Design

The mine design is illustrated in Figure 17.

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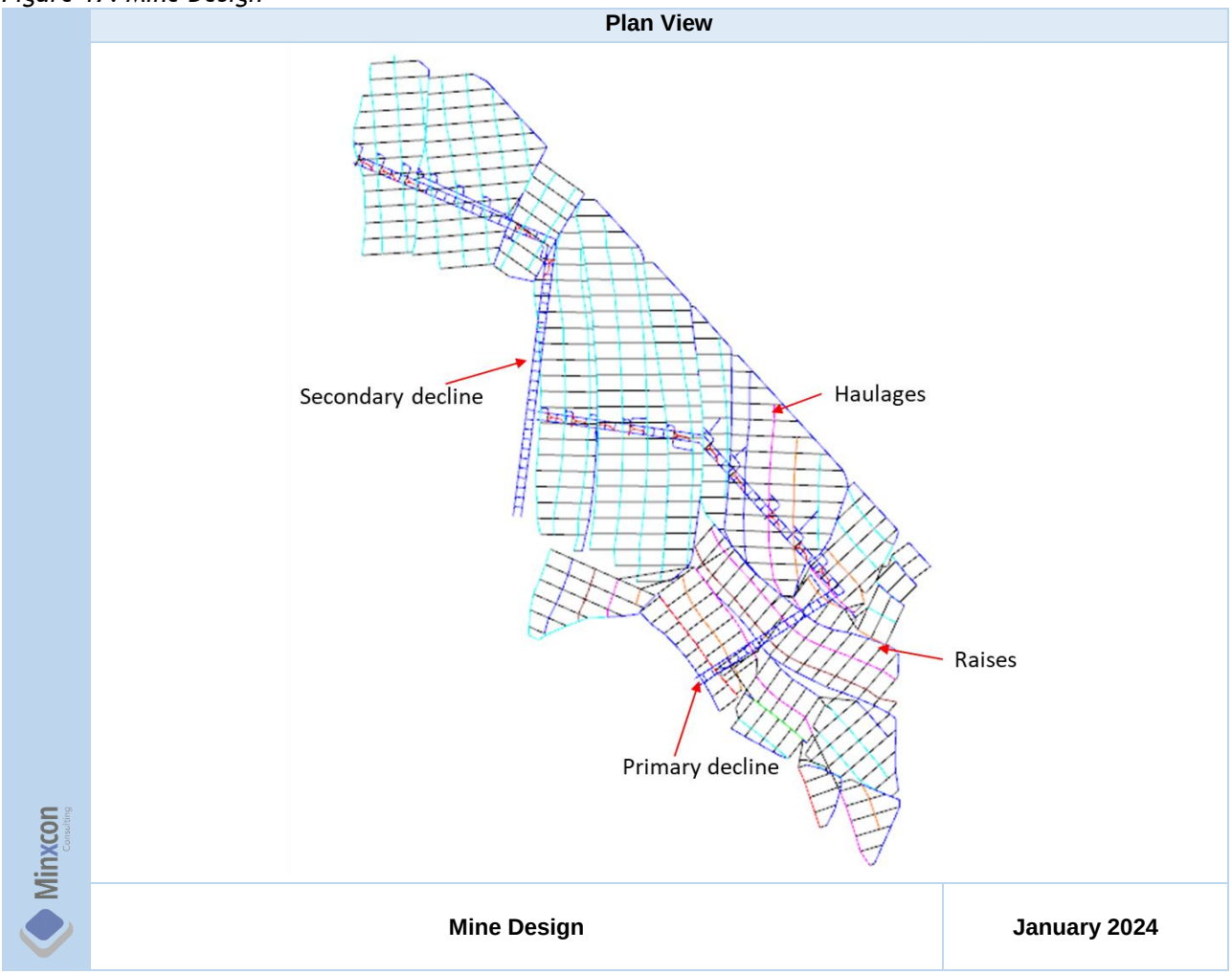
Figure 17: Mine Design



3.5 Mining Inventory

3.5.1 Mining Conversion Factors

Mining conversion factors are applied to convert the Mineral Resources to Mining Inventory. A summary of the applicable conversion factors applied to UG2 operations are shown in Table 5.

Table 5: Mining Conversion Factors

Factors		Unit	Value
Geological Loss	Indicated	%	21
	Inferred	%	24
	Exploration Target	%	40
Pillar Loss		%	16
Ore loss (Haulages)		%	3.13
Dilution (Haulages)		%	10.84
Panel SW		cm	110
MCF		%	95

Note: **1.** Mining conversion factors are only applicable to on-reef tonnes.
2. No additional geological loss factors was applied apart from the Mineral Resource Geological loss factors that was applied.

3.5.2 Mining Inventory

The mining inventory is detailed in Table 6.

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Table 6: Mining Inventory

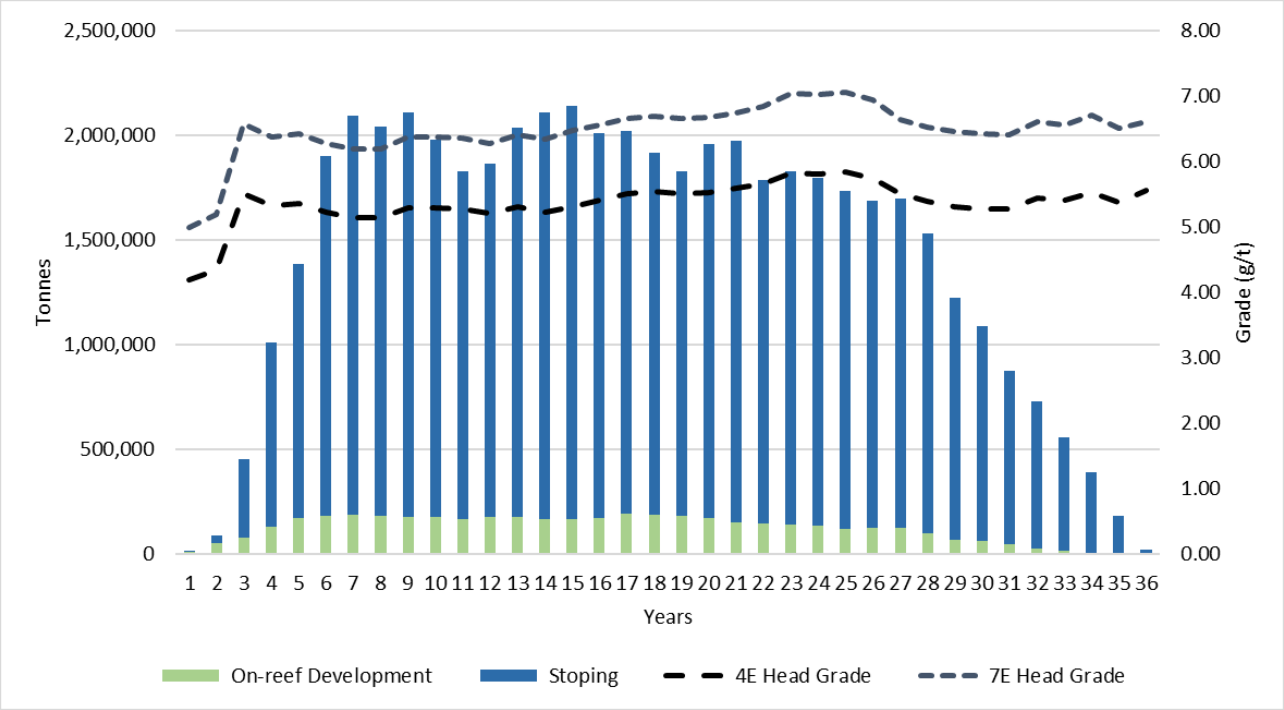
Mining Inventory	Tonnes	Grade 4E	Grade 7E	Content 4E	Content 7E	Contribution
	Mt	g/t	g/t	Koz	Koz	%
Indicated	28.04	5.36	6.47	4,837	5,830	54%
Inferred	19.69	5.50	6.66	3,481	4,215	38%
Exploration Target	4.17	5.43	6.59	724	883	8%
Total	**51.90**	**5.42**	**6.55**	**9,042**	**10,928**	**100%**

3.6 Production Scheduling

3.6.1 Diluted LoM Plan

The LoM plan production schedule is detailed in Figure 18.

Figure 18: LoM Production Schedule



3.6.2 Mineral Resources Category Diluted LoM plan

The mining area in the Mineral Resource category is illustrated in Figure 19, highlighted in the black dotted areas. There is potential for extending the mining area in the Nooitverwacht area as illustrated in Figure 19.

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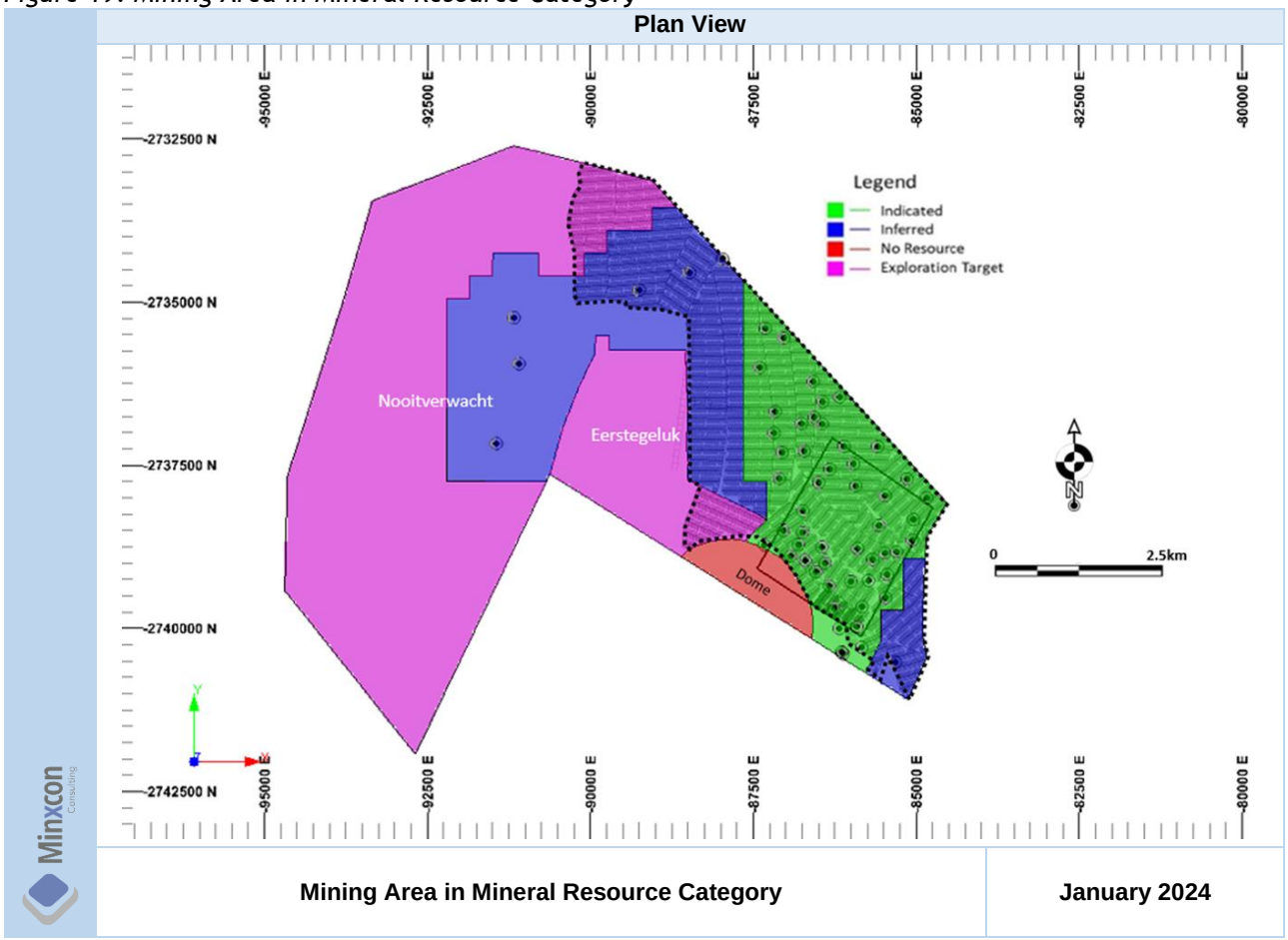
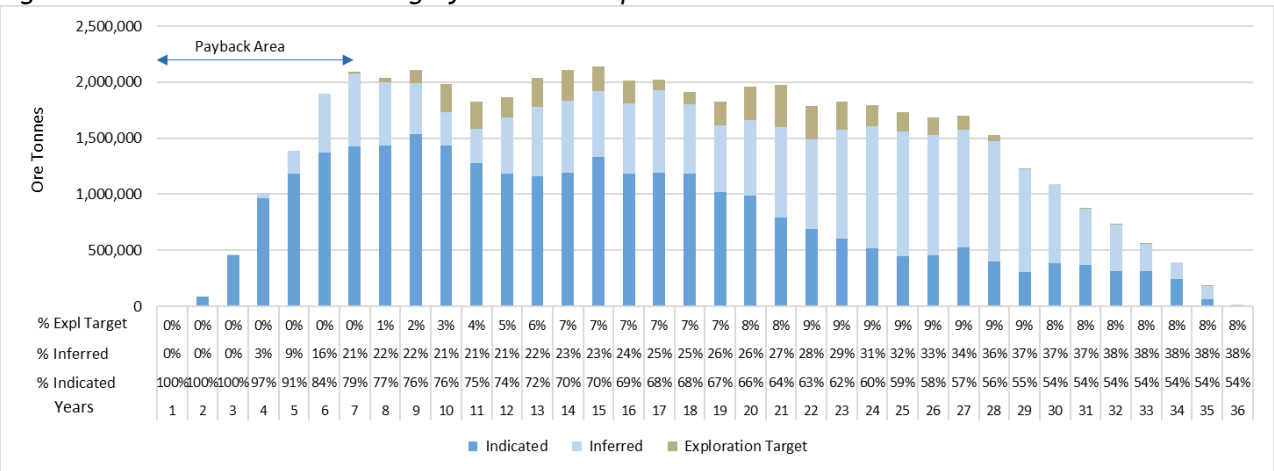
Figure 19: Mining Area in Mineral Resource Category



The LoM plan per Mineral Resource category is detailed in Figure 20, also detailing the cumulative % Mineral Resource category mined in years. The graph illustrates that 79% of the tonnes mined in the payback period is in the Indicated Mineral Resource category. A total of 4.8 Moz 7E remains after the payback period.

Figure 20: Mineral Resources Category Diluted LoM plan



Note: Plant production commences in Year 3 of the graph, hence a lower payback period from first plant production.

The stoping and development production schedule is illustrated in Figure 21, highlighting the payback period.

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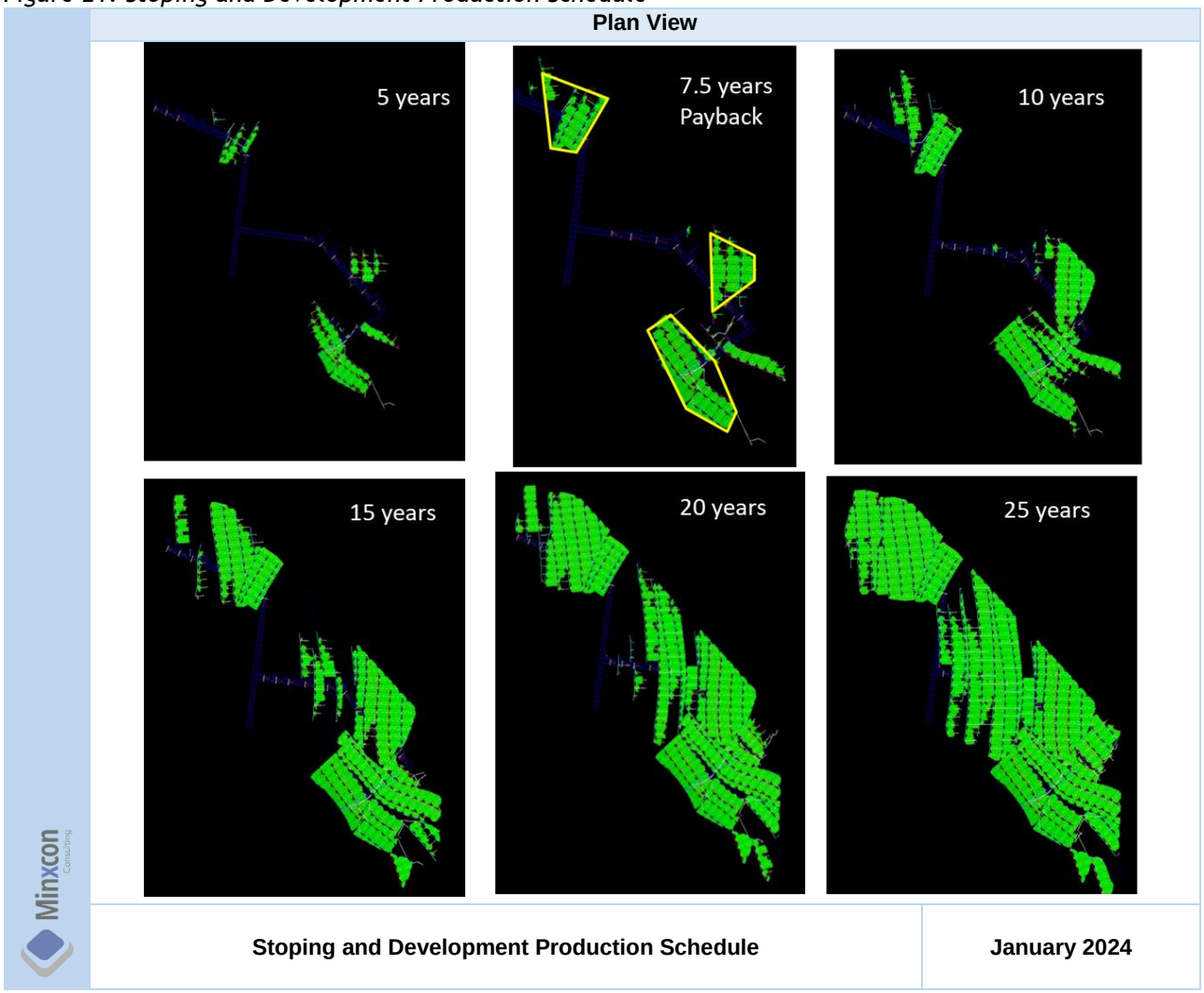
Figure 21: Stoping and Development Production Schedule



3.6.3 Development Schedule

The development schedule is detailed Figure 22.

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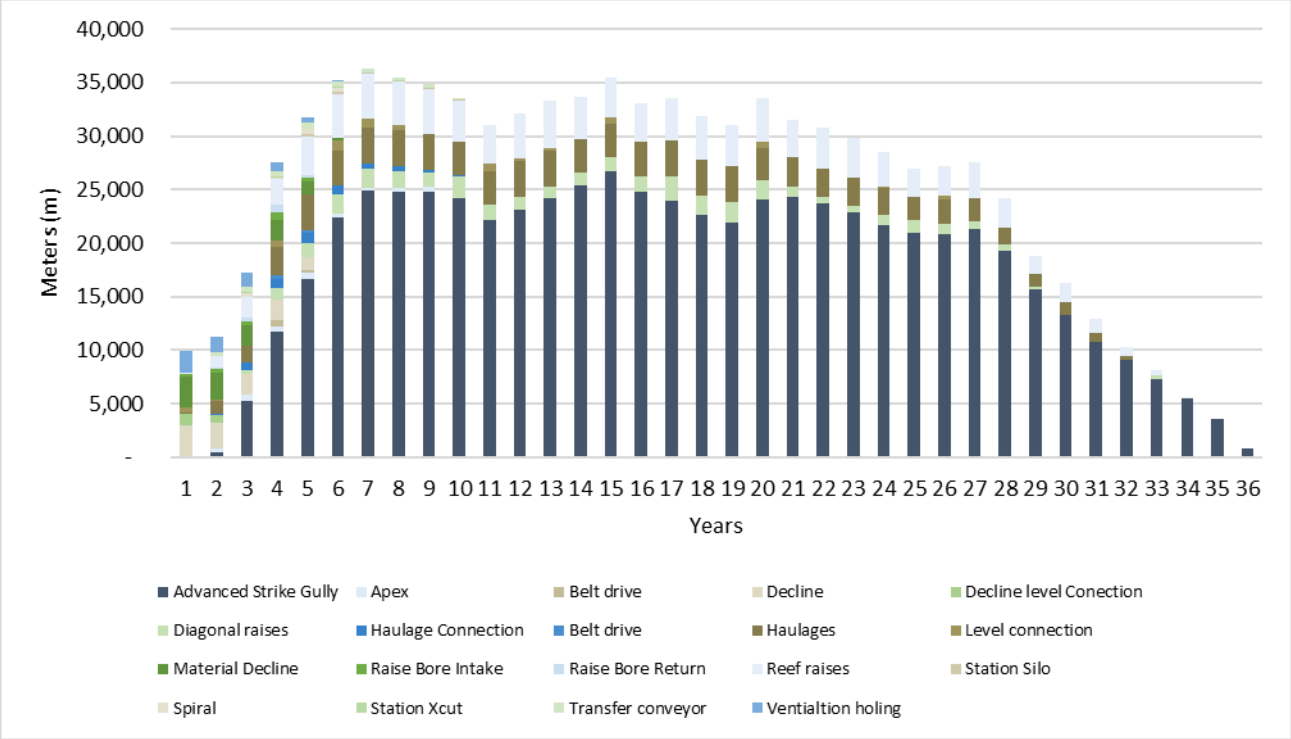
Figure 22: LoM Development Schedule



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4 METALLURGY

The PGM recovery to be expected can readily be assumed to be at least 85% on a 4E basis. This is derived from testwork that has been completed on material representative of the Run of Mine ("RoM") that will be delivered to plant. The associated concentrate grade should also be no less than 140 g/t on a 4E basis. The chrome recovery has not been tested. Benchmarks from UG2 operations on the BC indicate that a 15% chrome recovery could be expected. Similarly, benchmark recoveries for ruthenium (71%), iridium (75%), copper (75%) and nickel (35%) were considered as no testwork has yet been completed. These metals have a modest contribution the overall Project revenue.

The sample used for the first test campaign originated from the remainder of core sample testing. This implies that the specific bore hole location and associated mass of sample are known. This data provides required confidence of representativity of the composite sample made from the different core samples. The composite sample was the source of the test material for the different tests carried out.

4.1 Flotation Test Campaign

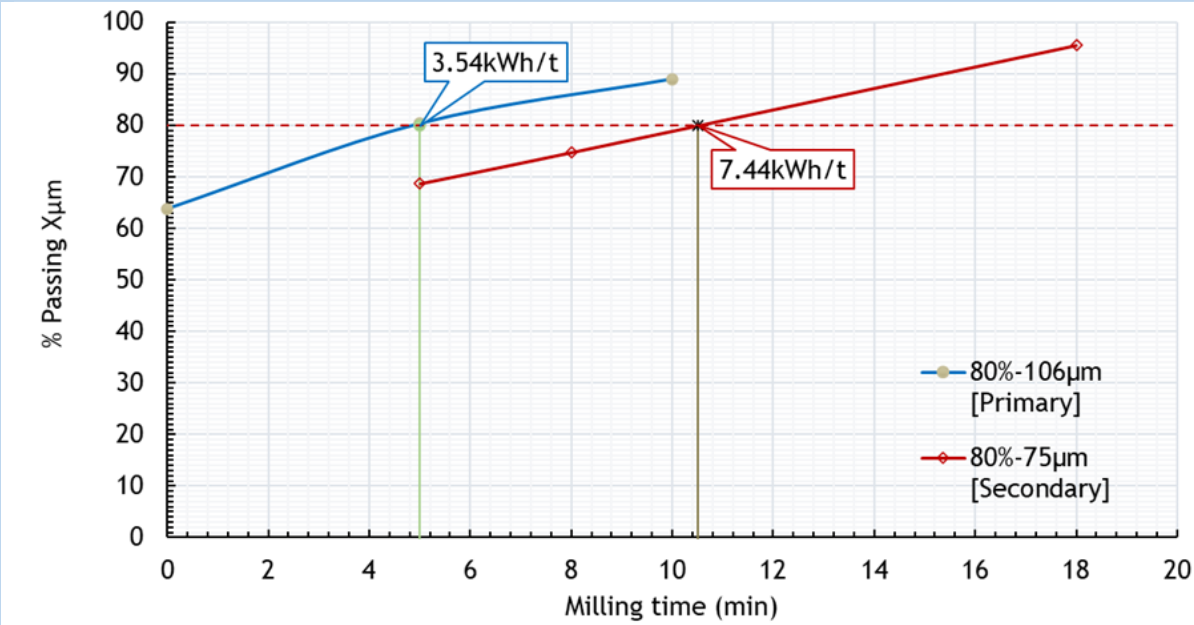
4.1.1 Head Chemical Analysis

The 4E head grade of the composite sample is 7.95 g/t (from 3 different constituent samples), which is the same as the current UG2 Mineral Resource 4E grade.

4.1.2 Milling Curve

Figure 23 illustrates the milling curves developed for the sample.

Figure 23: Primary Milling Curve (3.54 kWh/t) and Secondary Milling Curve (7.44 kWh/t)



Source: Suntech Geomet.

Primary Milling Curve (3.54 kWh/t) and Secondary Milling Curve (7.44 kWh/t)	January 2024

4.1.3 Locked Cycle Test

Figure 24 indicates the 2x Mill Float ("MF2") locked cycle flotation test protocol.

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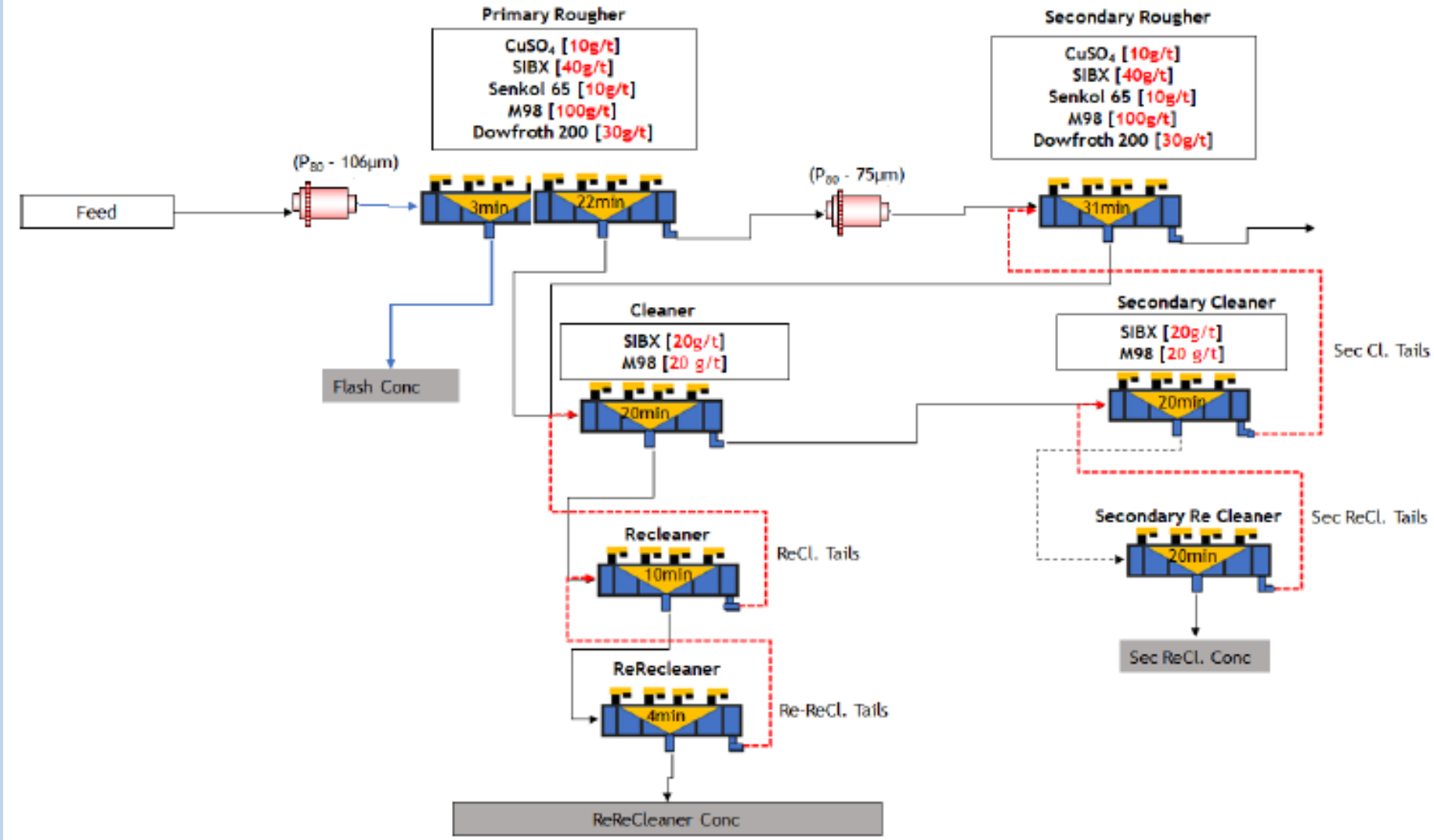
Figure 24: Locked Cycle Flotation Test Protocol



Source: Suntech Geomet.

Locked Cycle Flotation Test Protocol	January 2024

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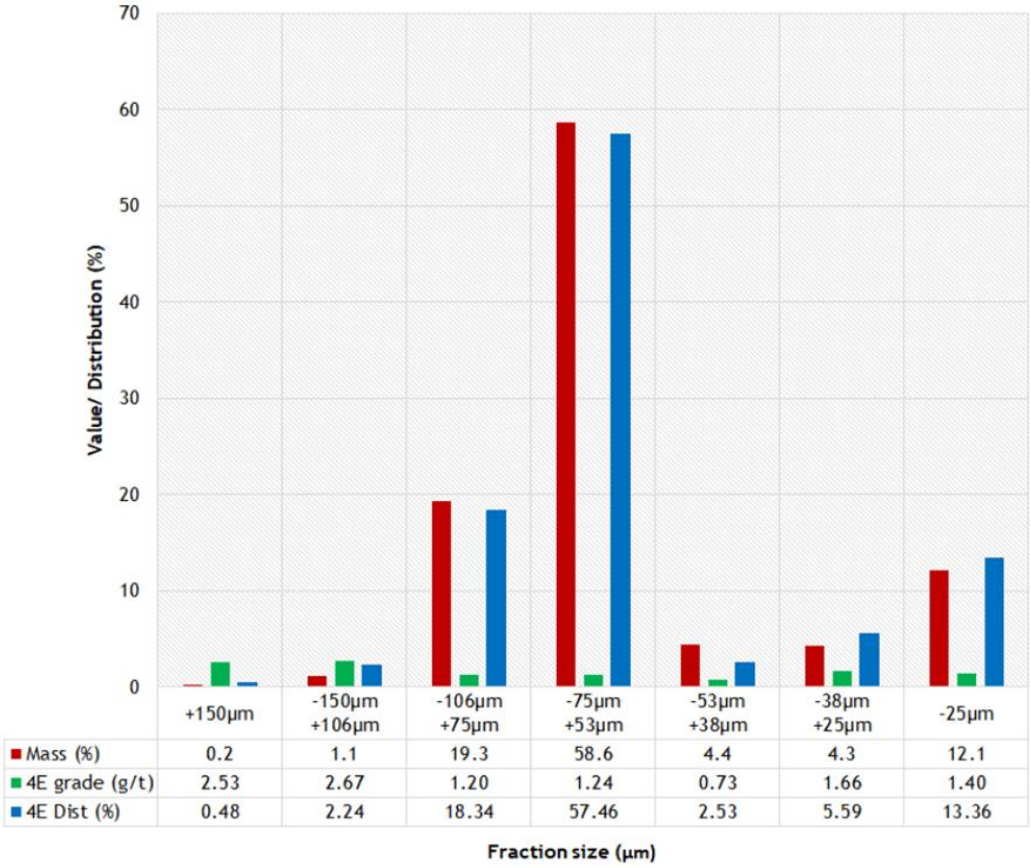
4.1.4 Tailing Particle Size Distribution

Figure 25 indicates that a secondary regrind finer than P_{80} -75 µm should be tested due to lock-up of approximately 58 %m/m PGM minerals in the -75 µm to +53 µm fraction of the tailings.

Figure 25: Distribution of Ore Particles in Tailings: Size by Mass (%m/m); Size by 4E Grade (g/t) and Size by 4E Distribution (%m/m)



	+150µm	-150µm +106µm	-106µm +75µm	-75µm +53µm	-53µm +38µm	-38µm +25µm	-25µm
Mass (%)	0.2	1.1	19.3	58.6	4.4	4.3	12.1
4E grade (g/t)	2.53	2.67	1.20	1.24	0.73	1.66	1.40
4E Dist (%)	0.48	2.24	18.34	57.46	2.53	5.59	13.36

Source: Suntech Geomet.

Distribution of ore particles in tailings: size by mass (%m/m); size by 4E grade (g/t) and size by 4E distribution (%m/m)	January 2024

Figure 26 illustrates that the 4E grade of 238 g/t obtained during the testwork is associated with a recovery of 80.5%. The relationship further illustrates that a lower grade is associated with a higher recovery. For instance, a recovery of 85% will provide a 4E grade of about 140 g/t.

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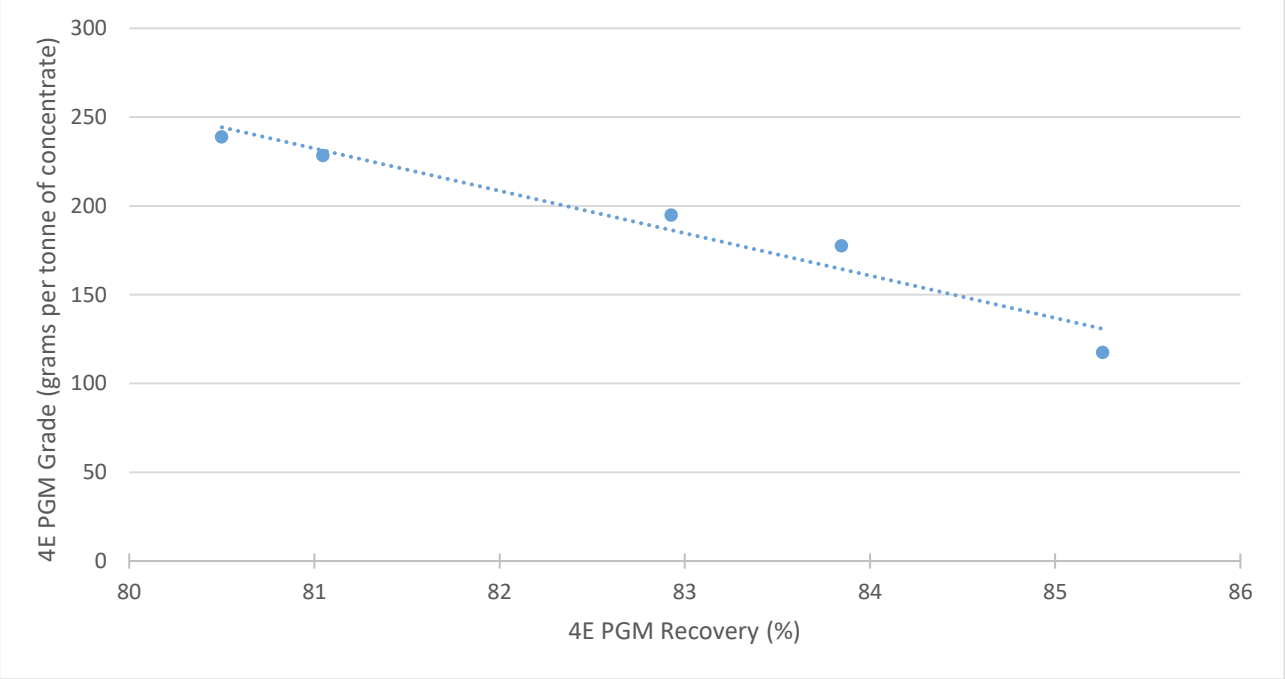
Figure 26: Grade-Recovery Relationship Obtained from Locked Cycle Test



4.1.5 Mineralogical Test Campaign

Table 7 shows that 97.4% of the PGM particles analysed are floatable and only 2.6% are unrecoverable via flotation. Middling is defined as a particle which exhibits a PGM mineral grain that is partly liberated and exposed and partly locked and unexposed.

Table 7: Floatability Index of Bengwenyama UG2 PGM Mineralogy Analysis

Particle Description	Flotation Rate	Mass Fraction %
Well exposed, coarse, liberated	Very fast floating	47.3
Well exposed, fine, liberated	Fast floating	28.1
Moderately exposed, coarse middlings		
Moderately exposed, fine middlings	Medium floating	9.3
Moderately exposed locked		
Poorly exposed middlings	Slow floating	12.7
Poorly exposed locked		
Not exposed	Unrecoverable	2.6
Total		**100**

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5 PROCESS PLANT

The PGM project is located very close to other, similar, PGM operations. The Bushveld Complex has been mined extensively for multiple decades for the extraction of PGM minerals from the UG2 reef. The standard technology has been established and has been optimised to the current state-of-the-art which requires an MF2 processing -infrastructure. After RoM is reduced in size via multiple stage crushing, primary grinding (ball milling) is applied to comminute the ore in the first instance to liberate the coarse fast-floating constituent of the ore, which is liberated to a high degree at approximately 106 µm.

In a conventional MF2 process plant, in the second instance of grinding, the tailings from the primary rougher, after first passing over several spirals to separate a gangue fraction, a PGM fraction and a chrome bearing fraction, is again milled in a secondary (regrind) ball mill to comminute the ore to a smaller size to enable flotation of the fine slow-floating PGM bearing minerals. The slow floating PGM minerals are not easily liberated in the primary mill, at a coarser size fraction, due to being locked in silicates and base metal sulphides.

The standard processing configuration required to separate chrome bearing minerals via gravity separation technologies, like spirals, is accomplished by processing the tailings of flotation from each instance over multiple spirals to utilise the density differential between the chrome minerals, PGM minerals and gangue bearing minerals, to establish separation. Several UG2 operations in proximity of the Bengwenyama location recover chrome bearing minerals via similar spiral gravity circuits.

The process plant has a conservative design capacity of 200 ktpm. A plant feed rate of 170 ktpm has been utilised for this study phase and is aligned with the planned RoM production. The RoM will be subjected to crushing operations to comminute the material. Classification will ensure the grinding section's primary ball mill receives feed sized at P_{100} -13 mm. The mill will further comminute the ore to a size of P_{80} -106 µm. Classification of the primary mill discharge will be performed via cyclone clusters to ensure the discharged ore size is within specification. The primary flotation circuit will consist of primary roughers where the fast-floating fraction is recovered to the concentrate thickener from various discharge points.

Tailings from the primary rougher section will be processed in a spiral circuit where the coarse chrome bearing minerals are recovered and a portion of gangue is separated from the coarse chrome fraction and the slow-floating PGM minerals fraction. The secondary ball mill will further comminute the slow-floating PGM ore to a size of P_{80} -75 µm. Classification of the secondary mill discharge will be performed via cyclone clusters to ensure the discharged ore size is within specification. The secondary flotation circuit will consist of secondary roughers, secondary cleaners, secondary recleaners, and secondary re-recleaners. Scavengers may also be considered subject to verification established by further testwork. The secondary flotation circuit will recover PGM concentrate to the concentrate thickener from various discharge points.

Tailings from the secondary rougher section will be processed in a spiral circuit where the fine chrome bearing minerals are recovered and separated from the gangue and the PGM fraction that is unrecoverable via flotation. These tailings will be thickened in the tailings thickener before being pumped to a TSF.

Figure 27 shows the process flow diagram of the proposed Bengwenyama process plant. The crushing section is not shown and will consist of a primary jaw crusher, a secondary cone crusher and two tertiary cone crushers that are operated in closed circuit with vibrating screens. Underflow from the tertiary screen constitutes feed to the primary ball mill.

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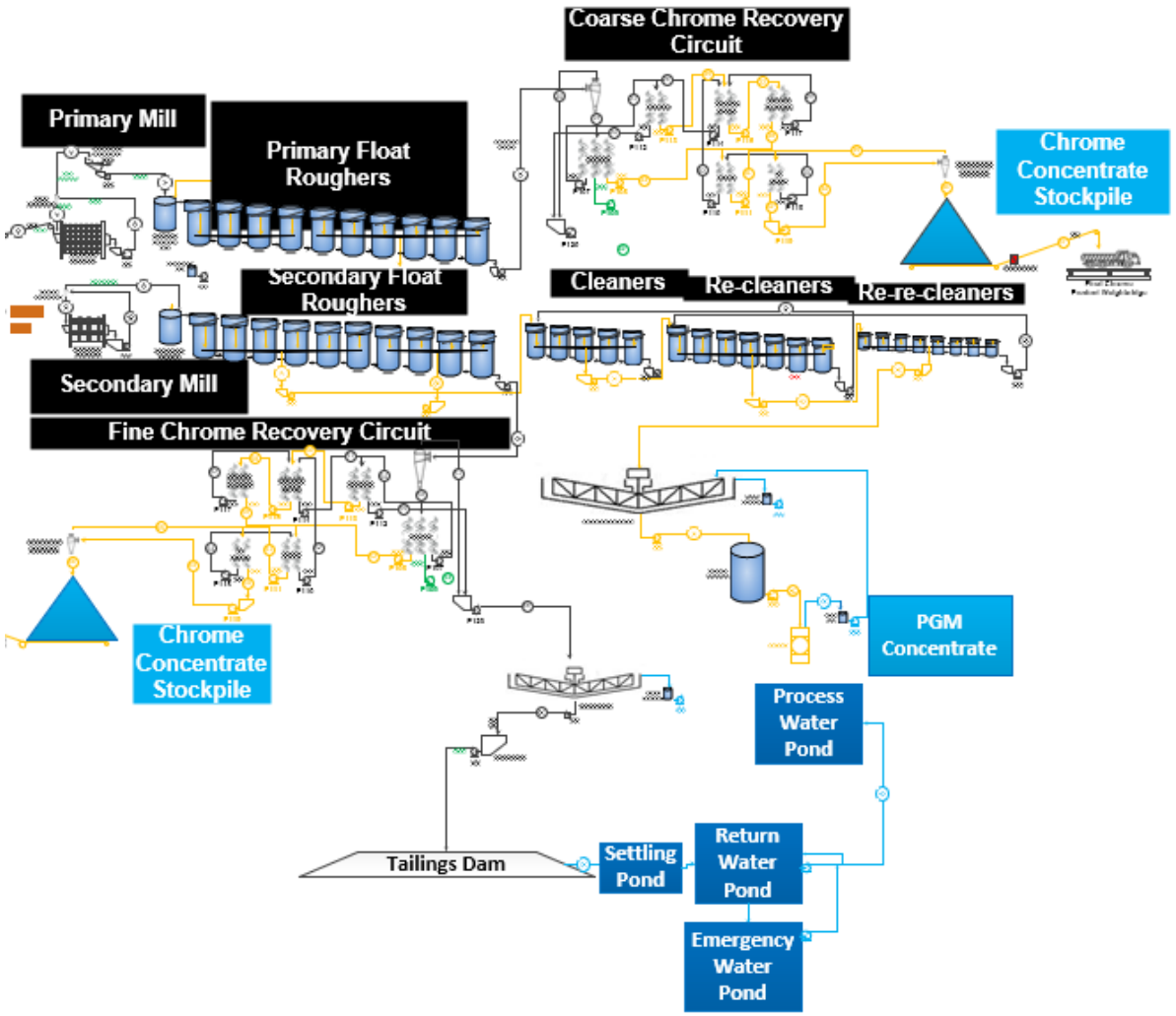
Figure 27: Current Bengwenyama Process Flow Diagram (Crushing Section Not Shown to Enhance Clarity)



Current Bengwenyama Process Flow Diagram (Crushing Section Not Shown to Enhance Clarity)	January 2024

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6 MINE SITE INFRASTRUCTURE AND SERVICES

6.1 Access & Security

The project is accessed via an established paved road network with the R555, which is a regional paved road, being the main route to the Project Area. The road heads northeast from the town of Middelburg. 27 km before reaching the town of Steelpoort, a paved D2484 district road on the left leads towards the Eerstegeluk farm where the Project is located. A dedicated access road of approximately 2 km will be constructed from the D2484 to provide access to the Project. Upgrades to existing roads and the construction of the new roads will facilitate reliable transport of consumable materials and equipment as well as safe transport of personnel to and from site.

Security and access control will consist mainly of fencing off sensitive/priority areas as well as establishing dedicated entry and exit points to ensure effective control of access to the mining operations and the process plant.

6.2 Power Supply

Power will be supplied to the project via a 132 kV overhead line that is connected to the national grid. The Merensky substation located 9 km northeast is the tie in point from which power will be supplied to the planned consumer substation of the project where power will be stepped down to 11 kV. The consumer substation must be constructed as this is a standard requirement from local power utility and will assist in the effective management of power to the site whilst also providing effective protection to the Eskom Merensky substation.

From the consumer substation power will be fed into the Bengwenyama distribution substations. These substations will be located close to the mine site and plant. Power will either be reticulated to high voltage loads or stepped down with various transformers to supply low voltage areas and equipment. Power will be reticulated and distributed via a combination of overhead lines, above ground and direct buried cables.

Synchronised back-up generators will feed into the Bengwenyama distribution substations, this is to ensure the ventilation fans, compressor unit and dewatering pumps systems and critical processing circuits are supplied with back-up power in the event of a power failure.

A full load list has been drafted and early indications for the total project power requirement is approximately 43 MVA.

Alternative power supply sources such as solar are being investigated in further study phases.

6.3 Water Supply & Management

Bulk water will be sourced from the local Lebalelo Water User Association pipeline that is located in close proximity (roughly 3.5 km from main points of consumption) to the project. This will be supplemented by groundwater from the underground workings and collected run-off water that will be contained as part of the general water management process of separating clean and dirty water on site.

Potable water will be sourced directly form the water supply scheme. A supply line will be installed from the project and tie into the existing main line. Water will be contained in provided reservoirs from where potable water will be supplied to both the surface infrastructure and underground workings after treatment to potable quality.

Service water will similarly be supplied from provided reservoirs fed by a supply line from the main Lebalelo pipeline.

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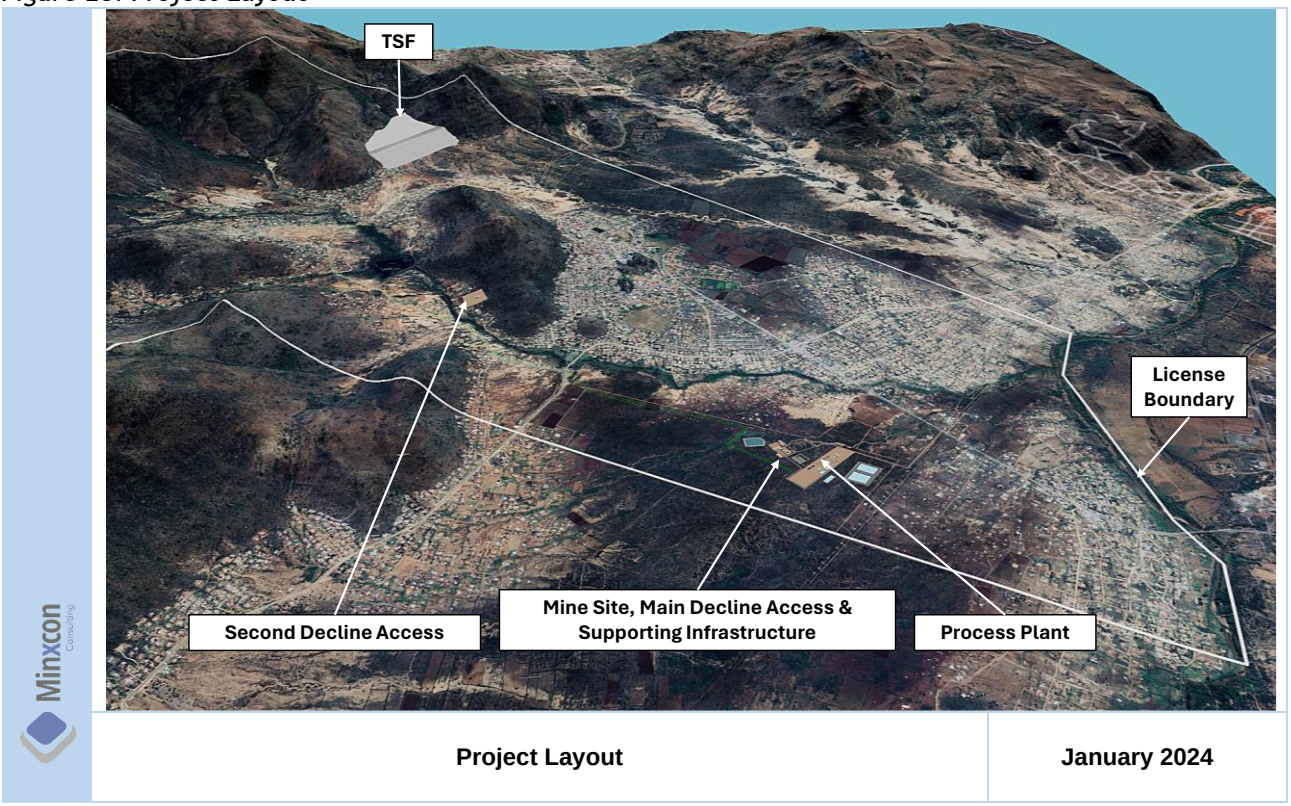
Early indications are that the total water requirement for the project will be approximately 150,000 m^3/month.

Surface water management infrastructure will be established with diversion and catchment trenches installed to divert clean surface run-off water away from the surface mining and process infrastructure areas and to catch and collect dirty run-off water within the surface mining and process infrastructure areas. The dirty runoff water will be collected for use as service water.

6.4 Site Layout/General Infrastructure

The general surface layout of the project is illustrated in Figure 28.

Figure 28: Project Layout



Allowance for non-processing infrastructure has been made and includes but are not limited to:-

- Security and access control facilities (Fencing, access control gates guardhouses etc);
- Administrative and management buildings and facilities;
- Change house, ablution and laundry facilities;
- Control room;
- Lamp room;
- Communication infrastructure and facilities;
- Emergency services facilities;
- Workshops, stores and laydown areas;
- Fuel storage and refuelling facilities;
- Mining magazine and explosives delivery facilities;
- Waste sorting and management facilities;
- Sewage treatment and management facilities;
- Bulk water supply infrastructure;
- Bulk power supply infrastructure; and

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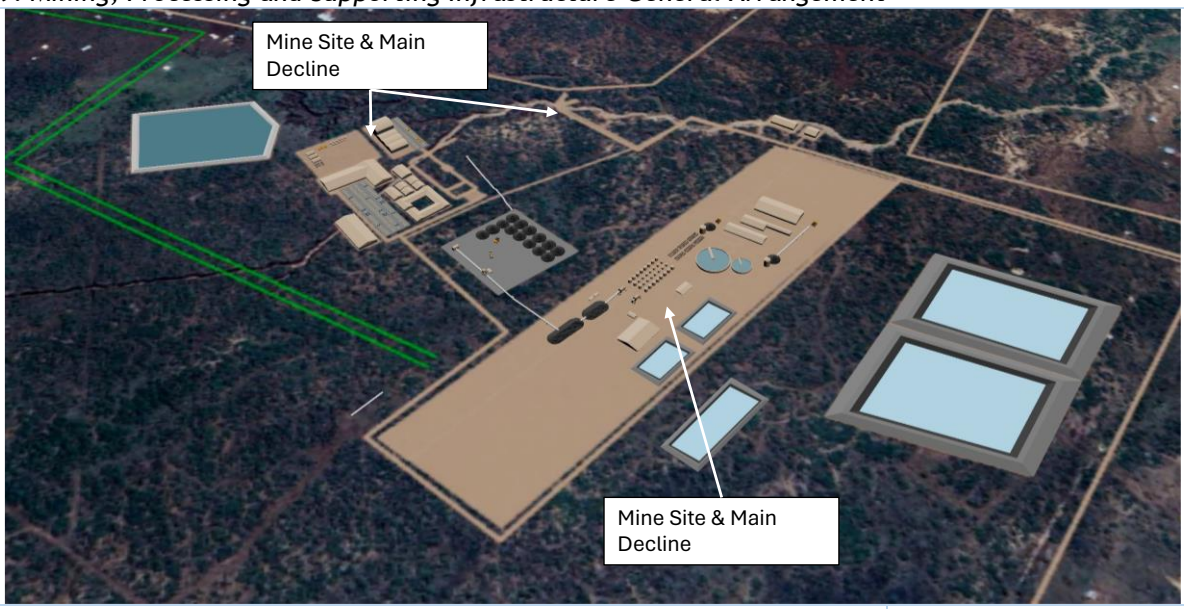
- Tailings Storage Facility.

The general arrangement of the, mining, processing and supporting infrastructure is illustrated in Figure 29.

Figure 29: Mining, Processing and Supporting Infrastructure General Arrangement



Mining, Processing and Supporting Infrastructure General Arrangement	**January 2024**

6.5 Tailing Storage Facility

Several potential locations for tailings storage facilities ("TSF") were evaluated across the project area, and Site 9 emerged as one of the preferred sites for the construction of the TSF for the project.

This site yielded favourable results, as it can accommodate tailings storage for the entire lifespan of the mine. Additionally, it presents a lower-risk option in terms of structural integrity and long-term closure considerations. Environmental considerations such as potentially reduced dust liberation also showed strongly positive for site 9 in the candidate site evaluation process.

Tailings experts, Tailex, have assisted in completing a conceptual TSF design. The Global Industry Standards on Tailings Management ("GISTM") requirements are utilised as the guiding principle in the design of the TSF.

The proposed site and anticipated design features of the facility include the following:

- Hill side impoundment type structure, with only one active engineered retaining wall, resulting significant slope stability factors and lower potential for run out failure consequences and potential.
- Downstream type engineered impoundment type wall for phases 1 -3, transitioning to upstream cyclone embankment for a fourth phase when required.
- Partially lined footprint (HDPE + clay barrier) class C base engineered barrier system, transitioning to steep hillside drainage system fulfilling requirements of the Department of Water and Sanitation ("DWS").
- Ability to design for either slurry discharge or filtered tailings (dry stack) deposition method on the same footprint and potential to transition from one to the other if required.

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- Maximum rate of rise of 2.5 meters per year near end of life of facility.
- Fully grassed side slopes at all times.
- Integrated silt trap and dedicated return water dam.
- Potential integrated clean water catchment system as possible improvement to community infrastructure.
- Alignment with current ICMM requirements.

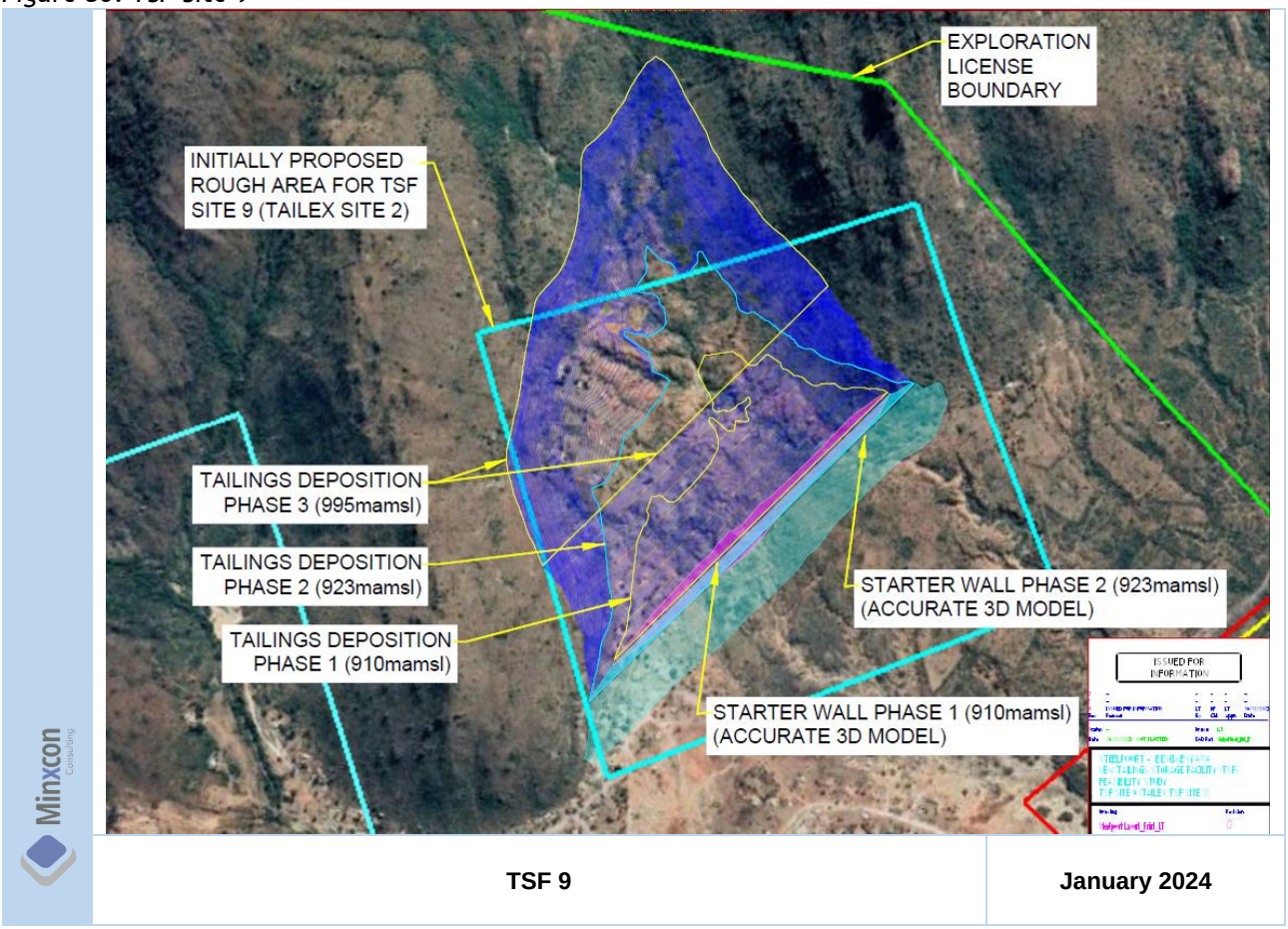
The TSF will be constructed in 4 Phases. The estimated capacity of each phase is listed in Table 8.

Table 8: TSF Phase Capacity

Phase	Unit	Capacity
Ph1	Mt	4.9
Ph2	Mt	10.4
Ph3	Mt	26.5
Ph 4	Mt	47.5
Total	**Mt**	**89.4**

The layout and phasing of the TSF is illustrated in Figure 30.

Figure 30: TSF Site 9



The location and 3D model of the TSF is illustrated in Figure 31.

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Figure 31: TSF Location and 3D Model

TSF Location and 3D Model	**January 2024**

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7 PROJECT IMPLEMENTATION

A preliminary development schedule has been compiled for the project. The main activities forming part of the schedule includes:-

- Pre-Feasibility Study ("PFS");
- Environmental Authorisation ("EA");
- Issue of Mining Right;
- Completion of required drilling (Resource infill, Metallurgical Testowork, Geotechnical and Hydrogeological);
- Feasibility Study ("FS") & Final Investment Decision ("FID");
- Mine Development;
- Construction; and
- Commissioning and Ramp-Up

The completion of the PFS and resource drilling is planned for the end of 2024. A 12 months period has been allowed for the Feasibility ("FS") and front-end engineering design ("FEED") starting early 2025.

A preliminary construction schedule has been developed based on an Engineering, Procurement and Construction Management("EPCM") basis for the various aspects of the project.

The initial schedule indicates a construction period of 36 months before plant commissioning. A large portion of this will take place concurrently with the development of the mine. Mine development will commence after one year of construction with first production planned after 36 months.

Further construction, specifically mining infrastructure, will continue as the underground mining footprint expands. TSF phases will also be constructed as storage capacity requirements increase over the LoM.

Lead times for critical equipment and long lead items have been provided for based on supplier recommendations and benchmarking from similar projects.

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8 OPERATIONS AND HUMAN RESOURCES

The mining and shared services labour compliment is shown in Table 9 and similarly, the processing plant labour compliment is indicated in Table 10.

Table 9: Mining and Shared Services Labour Compliment with Paterson Grading

Paterson Grade	Services	Engineering	Management & Admin	Production	Sub-Total
B1	250	236	0	857	1,343
B2	119	0	9	1,197	1,325
B4	15	58	14	243	330
B6	0	6	0	0	6
C1	15	0	2	0	17
C2	0	117	2	281	400
C3	16	0	4	0	20
C4	0	0	11	781	792
D1	0	0	4	0	4
D3	1	0	6	0	7
D4	1	0	2	0	3
E1	0	0	2	0	2
E2	0	0	1	0	1
Total	**417**	**417**	**57**	**3,359**	**4,250**
Distribution	**10**	**10**	**1**	**79**	**100**

Table 10: Processing Plant Labour Compliment with Paterson Grading

Paterson Grade	Engineering	Management & Admin	Production	Sub-Total
B1	4	-	8	12
B2	11	-	104	115
C1	-	-	4	4
C2	12	-	25	37
C4	2	1	-	3
C5	3	-	8	11
D2	-	1	-	1
D3	-	3	-	3
D4	-	2	-	2
E1	-	1	-	1
Total	**32**	**8**	**149**	**189**
Distribution	**17**	**4**	**79**	**100**

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9 ENVIRONMENTAL AND MINING APPROVALS

The rights to explore the Project Area are held by Miracle Upon Miracle Investments (Pty) Ltd ("MUM") via a Preferent Prospecting Right number LP30/5/1/1002PPR ("002PPR") granted in accordance with Section 104 of the Mineral and Petroleum Resources Development Act, No. 28 of 2002 ("MPRDA"). Preferent rights are granted to communities who are the registered owners of the land. The 002PPR is held in the name of MUM which is held 70% in the name of SPD, and 30% by Nurinox Investments (Pty) Ltd ("Nurinox"). Nurinox is fully represented by the Bengwenyama-ya-Maswazi Tribe ("Community"), who are the lawful occupants of the land.

The 002PPR encompasses the full extent of the two farms and is granted for the minerals PGMs, gold, copper, chrome, cobalt, silver and nickel. An MPRDA Section 22 mining right application, with simultaneous application for an Environmental Authorisation and Waste Management Licence in terms of the National Environmental Management Act, No. 107 of 1998 ("NEMA"), was submitted under file reference number LP30/5/1/2/2/10252MR on 29 September 2023 for the minerals PGMs, gold, copper, chrome, cobalt, silver and nickel over the Nooitverwacht and Eerstegeluk farms. The application was accepted by the Department of Mineral Resources and Energy ("DMRE") on 17 October 2023. The environmental scoping phase, including a formal public participation process ("PPP") was completed with the final environmental Scoping Report submitted in December 2023, for which the DMRE provided acknowledgement. The environmental Scoping Report is currently under review by the DMRE and under timeframes dictated by the NEMA, feedback is expected mid-February 2024. Upon approval of the Scoping Report, a 107-day Environmental Impact Assessment phase will commence. Following this, decision on the application and an appeals phase can be expected after 190 days.

Once the environmental Scoping Report is approved, the full environmental impact assessment ("EIA") phase will be triggered. The following specialist studies have been identified for the proposed project:-

- Ecological Assessment (Flora and Fauna);
- Aquatic Assessment;
- Wetlands Assessment;
- Soil and Agriculture Assessment;
- Hydropedological Assessment;
- Traffic Impact Assessment;
- Noise Impact Assessment;
- Visual Impact Assessment;
- Socio-Economic Assessment;
- Air Quality Assessment;
- Waste Classification;
- Geohydrological Assessment;
- Hydrological Assessment;
- Heritage Impact Assessment;
- Blasting Impact Assessment; and
- Palaeontological Study.

The majority of the specialists have already been mobilised with desktop and field studies underway. Environmental impacts of the operation are being assessed in this process. As part of this process, waste rock is being classified. Potential infrastructure sites, with alternative sites, have been identified based on social, environmental and production-proximity factors, and are being investigated in the EA process.

A Civil Engineer will be appointed in support of the Integrated Water Use Licence process.

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10 SOCIAL RESPONSIBILITY AND SUSTAINABILITY

SPD, through MUM, aims to develop sustainable and impactful shared value, supported by responsible ESG practices. This culture is already instilled in current activities, forming a strong foundation for continuation into mine development and operation.

10.1 Community Relationships

Southern Palladium places significant importance on close collaboration with the Community to ensure sustainable operations and deliver economic benefits to the region. The essence of the Community is deeply embedded in the development of the Project and Company. Above being core shareholders with board representation, MUM actively maintains open and frequent communication with officially elected representatives of the authorised Bengwenyama Traditional Council. The representatives are regularly included in progress discussions and consulted, with feedback considered and incorporated into project planning and impact assessments.

The Bengwenyama Traditional Council, responsible for community affairs, are embraced as the interface with the Community members occupying the Eerstegeluk and Nooitverwacht farms across seven villages. The Traditional Council and directors of Nurinox regularly hold community meetings across the villages to inform the Community about Project activities and dispel any potential misinformation.

Open public channels are established to disclose activities relevant to site activities and social investments. These include a dedicated Facebook page (https://www.facebook.com/SouthernPalladium) and half-yearly newsletters that are printed distributed freely across the farms. Community awareness of these channels is actively marketed by Community leaders.

Southern Palladium actively identifies and were possible participates in Community events. This includes sponsoring and attending local sports events and educational outings to the company sites.

By actively including the Community in the Project developments from exploration to planning, openly communicating activities, and participating in Community initiatives MUM maintains a strong relationship with the Community. The above structures are well-established and will be preserved throughout the further developments of the Project. As Project activities expand, opportunities for improved structures and channels will be identified and developed.

10.2 Socio-Economic Impact

In 2023, Southern Palladium initiated and completed a socio-economic survey across the seven villages to determine baseline information in support of planning. The planning is separated into the legislative requirement for a Social and Labour Plan (“SLP”) in support of a mining right, and, moreover, into a Social Upliftment and Development Plan (“SUDP”). The SUDP intends to provide a framework for the Community to implement and manage initiatives beyond the scope of the SLP, securing empowerment and upliftment in parallel with and far beyond the life of mine.

The survey was managed and undertaken by elected members of each village, the total extent of which extends beyond the licence area. Training and equipment were provided to a Community resident to capture the data. Over 400,000 data points were captured on the licence area farms and neighbouring village areas, with key information was completed from over 3,400 household and 350 business surveys, ~85% of which occur within the licence farms. This core baseline data which will support both the SUDP and the Socio-Economic Assessment for the EIA. SLP development also considers projects that will fill impact gaps to support employee and Community well-being.

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Southern Palladium has adopted to preferentially procure skills, services and other resources from the Community. This is currently implemented for the exploration activities, where a team of local residents are trained and employed as technical personnel, and a number of key service providers are sourced from the Community through an official tender process. Security, diesel provision, sanitation and other services are sourced locally. The exploration camp is also set up at a site rented from the Community with buildings renovated by Southern Palladium.

Continuing this preferential procurement culture, the village survey data will also be utilised to identify core available skills, services and other resources from the Community for the planned mine development and operational activities. Southern Palladium has committed to continue to open new direct opportunities for local entrepreneurs, SMMEs and residents in the Community. When in peak production, the planned mine will open over 4,000 jobs to the area. Although the properties are neighboured by mining operations, the Bengwenyama Mine development is anticipated to stimulate further lateral business development.

10.3 Environmental Stewardship

Mine development and production planning acutely consider aspects of the biophysical environment. SPD plans to actively implement and promote conservation and reduce reliance on natural resources such as water. Efficient waste and water management are core to the company, aiming to be a responsible steward of the Earth's resources. Site planning and optimisation aim to achieve closed water systems, reduced waste generation, responsible waste disposal and pollution control.

Desktop environmental assessments linked to social assessments have identified areas for potential site establishment, or areas of elimination for site planning. Following the results of the specialist studies, activities will be optimised and where applicable, impact areas will be spatially adjusted to preserve scientifically identified environmentally sensitive areas. Planning continues to be conscious of minimising the environmental impact of the operations by minimising ecological footprints and promoting sustainable resource management. Measures will be implemented to mitigate negative impacts and alternatives that promote environmental stewardship are preferred. Notably, sustainability is integrated into the scoping study and will be further refined in the pre-feasibility stage.

Awareness of these sentiments is already embedded in the exploration activities, whereby drill sites are rehabilitated to original state, topsoil removal is limited, water recycling is conducted during drilling, waste is responsibly disposed of, and habitats are considered in drillhole planning. Ongoing site monitoring allows for early risk identification and remediation. Environmental assessments are made during the prospecting operations to mitigate impacts as they occur.

10.4 Carbon Intensity

The use of more efficient and lower carbon intensity sources (including renewable energy sources), innovative technologies and practices are considered in the technical planning to reduce energy consumption. Energy specialists have been appointed and are currently conducting a carbon neutral energy study. The study includes investigation into the establishment of a solar PV project on the properties. Carbon intensity forecasts assessing greenhouse gas emissions per production factors are being undertaken and will be refined in the pre-feasibility stage. Utilising this, Southern Palladium is assessing the impacts of the future operation on climate change. Conversely, assessments are underway to review the impacts of climate change on the operation.

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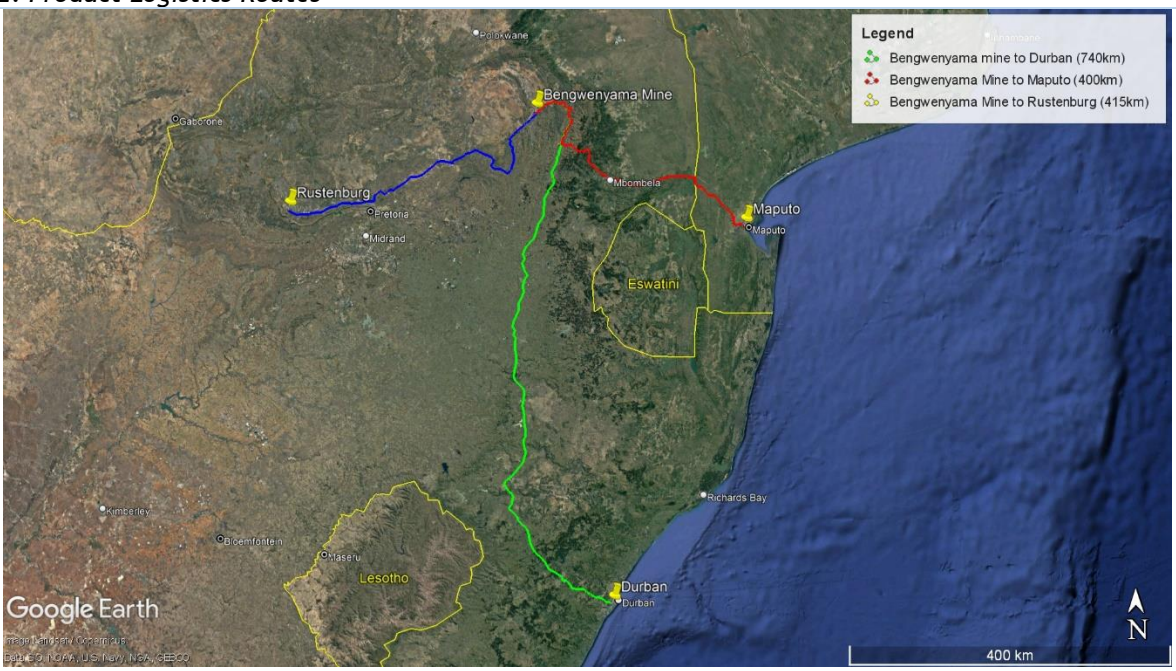
11 PRODUCT LOGISTICS

There is a well-established downstream refining process for PGM concentrate within South Africa, and well-established terms are in place. Most smelters processing the concentrate from the Eastern and Western Limbs are situated in Rustenburg, with almost all the concentrator product in the area being transported by truck to Rustenburg. The Project PGM concentrates are expected to be processed at one of these facilities. The distance from the Project to Rustenburg is approximately 415 km via tarred road.

The Chrome ore concentrate, for the purpose of the Scoping Study, will be trucked to either Maputo or Durban port and sold on the open export market. The distance to Maputo is approximately 400 km and the distance to Durban is approximately 740 km. There is potential to treat the chrome ore concentrate at a local chrome smelter as there are several in close proximity to the Project. This option will be investigated in the next phase of study.

Figure 32: Product Logistics Routes



Product Logistics Routes	January 2024

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12 MARKET & PRICING ASSUMPTIONS

12.1 Economic Input Parameters

Table 11 illustrates the forecasts up to 2028 along with the long-term forecast used in the financial model in real terms. It should be noted that only the long-term price will contribute to revenue. The price forecasts and exchange rate forecasts are based on the median of various banks, brokers and analyst forecasts and converted to real terms. From 2029 onwards a constant long-term forecast is applied for the remaining LoM. The inflation rate was sourced from International Monetary Fund ("IMF"). A constant Chrome ore concentrate (42%) price is assumed at USD285/t CIF China based on the Spot price as at the effective date. The Ruthenium and Iridium prices are also constant based on the Spot price as at the effective date.

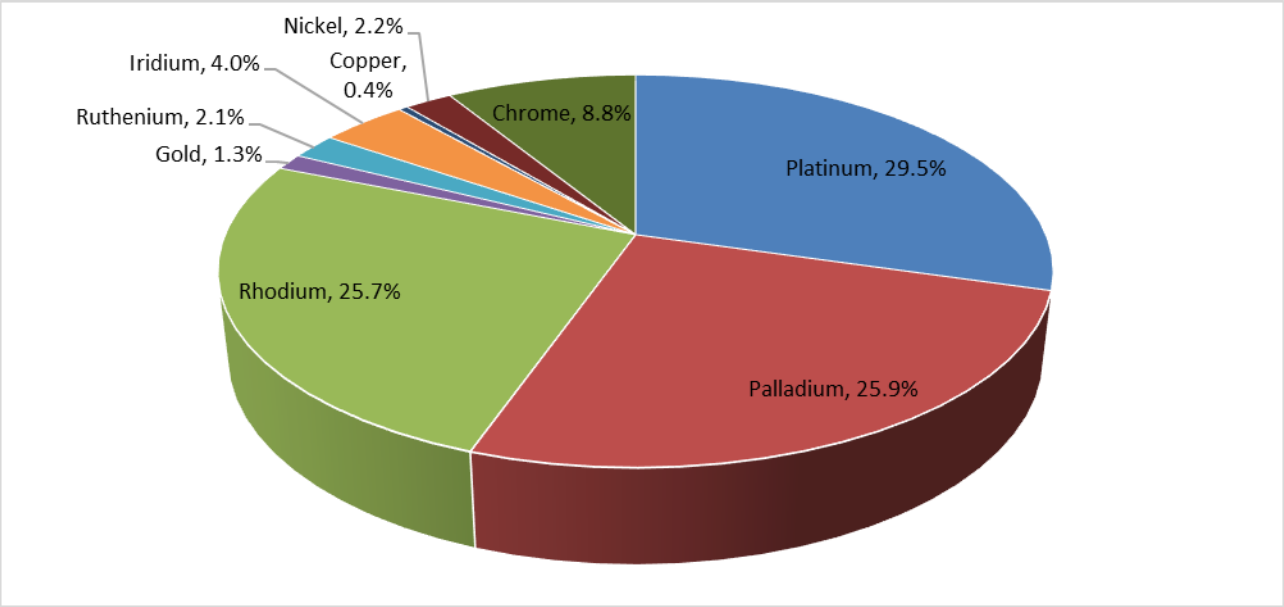
Table 11: Macro-economic Forecasts and Commodity Prices over the Life of Project

Commodity	Unit	Basis	2024	2025	2026	2027	2028	Long-term
Platinum	USD/oz	Real	1,048	1,168	1,218	1,229	1,240	1,200
Palladium	USD/oz	Real	1,113	1,068	991	953	985	1,100
Rhodium	USD/oz	Real	5,555	5,931	6,305	6,653	5,000	5,000
Gold	USD/oz	Real	2,010	1,935	1,816	1,741	1,766	1,800
Ruthenium	USD/oz	Real	465	465	465	465	465	470
Iridium	USD/oz	Real	5,000	5,000	5,000	5,000	5,000	5,000
Chrome Ore Conc. 42%	USD/t	Real	285	285	285	285	285	285
Copper	USD/t	Real	8,552	8,688	8,600	8,620	8,332	8,200
Nickel	USD/t	Real	18,200	18,585	19,111	18,797	16,952	18,500
Exchange Rate	ZAR/USD	Real	18.23	17.62	18.19	18.52	18.90	18.90

Sources: Consensus Economics, Sieberana Research, Minxcon

Figure 33 illustrates the revenue contribution by each metal as a percentage of the total revenue. The three largest contributors at forecast prices are platinum, palladium and rhodium, respectively. The smallest contributors are copper, gold, ruthenium and nickel, respectively.

Figure 33: Revenue Contribution by Metal



An Optimistic View scenario was completed to test the Project sensitivity to optimistic prices and exchange rates. Constant prices were applied over the LoM based on internal optimistic views for the 4E metals, chrome ore and the exchange rate. The other metal prices considered are the long-term prices as per the

price forecast. The Optimistic View prices are detailed in Table 12. The results of the Optimistic View scenario are detailed in Table 25 in the Sensitivity Analysis Section 15.3.4.

Table 12: Commodity Prices for Optimistic Scenario

Commodity	Unit	Basis	Optimistic view
Platinum	USD/oz	Constant	1,450
Palladium	USD/oz	Constant	1,350
Rhodium	USD/oz	Constant	7,000
Gold	USD/oz	Constant	2,100
Ruthenium	USD/oz	Constant	470
Iridium	USD/oz	Constant	5,000
Chrome Ore Concentrate 42%	USD/t	Constant	300
Copper	USD/t	Constant	8,200
Nickel	USD/t	Constant	18,500
Exchange Rate	ZAR/USD	Constant	20.00

12.2 Net Smelter Return/Payability

Junior miners have for many years sold PGM concentrates to smelters/refiners within South Africa, with the market and terms well established. The payabilities applied in the financial model were benchmarked from other mines selling PGM concentrates through a third-party refiner. Chrome ore concentrate (42%) will be sold on the open market, with the financial model assuming export sales. The payabilities applied detailed in Table 13.

Table 13: Payabilities

Commodity	Unit	Payability
Platinum	%	86%
Palladium	%	86%
Rhodium	%	86%
Gold	%	86%
Ruthenium	%	55%
Iridium	%	45%
Osmium	%	0%
Copper	%	68%
Nickel	%	73%
Chrome	%	100%

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13 CAPITAL COST ESTIMATE

Capital costs for the mining, shared and processing infrastructure and facilities of the Bengwenyama project has been estimated. The costs are based on the infrastructure, facilities and equipment required for an underground mining operation with a production rate of 170 ktpm. This includes but is not limited to:

- Access;
- Bulk services (Power and Water);
- Surface and Underground mining infrastructure and facilities;
- Process Plant and supporting infrastructure;
- Tailings storage facility;
- General supporting infrastructure; and
- EPCM.

The capital expenditure for the Project over the LoM is subdivided into mining, plant and shared infrastructure capital, as seen in Table 14. The study capital costs estimates are assessed to have an accuracy of ±30%. The total initial capital for the Project, calculated as direct capital in years zero to three (year first metal is produced), is estimated at ZAR6,535 million or USD346 million excluding contingencies and ZAR7,696 million or USD408 million including contingencies. Ongoing capital is defined as direct project capital after year 3. Stay in business capital or sustaining capital consists of renewals and replacement costs over the LoM. A 20% contingency has been applied on all direct capital (initial and ongoing).

Table 14: Project Capital Expenditure

Capital Expenditure	ZARm	USDm
Initial Capital		
Direct Mining Capital	1,408	75
Capitalised Development	973	52
Plant Capital	1,872	99
TSF Capital	435	23
Shared Infrastructure Capital	1,848	98
Contingency	1,161	62
Total Initial Capital	**7,696**	**408**
Ongoing Capital		
Direct Mining Capital	181	10
Capitalised Development	897	48
Plant Capital	-	-
TSF Capital	676	36
Ongoing Direct Capital	-	-
Contingency	216	11
Total Ongoing Capital	**1,969**	**104**
Stay-in-Business Capital		
Stay in Business Mining Capital	6,377	338
Stay in Business Plant Capital	1,285	68
Total Stay-in-Business Capital	**7,662**	**406**

Figure 34 and Figure 35 illustrate the capital schedule over the LoM in ZAR terms and USD terms, respectively.

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Figure 34: Project Capital Schedule – ZAR Terms

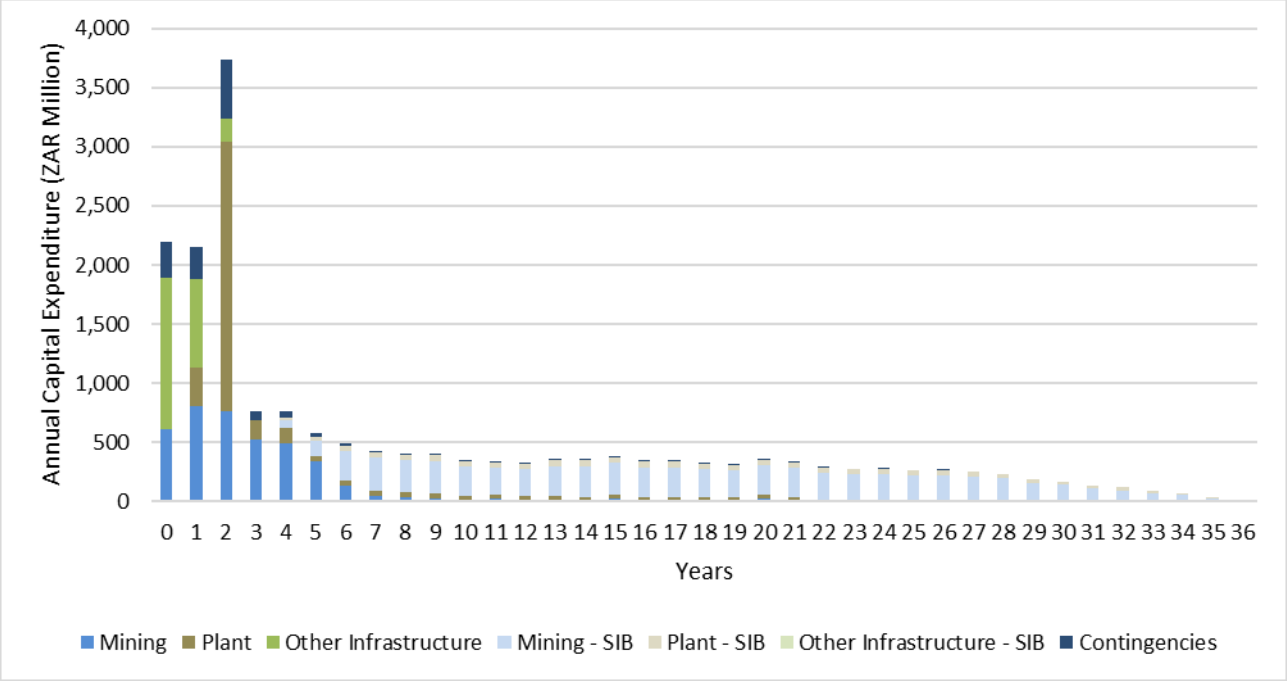
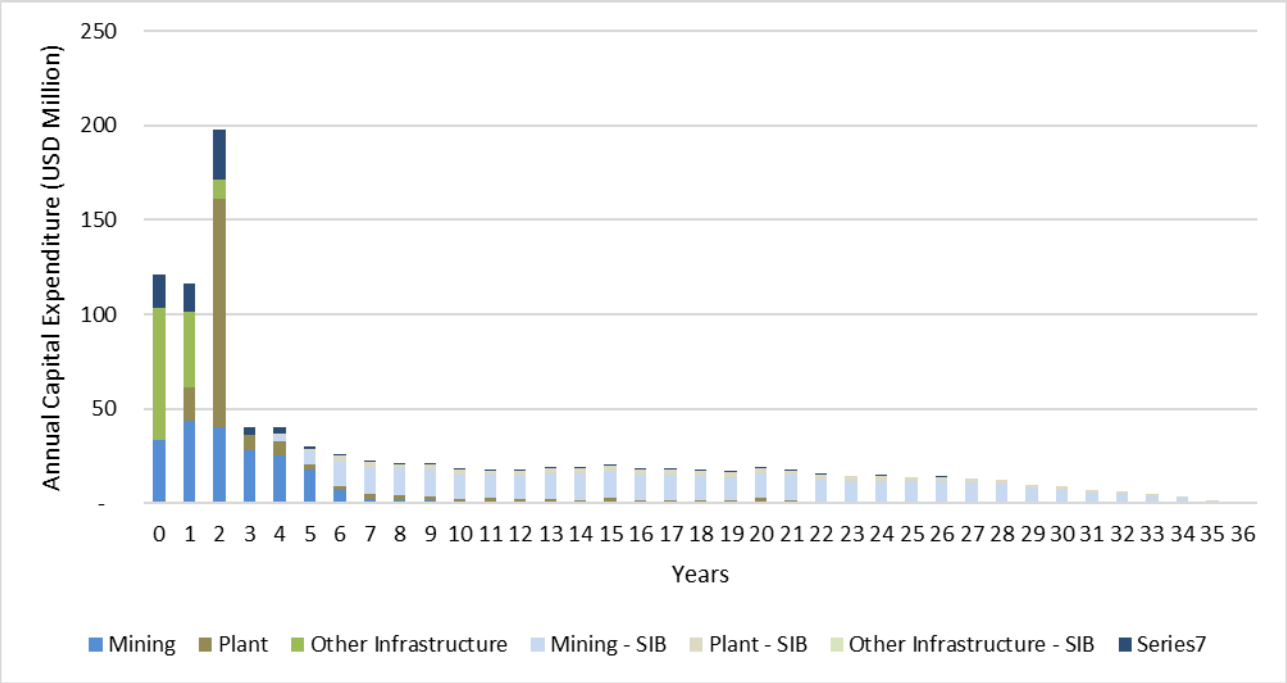


Figure 35: Project Capital Schedule – USD Terms



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14 OPERATIONAL COST ESTIMATE

14.1 Operating Costs

The Minxcon first-principles activity-based cost model was used to calculate operating costs for the underground and the processing operations. The cost model utilises the mine and engineering design criteria and production schedule inputs to derive cost rates for the mining, engineering and processing activities.

The costs for labour, equipment, consumables, services and utilities have been sourced from quotations, actual industry stores costs, industry rates and utility rates. Where costs could not be obtained from these sources, benchmarking with similar-sized projects and operations was conducted and historical costs escalated. The study operating costs estimates are assessed to have an accuracy of ±30%.

The weighted average operating cost summary per milled tonne is detailed in Table 15.

Table 15: Operating Cost Summary

Description	Unit	ZAR	USD
Mining	Cost per t	1,585	84.0
Processing	Cost per t	320	17.0
Other	Cost per t	413	21.9
Off-mine Overheads	Cost per t	17	0.9
Total	**Cost per t**	**2,335**	**123.7**

Table 16 further details the operating cost breakdown as applied in the financial modelling.

Table 16: Operating Cost Details

Description	Unit	ZAR	USD
Mining Fixed			
Total Mining Fixed	Cost('000)/Month	1,513	80.2
Mining Variable			
Stoping	Cost per t	1,513	80.2
Raise Development	Cost per m	14,881	788.6
Haulage Development	Cost per m	29,537	1,565.3
Decline Development	Cost per m	40,169	2,128.7
ASG Development	Cost per m	12,341	654.0
Fleet Lease*	Cost per Ore t	62.0	3.3
Other Mining	Cost per Ore t	5.7	0.3
Processing Fixed			
Total Processing Fixed	Cost('000)/Month	8,555	453.4
Processing Variable			
Total Processing Variable	Cost per Ore t	238	12.6
Technical & Shared Services Fixed			
Overheads	Cost('000)/Month	4,093	216.9
Engineering	Cost('000)/Month	7,634	404.6
Technical & Shared Services Variable			
Engineering Variable	Cost per Ore t	98	5.2
Regulatory			
Total Regulatory	Cost('000)/Month	61,855	3,277.9
Sales			
PGM Conc. Transport	Cost/Conc. t	924	49.0
Chrome Conc. Logistics	Cost/Conc. t	1,393	73.8
Chrome Conc. Selling Costs	% of Cr Revenue		5%
Corporate Costs			
Total Corporate Costs	Cost('000)/Month	2,000	106.0

Note: * Fleet lease cost has a payment schedule over 11 years. Cost presented calculated as total cost over the ore tonnes for first 11 years.

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15 FINANCIAL ANALYSIS

The scope of this evaluation exercise was to determine the financial viability of mining the UG2 reef of the Bengwenyama Project. This was done by using the Discounted Cash Flow ("DCF") method on a Free Cash Flow to the Firm ("FCFF") basis, to calculate the NPV or intrinsic value of the Project in both ZAR and USD real terms.

A company has different sources of finance, namely common stock, retained earnings, preferred stock and debt. Free cash flow is based on either Free Cash Flow to Equity ("FCFE") or FCFF. FCFF is the cash flow available to all the firm's suppliers of capital once the firm pays all operating expenses (including taxes) and expenditures needed to sustain the firm's productive capacity. The expenditures include what is needed to purchase fixed assets and working capital, such as inventory. FCFE is the cash flow available to the firm's common stockholders once operating expenses (including taxes), expenditures needed to sustain the firm's productive capacity, and payments to (and receipts from) debt holders are accounted for. Therefore, FCFF minus Nett Debt = FCFE.

The NPV is derived from post-tax, and pre-debt real cash flows, after considering operating costs, capital expenditures for the mining operations and the loading arrangement, and, where applicable, using forecast macro-economic parameters.

The project considers the mining of the UG2 Reef recovering and selling 6E metals, base metals (Copper and Nickel) and Chrome ore concentrate. Currently, osmium is not being considered as part of the economically recoverable metals.

15.1 Financial Parameters

15.1.1 Discount Rate

The company internal hurdle rate of 8% was utilised as the preferred discount factor the Project in real terms, as per Client's request. The Project NPV is also shown at various discount rates to demonstrate the sensitivity to the applied discount rate.

15.1.2 Saleable Product

The annual saleable 6E ounces per year is illustrated Figure 36. The average 6E recovery over the LoM is 81% with an average recovered 6E grade of 5.33g/t.

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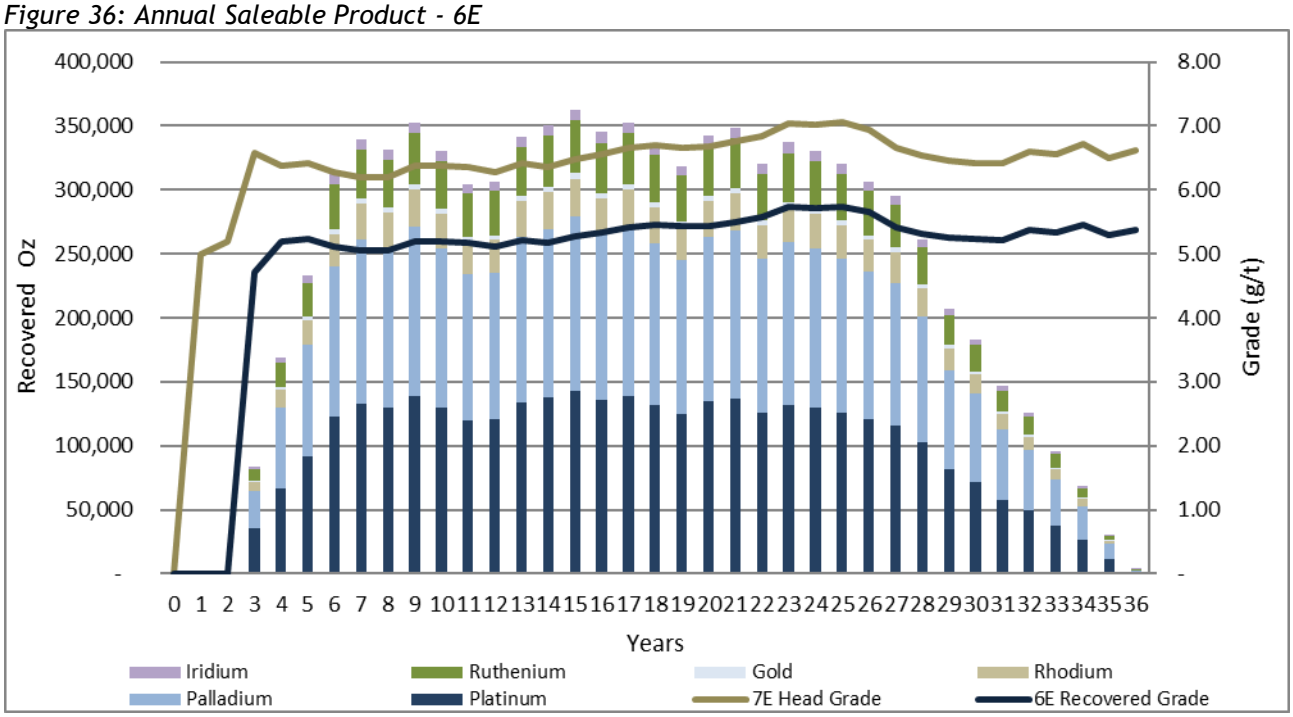
Figure 36: Annual Saleable Product - 6E



Note: 7E includes osmium of approximately 0.11g/t. The recovered 6E excludes the osmium which was not considered economically recoverable as part of this study.

A production breakdown of the tonnes and ounces in the LoM are displayed in Table 17.

Table 17: Production Breakdown in Life of Mine

Item	Unit	Bengwenyama
Total Tonnes Mined	kt	51,896
Total 4E Oz in Mine Plan	oz	9,033,561
Total 7E Oz in Mine Plan*	oz	10,934,273
Platinum Recovered	oz	3,495,689
Palladium Recovered	oz	3,341,940
Rhodium Recovered	oz	731,457
Gold Recovered	oz	106,179
Ruthenium Recovered	oz	1,003,953
Iridium Recovered	oz	217,660
4E Grade Delivered to Plant	g/t	5.41
4E Recovered grade	g/t	4.60
4E Yield/Recovery	%	85%
Total 4E Oz Recovered	oz	7,675,265
7E Grade Delivered to Plant*	g/t	6.55
6E Recovered grade	g/t	5.33
6E Yield/Recovery	%	81%
Total 6E Oz Recovered	oz	8,896,877
Copper Recovered	kt	9.73
Nickel Recovered	kt	20.0
Chrome Ore Concentrate 42% Produced	kt	3,767

Note: 7E includes osmium of approximately 0.11g/t. The recovered 6E excludes the osmium which was not considered economically recoverable as part of this study.

15.1.3 Financial Cost Indicators

Costs reported for the Project are displayed per milled tonne, per recovered 4E ounce as well as per recovered 6E ounce in Table 18. It should be noted that costs are inclusive of contingencies (5% on operating costs and 20% on the capital expenditure).

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Table 18: Project Cost Indicators (Weighted Average over Life of Mine)

Description	Unit	Value
Net Turnover	**ZAR/Milled tonne**	**4,451**
Mine Cost	ZAR/Milled tonne	1,585
Plant Costs	ZAR/Milled tonne	320
Other Costs	ZAR/Milled tonne	413
Royalties	ZAR/Milled tonne	221
Adjusted Operating Cost	**ZAR/Milled tonne**	**2,539**
Sustaining Capex	ZAR/Milled tonne	148
Rehabilitation	ZAR/Milled tonne	3
Off-Mine Overheads	ZAR/Milled tonne	17
All-in Sustaining Cost (AISC)	**ZAR/Milled tonne**	**2,706**
Non-Sustaining Capex	ZAR/Milled tonne	186
Non-Current Costs	ZAR/Milled tonne	-
All-in Cost (AIC)	**ZAR/Milled tonne**	**2,892**
EBITDA*	ZAR/Milled tonne	1,896
EBITDA Margin	%	43%
4E oz Recovered	oz	7,675,265
Net Turnover	**USD/4E oz**	**1,595**
Mine Cost	USD/4E oz	568
Plant Costs	USD/4E oz	115
Other Costs	USD/4E oz	148
Royalties	USD/4E oz	79
Adjusted Operating Cost	**USD/4E oz**	**910**
Sustaining Capex	USD/4E oz	53
Reclamation	USD/4E oz	1
Off-Mine Overheads	USD/4E oz	6
All-in Sustaining Cost (AISC)	**USD/4E oz**	**970**
Non-Sustaining Capex	USD/4E oz	67
Non-Current Costs	USD/4E oz	-
All-in Cost (AIC)	**USD/4E oz**	**1,036**
EBITDA	USD/4E oz	679
6E oz Recovered	oz	8,896,877
Net Turnover	**USD/6E oz**	**1,376**
Mine Cost	USD/6E oz	490
Plant Costs	USD/6E oz	99
Other Costs	USD/6E oz	128
Royalties	USD/6E oz	68
Adjusted Operating Cost	**USD/6E oz**	**785**
Sustaining Capex	USD/6E oz	46
Reclamation	USD/6E oz	1
Off-Mine Overheads	USD/6E oz	5
All-in Sustaining Cost (AISC)	**USD/6E oz**	**836**
Non-Sustaining Capex	USD/6E oz	58
Non-Current Costs	USD/6E oz	-
All-in Cost (AIC)	**USD/6E oz**	**894**
EBITDA	USD/6E oz	586

Note: 4E costs were included for comparison with mines reporting only 4E oz.

The Bengwenyama Project is estimated to cost in the lower quartile of the PGM cost curve (R. Hochreiter, 2023) as illustrated in Figure 37. The 6E AISC of the Project is estimated between that of Booysendal and Tharisa.

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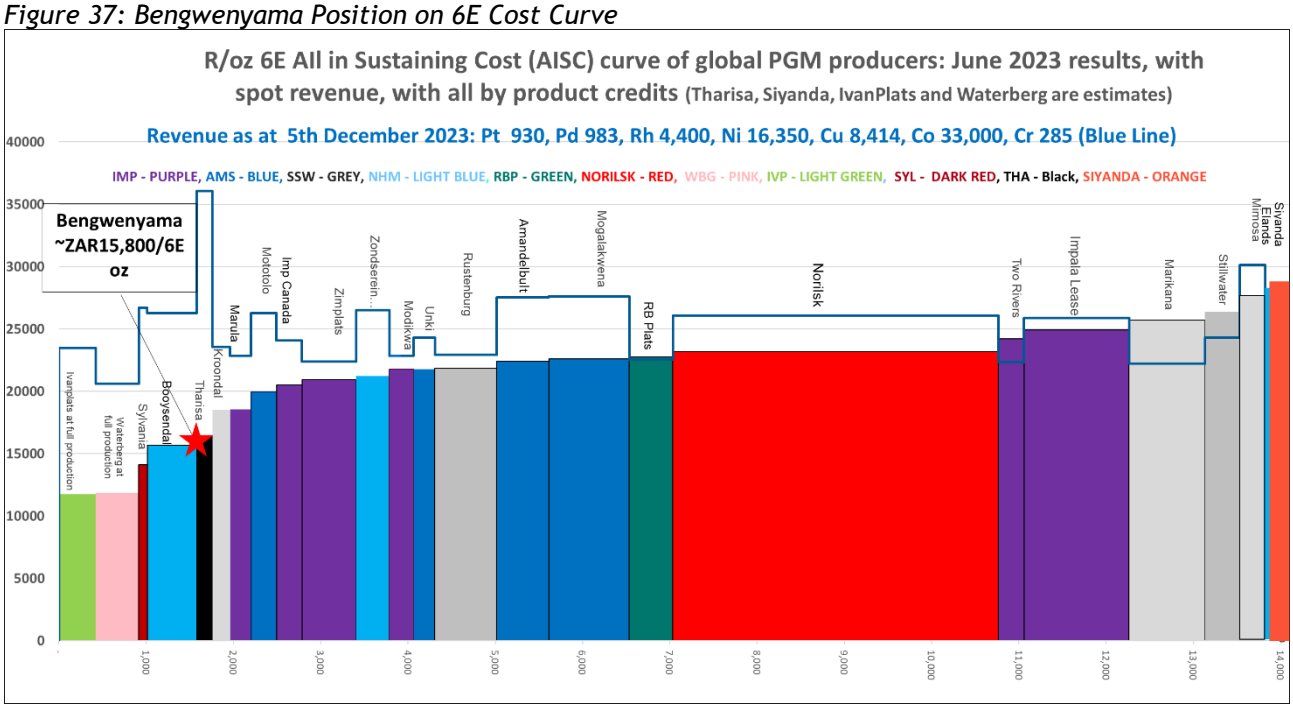
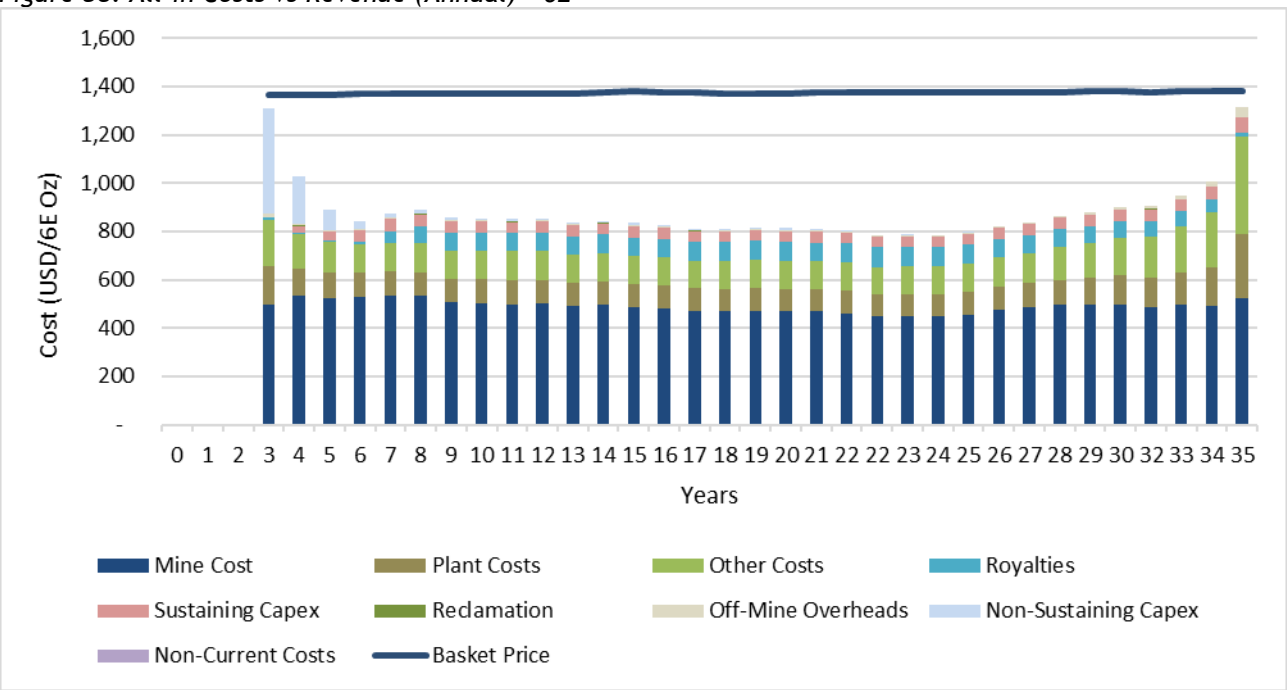
Figure 37: Bengwenyama Position on 6E Cost Curve



Source: Adapted from Rene Hochreiter (NOAH Capital Markets & Sieberana Research, 2023)

The AIC per recovered 6E ounce for the Project together with the 6E equivalent Basket price that was used in the LoM is displayed in Figure 38 on an annual basis.

Figure 38: All-in Costs vs Revenue (Annual) - 6E



The AISC per recovered 4E ounce for the Project together with the 4E equivalent Basket price that was used in the LoM is displayed in Figure 39 on an annual basis.

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Figure 39: All-in Sustaining Costs vs Revenue (Annual) - 6E

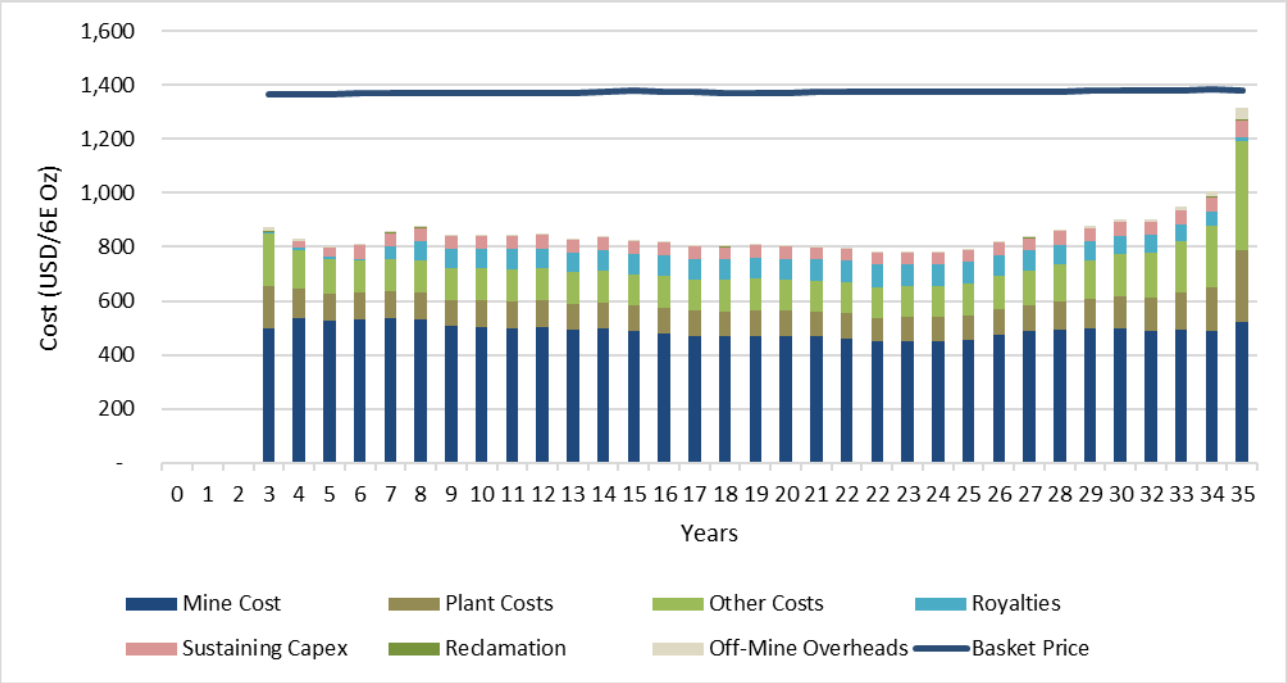
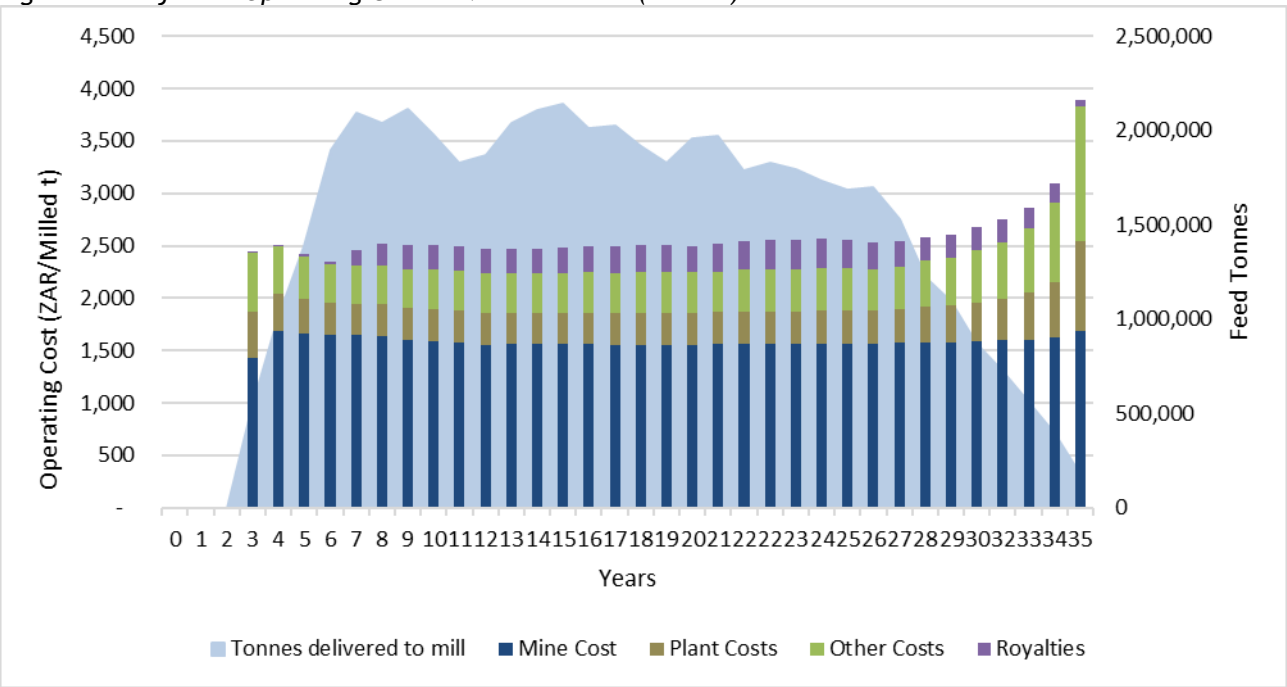


Figure 40 displays the Adjusted Operating Costs against the milled tonnes per year for the LoM plan. The ramp-up in feed tonnes in years two to six is due to development constraints.

Figure 40: Adjusted Operating Cost vs Milled Tonnes (Annual)



15.2 Effective Date

Value relates to a specific point in time. The effective date for the economic analysis is 1 January 2024.

15.3 Financial Results

Minxcon's in-house DCF model was populated with the data to illustrate the NPV for the operation in real ZAR terms, which was subsequently converted to real USD terms using the exchange rate forecast. The NPV

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is derived from post-tax, pre-debt real cash flows, using the techno-economic parameters, commodity price and macro-economic projections.

This economic analysis is based on a free cash flow and measures the economic viability of the overall Project as well as the economic viability of the orebody to demonstrate the extraction of the above-mentioned project is viable and justifiable under a defined set of realistically assumed modifying factors.

15.3.1 Basis of Evaluation

In generating the financial model and deriving the valuations, the following were considered:-

- This Report details the optimised cash flow model with economic input parameters.
- The cash flow model is in real money terms and completed in ZAR.
- The DCF evaluation was set up in calendar years.
- The annual ZAR cash flow used real term forecast exchange rates for the LoM period.
- The financial results have been converted to USD terms using the average exchange rate over the LoM.
- A company hurdle rate of 8.0% (in real terms) was utilised for the discount factor.
- The impact of the Mineral Royalties Act using the formula for unrefined metals was included.
- Sensitivity analyses were performed to ascertain the impact of discount factors, commodity prices, exchange rate, grade, operating costs and capital expenditures.
- Valuation of the tax entity was performed on a stand-alone basis.
- The full NPV of the operation was reported for the Bengwenyama Project.

15.3.2 Summary of Discounted Analysis

The Project NPVs for the Project are various real-term discount rates are detailed in Table 19 in ZAR and USD, respectively. The real term best-estimated value for the Project at a real discount rate of 8.0% is ZAR13,165 million or USD698 million with an IRR of 20.6%. This indicates that the Project is financially viable.

Table 19: Project NPVs at Various Discount Rates (Real Terms)

Project Value	Unit	Bengwenyama
NPV @ 0%	ZARm	59,109
NPV @ 5%	ZARm	22,771
NPV @ 8%	**ZARm**	**13,165**
NPV @ 10%	ZARm	9,083
NPV @ 15%	ZARm	3,136
NPV @ 20%	ZARm	247
IRR	**%**	**20.6%**
NPV @ 0%	USDm	3,132
NPV @ 5%	USDm	1,207
NPV @ 8%	**USDm**	**698**
NPV @ 10%	USDm	481
NPV @ 15%	USDm	166
NPV @ 20%	USDm	13
All-in Cost Margin	%	35%
Peak Funding Requirement	ZAR million	7,604
Peak Funding Requirement	USD million	403
Payback Period (from Start of Mining)	Years	6.5

The profitability ratios for the Project are detailed in Table 20 for the three scenarios.

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Table 20: Project Profitability Ratios

Description	Unit	Bengwenyama
Internal Rate of Return (IRR)	%	20.6%
NPV - ZAR/oz	ZAR/7E oz	1,204
NPV - USD/oz	USD/7E oz	64
LoM	Years	36
Undiscounted Cash Flow	ZARm	59,109
Discounted Cash Flow 8%	ZARm	13,165
Investment	ZARm	7,604
Undiscounted Cash over Investment*	Ratio	8.8
Discounted Cash 8% over Investment*	Ratio	2.7
Payback Period (Start of Mining)	Years	6.5
Payback Period (Start of Construction)	Years	7.5
Peak Funding Requirement	ZARm	7,604
Peak Funding Requirement	USDm	403
Break-even Pt Price (Excluding Capex)	USD/oz	735
Break-even Pt Price (Including Capex)	USD/oz	780

Note: * Calculated as net cash flow divided by investment (peak funding requirement)

15.3.3 Cash Flow

The Project capital expenditure, cash flow, and cumulative cash flow over the LoM are displayed in Figure 41 and Figure 42, on an annual basis in ZAR and USD terms, respectively. The peak funding requirement is ZAR7,604 million (or USD403 million) (inclusive of contingencies), with a pay-back period of 6.5 years from start of mining or 7.5 years from start of construction.

Figure 41: Annual and Cumulative Cash Flow - ZAR (Real Terms)

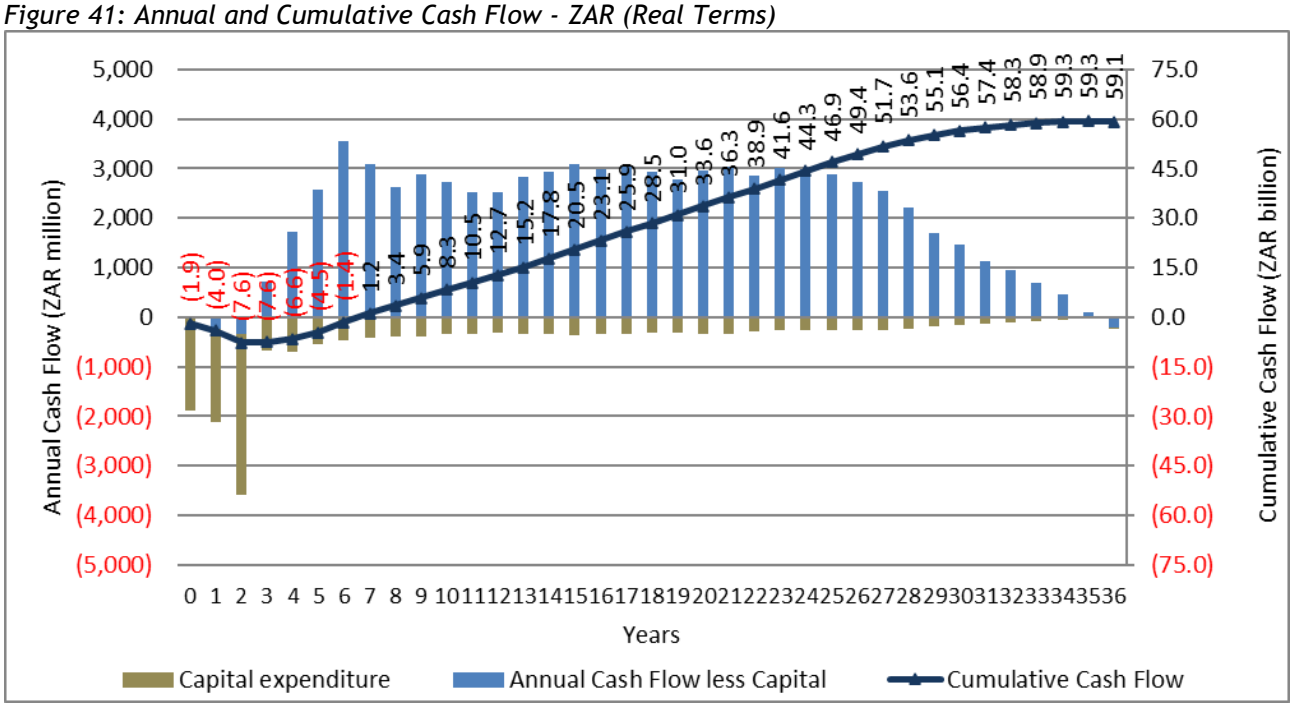

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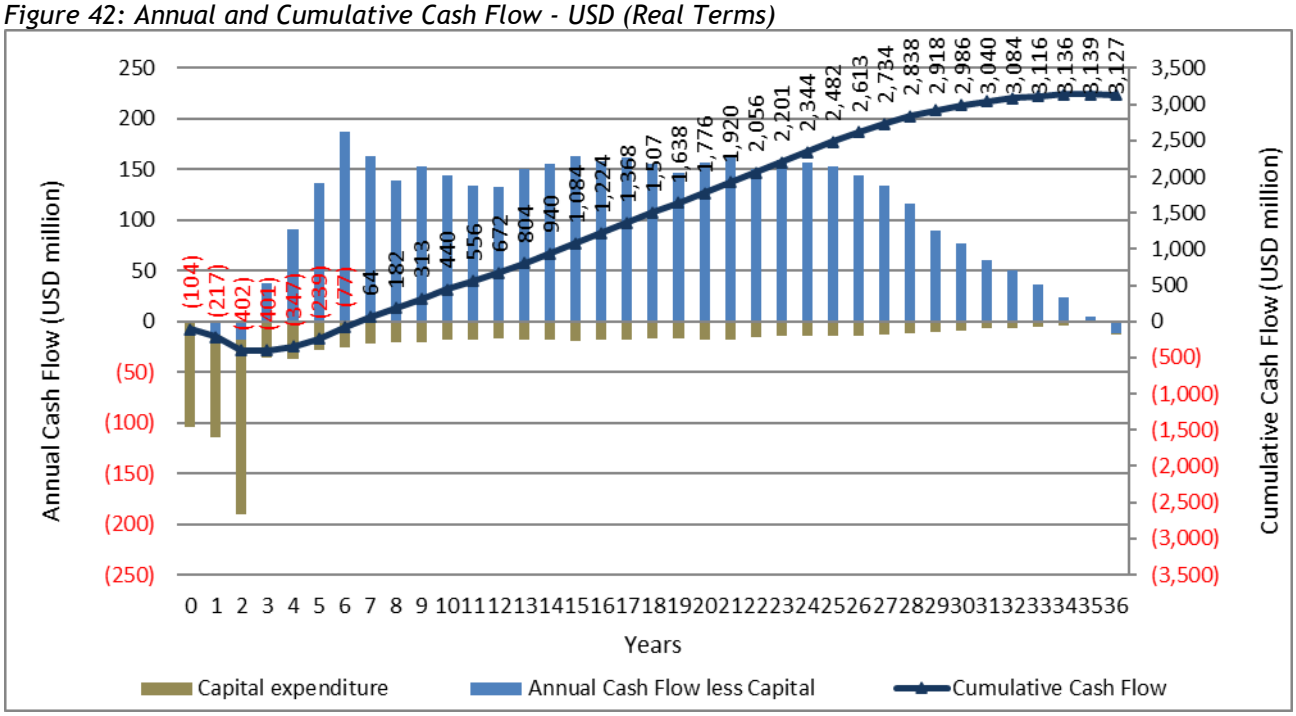
Figure 42: Annual and Cumulative Cash Flow - USD (Real Terms)



15.3.4 Sensitivity Analysis

Based on the real cash flow calculated in the financial model, Minxcon performed single-parameter sensitivity analyses to ascertain the impact on the NPV. The bars represent various inputs into the model; each being increased or decreased by 15%. The left-hand side of the graph indicates a negative 15% change in the input while the right-hand side of the graph indicating a positive 15% change in the input. A negative effect to the NPVs represented by red bars and a positive effect represented by blue bars. For the DCF, the exchange rate, grade and PGM prices have the biggest impact on the sensitivity of the Project followed by the mining operating costs. The Project is least sensitive to the base metal prices, capital and processing operating costs.

Figure 43: Project Sensitivity ZAR ($NPV_{8.0\%}$)

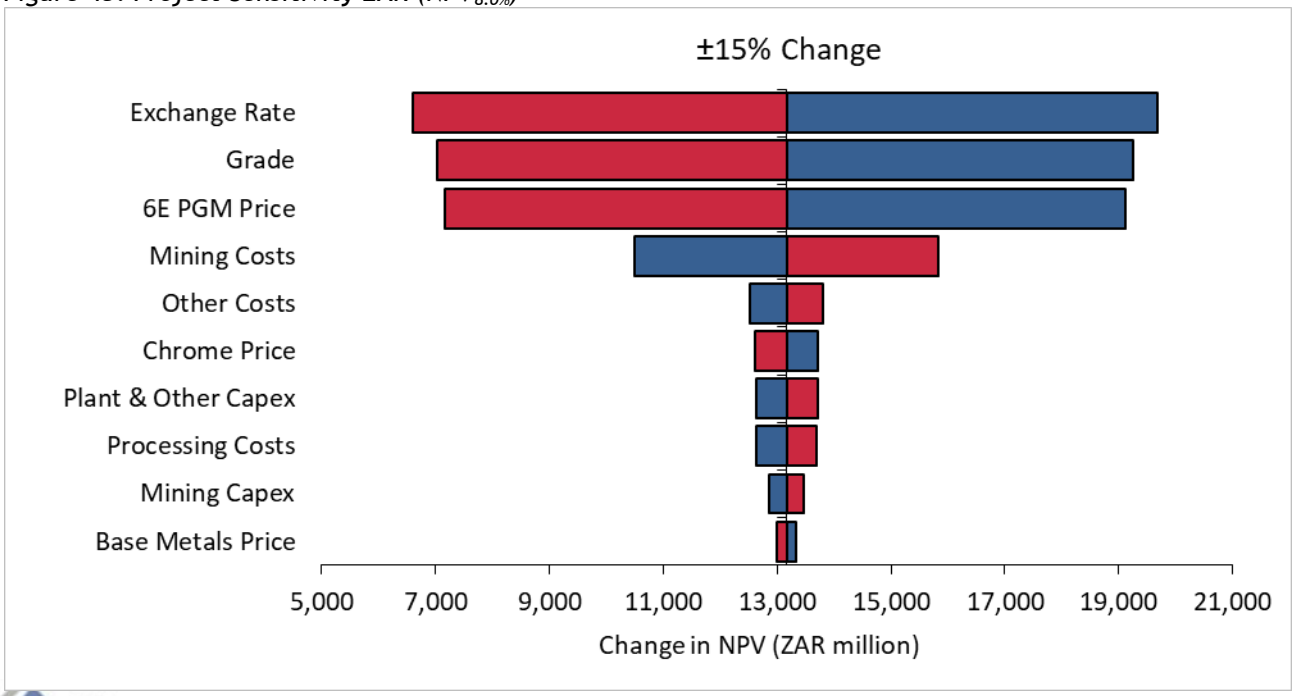


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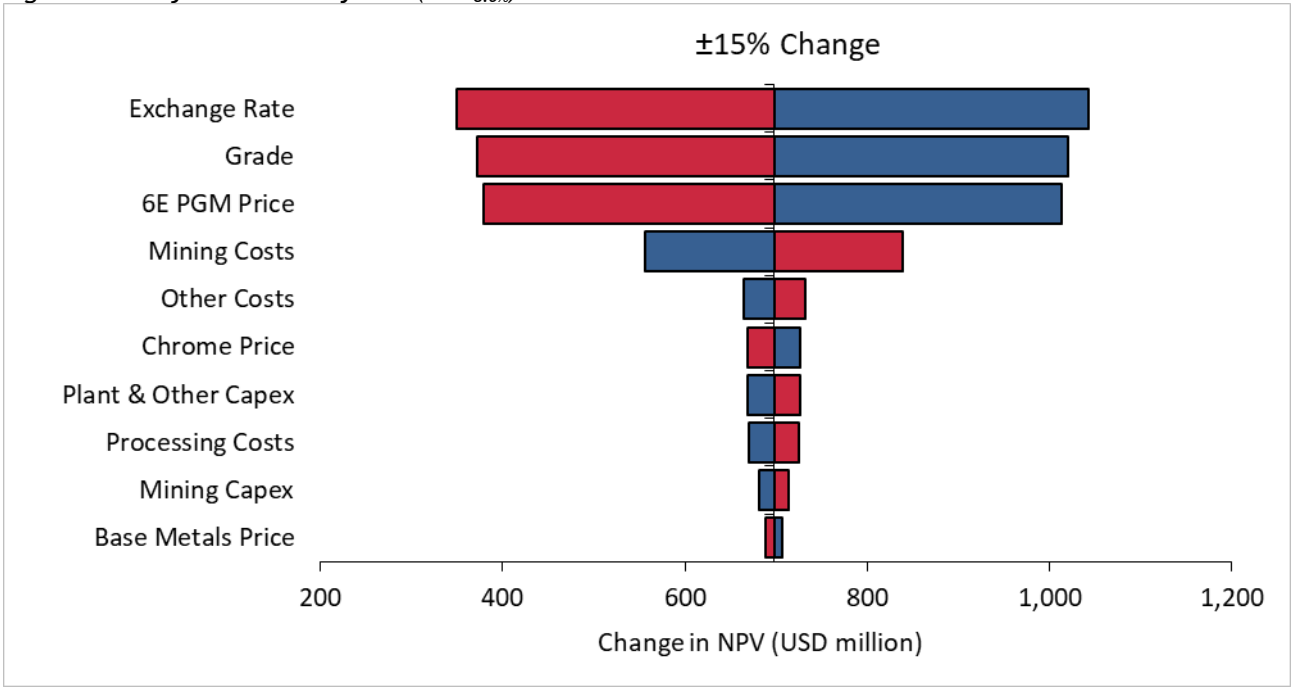
Figure 44: Project Sensitivity USD ($NPV_{8.0\%}$)



A sensitivity analysis was also conducted on the exchange rate and the commodity prices to better indicate the effect these two factors have on the NPV as well as the grade and the operating costs. This is displayed, for Project at an NPV of 8%, in Table 21 and Table 22 in ZAR terms, and Table 23 and Table 24 in USD terms.

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Table 21: Sensitivity Analysis of PGM Prices and Exchange Rate to $NPV_{8.0\%}$ (ZARm)

	Exchange Rate (ZAR/USD)	13.21	14.15	15.10	16.04	16.98	17.93	**18.87**	19.81	20.76	21.70	22.64	23.59	24.53
6E Basket Price (USD/oz)	% Change	-30%	-25%	-20%	-15%	-10%	-5%		5%	10%	15%	20%	25%	30%
1,046	-30%	-11,187	-8,779	-6,371	-4,304	-2,443	-683	1,016	2,672	4,302	5,917	7,519	9,116	10,703
1,121	-25%	-9,065	-6,506	-4,290	-2,317	-453	1,344	3,096	4,823	6,538	8,235	9,930	11,612	13,293
1,196	-20%	-6,944	-4,520	-2,416	-440	1,461	3,314	5,140	6,952	8,750	10,540	12,321	14,101	15,881
1,271	-15%	-5,002	-2,745	-644	1,369	3,327	5,254	7,165	9,064	10,951	12,831	14,711	16,585	18,452
1,345	-10%	-3,308	-1,067	1,067	3,133	5,165	7,177	9,177	11,162	13,141	15,121	17,092	19,057	21,023
1,420	-5%	-1,716	550	2,734	4,872	6,988	9,088	11,174	13,253	15,332	17,400	19,464	21,529	23,593
1,495		-186	2,126	4,376	6,598	8,799	10,986	**13,165**	15,344	17,511	19,674	21,837	24,001	26,172
1,570	5%	1,303	3,673	6,003	8,308	10,600	12,879	15,157	17,424	19,686	21,948	24,212	26,484	28,776
1,644	10%	2,758	5,202	7,616	10,014	12,393	14,771	17,139	19,500	21,861	24,224	26,596	28,990	31,402
1,719	15%	4,197	6,723	9,225	11,708	14,185	16,657	19,116	21,576	24,038	26,509	29,004	31,518	34,051
1,794	20%	5,621	8,232	10,823	13,401	15,976	18,535	21,094	23,653	26,223	28,817	31,432	34,067	36,723
1,869	25%	7,037	9,739	12,417	15,094	17,756	20,414	23,071	25,737	28,428	31,142	33,878	36,637	39,398
1,943	30%	8,445	11,234	14,010	16,779	19,536	22,292	25,054	27,839	30,648	33,484	36,344	39,208	42,073
2,018	35%	9,851	12,727	15,603	18,460	21,315	24,173	27,049	29,952	32,887	35,846	38,813	41,781	44,748

Note: Prices and Exchange rates indicated are average numbers over the LoM. Adjustments are made as a percentage change which applies to each year in the forecast to derive the desired average number.

Table 22: Sensitivity Analysis of Cash Operating Costs and Capital to $NPV_{8.0\%}$ (ZARm)

	6E + Au Grade (g/t)	4.59	4.92	5.24	5.57	5.90	6.23	**6.55**	6.88	7.21	7.54	7.86	8.19	8.52
Operating Cost (ZAR/t)	% Change	-30%	-25%	-20%	-15%	-10%	-5%		5%	10%	15%	20%	25%	30%
3,014	30%	-8,751	-5,759	-3,270	-971	1,223	3,347	5,435	7,504	9,558	11,598	13,632	15,667	17,691
2,898	25%	-6,819	-4,165	-1,807	420	2,566	4,665	6,741	8,796	10,843	12,879	14,913	16,943	18,963
2,782	20%	-5,096	-2,662	-395	1,776	3,890	5,971	8,033	10,088	12,123	14,159	16,193	18,214	20,234
2,666	15%	-3,541	-1,223	978	3,107	5,198	7,269	9,325	11,367	13,403	15,439	17,464	19,485	21,506
2,550	10%	-2,068	170	2,323	4,425	6,504	8,560	10,609	12,646	14,682	16,713	18,734	20,756	22,777
2,434	5%	-651	1,528	3,646	5,730	7,794	9,850	11,888	13,924	15,961	17,983	20,005	22,027	24,049
2,318		725	2,860	4,954	7,027	9,085	11,128	**13,165**	15,203	17,230	19,252	21,275	23,298	25,327
2,202	-5%	2,071	4,177	6,258	8,317	10,367	12,405	14,443	16,475	18,499	20,522	22,547	24,580	26,631
2,086	-10%	3,394	5,481	7,548	9,605	11,644	13,682	15,720	17,744	19,768	21,796	23,836	25,897	27,982
1,970	-15%	4,702	6,777	8,836	10,881	12,920	14,960	16,988	19,013	21,044	23,095	25,167	27,260	29,365
1,855	-20%	6,005	8,065	10,117	12,157	14,197	16,230	18,258	20,296	22,356	24,443	26,544	28,658	30,764
1,739	-25%	7,293	9,352	11,392	13,433	15,472	17,502	19,550	21,623	23,718	25,827	27,947	30,057	32,164
1,623	-30%	8,580	10,626	12,668	14,709	16,748	18,808	20,896	23,000	25,110	27,226	29,348	31,456	33,565

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Table 23: Sensitivity Analysis of PGM Prices and Exchange Rate to $NPV_{8.0\%}$ (USDm)

	Exchange Rate (ZAR/USD)	13.21	14.15	15.10	16.04	16.98	17.93	**18.87**	19.81	20.76	21.70	22.64	23.59	24.53
6E Basket Price (USD/oz)	% Change	-30%	-25%	-20%	-15%	-10%	-5%		5%	10%	15%	20%	25%	30%
1,046	-30%	-593	-465	-338	-228	-129	-36	54	142	228	314	398	483	567
1,121	-25%	-480	-345	-227	-123	-24	71	164	256	346	436	526	615	704
1,196	-20%	-368	-240	-128	-23	77	176	272	368	464	559	653	747	842
1,271	-15%	-265	-145	-34	73	176	278	380	480	580	680	780	879	978
1,345	-10%	-175	-57	57	166	274	380	486	591	696	801	906	1,010	1,114
1,420	-5%	-91	29	145	258	370	482	592	702	813	922	1,031	1,141	1,250
1,495		-10	113	232	350	466	582	**698**	813	928	1,043	1,157	1,272	1,387
1,570	5%	69	195	318	440	562	682	803	923	1,043	1,163	1,283	1,403	1,525
1,644	10%	146	276	404	531	657	783	908	1,033	1,158	1,284	1,409	1,536	1,664
1,719	15%	222	356	489	620	752	883	1,013	1,143	1,274	1,405	1,537	1,670	1,804
1,794	20%	298	436	574	710	847	982	1,118	1,253	1,390	1,527	1,666	1,805	1,946
1,869	25%	373	516	658	800	941	1,082	1,223	1,364	1,506	1,650	1,795	1,941	2,088
1,943	30%	448	595	742	889	1,035	1,181	1,328	1,475	1,624	1,774	1,926	2,078	2,230
2,018	35%	522	674	827	978	1,130	1,281	1,433	1,587	1,743	1,900	2,057	2,214	2,371

Note: Converted to USD at average exchange rate of 18.87.

Table 24: Sensitivity Analysis of Cash Operating Costs and Capital to $NPV_{8.0\%}$ (USDm)

	6E + Au Grade (g/t)	4.59	4.92	5.24	5.57	5.90	6.23	**6.55**	6.88	7.21	7.54	7.86	8.19	8.52
Operating Cost (USD/t)	% Change	-30%	-25%	-20%	-15%	-10%	-5%		5%	10%	15%	20%	25%	30%
160	30%	-464	-305	-173	-51	65	177	288	398	506	615	722	830	937
154	25%	-361	-221	-96	22	136	247	357	466	575	682	790	898	1,005
147	20%	-270	-141	-21	94	206	316	426	535	642	750	858	965	1,072
141	15%	-188	-65	52	165	275	385	494	602	710	818	925	1,033	1,140
135	10%	-110	9	123	234	345	454	562	670	778	886	993	1,100	1,207
129	5%	-34	81	193	304	413	522	630	738	846	953	1,060	1,167	1,274
123		38	152	263	372	481	590	**698**	806	913	1,020	1,127	1,235	1,342
117	-5%	110	221	332	441	549	657	765	873	980	1,088	1,195	1,303	1,411
111	-10%	180	290	400	509	617	725	833	940	1,048	1,155	1,263	1,372	1,483
104	-15%	249	359	468	577	685	793	900	1,008	1,115	1,224	1,334	1,445	1,556
98	-20%	318	427	536	644	752	860	968	1,076	1,185	1,295	1,407	1,519	1,630
92	-25%	386	496	604	712	820	928	1,036	1,146	1,257	1,369	1,481	1,593	1,704
86	-30%	455	563	671	779	888	997	1,107	1,219	1,331	1,443	1,555	1,667	1,779

Note: Converted to USD at average exchange rate of 18.87.

The Project NPVs for the Project at various real-term discount rates utilising optimistic prices are detailed in Table 25 in ZAR and USD, respectively. The real term value at a real discount rate of 8.0% for the Project increases to ZAR26,558 million (from 13,165 million) or USD1,328 million (from 698 million). The IRR increases to 30.0% from 20.6%. The peak funding requirement in USD terms decreases to USD380 million while the payback period from start of mining decreases to 5.2 years from 6.5 years.

Table 25: Project NPVs at Various Discount Rates (Real Terms) – Optimistic View

Project Value	Unit	Optimistic view
NPV @ 0%	ZARm	103,849
NPV @ 5%	ZARm	42,753
NPV @ 8%	**ZARm**	**26,558**
NPV @ 10%	ZARm	19,639
NPV @ 15%	ZARm	9,456
NPV @ 20%	ZARm	4,386
IRR	**%**	**30.0%**
NPV @ 0%	USDm	5,192
NPV @ 5%	USDm	2,138
NPV @ 8%	**USDm**	**1,328**
NPV @ 10%	USDm	982
NPV @ 15%	USDm	473
NPV @ 20%	USDm	219
All-in Cost Margin	%	47%
Peak Funding Requirement	ZAR million	7,604
Peak Funding Requirement	USD million	380
Payback Period (from Start of Mining)	Years	5.2

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16 CONCLUSION & RECOMMENDATIONS

CONCLUSIONS

Mining:

Ore production is estimated to start in year 3 after project commencement. Access location trade-off was investigated with this scoping study update to determine optimal position for early production. Additional access was also investigated to increase early ramp-up production.

A mining method trade-off was completed to determine the optimal mining method for extracting ore from the UG2 reef. The mining methods that were considered based on the orebody geometry was conventional development and stoping, narrow-reef long-hole mechanised stoping and a hybrid on-reef mechanised development with conventional stoping. The outcome of the trade-off was that it will be best to mine the project with a hybrid on-reef mechanised development with conventional stoping.

Processing:

The plant will be constructed to treat RoM using a crushing, screening, milling and conventional MF2 flotation and spiralling to deliver a PGM concentrate and a chrome concentrate. A processing plant capable of treating 200 ktpm nominally will be established to treat RoM ore. The estimated recoveries derived from testwork results are 85% with an associated 4E grade of 140 g/t.

Engineering & Infrastructure:

The Bengwyenyama project is located in an area that is well established in terms of infrastructure and services. Sufficient provision has been made for critical infrastructure and facilities to support the operation at the planned production rates.

TSF:

Various locations has been considered for the construction of a tailings storage facility for the project. At this early stage the most promising location has been selected for a conceptual design that has been completed for the project. The site showed positive results due to the fact that it can cater for storage of tailings for the life of mine, as well as being a lower risk option in terms of structural integrity and long term closure considerations. The design has been completed in accordance with GISTM requirements. The design allows for the construction of the facility and will be established in three phases. The three phases allows for sufficient storage capacity of tailings material for the LoM.

Development Timeline

Further development of the project includes the completion of the PFS work (Including resource drilling and resource update), FS study work (Including drilling – resource infill, geotechnical, metallurgical test work and hydrogeological) as well as FEED designs.

Early indications are that construction could commence early 2026 with a construction period of 24 months. Construction is planned to take place concurrently with the development of the main declines that will ensure first stoping ore in month 24 after commencement.

Financial:

The Project recovering 8.9 Moz 6E is economically feasible with a post tax NPV of ZAR13,165 million or USD698 million at a real discount rate of 8%. The Project has an IRR of 20.6% with a payback period of 7.5

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years from the start of construction. The peak funding requirement of the Project is ZAR7,604 million or USD403 million.

RECOMMENDATIONS

Processing:

Additional testwork is required to optimise the flotation performance. Specifically further work must include reagent optimisation and a finer secondary regrind for improved recovery. Spiral testwork is also required to evaluate expected chrome recovery from a coarse chrome fraction and a fine chrome fraction.

Engineering & Infrastructure:

Further detailed study work and engagement with the suppliers of bulk services to the project will be required in the next study phases. Alternative solutions to power supply should be investigated to comply with future carbon neutral requirements. Detailed hydrological and geohydrological studies should be completed to fully understand the requirements for the effective use and management of ground and surface water and in turn minimise the impact on the environment and local communities. Further detailed engineering designs should be undertaken to increase the level of accuracy and confidence of the infrastructure provision as well as the associated capital and operating costs.

Tailings Storage Facility:

Further detailed designs should be undertaken on the tailings storage facility. All designs should be conducted in accordance with GISTM and local legislative requirements. The eventual selected site and deposition method of the tailings storage facility along with the design should aim to minimise or eliminate any short, medium and long term risk to the environment, local community and the project.

Financial:

The scoping study confirms the 2 Mtpa, 350 kozpa Bengwenyama project is economically and technically feasible. It is recommended that the Project proceed to the next phase of study, namely a Pre-Feasibility Study.

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JORC CHECKLIST – TABLE 1 ASSESSMENT AND REPORTING CRITERIA

SECTION 1: SAMPLING TECHNIQUES AND DATA		
Criteria	**Explanation**	**Detail**
Sampling techniques	Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.	20 cm samples are taken within the reef horizon unless there is a lithological reason to deviate from this. A single sample is also taken in the hanging wall and footwall to test for mineralisation in the direct waste rock. The samples are split with a core saw and one half is submitted to the laboratory and the other half keep in the core tray.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	The core is orientated in such a way that the two halves are equal.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	The sampling methodology is standard and as per industry practice in the Bushveld Complex (BC). The samples are 20 cm in length and are split into two equal halves with one half being submitted for analysis. The core size starts as HQ (10 m to 50 m) but is NQ by the time the reef is intersected.
Drilling techniques	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	The drillholes start with HQ (for approximately 10-50 m) in the weathered zone but are then drilled NQ once in the fresher material. The drill rigs being utilised have been the CS 1500, Delta 520 and a smaller Longyear 44. The drill contractor is Geomech Africa.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Initially the core was scanned in with the software ScanIT which scans the core with high resolution photos and the geologists reconcile the depths and core losses per 3 m run. The Core recoveries and RQD are then calculated for the drillhole. ScanIT has however been discontinued and the core is now photographed and the core recovery and RQD is calculated manually by the geological assistants.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	The geologist informs the drilling supervisor at what depth the reef is expected so that they can take extra precautions around the anticipated reef depth. The core recoveries are measured per 3 m run and if there is excessive core loss in the reef horizon it is marked as a non-representative sample and will not be used in the resource estimation process.

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SECTION 1: SAMPLING TECHNIQUES AND DATA		
Criteria	**Explanation**	**Detail**
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	The core recoveries for the intersections submitted to the laboratory are all above 98%. If the core loss is excessive the sample is not submitted to the laboratory for Mineral Resource estimation purposes. Therefore, there will not be any sample bias due to poor recoveries.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	The core was initially scanned into ScanIT software which produced high resolution images. This has however been discontinued. The logging is conducted on paper log sheets or tablets at the core yard with dropdown menus. Legends have been set up in excel that cover the necessary detailed required for Mineral Resource estimation. Alpha angles and structure detail is also observed and logged. The beta angle is not measured as the core is not orientated but the downhole televiewer survey supplies structural orientation information which is incorporated into the logs.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Core logging is qualitative and utilises excel spreadsheets on tablets.
	The total length and percentage of the relevant intersections logged.	The total drillhole is geologically logged and photographed and the televiewer survey is conducted from 100 m above the reef horizon for additional structural information.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	The core is cut in two equal halves for sampling and storage purposes.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	This project only makes use of core drilling.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation code at ALS is PREP-31H which has the following procedure: - Login of samples into the system, weighing, fine crushing of entire sample to 70% - 2 mm, split off 500 g and pulverize split to better than 85% passing 75 microns.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	The QAQC sequence is as follows: - If the batch is less than 20 samples the batch starts and ends with a blank and a CRM and duplicate are inserted into the sample stream. If the batch is great than 20 samples then the batch starts and ends with a blank and every tenth sample is either a CRM, duplicate or blank. This equates to between 20% and 10% QAQC samples.
	Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.	The sampling of the reef is reef material only except for the first and last sample of the reef as it will have 2 cm of hanging wall or footwall material to ensure the entire mineralisation is captured. This 2 cm dilution will be calculated into the reef width. The hanging wall and footwall are sampled separately to the reef. Hence the reef samples are representative of the *in-situ* reef horizon. Requested duplicates are pulp duplicates and the CRMs are material from the UG2 and MR from African Mineral Standards (AMIS).

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SECTION 1: SAMPLING TECHNIQUES AND DATA		
Criteria	**Explanation**	**Detail**
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The reef horizon is sampled in 20 cm increments so that the grade distribution can be observed if a mining cut is required. The UG2 reef is approximately 70 cm wide and will have three to four samples which will be composited later. The MR is wider at around 200 cm and will have about ten individual samples to determine the grade distribution. These will also be composited later for Mineral Resource Estimation purposes. Hanging wall and footwall samples are also taken to check if there is any mineralisation in the direct surrounding waste rock. This is industry best practice for the BC.
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	The UG2 reef will be assayed for 4E and 7E as well as for Cu, Ni, Co, Cr and Fe. The MR will be assayed for the same except the Cr and Fe as it is not a chromitite seam but a pyroxenite layer. The ALS methods are as follows: - PGM-ICP23 - Pt, Pd, Au package using lead fire assay with ICP-AES finish. 30 g nominal sample weight. Rh-ICP28 - Fire assay fusion using lead flux with Pd collector for Rh determination by ICPAES. 10 g nominal sample weight. PGM-MS25NS - The Platinum Group Metals are separated from the gangue material using the Nickel Sulphide Fire Assay procedure. After dissolution of the pulp with aqua regia, PGMs are determined by ICP-MS. ME-XRF26s - Analysis of Chromite ore samples by fused disc / XRF. This method is suitable for the determination of major and minor elements in ore samples which require a high dilution digest such as Chromite ores. Elements that will be analysed are Cr, Cu, Ni, Fe and Co. The overall pass rate of the various QAQC samples is 90%. All methodologies are total.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	All analytical work is undertaken by ALS Chemex South Africa (Pty) Ltd, located in Johannesburg, which is part of the ALS group. The South African laboratory is ISO 17025 accredited by SANAS (South African National Accreditation System).
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	QAQC procedure has been described above. In addition to the QAQC samples the analytical methodologies are also correlated with each other i.e. PGM-ICP23 and RH-ICP28 is compared to PGM-MS25NS. There is a good correlation and on average are within 1% of each other over the 4E grade.

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SECTION 1: SAMPLING TECHNIQUES AND DATA		
Criteria	**Explanation**	**Detail**
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	An umpire laboratory will be utilised as an additional check at a later stage.
	Discuss any adjustment to assay data.	No adjustments have been made to the assayed results.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	The assay results are received from the laboratory in pdf format and excel format. The excel form is imported into the Minxcon excel database. These are checked by the senior geologist. The assay certificates are stored in the project folder.
	The use of twinned holes.	No twinning has been undertaken to date.
Location of data points	Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Drillhole collar positions are initially recorded by handheld Garmin GPS. Drillhole collar survey was conducted by Aero Geomatics (Pty) Ltd. All completed drillholes were surveyed by post-processing Kinematic methodology. ("PPK"). The accuracy of PPK is 5 mm + 0.5 ppm horizontally and 10 mm + 1 ppm vertically. The survey was based on the World Geodetic System 1984 ellipsoid, commonly known as WGS84.
	Specification of the grid system used.	The coordinate system used is LO31.
	Quality and adequacy of topographic control.	Regional three-dimensional (3D) topography was constructed from regional surface contours and Shuttle Radar Topography Mission (SRTM) data. The surface was trimmed 300–500 m beyond the Project perimeter.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	The final drillhole spacing will be approximately 350 m. The drilling completed to date or in progress has a wider spacing to get a better understanding of the larger structural domains of the project. There are areas that have closer spacing (down to 175m) to better understand the structural blocks
	Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	Geological continuity is based on the knowledge of the surrounding area and 3D model constructed from historical data. 67 drillholes and 29 deflections have been completed confirming the position of the UG2 reef. Of the 14 drillholes expected to intersect the MR 11 have intersected the reef and two have been faulted.
	Whether sample compositing has been applied.	The 20cm (or larger) samples are composited to obtain the weighted average of the entire intersection.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	The drillholes are vertical drillholes and intersect the reef close to right angles. The sample is therefore unbiased. If the reef is faulted it will be noted and if the reef intersection is not representative, it will not be used in Mineral Resource estimations.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if	No sampling bias will be introduced based on the drilling orientation as they are close to perpendicular.

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SECTION 1: SAMPLING TECHNIQUES AND DATA		
Criteria	**Explanation**	**Detail**
Sample security	The measures taken to ensure sample security.	Samples are only handled by the drilling contractor and the Minxcon geological staff. There is a strict chain of custody that is followed from the time the core leaves the drill site to the time the sample is received by the laboratory.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits have been undertaken on the drilling to date.

SECTION 2: REPORTING OF EXPLORATION RESULTS		
Criteria	**Explanation**	**Detail**
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	A Preferent Prospecting Right LP002PPR was granted to the Bengwenyama Tribe's investment vehicle, Miracle Upon Miracle Investments (Pty) Ltd in 2015 over the farms Eerstegeluk 327 KT and Nooitverwacht 324 KT. This was renewed in early 2021 and is valid until February 2024. The Right covers all elements of potential economic interest.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	The right is valid until February 2024.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Drilling was undertaken by Rustenburg Platinum Mines from 1966 to 1985. Trojan exploration completed drilling on Eerstegeluk between 1990 and 1993. Drilling prior to 1994 was not used as part of this Mineral Resource estimate (MRE) due to the incomplete nature or availability of the drillhole data. Nkwe completed drillholes in 2007–2008. This drilling supports the MRE. Reconnaissance mapping has been completed by previous operators.
Geology	Deposit type, geological setting and style of mineralisation.	The target UG2 and Merensky reefs occur within the Upper Critical Zone of the Rustenburg Layered Suite of the BC. These reefs are laterally continuous for tens to hundreds of kilometres. The UG2 comprises mineralised chromitite, whereas the Merensky Reef is defined as the mineralised pyroxenitic zone between upper and lower chromitite stringers. The BC is the world's largest igneous intrusion and also the largest global repository of PGEs and chromitite. Both reefs are stratiform with relatively minor disruptive structural features and replacement deposits.

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SECTION 2: REPORTING OF EXPLORATION RESULTS

Criteria	Explanation	Detail
Drillhole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes: * easting and northing of the drillhole collar * elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar * dip and azimuth of the hole * down hole length and interception depth * hole length.	

			Drilling			
BHID	Date Started	Date Completed	From (m)	To (m)	Drilled Metres	Comment
E019	23-Aug-22	06-Sep-22	0.00	32.42	32.42	Abandoned, stuck drill rods
E019a	06-Sep-22	05-Oct-22	0.00	323.77	323.77	EOH, completed
E060	28-Aug-22	18-Oct-22	0.00	208.72	208.72	EOH, completed
E060D1	23-Nov-22	29-Nov-22	139.00	185.53	46.53	EOH, completed
E062	26-Aug-22	02-Sep-22	0.00	120.34	120.34	EOH, completed, Deflection, UG1 for stratigraphy
E062D1	07-Sep-22	09-Sep-22	18.30	34.92	16.62	Deflection completed, faulted UG2
E062D2	09-Sep-22	10-Sep-22	13.30	33.00	19.70	Deflection completed, faulted UG2
E059	12-Sep-22	05-Oct-22	0.00	159.25	159.25	EOH, completed
E033	07-Sep-22	16-Oct-22	0.00	281.68	281.68	EOH, completed
E028	07-Oct-22	24-Oct-22	0.00	383.75	383.75	EOH, completed
E004	14-Oct-22	15-Nov-22	0.00	524.60	524.60	EOH, completed
E004D1	19-Nov-22	24-Nov-22	457.00	518.75	61.75	EOH, completed
E030	26-Oct-22	05-Dec-22	0.00	413.75	413.75	EOH, completed
E025	10-Oct-22	09-Nov-22	0.00	267.50	267.50	EOH, completed
E037	13-Oct-22	02-Nov-22	0.00	282.48	282.48	EOH, completed
E049	21-Oct-22	19-Nov-22	0.00	322.75	322.75	EOH, completed, Deflection, UG1 for stratigraphy
E031	07-Nov-22	22-Nov-22	0.00	423.22	423.22	EOH, completed
E044	12-Nov-22	14-Dec-22	0.00	283.73	283.73	EOH, completed
E016	29-Nov-22	14-Dec-22	0.00	454.68	454.68	EOH, completed
E007	28-Nov-22	19-Dec-22	0.00	422.80	422.80	EOH, completed
E054	29-Nov-22	06-Dec-22	0.00	166.40	166.40	EOH, completed
E071	07-Dec-22	12-Dec-22	0.00	188.80	188.80	EOH, completed
E085	08-Dec-22	15-Dec-22	0.00	239.75	239.75	EOH, completed
E001	12-Jan-23	06-Feb-23	0.00	554.75	554.75	EOH, completed
E015	12-Jan-23	19-Jan-23	0.00	298.72	298.72	EOH, completed
E020	11-Jan-23	21-Jan-23	0.00	350.75	350.75	EOH, completed
E041	13-Jan-23	06-Feb-23	0.00	258.77	258.77	EOH, completed
E087	12-Jan-23	25-Jan-23	0.00	308.45	308.45	EOH, completed
E013	23-Jan-23	01-Feb-23	0.00	327.28	327.28	EOH, completed
E024	23-Jan-23	29-Jan-23	0.00	284.75	284.75	EOH, completed
E069	27-Jan-23	29-Mar-23	0.00	305.45	305.45	EOH, Completed
E027	01-Feb-23	21-Feb-23	0.00	290.75	290.75	EOH, completed
E014	07-Feb-23	10-Apr-23	0.00	354.10	354.10	EOH, completed
E059D1	04-Apr-23	06-Apr-23	180.00	251.65	71.65	EOH, Completed
E001D1	13-Apr-23	18-Apr-23	508.00	552.02	44.02	EOH, Completed
E014D1	15-Apr-23	16-Apr-23	302.00	344.04	42.04	EOH, Completed
E014D2	24-Apr-23	27-Apr-23	292.00	346.65	54.65	EOH, Completed
E032	12-Apr-23	04-May-23	0.00	467.75	467.75	EOH, Completed
**E057	08-Apr-23	22-Apr-23	0.00	299.68	299.68	EOH, Completed
E045	01-May-23	10-May-23	0.00	206.55	206.55	EOH, Completed
**E088	28-Apr-23	12-May-23	0.00	338.70	338.70	EOH, Completed
E082	21-Feb-23	31-May-23	0.00	258.88	258.88	EOH, Completed
E072	10-May-23	17-May-23	0.00	254.75	254.75	EOH, Completed
E072D1	19-May-23	22-May-23	208.00	251.75	43.75	EOH, Completed
E072D2	23-May-23	24-May-23	203.00	251.75	48.75	EOH, Completed
E029	15-May-23	01-Jun-23	0.00	320.78	320.78	EOH, Completed
E050D1	31-May-23	07-Jun-23	185.00	279.98	94.98	EOH, Completed
E076	31-May-23	08-Jun-23	0.00	238.75	238.75	EOH, Completed
E029D1	03-Jun-23	09-Jun-23	248.00	320.78	72.78	EOH, Completed
E068	10-May-23	09-Jun-23	0.00	225.32	225.32	EOH, Completed
E066D1	12-Jun-23	15-Jun-23	161.00	225.62	64.62	EOH, Completed
E049	10-Jun-23	21-Jun-23	0.00	248.88	248.88	EOH, Completed
E048	09-Jun-23	19-Jun-23	0.00	236.70	236.70	EOH, Completed
E054	10-Jun-23	19-Jun-23	0.00	287.57	287.57	EOH, Completed
E069	02-Jun-23	24-Jun-23	0.00	99.65	99.65	EOH, Completed
E039	19-Jun-23	26-Jun-23	0.00	249.30	249.30	EOH, Completed
E039D1	26-Jun-23	08-Jul-23	166.00	229.42	63.42	EOH, Completed
E120	23-Jun-23	09-Jul-23	0.00	218.98	218.98	EOH, Completed
E082	21-Jun-23	10-Jul-23	0.00	248.90	248.90	EOH, Completed
E034	12-Jul-23	20-Jul-23	0.00	298.38	298.38	EOH, Completed
E082D1	17-Jul-23	19-Jul-23	177.00	245.90	68.90	EOH, Completed
E086A	28-Jun-23	17-Jul-23	0.00	260.75	260.75	EOH, Completed
E086AD1	18-Jul-23	21-Jul-23	196.00	260.75	64.75	EOH, Completed
E087	28-Jun-23	26-Jul-23	0.00	294.37	294.37	EOH, Completed
E086AD2	24-Jul-23	26-Jul-23	190.00	257.75	67.75	EOH, Completed
E120D1	25-Jul-23	03-Aug-23	95.00	182.68	87.68	EOH, Completed
E034D1	26-Jul-23	02-Aug-23	232.00	296.88	64.88	EOH, Completed
E070	21-Jul-23	02-Aug-23	0.00	191.90	191.90	EOH, Completed
E070D1	04-Aug-23	08-Aug-23	126.00	191.90	66.90	EOH, Completed
E114	04-Aug-23	08-Aug-23	0.00	101.68	101.68	EOH, Completed
E034D2	06-Aug-23	08-Aug-23	227.00	296.51	69.51	EOH, Completed
E051	10-Aug-23	15-Aug-23	0.00	105.56	105.56	EOH, Completed
E080	03-Aug-23	14-Aug-23	0.00	195.17	195.17	EOH, Completed
E065	09-Aug-23	23-Aug-23	0.00	251.90	251.90	EOH, Completed
E079	17-Aug-23	26-Aug-23	0.00	270.13	270.13	EOH, Completed
E113	10-Aug-23	11-Sep-23	0.00	497.60	497.60	EOH, Completed
E051D1	11-Sep-23	13-Sep-23	50.00	99.38	49.38	EOH, Completed
E115	16-Sep-23	20-Sep-23	0.00	93.30	93.30	EOH, Completed
E118	28-Aug-23	18-Sep-23	0.00	294.18	294.18	EOH, Completed
E122	14-Sep-23	20-Sep-23	0.00	185.70	185.70	EOH, Completed
E126	13-Sep-23	20-Sep-23	0.00	233.75	233.75	EOH, Completed
E125D1	21-Sep-23	22-Sep-23	168.00	233.75	65.75	EOH, Completed
E035	22-Sep-23	05-Oct-23	0.00	260.62	260.62	EOH, Completed
E035D1	07-Oct-23	10-Oct-23	213.00	257.62	44.62	EOH, Completed
E117	21-Sep-23	08-Oct-23	0.00	228.00	228.00	EOH, Completed
E077	22-Sep-23	16-Oct-23	0.00	264.22	264.22	EOH, Completed
E011	25-Sep-23	19-Oct-23	0.00	407.75	407.75	EOH, Completed
E011D1	20-Oct-23	21-Oct-23	74.00	100.00	26.00	EOH, Completed
E043	10-Oct-23	24-Oct-23	0.00	266.14	266.14	EOH, Completed
E017	11-Oct-23	06-Nov-23	0.00	461.65	461.65	EOH, Completed
E077D1	20-Oct-23		291.00		-291.00	
E011D2	23-Oct-23	24-Oct-23	68.00	98.75	30.75	EOH, Completed
E043D1	06-Nov-23	09-Nov-23	193.00	263.00	70.00	EOH, Completed
E100	07-Oct-23	20-Nov-23	0.00	503.35	503.35	EOH, Completed
E124	09-Nov-23	21-Nov-23	0.00	368.68	368.68	EOH, Completed
E003	02-Nov-23	23-Nov-23	0.00	563.75	563.75	EOH, Completed

All drillholes were drilled -90 degrees.

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SECTION 2: REPORTING OF EXPLORATION RESULTS		
Criteria	**Explanation**	**Detail**
		The UG2 and MR geological and estimation models have been updated to include drilling and assaying data as at end of November 2023. The structural / geological model utilised 20 historical Nkwe drillholes and 67 SPD drillholes while the estimation model utilised 10 historical Nkwe drillholes and 48 SPD drillholes for the UG2 and 10 historical Nkwe drillholes and 8 SPD drillholes for the MR.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	N/A
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	With the Mineral Resource update the statistical analysis recommended no top cutting of the grade. In the case of the MR there was one sample that was capped. The Mineral Resource has been declared at a paylimit of 1.9 g/t for the UG2 and 1.6 g/t for the MR. The exploration target range is based on the kriged estimated value with a 20% range applied to it.
	Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.	The individual 20cm samples are combined per drillhole per reef intersection for the composite grades used in the estimation process.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent has been reported but the various elements have been combined for 3PGE+Au grades (4E) and 6PGE+au grades (7E).
Relationship between mineralisation widths and intercept lengths	If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	The intersection lengths stated are the downhole lengths. The drillholes are drilled at -90 degrees and the reef dip is expected to be approximately 6 degrees. Therefore, the difference should be minimal.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drillhole collar locations and appropriate sectional views.	A map of the drillhole positions is included in this and the previous press release. A stratigraphic column has been completed for the project (in press releases). A section has been included in the press release.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be	Reef intersection depths for all the drillholes have been reported in the table below.

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SECTION 2: REPORTING OF EXPLORATION RESULTS		
Criteria	**Explanation**	**Detail**
	practiced to avoid misleading reporting of Exploration Results.	
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	A high-definition helicopter borne Total Magnetic Field (TMF) gradient and gamma-ray spectrometry survey was completed by New Resolution Geophysics (Pty) Ltd (NRG) in January of 2022 which highlighted the major structural features that could be expected. The total line kilometres flown was 1,425 lkm over the farms Eerstegeluk 327 KT and Nooitverwacht 324 KT with the survey being flown at a height between 25 m and 80 m due to the topography and residential areas with an average height of approximately 35 m to 40 m and a line spacing of 50 m.

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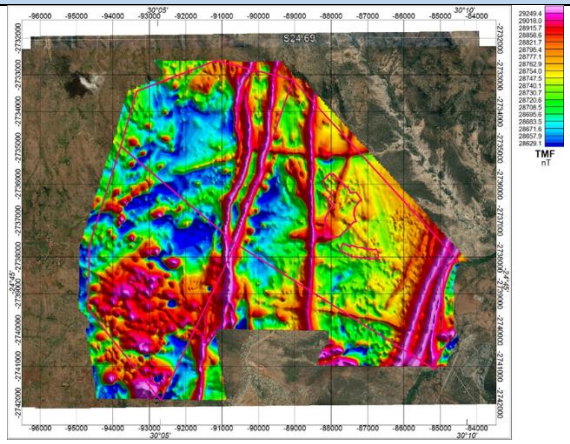
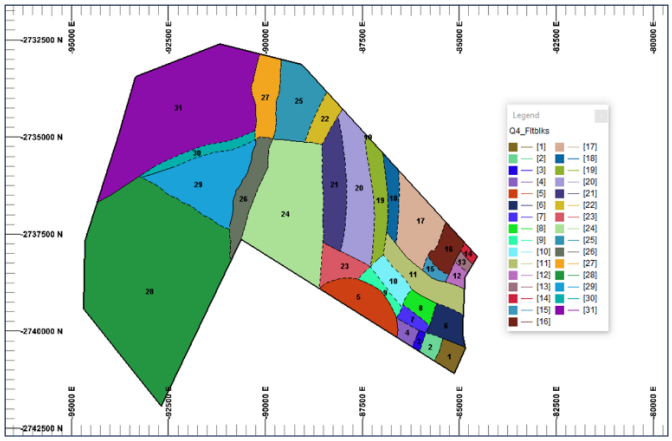
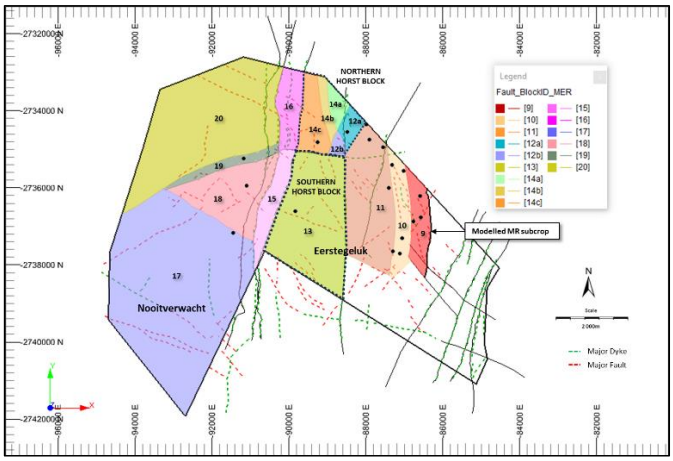
SECTION 2: REPORTING OF EXPLORATION RESULTS		
Criteria	**Explanation**	**Detail**
		
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	Phase 1a has been completed which was approximately 10,000m of drilling. This phase tested the wider area for the grade distribution and bigger picture structural understanding. Phase 1b will now focus on the PFS payback area to convert the inferred resource in this area to indicated resources. Deflections will now be drilled for short range variability work. To date 23,347m have been completed but it is envisaged approximately 14 000 more meters will be drilled.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	 

SECTION 2: REPORTING OF EXPLORATION RESULTS		
Criteria	**Explanation**	**Detail**
		Above are the structural blocks modelled from the drillhole database (UG2 on top and MR the second). The entire area is either in Mineral Resource (indicated or inferred) or Exploration Target so there is limited upside potential within the project boundaries.

SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES		
Criteria	**Explanation**	**Detail**
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Geological data in the form of drillhole collar surveys, downhole surveys and geological logs captured on paper records was compared to data captured and saved in soft copy Excel spreadsheets that form the geological repository which informs the modelling database. Any errors, omissions, and invalid transcriptions identified were returned to the exploration team for rectification before the data was processed any further for use in 3D-structural modelling and grade estimation processes.
	Data validation procedures used.	Base geological data informing the estimate was validated using in-built functionality in Datamine StudioRM software. Validation routine involved checking spatial location of drillholes collars and intersections, validity of stratigraphic logging, checking for repetition of logged intersections, reasons for the absence of analytical data, negative thicknesses and an assessment of the correlation of all aspects of the new drilling data to the historic drilling data from the Nkwe drillhole database. The Nkwe database was inspected for erroneous / non representative datapoints and removed based on the knowledge gained from the recent SPD drilling.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person regularly visits the project site with the latest visit having been carried out on 16 November 2023.
	If no site visits have been undertaken indicate why this is the case.	Refer to above.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	The Bengwenyama project is bounded to the northern extremity by a mine that is in current operation and economically exploiting the same UG2 reef. Several SPD drillholes are sited in areas in which similar drilling was completed by Nkwe Platinum during the early 2000s. Geological interpretation as informed from the current SPD holes, correlates reasonably well with interpretation from the historic Nkwe drill data.
	Nature of the data used and of any assumptions made.	The consolidated SPD database informing this estimate incorporates data from historic Nkwe drilling. This data was compiled by transcribing information from documents available in the public domain. Analytical data in the Nkwe drillholes is presented as 4E only. Individual PGEs were not reported. Results from QQ plots (R^2=0.93 for the UG2 and R^2=0.81 for the MR) suggest that SPD data is highly comparable to the Nkwe data. Accordingly, the data has been consolidated into a single geological database.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	Literature from the public domain suggests absence of UG2 reef in the Eerstegeluk Dome area. In contrast, recent SPD drilling (drillhole E057) located within the area, intersected the UG2 reef at a depth of approximately 30m below surface. This implies the SPD drilling in the area is presenting an opportunity to

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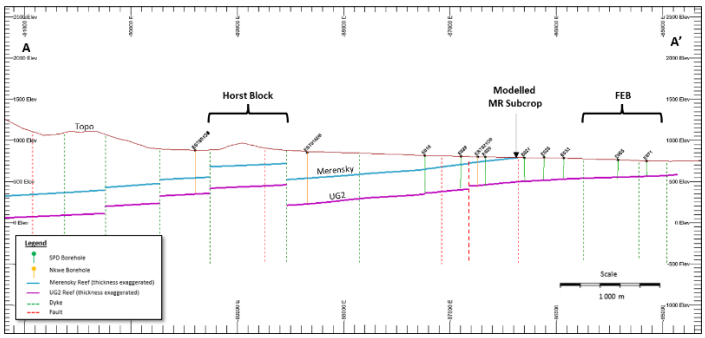
SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES		
Criteria	**Explanation**	**Detail**
		validate the theory or potentially offer an alternative interpretation of this structurally complex area of the project. However, at this stage the dome area has been excluded from the Mineral Resource.
	The use of geology in guiding and controlling Mineral Resource estimation.	Contouring of the elevation of the UG2 reef and MR top contact as interpreted from geological logging, knowledge of the regional structural geology, incorporation of mapped faults, dykes, sills, and the use of data from the TMF gradient and gamma-ray spectrometry survey completed by New Resolution Geophysics (Pty) Ltd (NRG) in January of 2022, highlighting the major structural features, guided delineation of 30 fault blocks and culminated in the generation of the associated UG2 3D wireframe model.
	The factors affecting continuity both of grade and geology.	The project area is bisected by faults and several dyke swarms with throws in excess of 200m. Current structural interpretation postulates the Eerstegeluk Dome area comprises a stack of several upthrow faults culminating in an overall upthrow of the UG2 reef to a location as shallow as 30m below surface. Other than potholing observed in the areas limited to the northern periphery, the PGE grades appear unaffected.
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	The Bengwenyama project covers an area of approximately 52.9km^2 with a strike of approximately 4km. Data from the drillholes suggests a down-dip continuity of UG2 and MR reef over approximately 11km at an average true dip of approximately 6-7˚, north-west.  Location of the UG2 reef is shallowest in the south-east corner of the project area at approximately 30m below surface and deepest in the north-west corner where it is in excess of 1,000m below surface. The MR is approximately 260m above the UG2 reef and subcrops in the central portion of the farm Eerstegeluk.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	The statistical analysis on the base geological data informing the estimate suggests that no capping or treatment of extreme values is necessary. Owing to the low density of drilling data available to date geological domains, possible facies and anisotropy has not been identified. However, for the MR one sample was capped back to 4.68 g/t for the 4E grade (see below). Zone / Element / Capping Value 1 / Pt / 3.028 1 / Pd / 1.24 1 / Rh / 0.192 1 / Au / 0.22 1 / 4E / 4.68

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SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES		
Criteria	**Explanation**	**Detail**
		Ordinary Kriging, an industry best choice for evaluation of PGEs, has been successfully applied for all grade interpolation with all 3D wireframe modelling and grade estimation processes completed in Datamine StudioRM Version 1.11.65.0 geological modelling software. Kriging neighbourhood analysis (KNA) recommended a parent block size of 350m (in X and Y directions) with a minimum and maximum number of samples of 5 and 15 respectively for the first search volume which is matched to the range of the 4E modelled variogram (approximately 2,000m). Three search volumes with decreasing samples were used for the estimation. All PGE elements, Pt, Pd, Rh, Au, Ir, Os and Ru as well as base metals Cu, Ni, Cr and Fe were individually estimated in addition to estimation of combined 4E (Pt, Pd, Rh & Au) and 7E (Pt, Pd, Rh, Ir, Os, Ru & Au) grades. Extrapolation has been carried out to half the average drillhole spacing and where applicable terminated on the major geological structures.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	The Bengwenyama Project is a green field project with no mining activity ever recorded. As such no depletion of Mineral Resources is applicable. The previous estimate for the Bengwenyama Project was declared on 01 July 2021 and presented 33.87Mt at 7.7g/t 4E and 8.38Moz in Inferred Resources. Taking into account the impact of the additional SPD drilling completed to date, the previous estimate correlates reasonably well with the first update updated estimate of 49.85Mt at 7.51g/t 4E and 12.040Moz of Indicated and Inferred Resources for the UG2 with the MR also having very similar results. The second update grades are also very similar.
	The assumptions made regarding recovery of by-products.	Metallurgical testwork is currently underway to establish the viability of recovery of any by-products, in particular chromite. There is no record of previous similar testwork completed in the Bengwenyama project area. However, the UG2 on the eastern limb of the BC is well known and understood and the average recoveries have been assumed for now.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	Other than the base metals Cu, Ni and Fe, no deleterious elements have been identified. The base metals have all been estimated on elemental basis with the Cr:Fe ratio of the UG2 chromitite horizon, from modelled Cr and Fe analysis, observed to be around 1.21.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Drillhole spacing is not on a defined grid owing to challenges drilling in populated space. The well drilled areas are typically informed by an average drillhole spacing of approximately 350m with areas even closer at approximately 175m spacing with poorly informed areas informed by drilling spacing in excess of 1,000m.

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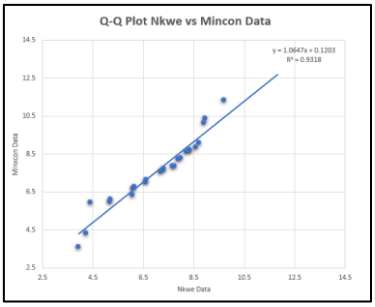
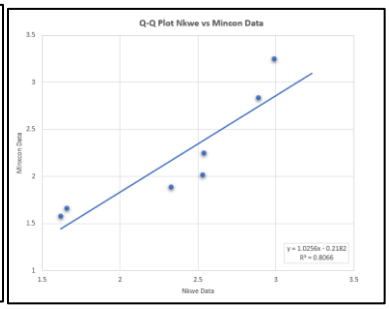
SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES		
Criteria	**Explanation**	**Detail**
		Kriging neighbourhood analysis (QKNA) recommended a parent block size of 350m (in X and Y directions) with a minimum and maximum number of samples of 5 and 15 respectively for the first search volume which is matched to the range of the 4E modelled variogram (approximately 2,000m). Three search volumes with decreasing samples were used for grade estimation.
	Any assumptions behind modelling of selective mining units.	A study to test the viability of several possible options and in some cases combinations of mining methods is currently underway. The current modelling does not incorporate guidance from knowledge of any possible proposed mining method or selective mining approach.
Estimation and modelling techniques (continued)	Any assumptions about correlation between variables.	The QQ plot results (R^2=0.93 for the UG2 and R^2=0.81 for the MR) suggest SPD data is highly comparable to the Nkwe historic drill data.   Accordingly, the data was consolidated into a single database. The consolidation enabled expansion of the database to incorporate back-calculated individual Pt, Pd, Rh and Au grades from the single analytical 4E grade in the Nkwe drillholes basing on prill splits as established from the complete empirical SPD analytical dataset. The grades for Os, Ir and Ru were then determined from regression relationships enabling the estimation and eventual reporting to 7E grade and including base metals.
	Description of how the geological interpretation was used to control the resource estimates.	Major structural discontinuities were identified from interpretation of the TMF gradient and gamma-ray spectrometry survey, field mapping and contouring of elevation of the UG2 reef top contact. Knowledge of regional structural geology and regional geological losses guided delineation of fault blocks and the generation of the resultant UG2 and MR 3D wireframe model. Application of results such as the modelled variogram ranges, spatial continuity of kriging efficiencies and the slope of regression results, the sample search volume used and the number of samples informing a grade estimate constrained grade extrapolations beyond known drill data.
	Discussion of basis for using or not using grade cutting or capping.	Statistical analysis on the raw data informing the estimate suggests that no capping or treatment of extreme values is necessary, other than one sample for the MR, and does show reasonable support for geological domaining or any possible anisotropy.
	The process of validation, the checking process used, the comparison of model data to drillhole	Integrity of grade estimation was validated through swath plots in the X and Y directions, sample-to-model box-whisker plots on global means for all estimated grades and the visual analysis of grade plans for the 4E and 7E grades as well as plans showing the spatial distribution of the UG2 reef thickness, Slope of

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<table>
<tr><th colspan="3">SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES</th></tr>
<tr><th>Criteria</th><th>Explanation</th><th>Detail</th></tr>
<tr><td></td><td>data, and use of reconciliation data if available.</td><td>Regression, Kriging Efficiencies, Search Volume and the number of samples used to inform grades estimates.</td></tr>
<tr><td>Moisture</td><td>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</td><td>All tonnages are reported on a dry basis.</td></tr>
<tr><td>Cut-off parameters</td><td>The basis of the adopted cut-off grade(s) or quality parameters applied.</td><td>Zone specific geological losses have been applied and the Mineral Resources are declared at a paylimit of 1.9 g/t and 1.6 g/t 4E using a basket price of USD 2,654/oz and USD 1,888/oz for the UG2 Reef and MR respectively. No mining cut has been applied at this stage as the supporting geotechnical work is still in progress.

Below are the parameters used for the basket price and pay limit calculation.
<table>
<tr><th>Element</th><th>Resource price (USD/oz)</th><th>4E prill split</th><th>7E prill split</th><th>Recovery</th><th>Payability</th></tr>
<tr><td>Platinum</td><td>1,025</td><td>45.3%</td><td>37.5%</td><td>85%</td><td>86%</td></tr>
<tr><td>Palladium</td><td>2,200</td><td>43.5%</td><td>36.0%</td><td>85%</td><td>86%</td></tr>
<tr><td>Rhodium</td><td>12,400</td><td>9.7%</td><td>8.0%</td><td>85%</td><td>86%</td></tr>
<tr><td>Gold</td><td>2,000</td><td>1.5%</td><td>1.2%</td><td>85%</td><td>86%</td></tr>
<tr><td>Ruthenium</td><td>465</td><td>0.0%</td><td>13.0%</td><td>71%</td><td>55%</td></tr>
<tr><td>Iridium</td><td>4,600</td><td>0.0%</td><td>2.6%</td><td>75%</td><td>45%</td></tr>
<tr><td>Osmium</td><td>400</td><td>0.0%</td><td>1.7%</td><td>75%</td><td>45%</td></tr>
</table></td></tr>
<tr><td>Mining factors or assumptions</td><td>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</td><td>It is envisaged that the Mineral Resource mining cut will be approximately 1m for the UG2 due to the absence of stringers in footprint of the currently drilled area. The hanging wall contact is a distinct Leuconorite plane referred to as the Leuconorite Parting Plane (LPP) and forms a distinct sharp hanging wall contact with no chromitite stringers above it. For the MR the mining cut will probably be the reef width, which is approximately 2,00m plus 10cm hanging wall and 10cm footwall dilution.

Mining studies on the possible practical mining methods or a combination thereof are currently being concluded.

The current geological modelling does not incorporate any assumptions or provide any form of guidance for a chosen specific mining method.</td></tr>
<tr><td>Metallurgical factors or assumptions</td><td>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not</td><td>Samples for metallurgical testwork for the UG2 have been collected from site and submitted to the SGS and Suntech Geomet laboratories to establish the most optimal recovery method or a combination thereof.

The current geological modelling supporting this estimate does not incorporate any assumptions or provide guidance for a specific recovery method.</td></tr>
</table>

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SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES		
Criteria	**Explanation**	**Detail**
	always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	A series of specialised environmental studies are in the process of being commissioned to establish a balance between compliance of the eventual chosen mining method to environmental regulations against optimal and practical extraction that will achieve the least environmental impact. The current geological modelling supporting this estimate does not incorporate any assumptions or provide guidance to achieve the least environmental impact.
Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.	A density of 3.93 t/m^3 for the UG2 and 3.28 t/m^3 for the MR was used in the tonnage estimation. The density was determined empirically using the Archimedes method on UG2 reef and MR intersection samples from a population from 45 and 81 diamond drill core samples respectively from 14 SPD drillholes. The determination of density is an ongoing exercise conducted by the field exploration team to expand the database for use to support tonnage estimates.
	The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.	The density was determined empirically using the Archimedes method on UG2 reef and MR intersection samples.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Not applicable
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The Mineral Resource categories were determined based on the QAQC, slope of regression (SOR), kriging efficiency (KE) and knowledge of the continuity of the UG2 reef horizon.

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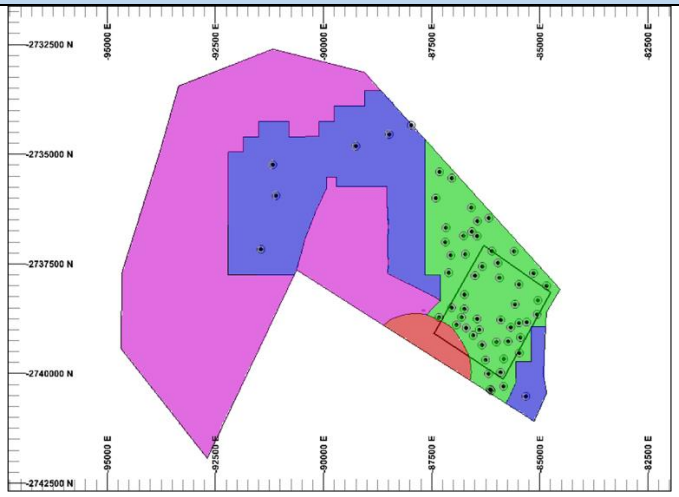
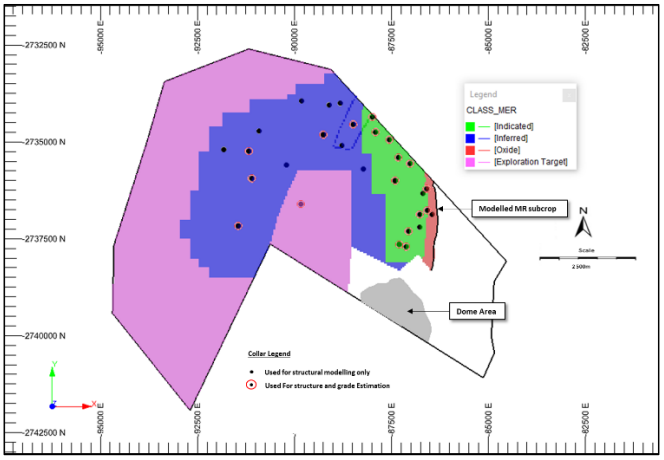
SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES		
Criteria	**Explanation**	**Detail**
		  The Indicated Mineral Resources are based on a SOR greater than 0.6, a KE greater than 0.3, a search volume less than 2.5 as well as application of local knowledge of areas with high confidence in UG2 reef continuity. The Inferred Mineral Resources are based on a SOR of greater than 0.3, extrapolation based on half the distance of the range of the 4E grade variogram with termination onto the major structural discontinuities. The footprint of the Exploration Target Range is extrapolated from the boundary of Inferred Mineral Resources to the project perimeter fence.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	Geological losses have been applied to the resource to account for the effects of faults, dykes, and potholes. This was estimated by considering the successful drillhole intersections, identified major faults and dykes from the TMF geophysics and additional minor losses. The project area was divided into larger blocks representing various degrees of geological losses. The geological losses for the UG2 range from 21% to 40% for the Exploration Target area with the Eerstegeluk Dome area completely excluded at this stage of reporting. For the MR the geological losses range from 18% to 40% for the Exploration Target area and the top 40m (vertically) at the subcrop for the MR is also excluded due to weathering and oxidation.

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SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES		
Criteria	**Explanation**	**Detail**
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The CP is of the opinion that the Mineral Resource classification criteria and associated results are a true reflection of the Bengwenyama orebody and demonstrate the current levels of confidence as informed by drill data.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	The Mineral Resources estimate, as well as processes associated with estimation work as contained in this press release has been reviewed by an independent third party, Mr. Garth Mitchell, of ExplorMine Consultants (Pty) Ltd. Mr. Mitchell confirms validity and reasonableness of estimate and confirms that due care and diligence was applied in the compilation.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.	The QQ plot results (R^2=0.93 for the UG2 and R^2=0.81 for the MR) suggest the SPD data is highly comparable to the Nkwe historic drill data and that the two datasets can be consolidated into a single database without any issues. The consolidation enabled back-calculation of individual Pt, Pd, Rh and Au grades from the single analytical 4E grade in the Nkwe drillholes basing on prill splits established from the complete empirical SPD analytical dataset as well at determining individual grades for Os, Ir and Ru from regression relationships. This has enabled reporting to 7E grade. The UG2 Exploration Target is based on the estimated kriged value of the drillhole database with a 20% range applied to it.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	The CP is of the opinion that geological modelling underlying the estimate contained in this press release is a true reflection of the Bengwenyama orebody and considers the grade and tonnage estimates robust.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Not applicable