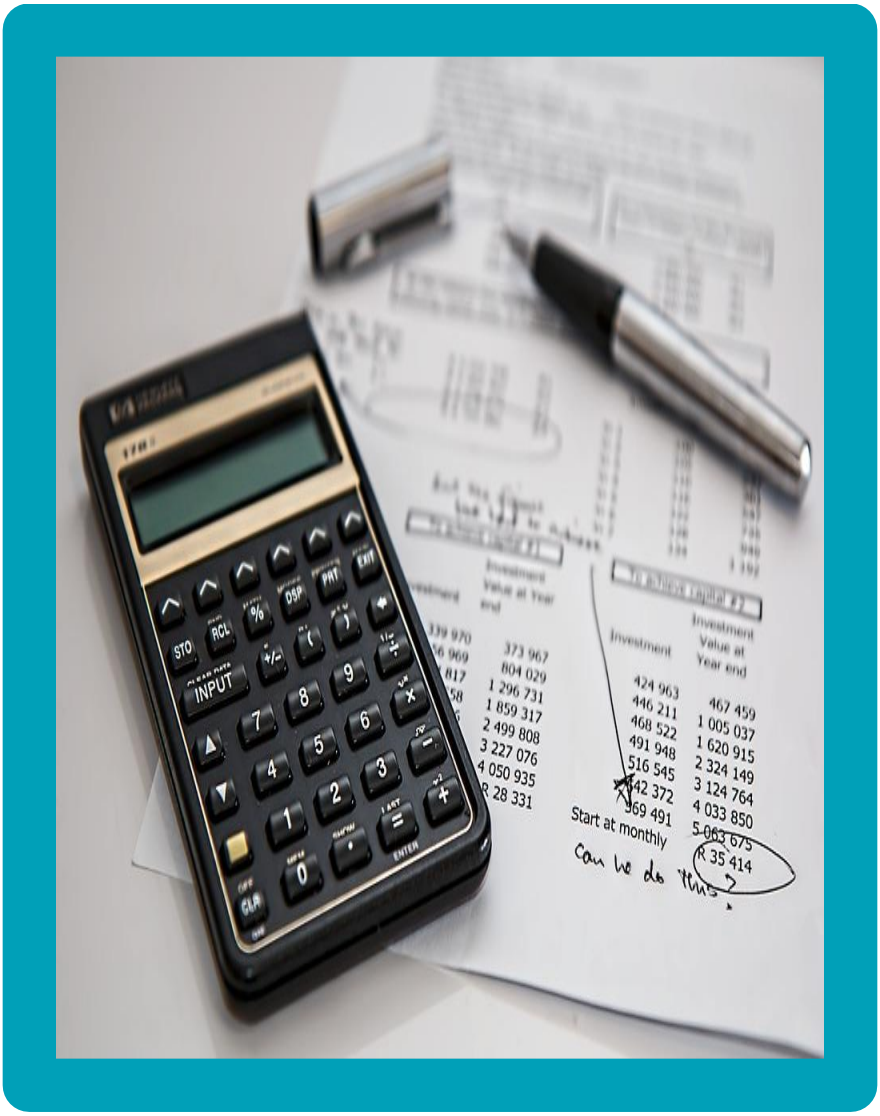
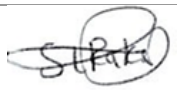



# Financial Provision

COMPILED FOR THE PROPOSED MODIKWA PLATINUM MINE SOUTH 3 OPENCAST APPLICATION, LOCATED WITHIN THE FARM WINTERVELDT 293 KT UNDER THE SEKHUKHUNE DISTRICT MUNICIPALITY IN LIMPOPO PROVINCE

**For:** Modikwa Platinum Mine | **By**: Segope Water and Environmental Services | **2024**

# Documents Control

| | | |
|---|---|---|
| **Project Name** | Financial Provision Report for the Proposed Integrated Environmental Authorisation Applications for Modikwa Platinum Mine South 3 Opencast Project in Burgersfort, Limpopo Province | |
| **Project Number** | LP30/5/1/2/3/2(129 MR) | |
| **Client Details** | Modikwa Platinum Mine<br><br>292 KT Onverwacht Hill Steelpoort Mpumalanga 1129 | |
| **Status** | Draft Report | |
| | | **Signature** |
| **Prepared by** | Dineo Makhubela<br>➢ Environmental Scientist |  |
| **Reviewed by:** | Lorato Rakuba<br>➢ Environmental Scientist |  |
| **Reviewed by:** | Tshimangadzo Rasifudi<br>➢ Environmental Scientist (Project Manager) |  |
| **Reviewed and Approved by** | Letladi Maisela<br>➢ Director | |
| **Last saved on** | 30th of August 2024 | |

*This report should be cited as 'Segope Water and Environmental Services, 2024. Financial Provision Report. Prepared for Modikwa Platinum Mine.'*

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# Abbreviations

| Abbreviation | Description |
|---|---|
| **DAFF** | Department of Agriculture, Forestry and Fisheries |
| **DEA** | Department of Environmental Affairs |
| **DMR** | Department of Mineral Resources |
| **DWS** | Department of Water and Sanitation |
| **ECA** | Environmental Conservation Act (Act 73 of 1989) |
| **ECO** | Environmental Control Officer |
| **EIA** | Environmental Impact Assessment |
| **EIR** | Environmental Impact Assessment Report |
| **EMPR** | Environmental Management Programme |
| **GNR** | Government Notice Regulation |
| **GN 1147** | Government Notice 1147 |
| **LOM** | Life of Mine |
| **MPRDA** | Mineral and Petroleum Resources Development Act (Act 28 of 2002) |
| **MRA** | Mining Right Application |
| **NEMA** | National Environmental Management Act (Act 107 of 1998) |
| **NEMBA** | National Environmental Management: Biodiversity Act (Act 10 of 2004) |
| **NEMWA** | National Environmental Management: Waste Act (Act 59 of 2008) |
| **NWA** | National Water Act (Act 36 of 1998) |
| **PCD** | Pollution Control Dam |
| **ROM** | Run of Mine |
| **CPI** | Consumer Price Index |
| **RWD** | Return Water Dam |
| **MPM** | Modikwa Platinum Mine |

# 1. Introduction

Modikwa Platinum Mine (MPM) is located approximately 20 km west of Burgersfort and 18 km north of Steelpoort on the Eastern Limb of the Bushveld Complex, situated in the Fetakgomo Tubatse Local Municipality (FTLM) within the Sekhukhune District Municipality (SDM) of the Limpopo Province. The MPM's mining rights area includes portions of the farms: Maandagshoek 254 KT, Driekop 253 KT, Hendriksplaats 281 KT, Onverwacht 292 KT, and Winterveld 293 KT. However, the proposed study focuses on the South 3 Opencast Project which is situated on the Winterveldt 293 KT Farm.

MPM is proposing to develop opencast mining activities on Farm Winterveld 293 KT and holds a Prospecting Right over the mining right application area. South 3 Opencast Operation is an extension of the existing MPM operations. The MPM consists of South 2 Shaft which is currently operating under the existing approved Environmental Management Programme (EMP) Amendment. South 2 Shaft is an extension of South 1 Shaft and Onverwacht Hill shaft developments. An application is being made to amend the current Environmental Authorisation to include the proposed additional mining-related infrastructure at South 3 Opencast. The proposed additional opencast mining together with the mining-related infrastructure at the South 3 Opencast project are necessary and will effectively increase the Life of Mine (LOM) for MPM into the future.

In broad terms, the proposed South 3 project would involve the development of an opencast with three sections as shown in **Figure 1**.

The project will also involve setting up run-of-mine (ROM) ore stockpiles, topsoil stockpiles, and waste rock dumps. Additionally, it will include supporting infrastructure such as material storage and handling facilities for fuel, lubricants, general and hazardous substances, as well as general and hazardous waste management facilities, sewage management facilities, water management infrastructure, and security facilities.

MPM is currently operating at a production rate of 240 ktpm. The life of the UG2 open pits from construction to final rehabilitation is anticipated to be approximately ten years with the life of the Merensky pits in the region of twenty years. The life of the main shafts (North 1, South 1, and South 3 Opencast) is anticipated to continue until approximately 2040.

The financial provision legislation for mining rights in South Africa is overseen by the Department of Mineral Resources and Energy (DMRE) which involves several key requirements and regulations aimed at ensuring that mining operations are conducted responsibly and that adequate financial resources are available for environmental rehabilitation and closure of mining sites. The amount of **R30 450 515,95** for financial provision was calculated for the proposed South 3 mining application. Financial provision will be made in the form of a bank guarantee upon the successful granting of the mining application.

Before the commencement of the project, an EIA regulatory process must be conducted in terms of the MPRDA, National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA) and the National Environmental Management: Waste Act, 2008 (No. 59 of 2008) (NEM: WA), all as amended.

MPM has appointed Segope Water and Environmental Services (hereafter referred to as Segope Consulting) as an independent consulting company, to carry out a full Scoping and Environmental Impact Assessment (S&EIA) process to assess any potential environmental, social, and economic impacts of the proposed opencast mining project. Segope Consulting had been also appointed to consolidate the cost estimations for the proposed South 3 project which involves an opencast pit for extraction of the ore-bearing materials, a waste rock dump for the storage of waste rock generated at the South 3 Opencast, Pollution Control Dams (PCD), offices and associated infrastructure, haul roads connecting the existing South 2 Shaft with the South 3 opencast, septic sewage system and Stormwater Management (SWM) infrastructure as shown on **Figure 1** below.

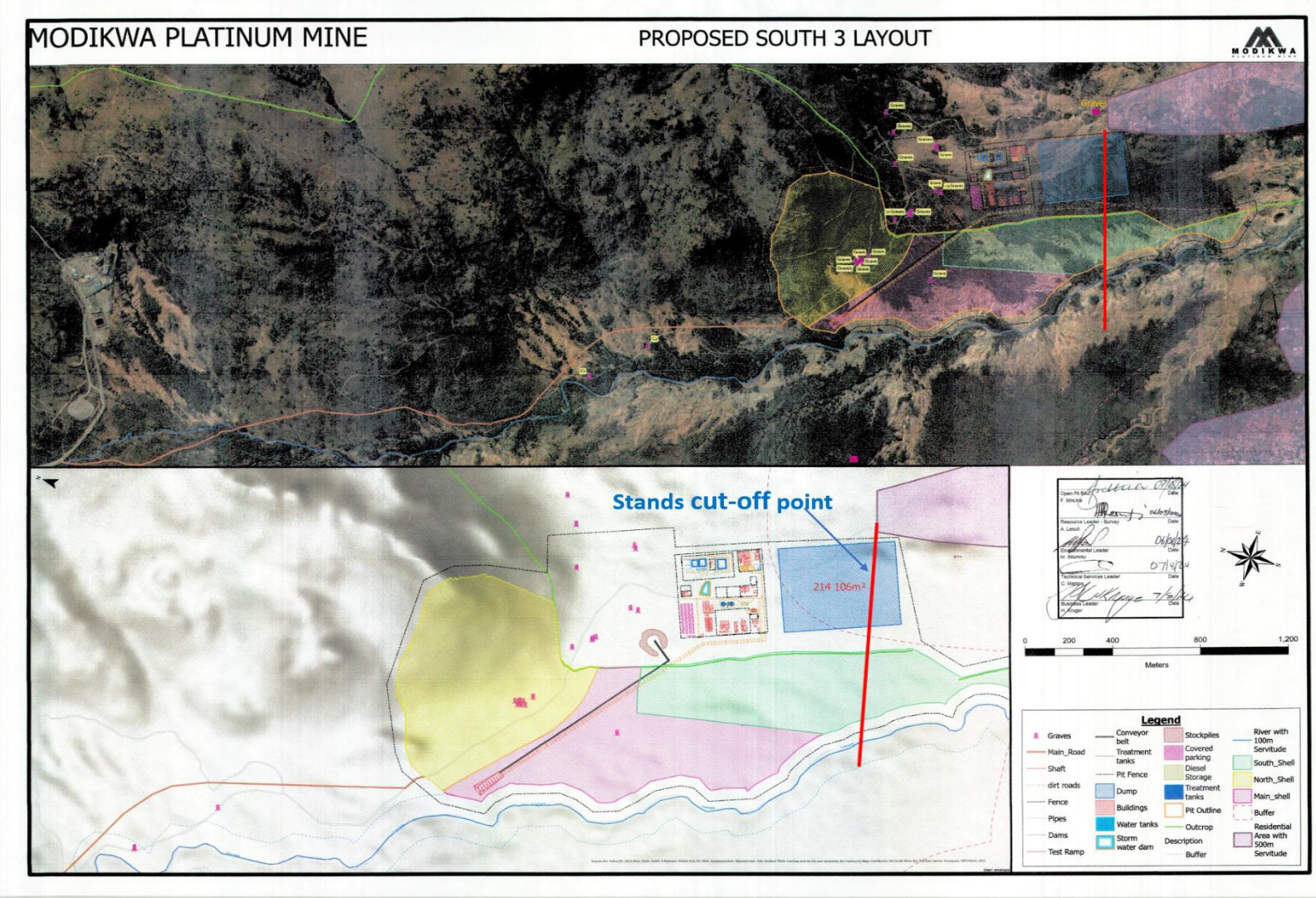


*Figure 1: Mine layout plan for the proposed mining area (Segope Consulting , 2024)*

# 2. Legal framework

The below information provides key legislation and financial provision requirements that aim to ensure that mining companies operate in an environmentally responsible manner and that they have the necessary resources to restore mining areas to a safe and stable condition after mining activities cease.

1. **Mineral and Petroleum Resources Development Act (MPRDA) 2002**:
   - The MPRDA is the primary legislation governing mineral resources in South Africa.
   - It mandates that mining companies must obtain mining rights and comply with specific environmental management requirements.
2. **National Environmental Management Act (NEMA) 1998**:
   - Under NEMA, environmental management and protection are integrated into the mining rights process.
   - Mining companies must submit Environmental Management Plans (EMPs) and Environmental Impact Assessments (EIAs).
3. **Regulations Pertaining to the Financial Provision for Prospecting, Exploration, Mining, or Production Operations (GN R1147 of 2015)**:
   - These regulations outline the requirements for financial provision to ensure the rehabilitation and closure of mining sites.
   - Companies must provide financial guarantees or other financial instruments to cover the costs of environmental rehabilitation.

## 2.1. Financial Provision Requirements

1. **Environmental Management Plans (EMPs)**:
   - Mining companies are required to submit EMPs that detail how they will manage and mitigate environmental impacts.
   - EMPs must include provisions for ongoing rehabilitation and eventual closure of the mining operation.
2. **Financial Guarantees**:
   - Companies must provide financial guarantees, which can take the form of bank guarantees, insurance policies, trust funds, or other approved financial instruments.

- The amount of the financial provision must be sufficient to cover the costs of rehabilitation, including post-closure monitoring and maintenance.

3. **Annual Reviews and Adjustments**:
   - The financial provision must be reviewed and adjusted annually to ensure it remains adequate to cover rehabilitation costs.
   - Companies must submit annual reports to the DMRE detailing their financial provision and any changes to their rehabilitation plans.
4. **Independent Audits**:
   - Independent auditors must assess the adequacy of the financial provision.
   - Audit reports must be submitted to the DMRE along with the annual review.

### 2.2. Recent Developments

- **Amendments and Updates**: The regulations are periodically updated to address emerging issues and improve the effectiveness of financial provisions.
- **Public Participation**: There is an emphasis on involving affected communities and stakeholders in the decision-making process, particularly concerning environmental impacts and rehabilitation plans.

### 2.3. Enforcement and Compliance

- The DMRE is responsible for enforcing compliance with financial provision requirements.
- Non-compliance can result in penalties, suspension, or revocation of mining rights.

# 3. Determination of the Quantum

A guideline document compiled by DMRE for the evaluation of the quantum of closure-related financial provision was utilized in this report to calculate the financial provision for the proposed South 3 MPM project. Figure B.1 of the guideline document was followed in the assessment of the quantum for financial provision and closure calculations. **Figure 2** indicates a summary of the procedural steps to be taken to calculate the quantum of financial provision required.

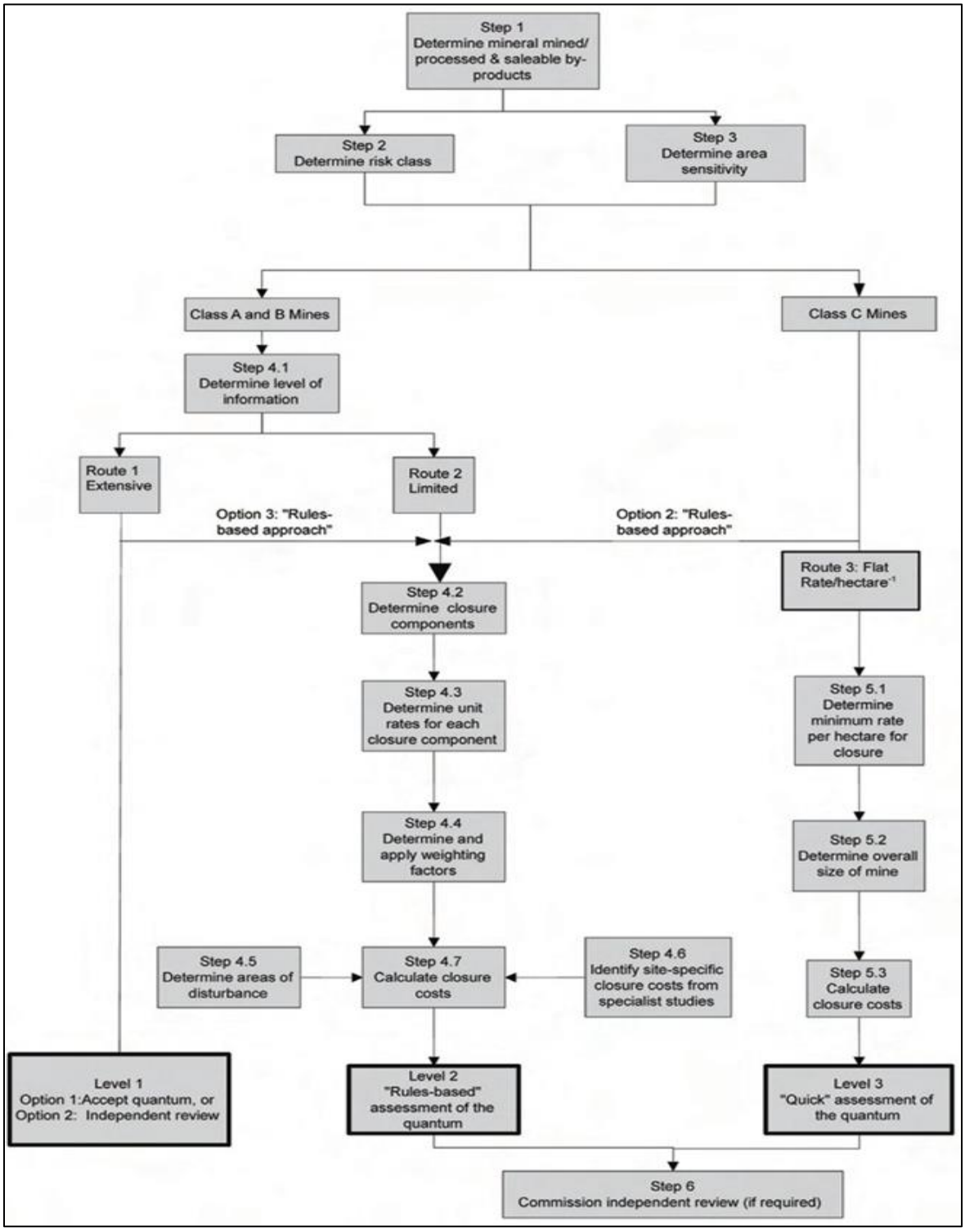


*Figure 2: Summary of the procedural steps to be taken to calculate the quantum of financial provision (DMRE, 2005)*

### Step 1: Determine mineral mined and saleable by-products

The proposed South 3 application covers approximately 282 hectares. The proposed project triggers listing Notice 2 of GN 984 and GN R325 as outlined in Section 24(2) of NEMA which requires the applicant to conduct the full Scoping and EIA/EMPr process due to the proposed mine being large and expected to have major impacts such as:

- High scale activities
- Longer processes
- Sensitive and complex projects
- Significant impacts

The mine will be mining the Platinum Group Metals (PGMs) minerals also they will be recovering chrome minerals when encountered during the mining process. PGMs are essential and precious metals which include platinum, palladium, rhodium, iridium, osmium, and ruthenium.

### Step 2: Determine the primary risk class

The risk class of the mineral was identified using **Table 1** below. The risk class will be either:

- **Class A (High risk):** a high probability of the occurrence of the impact with a severe consequence,
- **Class B (Medium risk):** a moderate probability of occurrence of the impact with a manageable consequence,
- **Class C (Low risk):** a low probability of occurrence of the impact with a negligible consequence.

In terms of **Table 1** below indicates that the proposed South 3 project falls under Class C as highlighted.

**Table 1: Primary risk class for the type of mineral mined/ processed (DMRE, 2005)**

| Mineral | Ore | Size: large if > than (tpm) | Primary risk class | | | |
|---|---|---|---|---|---|---|
| | | | Large mine | | Small mine | |
| | | | Mine and Mine waste | Mine, mine waste, plant and plant waste | Mine and Mine waste | Mine, mine waste, plant and plant waste |
| Antimony | | 1000 | A | A | C | C |
| Asbestos | | 0 | A | A | A | A |
| Base metals (Copper, Cadmium, Cobalt, Iron ore, Molyb-denum, Nickel, Tin, Vana-dium) | Sulphide | 10 000 | A | A | C | A |
| | Oxide | 10 000 | C | A | C | A |
| Coal | | 0 | A | A | A | A |
| Chrome | | 10 000 | C | A | C | C |
| Diamonds and precious stones | | 10 000 | C | B | C | C |
| Gold, silver, uranium | | 10 000 | B | A | B | A |
| Phos-phate | | 10 000 | C | B | C | C |
| Platinum | | 10 000 | C | B | C | B |
| Mineral sands (Ilmenite, Titanium, Rutile, Zircon) | | 10 000 | C | B | C | C |
| Zinc andLead | | 10 000 | C | A | C | A |
| Industrial Minerals (Anda- lusite, Barite, Bauxite, Cryolite, Fluor- spar) | | 10 000 | C | C | C | C |

### Step 3: Determine environmental sensitivity of the mine area

The mining operation can be located in a Low, Medium or High sensitivity area based on the biophysical, social and economic situation. **Table 2** provides criteria to aid with the determination of the sensitivity of the area within which the mine is located. This step thus involves the following:

- Assess and rank the sensitivity of the area by individually assessing the biophysical situation, then the social situation and then the economic situation,
- Establish the overall sensitivity of the area, by accepting the most sensitive of the three individual assessments, e.g. if the area has a Medium biophysical sensitivity, a High social sensitivity and a Low economic sensitivity, the overall sensitivity will be High.

**Table 2: Criteria used to determine the area sensitivity**

| Sensitivity | Sensitivity criteria | | |
|---|---|---|---|
| | Biophysical | Social | Economic |
| Low | • Largely disturbed from the natural state.<br>• Limited natural fauna and floraremains.<br>• Exotic plant species evident.<br>• Unplanned development.<br>• Water resources are disturbed and impaired. | • The local communities are not within sighting distance of the mining operation.<br>• Lightly inhabited area (rural). | • The area is insensitive to development.<br>• The area is not a major source of income for the local communities. |
| Medium | • Mix of natural andexotic fauna and flora.<br>• Development is a mix of disturbed and undisturbed areas, within an overall planned framework.<br>• Water resources are well controlled. | • The local communities are in the proximity of the mining operation (within sighting distance).<br>• Peri-urban area with density aligned with a development framework.<br>• Area developed with an established infrastructure. | • The area has a balanced economic development where a degree of income for the local communities is derived from the area.<br>• The economic activity could be influenced by indiscriminate development. |

| | | | |
|---|---|---|---|
| **High** | • Largely in a natural state.<br>• Vibrant fauna and flora, with species diversity and abundance matching the nature of the area.<br>• Well planned development.<br>• Area forms part of an overall ecological regime of conservation value.<br>• Water resources emulate their original state. | • The local communities are in close proximity to the mining operation (on the boundary of the mine).<br>• Densely inhabited area (urban/dense settlements).<br>• Developed and well-established communities. | • The local communities derive the bulk of their income directly from the area.<br>• The area is sensitive to development that could compromise the existing economic activity. |

In terms of the proposed South 3 application, the following were considered:

- **Biophysical**

  The project area is situated within the quarter-degree grid square of 2430 CA within the Sekhukhune Plains Bushveld ecosystem which is considered Endangered according to the South African National Biodiversity Institute (SANBI) 2022 Ecosystem Red list. The ecosystem consists of predominantly short, open-to-closed thornveld with an abundance of aloe species and other succulents. Encroachment by Indigenous microphyllous trees and invasion by alien species is common throughout the area.

  The majority of the study area is covered with Bonheim/Abbotspoort and Witbank soils that are deep, dark-colored, clayey, and structured with pedocutanic and neocutanic characteristics. The highly intensive rainfall events of short duration and the clayey nature of these soils promote surface runoff and discourage infiltration, sometimes leading to erosion gullies which ultimately act as preferential flow path drainage lines.

  The is a Tubatsane River (perennial river) approximately 50 m to the west, while the non-perennial Mufafa River is about 10 m east of the proposed mining boundary. No wetlands have been identified on site. The mine will maintain a buffer of at least 32 meters around the proposed rivers.

However, the majority of the planned project area has been highly degraded and overexploited by man as a result of present illegal mining activities, as well as previous farming and urbanization. Based on the overall outline of the biophysical section, it can be established that the proposed South 3 has **Medium** sensitivity criteria.

- **Social**

  It has been reported that there are currently approximately 98 residences within the 500m blasting circle. The photographs of the current houses were taken from Google Earth Pro, which was last updated on November 28, 2023, indicating that there may be more buildings erected near the planned project area's boundaries. The area consists of **Medium** sensitivity criteria under the social sector.

- **Economic**

  The proposed South 3 project area is currently not used by the community members except for the illegal mining operations that are currently taking place. The area consists of **Low**-sensitivity criteria under the economic sector.

### Step 4: Determine the closure components

The applicable closure components were Identified, based on the type of mining as well as site-specific conditions. The mining operation is either:

- An open-cast activity,
- Underground activity, or
- A combination of the above, with both opencast and underground activities being conducted.

The South 3 project will consist of a combination of two mining operations. **Table 3** lists the closure components and identifies the components that will apply to the South 3 mining project.

**Table 3: Closure components applicable for the proposed mine**

| Component No. | Main description | Applicable closure components for mine type | | |
|---|---|---|---|---|
| | | Open-cast | Underground | Combination |
| 1 | Dismantling of processing plant andrelated structures (including over-land conveyors and power lines) | No | No | No |
| 2(A) | Demolition of steel buildings and structures | No | Yes | No |
| 2(B) | Demolition of reinforced concrete buildings and structures | No | No | No |
| 3 | Rehabilitation of access roads | No | No | No |
| 4(A) | Demolition and rehabilitation of electrified railway lines | No | No | No |
| 4(B) | Demolition and rehabilitation of non-electrified railway lines | No | No | No |
| 5 | Demolition of housing and facilities | No | No | No |
| 6 | Opencast rehabilitation includingfinal voids and ramps | Yes | No | Yes |
| 7 | Sealing of shafts, adits, and inclines | No | Yes | Yes |
| 8(A) | Rehabilitation of overburdenand spoils | Yes | Yes | Yes |
| 8(B) | Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing waste) | No | No | No |
| 8(C) | Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste) | No | No | No |
| 9 | Rehabilitation of subsided areas | No | No | No |

| | | | | |
|---|---|---|---|---|
| **10** | General surface rehabilitation, including grassing of all denuded areas | Yes | Yes | Yes |
| **11** | River diversions | Yes | Yes | Yes |
| **12** | Fencing | Yes | Yes | Yes |
| **13** | Water management (Separating clean and dirty water, managing polluted water and managing the impact on groundwater, including treatment, when required) | Yes | Yes | Yes |
| **14** | 2 to 3 years of maintenance and aftercare | Yes | Yes | Yes |

### Step 5: Determine the unit rates for closure components

Use the risk class (Class A, B, or C) from Step 2 and the sensitivity of the area where the mine is located (Low, Medium, or High) from Step 3 to determine the unit rates for the applicable closure components identified in Step 4.

**Table 4** provides the unit rates for the closure components listed in **Table 3**. More specifically:

- A Master Rate for each closure component is provided, and
- A multiplication factor to apply to the Master Rate is provided in each table, depending on the risk class and the area sensitivity.

The Master Rate for each closure component is based on the "generally accepted closure methods" for each of the closure components listed in **Table 3**. The master rates had been derived from the 2022 master rates which had been added to the average Consumer Price Index (CPI) of 2023 which is 6.0% **(Appendix 1)**.

## Table 4: Unit rates for closure components

| COMPONENT 1 | PROCESSING PLANT and related structures (including overland conveyors and power lines) | |
|---|---|---|
| | Unit | Master rate |
| | $m^3$ | 19.14 |
| | Multiplication factor | |
| Risk Class (A, B or C) | 1.00 | |
| | Environmental Sensitivity (High, Medium or Low) | |

| COMPONENT 2 (A) | STEEL BUILDINGS AND STRUCTURES (including floor slabs) | |
|---|---|---|
| | Unit | Master rate |
| | $m^2$ | 266,55 |
| | Multiplication factor | |
| Risk Class (A, B or C) | 1.00 | |
| | Environmental Sensitivity (High, Medium or Low) | |

| COMPONENT 2 (B) | REINFORCED CONCRETE BUILDINGS & STRUCTURES | |
|---|---|---|
| | Unit | Master rate |
| | $m^2$ | 392,80 |
| | Multiplication factor | |
| Risk Class (A, B or C) | 1.00 | |
| | Environmental Sensitivity (High, Medium or Low) | |

| COMPONENT 3 | ACCESS ROADS | |
|---|---|---|
| | Unit | Master rate |
| | $m^2$ | 47,70 |
| | Multiplication factor | |
| Risk Class (A, B or C) | 1.00 | |
| | Environmental Sensitivity (High, Medium or Low) | |

| COMPONENT 4 (B) | NON - ELECTRIFIED RAILWAY LINES | |
|---|---|---|
| | Unit | Master rate |
| | m | 462,95 |
| | Multiplication factor | |
| Risk Class (A, B or C) | 1.00 | |
| | Environmental Sensitivity (High, Medium or Low) | |

| COMPONENT 4 (A) | ELECTRIFIED RAILWAY LINES | |
|---|---|---|
| | Unit | Master rate |
| | m | 252,52 |
| | Multiplication factor | |
| Risk Class (A, B or C) | 1.00 | |
| | Environmental Sensitivity (High, Medium or Low) | |

| COMPONENT 5 | HOUSING AND FACILITIES(including floor slabs) | |
|---|---|---|
| | Unit | Master rate |
| | m | 533,09 |
| | Multiplication factor | |
| Risk Class (A, B or C) | 1.00 | |
| | Environmental Sensitivity (High, Medium or Low) | |

| COMPONENT 6 | OPENCAST REHABILITATION (including final voids and ramps) | | | |
|---|---|---|---|---|
| | Unit | | Master rate | |
| | ha | | 271 315,55 | |
| | Multiplication factor | | | |
| Risk Class (A, B or C) | A | 0.04 | 0.52 | 1.00 |
| | B | 0.04 | 0.52 | 1.00 |
| | C | 0.04 | 0.52 | 1.00 |
| | | Low | Medium | High |
| | Environmental Sensitivity | | | |

| COMPONENT 7 | SEALING OF SHAFTS, ADITS & INCLINES (including concrete cap) | |
|---|---|---|
| | Unit | Master rate |
| | $m^3$ | 143,09 |
| | Multiplication factor | |
| Risk Class (A, B or C) | 1.00 | |
| | Environmental Sensitivity (High, Medium or Low) | |

| COMPONENT 8 (A) | OVERBURDEN AND SPOILS | |
|---|---|---|
| | Unit | Master rate |
| | ha | 186 301,47 |
| | Multiplication factor | |
| Risk Class (A, B or C) | 1.00 | |
| | Environmental Sensitivity (High, Medium or Low) | |

| COMPONENT 8 (B) | PROCESSING WASTE DEPOSITS & EVAPORATION PONDS (basic, salt - producing waste) | |
|---|---|---|
| | Unit | Master rate |
| | Ha | 232 035,11 |
| | Multiplication factor | |
| Risk Class (A, B or C) | 1.00 | |
| | Environmental Sensitivity (High, Medium or Low) | |

| COMPONENT 8 (C) | PROCESSING WASTE DEPOSITS & EVAPORATION PONDS (acidic, metal- rich waste) | | | |
|---|---|---|---|---|
| | Unit | | Master rate | |
| | ha | | 673 939,96 | |
| | Multiplication factor | | | |
| Risk Class | A | 0.59 | 0.80 | 1.00 |
| | B | 0.55 | 0.76 | 0.90 |
| | C | 0.51 | 0.66 | 0.81 |
| | Low | | Medium | High |
| | Environmental Sensitivity | | | |

| COMPONENT 9 | SUBSIDED AREAS | |
|---|---|---|
| | Unit | Master rate |
| | ha | 155 999,42 |
| | Multiplication factor | |
| Risk Class (A, B or C) | 1.00 | |
| | Environmental Sensitivity (High, Medium or Low) | |

| COMPONENT 10 | GENERAL SURFACE REHABILITATION (including grassing of denuded areas) | |
|---|---|---|
| | Unit | Master rate |
| | Ha | 147 582,19 |
| | Multiplication factor | |
| Risk Class (A, B or C) | 1.00 | |
| | Environmental Sensitivity (High, Medium or Low) | |

| COMPONENT 11 | RIVER DIVERSIONS | |
|---|---|---|
| | Unit | Master rate |
| | Ha | 147 582,19 |
| | Multiplication factor | |
| Risk Class (A, B or C) | 1.00 | |
| | Environmental Sensitivity (High, Medium or Low) | |

| COMPONENT 12 | FENCING | |
|---|---|---|
| | Unit | Master rate |
| | m | 168,34 |
| | Multiplication factor | |
| Risk Class (A, B or C) | 1.00 | |
| | Environmental Sensitivity (High, Medium or Low) | |

| COMPONENT 13 | WATER MANAGEMENT | | | |
|---|---|---|---|---|
| | Unit | | Master rate | |
| | Ha | | 56 144,90 | |
| | Multiplication factor | | | |
| Risk Class | A | 0.60 | 0.67 | 1.00 |
| | B | 0.41 | 0.60 | 0.67 |
| | C | 0.17 | 0.25 | 0.33 |
| | Low | Medium | | High |
| | Environmental Sensitivity | | | |

| COMPONENT 14 | MAINTENANCE | |
|---|---|---|
| | Unit | Master rate |
| | ha | 19 640,22 |
| | Multiplication factor | |
| Risk Class (A, B or C) | 1.00 | |
| | Environmental Sensitivity (High, Medium or Low) | |

### Step 6: Determine and apply the weighting factors

Identify the applicable weighting factors, based on the specific mine location. The two applicable weighting factors are as follows:

- **Weighting Factor 1:** The nature of the terrain where the mine is located **(see Table 5)**. This factor is applicable as it is more difficult (and hence costlier) to undertake work related to mine closure in areas that are undulating or rugged. Weighting Factor 1 is applied to each of the closure components.

  **Table 5: Weighting Factor 1 (Nature of terrain)**

| Weighting Factor 1: | Flat | Undulating | Rugged |
|---|---|---|---|
| Nature of the terrain/ accessibility | 1.00 | 1.10 | 1.20 |

  Note:

  - Flat: Generally flat over the mine area
  - Undulating: A mix of sloped and undulating areas within the mine area
  - Rugged: Steep natural ground slopes (greater than 1:6) over the majority of the mine area

- **Weighting Factor 2:** The proximity of the mine to an urban centre **(see Table 6).** This factor is applicable as there will be increased costs to transport machinery, goods and personnel to more remote mine sites. Weighting Factor 2 is applied to the Preliminary and General items only.

  **Table 6: Weighting Factor 2 (Proximity to urban area)**

| Weighting Factor 2: | Urban | Peri-urban | Remote |
|---|---|---|---|
| Proximity to urban area where goods andservices are to be supplied | 1.00 | 1.05 | 1.10 |

  **Note:**

  - Urban: Within a developed urban area
  - Peri-urban: Less than 150 km from a developed urban area
  - Remote: Greater than 150 km from a developed urban area

### Step 7: Identify areas of disturbance

Identify areas, volumes or lengths of disturbance and/or development from the mining operations, for each of the applicable closure components. The base information can be identified from suitably scaled topographical maps, which will be augmented by one or more site visits to the mining operation

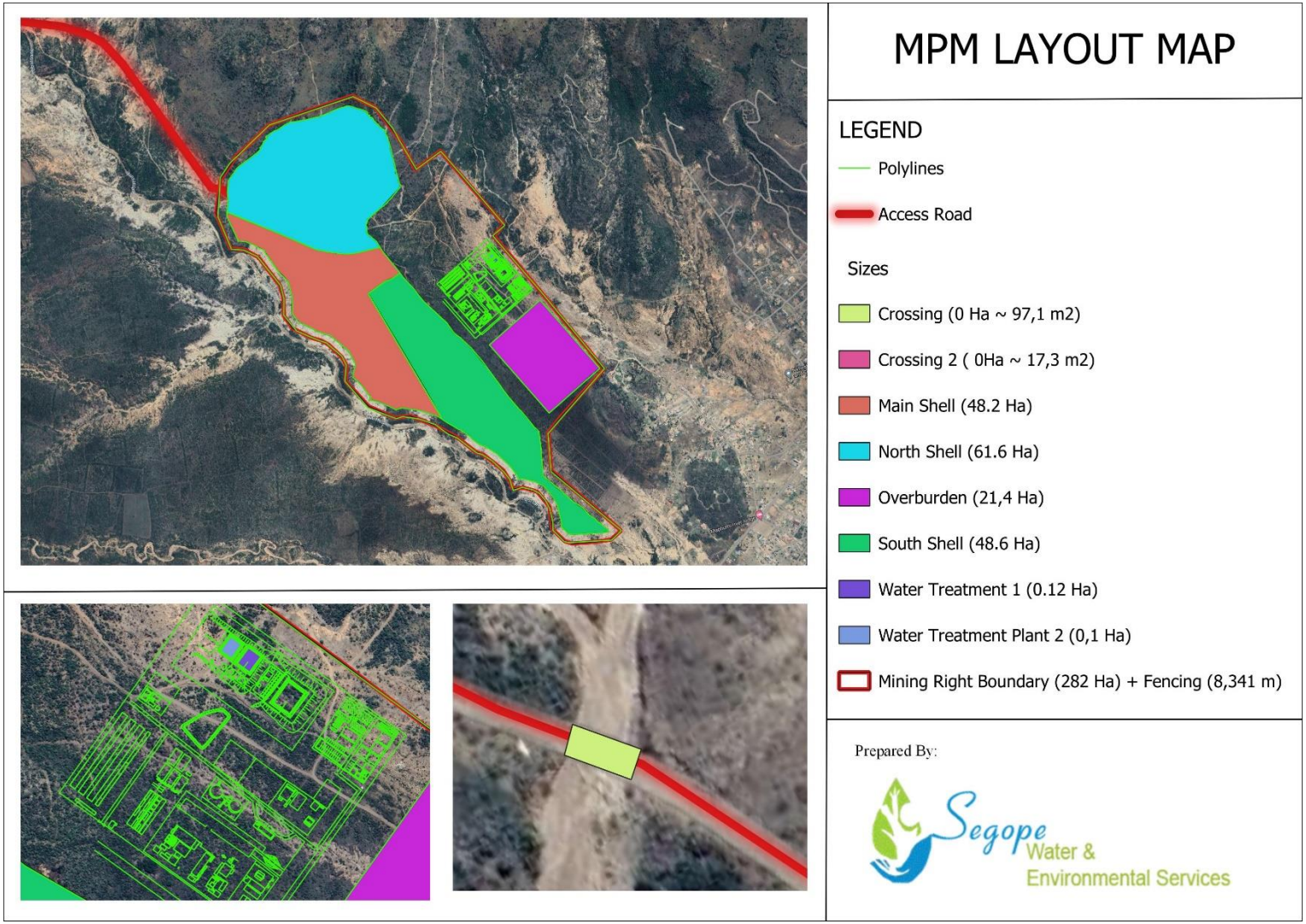


*Figure 3: The proposed quantity for each of the applicable closure components for MPM (Segope Consulting , 2024)*

### Step 8: Calculate closure costs

Calculate two sets of quantum figures for financial provision, using the "rules-based" approach and the applicable closure components, unit rates, areas of disturbance, and closure costs from specialist studies. The quantum figures to calculate include A quantum for financial provision to cover the current environmental liability. The "Grand Total" in **Figure 4** will be used for this calculation, as this assumes that the work

- Will be done by a Third Party (as the mining operation will be in premature closure), and
- The quantum of financial provision to cover the final closure of the mine.

The "Sub-Total 1" in **Figure 4** will be used for this calculation, which assumes that the mine does the closure and rehabilitation work themselves.

| CALCULATION OF THE QUANTUM | | | | | | | |
|---|---|---|---|---|---|---|---|
| Mine: Modikwa Platinum Mine | | | | DMRE REF:LP30/5/1/2/3/2(129 MR) | | | |
| Evaluators:Segope Consulting | | | | Date:06/10/2024 | | | |
| No | Description | Unit | A Quantity | B Master Rate | C Multiplication factor | D Weighting factor 1 | E=A*B*C*D Amount (rands) |
| 1 | Dismantling of processing plant and related structures (Including overland conveyors and power lines) | m3 | 0 | R 19,03 | 1 | 1,1 | R - |
| 2(A) | Demolition of steel buildings and structures | m2 | | R 265,02 | 1 | 1,1 | R - |
| 2(B1) | Demolition of reinforced concrete buildings and structures | m2 | | R 390,55 | 1 | 1,1 | R - |
| 2(B2) | Demolition of light concrete slab and structures | m2 | 160 | R 210,33 | 1 | 1,1 | R 37 018,08 |
| 3 | Rehabilitation of access roads | m2 | 0 | R 47,42 | 1 | 1,1 | R - |
| 4(A) | Demolition and rehabilitation of electrified railway lines | m | 0 | R 460,29 | 1 | 1,1 | R - |
| 4(B) | Demolition and Rehabilitation of non-electrified railway lines | m | 0 | R 251,07 | 1 | 1,1 | R - |
| 5 | Demolition of housing and/or administration facilities | m2 | 0 | R 530,04 | 1 | 1,1 | R - |
| 6 | Opencast rehabilitation including final voids and ramps | ha | 0 | R 269 760,48 | 0,52 | 1,1 | R - |
| 7 | Sealing of shafts, adits and inclines | m3 | | R 142,27 | 1 | 1,1 | R - |
| 8(A) | Rehabilitation of overburden and spoils | ha | 21,4 | R 185 233,67 | 1 | 1,1 | R 4 360 400,59 |
| 8(B) | Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing waste) | ha | 0 | R 240 705,19 | 1 | 1,1 | R - |
| 8(C) | Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste) | ha | 0 | R 670 077,22 | 0,44 | 1,1 | R - |
| 9 | Rehabilitation of subsided areas | ha | 0 | R 155 105,30 | 1 | 1,1 | R - |
| 10 | General surface rehabilitation | ha | 82 | R 146 736,31 | 1 | 1,1 | R 13 196 876,78 |
| 11 | River diversions | ha | 0,11 | R 146 736,31 | 1 | 1,1 | R 18 465,30 |
| 12 | Fencing | m | 0 | R 167,38 | 1 | 1,1 | R - |
| 13 | Water management | ha | 0,22 | R 55 793,27 | 0,17 | 1,1 | R 2 295,34 |
| 14 | 2 to 3 years of maintenance and aftercare | ha | 103 | R 18 644,70 | 1 | 1,1 | R 2 115 725,98 |
| 15 (A) | Specialist study | Sum | 0 | R 63 606,80 | 0 | 1,1 | R - |
| 15 (B) | Specialist study | Sum | 0 | R 73 370,06 | 0 | 1,1 | R - |
| | | | | | | | R19 730 782,06 |
| Multiply Sum * of 1 – 15 by Weighting factor 2 (Step 4.4) | | | 1,1 | R19 730 782,06 | | R | 21 703 860,26 (Subtotal 1) |
| 1 | Preliminary and General | Add 6% of **Subtotal 1** if **Subtotal 1**> R100,000,000.00 **6%** | | | | | |
| | | Add 12% of **Subtotal 1** if **Subtotal 1** < R100,000,000.00 **12%** | | | | R | 2 604 463,23 |
| | Contingencies | Add 10% of **Subtotal 1** | | | | R | 2 170 386,03 |
| 2 | | 10% | | | | | |
| | | **Sub Total 2** (Subtotal 1 plus sum of management and contingency) | | | | R | 4 774 849,26 |
| | | **Sub Total 3** | | | | R | 26 478 709,52 |
| | | VAT @ 15 % of Subtotal 3 | | | | R | 3 971 806,43 |
| | | **GRAND TOTAL** (Subtotal 3 plus VAT) | | | | R | 30 450 515,95 |

*Figure 4: Calculated Financial Provision for the proposed South 3 project (Segope Consulting, 2024)*

# 4. Conclusion

The financial provision for MPM has been thoroughly assessed and determined to be adequate for covering all anticipated costs associated with environmental rehabilitation and mine closure. The current provision complies with all regulatory requirements under the National Environmental Management Act (NEMA) and has been reviewed and certified by independent auditors. Regular reviews will continue to ensure the provision remains sufficient and responsive to any changes in operational scope or environmental conditions. MPM remains committed to environmental responsibility and will take all necessary steps to ensure successful rehabilitation and closure of the mining site.

# 5. Appendices

**Appendix 1: CPI headline year-on-year rates3 (DMRE, 2005)**

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 | 15,1 | 14,9 | 14,9 | 14,6 | 13,9 | 13,6 | 13,3 | 13,6 | 14,3 | 14,0 | 15,3 | 14,6 | 14,4 |
| 1991 | 14,3 | 15,0 | 15,7 | 15,6 | 15,2 | 15,2 | 15,8 | 15,6 | 15,4 | 16,8 | 15,5 | 16,2 | 15,3 |
| 1992 | 15,8 | 15,8 | 15,7 | 15,6 | 14,8 | 15,1 | 14,6 | 14,3 | 13,5 | 11,7 | 11,0 | 9,6 | 13,9 |
| 1993 | 9,7 | 9,0 | 9,7 | 11,0 | 10,6 | 10,0 | 9,9 | 9,3 | 9,1 | 9,4 | 9,2 | 9,5 | 9,7 |
| 1994 | 9,9 | 9,9 | 9,0 | 7,1 | 7,2 | 7,5 | 8,2 | 9,4 | 10,1 | 9,8 | 9,9 | 9,9 | 9,0 |
| 1995 | 9,6 | 9,9 | 10,2 | 11,0 | 10,8 | 10,0 | 9,0 | 7,5 | 6,4 | 6,3 | 6,4 | 6,9 | 8,7 |
| 1996 | 6,9 | 6,5 | 6,3 | 5,5 | 5,9 | 6,9 | 7,1 | 7,5 | 8,4 | 9,1 | 9,2 | 9,4 | 7,4 |
| 1997 | 9,4 | 9,8 | 9,6 | 9,9 | 9,5 | 8,8 | 9,1 | 8,7 | 8,0 | 7,5 | 6,8 | 6,1 | 8,6 |
| 1998 | 5,6 | 5,4 | 5,4 | 5,0 | 5,1 | 5,2 | 6,6 | 7,6 | 9,1 | 9,0 | 9,4 | 9,0 | 6,9 |
| 1999 | 8,9 | 8,6 | 7,9 | 7,7 | 7,1 | 7,3 | 4,9 | 3,2 | 1,9 | 1,7 | 1,9 | 2,2 | 5,1 |
| 2000 | 2,6 | 2,4 | 3,4 | 4,6 | 5,1 | 5,1 | 5,9 | 6,8 | 6,8 | 7,1 | 7,1 | 7,0 | 5,3 |
| 2001 | 7,1 | 7,8 | 7,4 | 6,5 | 6,4 | 6,3 | 5,3 | 4,6 | 4,4 | 4,0 | 4,3 | 4,6 | 5,7 |
| 2002 | 5,0 | 5,9 | 6,2 | 7,4 | 7,8 | 8,0 | 9,6 | 10,4 | 11,2 | 13,0 | 12,9 | 12,4 | 9,2 |
| 2003 | 11,6 | 10,3 | 10,2 | 8,8 | 7,8 | 6,7 | 5,2 | 5,1 | 3,7 | 1,5 | 0,4 | 0,3 | 5,8 |
| 2004 | 0,2 | 0,7 | 0,4 | 0,2 | 0,6 | 1,2 | 1,6 | 1,0 | 1,3 | 2,4 | 3,7 | 3,4 | 1,4 |
| 2005 | 3,0 | 2,6 | 3,0 | 3,4 | 3,3 | 2,8 | 3,4 | 3,9 | 4,4 | 4,0 | 3,4 | 3,6 | 3,4 |
| 2006 | 4,0 | 3,9 | 3,4 | 3,3 | 3,9 | 4,9 | 5,0 | 5,4 | 5,3 | 5,4 | 5,4 | 5,8 | 4,7 |
| 2007 | 6,0 | 5,7 | 6,1 | 7,0 | 6,9 | 7,0 | 7,0 | 6,7 | 7,2 | 7,9 | 8,4 | 9,0 | 7,1 |
| 2008 | 9,3 | 9,8 | 10,6 | 11,1 | 11,7 | 12,2 | 13,4 | 13,7 | 13,1 | 12,1 | 11,8 | 9,5 | 11,5 |
| 2009 | 8,1 | 8,6 | 8,5 | 8,4 | 8,0 | 6,9 | 6,7 | 6,4 | 6,1 | 5,9 | 5,8 | 6,3 | 7,1 |
| 2010 | 6,2 | 5,7 | 5,1 | 4,8 | 4,6 | 4,1 | 3,7 | 3,5 | 3,2 | 3,4 | 3,6 | 3,5 | 4,3 |
| 2011 | 3,7 | 3,7 | 4,1 | 4,2 | 4,6 | 5,0 | 5,3 | 5,3 | 5,7 | 6,0 | 6,1 | 6,1 | 5,0 |
| 2012 | 6,3 | 6,1 | 6,0 | 6,1 | 5,7 | 5,5 | 4,9 | 5,0 | 5,5 | 5,6 | 5,6 | 5,7 | 5,6 |
| 2013 | 5,4 | 5,9 | 5,9 | 5,9 | 5,6 | 5,5 | 6,3 | 6,4 | 6,0 | 5,5 | 5,3 | 5,4 | 5,7 |
| 2014 | 5,8 | 5,9 | 6,0 | 6,1 | 6,6 | 6,6 | 6,3 | 6,4 | 5,9 | 5,9 | 5,8 | 5,3 | 6,1 |
| 2015 | 4,4 | 3,9 | 4,0 | 4,5 | 4,6 | 4,7 | 5,0 | 4,6 | 4,6 | 4,7 | 4,8 | 5,2 | 4,6 |
| 2016 | 6,2 | 7,0 | 6,3 | 6,2 | 6,1 | 6,3 | 6,0 | 5,9 | 6,1 | 6,4 | 6,6 | 6,8 | 6,4 |
| 2017 | 6,6 | 6,3 | 6,1 | 5,3 | 5,4 | 5,1 | 4,6 | 4,8 | 5,1 | 4,8 | 4,6 | 4,7 | 5,3 |
| 2018 | 4,4 | 4,0 | 3,8 | 4,5 | 4,4 | 4,6 | 5,1 | 4,9 | 4,9 | 5,1 | 5,2 | 4,5 | 4,7 |
| 2019 | 4,0 | 4,1 | 4,5 | 4,4 | 4,5 | 4,5 | 4,0 | 4,3 | 4,1 | 3,7 | 3,6 | 4,0 | 4,1 |
| 2020 | 4,5 | 4,6 | 4,1 | 3,0 | 2,1 | 2,2 | 3,2 | 3,1 | 3,0 | 3,3 | 3,2 | 3,1 | 3,3 |
| 2021 | 3,2 | 2,9 | 3,2 | 4,4 | 5,2 | 4,9 | 4,6 | 4,9 | 5,0 | 5,0 | 5,5 | 5,9 | 4,5 |
| 2022 | 5,7 | 5,7 | 5,9 | 5,9 | 6,5 | 7,4 | 7,8 | 7,6 | 7,5 | 7,6 | 7,4 | 7,2 | 6,9 |
| 2023 | 6,9 | 7,0 | 7,1 | 6,8 | 6,3 | 5,4 | 4,7 | 4,8 | 5,4 | 5,9 | 5,5 | 5,1 | 6,0 |
| 2024 | 5,3 | 5,6 | 5,3 | 5,2 | 5,2 | 5,1 | 4,6 | | | | | | |

## Appendix 2:Detailed Cost calculations sheet for financial liability estimate on DMRE rates.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Company:** | | Modikwa Platinum Mine (Pty) Ltd | | **Location** | | | | | Limpopo Province |
| **Mining Right:** | | LP30/5/1/2/3/2(129 MR | | **Date** | | | | | 13/09/2024 |
| **Operation:** | | South 3 | | **LoM** | | | | | 30 years |
| **Disturbed Properties:** | | Portion 0 of the farm Winterveld 293 KT | | **Estimated Year of Closure** | | | | | 2054 |
| **Evaluators:** | | Segope Consulting (Pty) Ltd | | **Year of Assessment** | | | | | FY2023 |
| **Risk Class:** | | C | | | | | | | |
| **Area Sensitivity:** | | Medium | | | | | | | |
| | | | | **Closure Liability for Proposed Projects, FY2023** | | | | | |
| **Component No.** | **Unit Class Reference** | Description | **Unit** | **A2** | **B** | **C** | **D** | **E1 = A2*B*C*D** | **Comments** |
| | | | | **Quantity Scheduled** | **Master rate FY2023** | **Multiplication factor** | **Weighting factor 1** | **Amount (ZAR) Scheduled** | |
| **1** | 2.8 | Dismantling of processing plant and related structures (including overland conveyors and powerlines) | $m^3$ | - | R 19,03 | 1 | 1,1 | R - | Not applicable. |
| **2(A)** | 2.1-2.4; 1.6 | Demolition of steel buildings and structures | $m^2$ | | R 265,02 | 1 | 1,1 | R - | Not applicable |
| **2(B1)** | 3.1; 3.2; 3.3; 3.12 | Demolition of reinforced concrete buildings and structures | $m^2$ | | R 390,55 | 1 | 1,1 | R - | Not applicable |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **2(B2)** | | Demolition of Light concrete slab and structures | m² | 160 | R 210,33 | 1 | 1,1 | R 37 018,08 | Unreinforced mass concrete structures and flooringNominal provision for Workshop AreasAssume 80m2 concrete slab/ bund at the workshop station (Quantities based on reasonable assumptions based on the proposed project layout plan) |
| **3** | 4.1; 4.3 | Rehabilitation of access roads | m² | - | R 47,42 | 1 | 1,1 | R - | Not applicable.<br>Rehabilitation of access roads and internal roads (gravel roads only) provided for under the general rehabilitation provision (Component 10). |
| **4(A)** | | Demolition and rehabilitation of electrified railway lines | m | - | R 460,29 | 1 | 1,1 | R - | Not applicable |
| **4(B)** | 7,6 | Demolition and rehabilitation of non-electrified railway lines | m | - | R 251,07 | 1 | 1,1 | R - | Not applicable |
| **5** | 1.1; 1.2; 1.4; 1.8 | Demolition of housing and/or administration facilities | m² | - | R 530,04 | 1 | 1,1 | R - | Not applicable<br>Mobile offices/ containerised offices owned by mining contractor. Contractor to remove |
| | | Sub Total for Infrastructure Areas | | | | | | **R 37 018,08** | |
| **6** | | Opencast rehabilitation including final voids and ramps | ha | | R 269 760,48 | 0,04 | 1,1 | R - | The Backfilling Method will be implemented for the opencast shells |
| **7** | 8,3 | Sealing of shafts, adits and inclines | m³ | | R 142,27 | 1 | 1,1 | R - | Not Applicable |
| **8(A)** | 14.1; 14.13 | Rehabilitation of overburden and spoils | ha | 21,4 | R 185 233,67 | 1 | 1,1 | R 4 360 400,59 | Provision for Waste Rock Dump (WRD). Waste assessment indicates that the waste rock has a low pollution potential. |
| **8(B)** | 14.1; 14.13 | Rehabilitation of processing waste deposits and evaporation ponds (basic salt-producing waste) | ha | | R 230 705,19 | 1 | 1,1 | R - | Not applicable |
| **8(C)** | | Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste) | ha | - | R 670 077,22 | 0,51 | 1,1 | R - | Not applicable |
| **9** | | Rehabilitation of subsided areas | ha | - | R 155 105,30 | 1 | 1,1 | R - | Not applicable |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Sub Total for Mining Areas | | | | | | **R 4 360 400,59** | |
| **10** | 13,2 | General surface rehabilitation: | ha | 82 | R 146 736,31 | 1 | 1,1 | R 13 196 876,78 | Rehabilitation of all areas affected by mining and related activities to achieve the final land use. Areas considered in Components 6 - 9 are not included, as rehabilitation for these components included sloping and revegetation. General surface rehabilitation should be aligned to the intended final land use and generally include the following activities:•Sloping to emulate general surface topography and create free-draining areas that can facilitate surface runoff and minimise erosion risk•Removal of rubble, dumps and unnecessary remnants of surface infrastructure to prepare areas suitable for revegetation•Revegetation of areas with appropriate seedbanks to achieve end land useAll footprint areas affected by mining infrastructure to be rehabilitated and revegetated, aligned with the end land use presented in the approved EMP.Assume 80% of area directly surrounding the proposed mine (incl. roads) |
| **11** | | River diversions | ha | 0,11 | R 146 736,31 | 1 | 1,1 | R 18 465,30 | The Haul Road traverses the river on two occasions. |
| **12** | 10.9; 10.10; 10.12 | Fencing | m | - | R 167,38 | 1 | 1,1 | R - | Assume standard diamond mesh fence |
| **13** | | Water management | ha | 0,22 | R 55 793,27 | 0,17 | 1,1 | R 2 295,34 | Two Water Treatment Plants for water management onsite |
| **14** | 14,9 | 2 to 3 years of maintenance and aftercare | ha | 103 | R 18 644,70 | 1 | 1,1 | R 2 115 725,98 | Follow-up inspections and re-seeding of poorly vegetated and/or bare areas; 25% (Allow for three (3x) years' monitoring after rehabilitation) |
| **15(A)** | | Specialist study | Sum | - | R 63 606,80 | 1 | 1,1 | R - | Provided for as part of MR premature closure quantum |
| **15(B)** | | Specialist studies (soil remediation) | Sum | - | R 73 370,06 | 1 | 1,1 | R - | Provided for as part of MR premature closure quantum |
| | | Sub Total for General Areas | | | | | | **R 15 333 363,39** | |

| | |
|---|---|
| Sum of items 1 - 15 above | **R 19 730 782,06** |

| | | | |
|---|---|---|---|
| SubTotal 1 | 1,1 | | **R 21 703 860,26** |

| | | | |
|---|---|---|---|
| Preliminary and General | 6,00% | If Subtotal 1 > 100 000 000 | R - |
| | 12,00% | If Subtotal 1 < 100 000 000 | R 2 604 463,23 |

| | | | |
|---|---|---|---|
| Contingency | 10% | of Sub Total 1 | R 2 170 386,03 |

| | | |
|---|---|---|
| SubTotal 2 | Sum of P&Gs and contingency (excl. VAT) | R 4 774 849,26 |

| | |
|---|---|
| Sub Total 3 | **R 26 478 709,52** |

| | |
|---|---|
| Add 15% VAT | R 3 971 806,43 |

| | |
|---|---|
| GRAND TOTAL (incl. VAT) | **R 30 450 515,95** |