

**CLOSURE AND FINANCIAL PROVISION ASSESSMENT FOR KANGRA COAL  
FOR THE PROPOSED TAILING STORAGE FACILITY AND WATER  
TREATMENT PLANT – MAQUASA MINING RIGHT AREA**

# KANGRA

**MAQUASA MINING RIGHT AREA**

**MINING RIGHT NUMBER: MP 30/5/1/2/2/133MR**

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## REPORT DETAILS

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<b>Report Title</b>	Closure and Financial Provision Assessment Kangra Operations for the proposed Tailings Storage Facility and Water Treatment Plant - Maquasa Mining Right Area
<b>Report Number</b>	KC_MPRDA_MP_04_05_24
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<b>Client Reviewed</b>	Kangra Coal Proprietary Limited Mahlatse Monareng Environmental Superintendent
<b>Report Revision</b>	Final
<b>Date of Report</b>	27 November 2024

## AUDITOR DECLARATION OF INDEPENDENCE

I, **DuToit Wilken**, declare that:

- I act as the independent specialist for the closure and financial provision assessment.
- I have performed the work relating to the assessment in an objective manner, even if this results in views and findings that are not favourable to the Licensee.
- I declare that there are no circumstances that may compromise my objectivity in performing such work.
- I have expertise in conducting independent closure and financial provision assessment, including knowledge of the MPRDA and MPRDA Regulations, NEMA, the 2015 NEMA Regulations (GNR 1147), 2014 EIA Regulations, NWA, GNR 704, Draft National Mine Closure Strategy 2021 (GN 446) and any guidelines that have relevance to the activity.
- I have complied with NEMA Regulations GNR 1147 and all other applicable legislation.
- I have no, and have not engaged in, conflicting interests in the undertaking of the assessment.
- I have undertaken to disclose to the Licensee and the Competent Authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the project by the Competent Authority, and the objectivity of any report, plan or document prepared by myself for submission to the competent authority.
- All the particulars furnished by me in this report are true and correct.
- I realise that a false declaration is an offence in terms of Regulation 48 and is punishable in terms of section 24F of the Act.
- I do not have and will not have any vested interest (either business, financial, personal, or other) in the project other than remuneration for work performed.



DuToit Wilken

November 2024

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Melissa is an environmental practitioner with sixteen (16) years of experience in the environmental field. Melissa has obtained a BSc and BSc (Hons) in Geographical Science (Environmental Management and Development) from the University of KwaZulu-Natal. Her experience includes the management of environmental compliance within the mining industry, licensing of new projects, rehabilitation and financial provision calculations, environmental compliance auditing, environmental impact assessments, development and implementation of social and labour plans, and project management. She has been involved in implementing and developing integrated strategies in line with relevant environmental legislation and stakeholder management. Melissa is registered as an Environmental Assessment Practitioner with the Environmental Assessment Practitioners Association of South Africa (Registration Number: 2023/6583).

## **CONFIDENTIALITY**

The contents of this report are of a confidential nature, intended for Kangra Coal Proprietary Limited and permitting authorities as required by the approved Mining License and Environmental Management Program (EMPr) and South African law. Any unauthorised use, alteration, or dissemination of the contents of this report is strictly prohibited. Protection of the information in this report is awarded in terms of the *Promotion of Access to Information Act, 2002 (Act No. 2 of 2002)* and without limiting this claim, especially the protection afforded by Chapter 4 of the Act.

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## **DISCLAIMER**

The results and conclusions of this report are limited to the Scope of Work agreed between Elemental Sustainability and the Client for whom this report has been compiled. All assumptions made and all information contained within this report and its attachments depend on the accessibility to and reliability of relevant information, including data and previous reports from the Client. The specialist further declares that, as a representative of Elemental Sustainability Proprietary Limited:

- All work undertaken in relation to the closure assessment was conducted in an objective, independent and uninfluenced manner.
- There is no compromise on the objectivity exercised in undertaking the closure assessment
- The relevant knowledge, expertise and experience required to undertake this closure assessment is held by the author, including, but not limited to, *MPRDA, NEMA, GNR 1147, EIA Regulations* and *MPRDA Regulations* relevant regulations, guidelines relevant to the activity, as well as the required skills, and
- All information furnished in this report is true and correct at the time of the report being finalised.

## **EXECUTIVE SUMMARY**

Elemental Sustainability Proprietary Limited, represented by an independent specialist, was appointed by Kangra Coal Proprietary Limited, to undertake the Closure and Financial Provision Assessment (Closure Cost Assessment), as required in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA), for the Kanga Coal – proposed Co-Disposal Facility (CDF) and Water Treatment Plant.

The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) prescribes that mines must comply with the prescribed financial provision for the rehabilitation, closure and on-going post-decommissioning management of negative environmental impacts arising from the mining operation.

The legal requirement to financially provide for the rehabilitation or management of the negative environmental impacts resulting from a prospecting right, mining right or mining permit are obtained from both the MPRDA (Act 28 of 2002) and NEMA FPR (the Financial Provisioning Regulations, 2015) (As amended). Although the NEMA FPR regulation repeals the Regulation 53 and 54 of the MPRDA requirements it also extends it to cater for a transitional period as set out above in Government Notice No. R. 4296 of 1 February 2024.

This report constitutes an update of the Closure Cost Assessment, as per NEMA requirements and prepared in terms of the NEMA Financial Provisioning Regulations, 2015 (as amended). This Closure Cost Assessment was performed in accordance with the requirements as set out in Regulation 53 and 54 of the MPRDA.

Additional contribution is required towards the Rehabilitation Trust for the scheduled activities associated with the development of the CDF and the water treatment plant. A schedule contribution of R17 301 677,76 (incl. VAT) is required.

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**DEFINITIONS**

<b>TERM</b>	<b>DEFINITION</b>
<b>Care and maintenance</b>	This involves the maintaining and corrective action as requires as well as conducting the required inspection and monitoring to demonstrate achievement of success of the implemented measures.
<b>Closure</b>	This involves the application for closure certificate and initiation of transfer of on-going care and maintenance to third parties.
<b>Closure Planning</b>	A process that begins during the pre-feasibility phase of a project and continues throughout the operations to closure certification. It sets clear objectives and guidelines, makes financial provision, and establishes effective stakeholder engagement leading to closure.
<b>Contingencies</b>	This allows for making reasonable allowance for possible oversights/omissions and possible work not foreseen at the time of compilation of the closure costs. Allowance of between 10 percent and 20 percent would usually be made based on the accuracy of the estimations. The South African Department of Mineral Resources Guideline (January 2005) requires an allowance of 10 percent.
<b>Decommissioning</b>	This relates to the situation after cessation of operations involving the deconstruction/removal and/or transfer of surface infrastructure and the initiation of general site rehabilitation.
<b>Environmental Management Programme</b>	A legal document capturing the current state of the mine, mine progress as to the agreed state and the interim arrangements made during the course of each year of the mine's operation, as contemplated in Section 39 of the MPRDA.
<b>Financial Provision</b>	Section 1 of the MPRDA defines financial provision as meaning the insurance, bank guarantee, trust fund or cash that applicants for or holder of a right of a right or permit must provide in terms of section 41 and 89 guaranteeing the availability of sufficient funds to undertake the agreed work programmes and to rehabilitate the prospecting, mining, reconnaissance, exploration, or production areas, as the case may be.
<b>Life of Mine</b>	An assessment of realistically assumed geological, mining, metallurgical, economic, marketing, legal, environmental, social, governmental, engineering, operational and all other modifying factors, which are considered in order to derive the year for which a mine can still operate economically.
<b>Post-closure</b>	The period of on-going care and maintenance, as per arrangement with third parties.

TERM	DEFINITION
<b>Preliminary and Generals (P&amp;Gs)</b>	This is a key cost item which is directly related to whether third party contractors are applied for site rehabilitation. This cost item comprises both fixed and time-related charges. The former makes allowance for establishment (and de-establishment) of contractors on site, as well as covering their operational requirements for their offices (electricity/water/communications), latrines, etc. Time-related items make allowance for the running costs of the fixed charged items for the contract period.
<b>Reserve</b>	The economically mineable material derived from a measured and/or indicated resource (SAMREC, 2007).
<b>Rehabilitation</b>	The re-instatement of a disturbed area into a usable state (not necessarily its pre-mining state) as defined by broad land use and related performance objectives.
<b>Remediation</b>	To assist in the rehabilitation process by enhancing the quality of an area through specific actions to improve especially bio-physical site conditions.
<b>Scheduled closure</b>	Closure that happens at the planned date and/or time horizon.
<b>Site relinquishment</b>	Receipt of closure certificate and handover to third parties for on-going care and maintenance, if required.
<b>Unscheduled closure</b>	Immediate closure of a site, representing decommissioning and rehabilitation of the site in its present state.

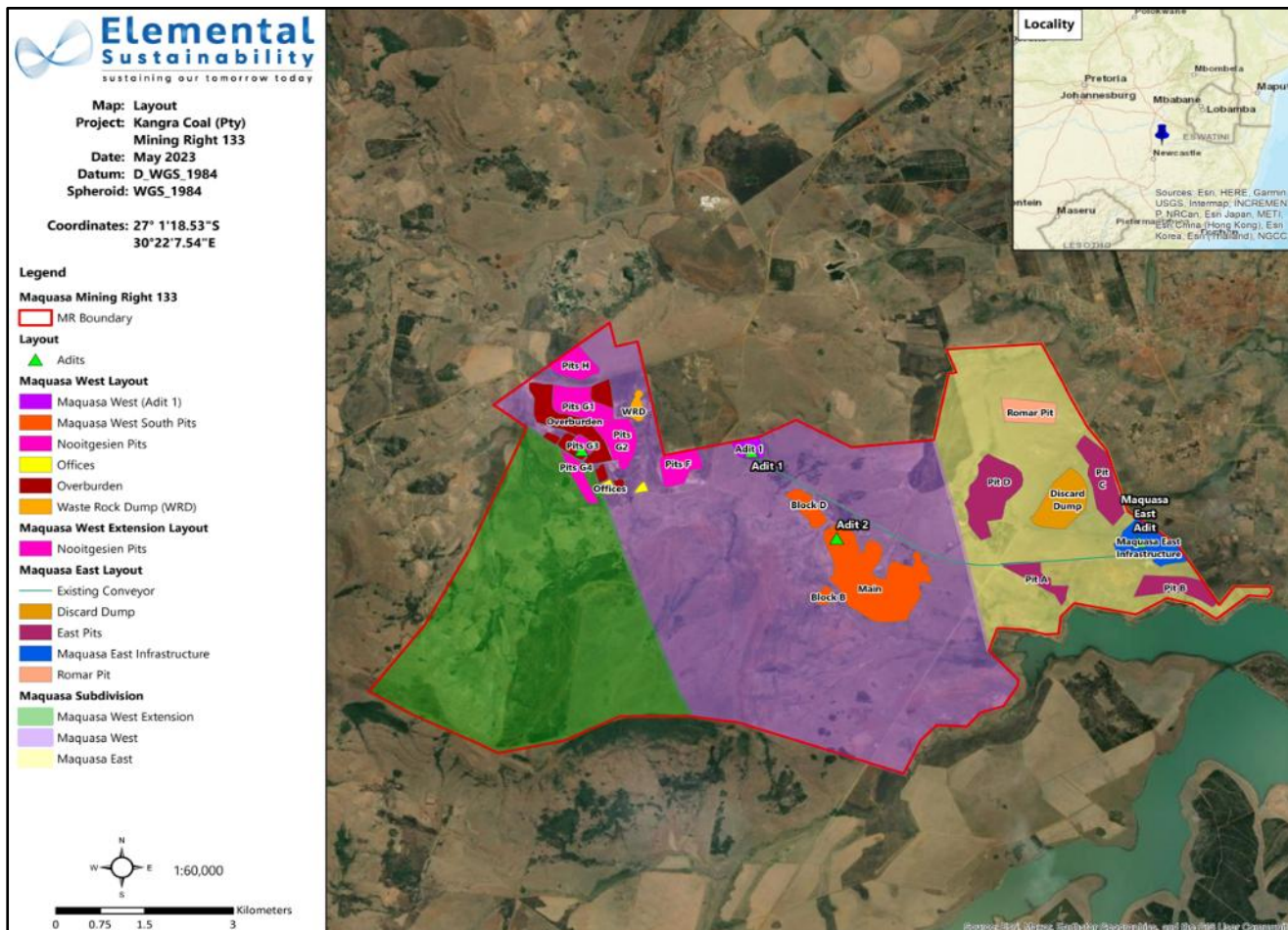
## ABBREVIATIONS AND ACCRONYMS

ACRONYM	DESCRIPTION
<b>DMR</b>	Department of Mineral Resources <i>Note: Currently this Department is known as the Department of Mineral Resources and Energy, DMRE.</i>
<b>DWS</b>	Department of Water and Sanitation <i>Note: this department was formerly known as the Department of Water Affairs and Forestry, DWAF, and is currently known as the Department of Human Settlements, Water and Sanitation, DHSWS.</i>
<b>EAP</b>	Environmental Assessment Practitioner
<b>ECO</b>	Environmental Control Officer
<b>EMPr</b>	Environmental Management Program
<b>FP Regulations</b>	Financial Provisioning Regulations, 2015 (as amended)
<b>Ha</b>	Hectares

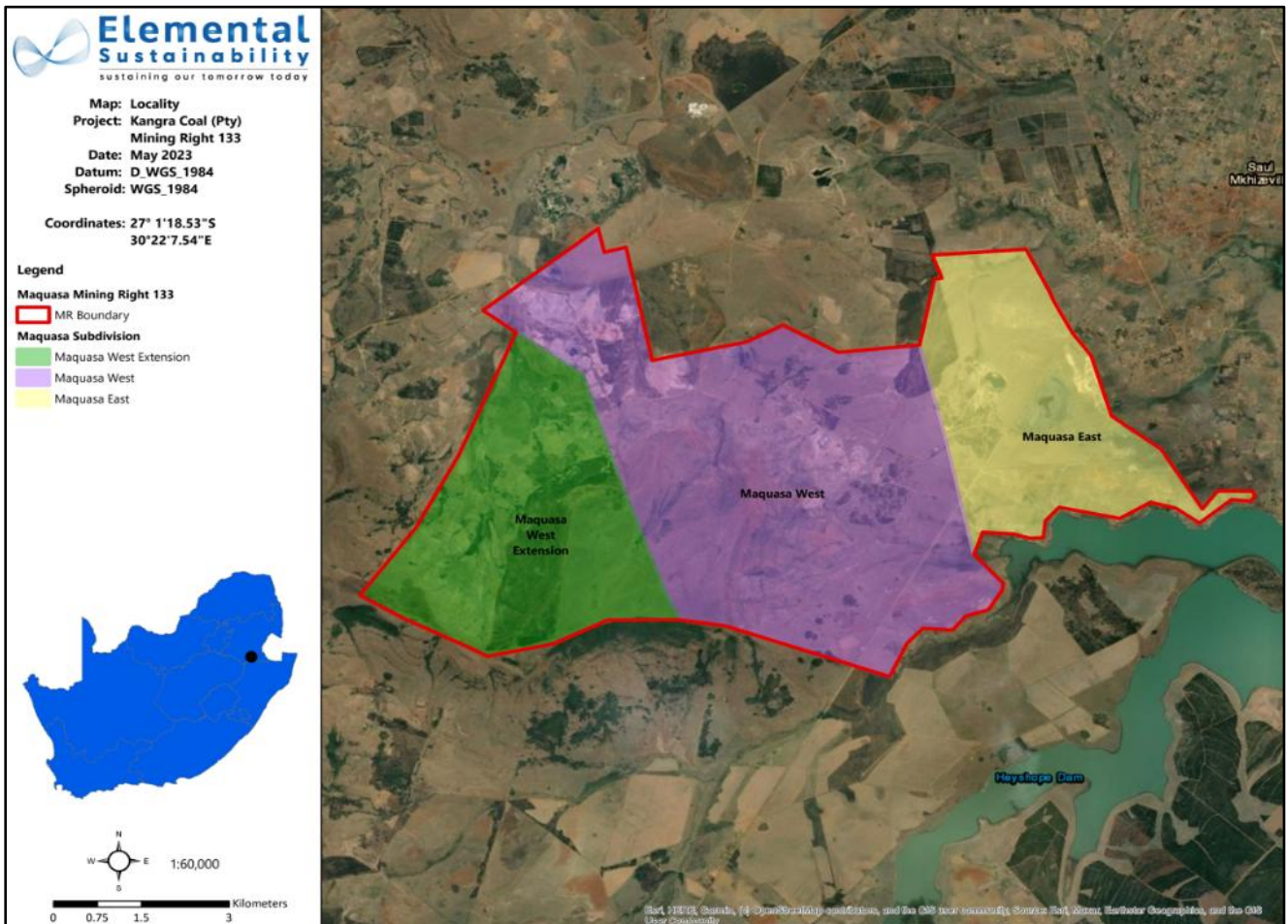
<b>ACRONYM</b>	<b>DESCRIPTION</b>
<b>Mamsl</b>	metres above mean sea level
<b>MPRDA</b>	Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
<b>MRA</b>	Mining Right Area
<b>MRDS</b>	Mine Residue Disposal Site
<b>NAEIS</b>	National Atmospheric Emissions Inventory System
<b>NEMA</b>	National Environmental Management Act, 1998 (Act No. 107 of 1998)
<b>PCD</b>	Pollution Control Dam
<b>PPP</b>	Public Participation Process
<b>ROM</b>	Run of Mine
<b>RWD</b>	Return Water Dam
<b>WMA</b>	Water Management Area

# 1. INTRODUCTION

Elemental Sustainability Proprietary Limited (Elemental-S) has been appointed to undertake the closure cost assessment for the proposed activities at Kangra Coal Proprietary Limited (Kangra) in terms of Section 41 and Regulations 53 and 54 (MPRDA Regulations) as required by GNR 1147 in the transitional period for the proposed Co-Disposal Facility and Water treatment plant. The Kangra Coal – Savmore Colliery (Maquasa Colliery Mining Right No.: MP30/5/1/2/2/133 MR) consists of the operations as presented in Figure 1 and 2 below.



**Figure 1: Maquasa Mining Right area (MP30/5/1/2/2/133 MR) – Operational Areas**



**Figure 2: Maquasa Mining Right area (MP30/5/1/2/2/133 MR)**

NEMA prescribes that Mines must comply with the prescribed financial provision for the rehabilitation, closure and on-going post-decommissioning management of negative environmental impacts arising from the mining operation. This Report aims to meet the NEMA requirements and has been prepared in terms of the NEMA Financial Provisioning Regulations, 2015 (as amended).

The report is presented within the extended transitional period as presented in Government Notice No. R. 4296 of 1 February 2024.

*“Unless regulation 17A applies, a holder, or holder of a right or permit, who applied for such right or permit prior to 20 November 2015, regardless of when the right or permit was obtained –*

- (a) must by no later than a date published in the Government Gazette comply with these Regulations; and*
- (b) shall, until such date published in the Government Gazette contemplated in paragraph (a), be regarded as complying with the provisions of these Regulations, if such holder has complied with the provisions and arrangements regarding financial provisioning, approved as part of the right or permit issued in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).”*

The legal requirement to financially provide for the rehabilitation or management of the negative environmental impacts resulting from a prospecting right, mining right or mining permit are obtained

from both the MPRDA (Act 28 of 2002) and NEMA FPR (the Financial Provisioning Regulations, 2015) (As amended). Although the NEMA FPR regulation repeals the Regulation 53 and 54 of the MPRDA requirements it also extends it to cater for a transitional period as set out above in Government Notice No. R. 4296 of 1 February 2024.

In terms of the Transitional arrangements, as set out in Regulation 17 of the NEMA FPR

17(1) *Any actions taken in terms of regulation 53 and 54 of the MPRDA Regulations (2004) which can be undertaken in terms of a provision of the NEMA regulations must be considered to have been undertaken in terms of the NEMA regulations,*

17(2) *Financial provision submitted in terms of regulations 53 and 54 of the Mineral and Petroleum Resources Development Regulations, 2004 for which approval is pending when these Regulations take effect, must despite the repeal of regulations 53 and 54 of the Mineral and Petroleum Resources Development Regulations, 2004 be dispensed with in terms of regulations 53 and 54 the Mineral and Petroleum Resources Development Regulations, 2004 as if regulations 53 and 54 of the Mineral and Petroleum Resources Development Regulations, 2004 were not repealed.*

Financial provision that was approved in terms of the MPRDA Regulations must be regarded as approved in terms of the NEMA regulations and the holder must review and align such financial provision with the provisions of the NEMA regulations. For this reason this report is submitted in terms of Regulation 53 and 54, and Section 41(1) of the MPRDA.

*Section 41(1) "an applicant for a prospecting right, mining right or mining permit must, before the Minister approves the environmental management plan or environmental management programme (EMP) in terms of Section 39(4), make the prescribed "financial provision" for the rehabilitation or management of negative environmental impacts",*

## 1.1. MINE CONTACT DETAILS

Contact details for Kangra Coal Proprietary Limited are outlined in Table 1 below.

**Table 1: Mine Contact Details**

<b>Name of Company</b>	Kangra Coal Proprietary Limited
<b>Name of Project</b>	Closure and Financial Provision Assessment Kangra Operations –for the proposed Tailings Storage Facility and Water Treatment plant - Maquasa Mining Right Area
<b>Contact Person</b>	Mahlatse Monareng
<b>Email</b>	mahlatse.monareng@kangracoal.co.za

## 1.2. CLOSURE ASSESSMENT PRACTITIONER

This Closure and Financial Provision Assessment was compiled by Elemental-S, under the technical lead of DuToit Wilken. Contact details are provided in Table 2 and Table 3 below.

**Table 2: Contact Details of Closure Assessment Practitioner**

<b>Name of Company</b>	Elemental Sustainability Proprietary Limited
------------------------	--

<b>Address</b>	460a The Wishbone North, Lynnwood
<b>E-mail</b>	dutoit@elemental-s.co.za
<b>Cellular Number</b>	+27 84 588 2322

**Table 3: Details of Specialists**

<b>Specialist</b>	<b>Task</b>	<b>Professional Registrations/Experience</b>
DuToit Wilken	Closure Cost Estimation	BSc MSc – (Geography – Mine Closure) Pr.Sci.Nat 14 years' experience
Melissa Pillay	Closure Plan Compilation	BSc, BSc Hons (Geographical Science) EAPASA 2023/6583 16 years' experience

## 2. GUIDING PRINCIPLES

The following broadly accepted principles have been adopted to guide the preliminary closure planning for Kangra Coal:

- Undertake a Financial provision for remediation of environmental damage in terms of Section 41 (MPRDA) and Regulation 53 and 54 of the MPRDA Regulations.
- Providing the vision, objectives, targets and criteria for final rehabilitation, decommissioning, and closure of the mine. Outlining the design principles for closure.
- Detailing the closure actions that clearly indicate the measures that will be taken to mitigate and/or manage identified risks and describes the nature of residual risks that will need to be monitored and managed post closure.
- Committing to a schedule, budget, roles and responsibilities for final rehabilitation, decommissioning and closure of each relevant activity or item of infrastructure.
- Identifying knowledge gaps and how these will be addressed and filled.
- Detailing the full closure costs for the life of mine at increasing levels of accuracy as the mine develops and approaches closure in line with the final land use proposed; and
- Outlining monitoring, auditing, and reporting requirements.

According to the NEMA GNR 1147 the objective of the final rehabilitation, decommissioning, and closure plan, is to identify a post-mining land use that is feasible.

- Rehabilitation and Closure Planning must comply with relevant legislation, as well as with generally accepted good practices.
- Closure objectives must be realistic and achievable.
- Closure related rehabilitation of land disturbed by mining must be conducted to allow for pre-determined post-mining land uses, as agreed with stakeholders. In this regard, the rehabilitated areas must be safe, stable, and non-polluting for integration into the existing land uses.

- Closure actions / measures conceptualised and implemented must limit the potential adverse effects of the closed mine site on the receiving environment, and thereby ensure that the quality of life of the surrounding / resident communities is not compromised after closure by possible threats to the health and safety of people and their animals.
- Closure measures must be sustainable under foreseeable natural events.
- Priority must be given to the use of locally available natural materials and / or vegetation as opposed to imported / synthetic material and / or exotic vegetation. The measures provided must be appropriate for the site-specific conditions.
- Manage activities within the mine in order to maintain and/ or improve ecological integrity of the area.
- Maximise the service provision and ecological function of the watercourse.
- The success, performance and sustainability of the closure measures must be demonstrated and confirmed by suitable monitoring and measurement for an adequate period post closure.
- A site with limited residual care-and-maintenance requirements must be sought. In this regard, proven sustainable passive measures must be favoured over measures that require ongoing maintenance and / or active care post-closure.
- Involvement of stakeholders must be undertaken in a meaningful manner to inform Closure planning by reflecting local requirements, priorities, and preferences, as well as the requirements as stipulated in local and provincial planning as well as the municipal Integrated Development Plans / frameworks; and
- Closure should be achieved as efficiently and cost effectively as possible.

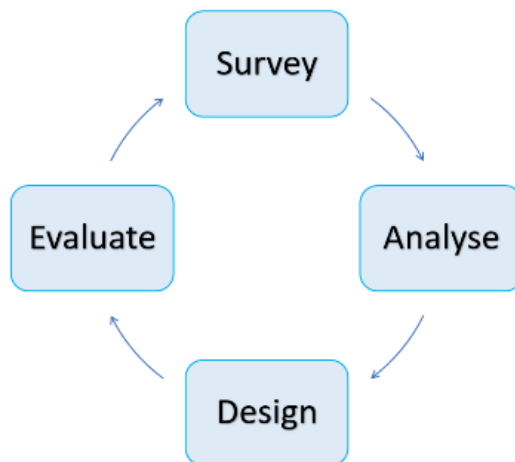
Regulation 54 requires that the quantum of financial provision, to be approved by the Minister, must be based on the requirements of the approved EMP and shall include a detailed itemisation of all actual costs required for Scheduled cost during application phase and unscheduled closure cost during operational phase for the following:

- Rehabilitation of the surface of the area;
- Prevention and management of pollution of the atmosphere;
- Prevention and management of pollution of water and the soil;
- Prevention of leakage of water and minerals between subsurface formations and the surface;
- Decommissioning and final closure of the operation; and Post closure management of residual and latent environmental impacts.

### **3. APPROACH**

The approach adopted in undertaking closure planning for Kangra as further refinement to the guiding principles documented above, is based on the following key planning foci:

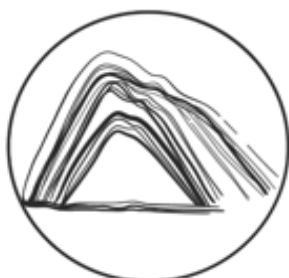
### 3.1. APPLICATION OF AN ITERATIVE CLOSURE PLANNING / DESIGN PROCESS



**Figure 3: Iterative Closure Planning / Design Process**

This iterative process underpins the principle that planning for closure should occur throughout the life of the mine, with solutions continually being evaluated through the process cycle.

### 3.2. CLOSURE OBJECTIVES



physical stability

To create a physically stable, safe, rehabilitated landscape that limits long term environmental degradation, erosion, and failure / collapse of unavoidably remnant mining residue which are present on the mine site post closure, thus enabling the successful establishment of the planned post-mining land use.



environmental quality

To ensure that local environmental quality is not adversely affected by possible physical effects and chemical contamination arising from the mine site or individual facilities, as well as to sustain catchment yield as far as possible after closure



healthy and safety

To limit the possible health and safety threats to humans and animals using the rehabilitated mine site as it becomes available



land capability land use

To re-instate a suitable land capability over the mine site to facilitate the progressive implementation of the planned post-mining land use



landscape viability

To create a landscape that is self-sustaining and over time will converge to the desired ecosystem structure, function, and composition



biodiversity

To encourage, where appropriate and as aligned to the planned post-mining land use, the re-establishment of native vegetation on the rehabilitated mine site such that the terrestrial biodiversity is largely reinstated over time

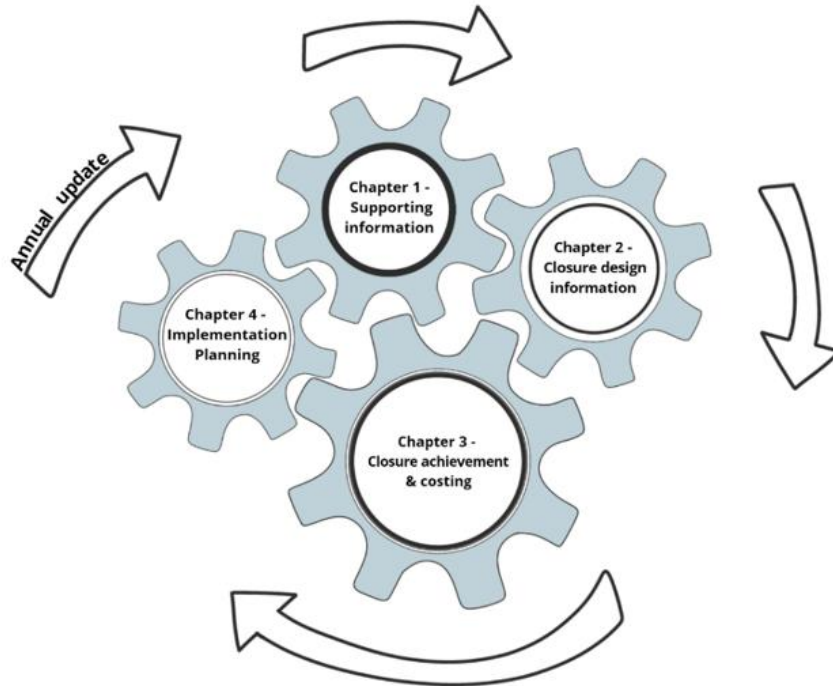


socio-economic resilience

To ensure that there is constructive engagement and alignment with local communities and regulatory authorities regarding the proposed end land use

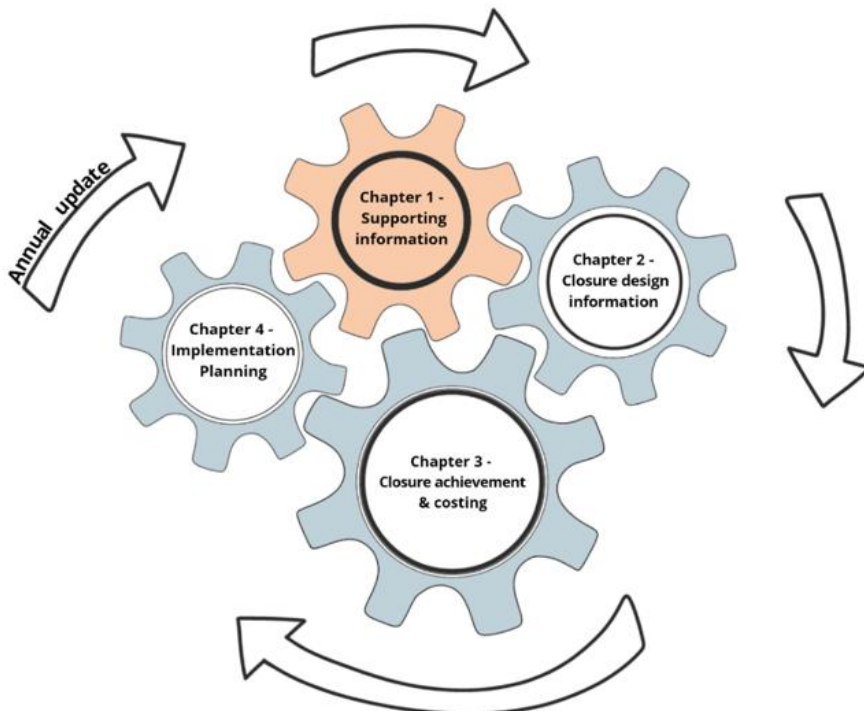
### 3.3. TIERED RISK-BASED PROCESS

The application of a tiered risk-based process to allow for an understanding of the challenges and opportunities that need to be addressed and refining, abstracting, and prioritising essential issues. The structure of this report is presented below in Figure 4.



**Figure 4: Approach to Closure Plan Compilation**

#### **4. CHAPTER ONE – SUPPORTING INFORMATION**



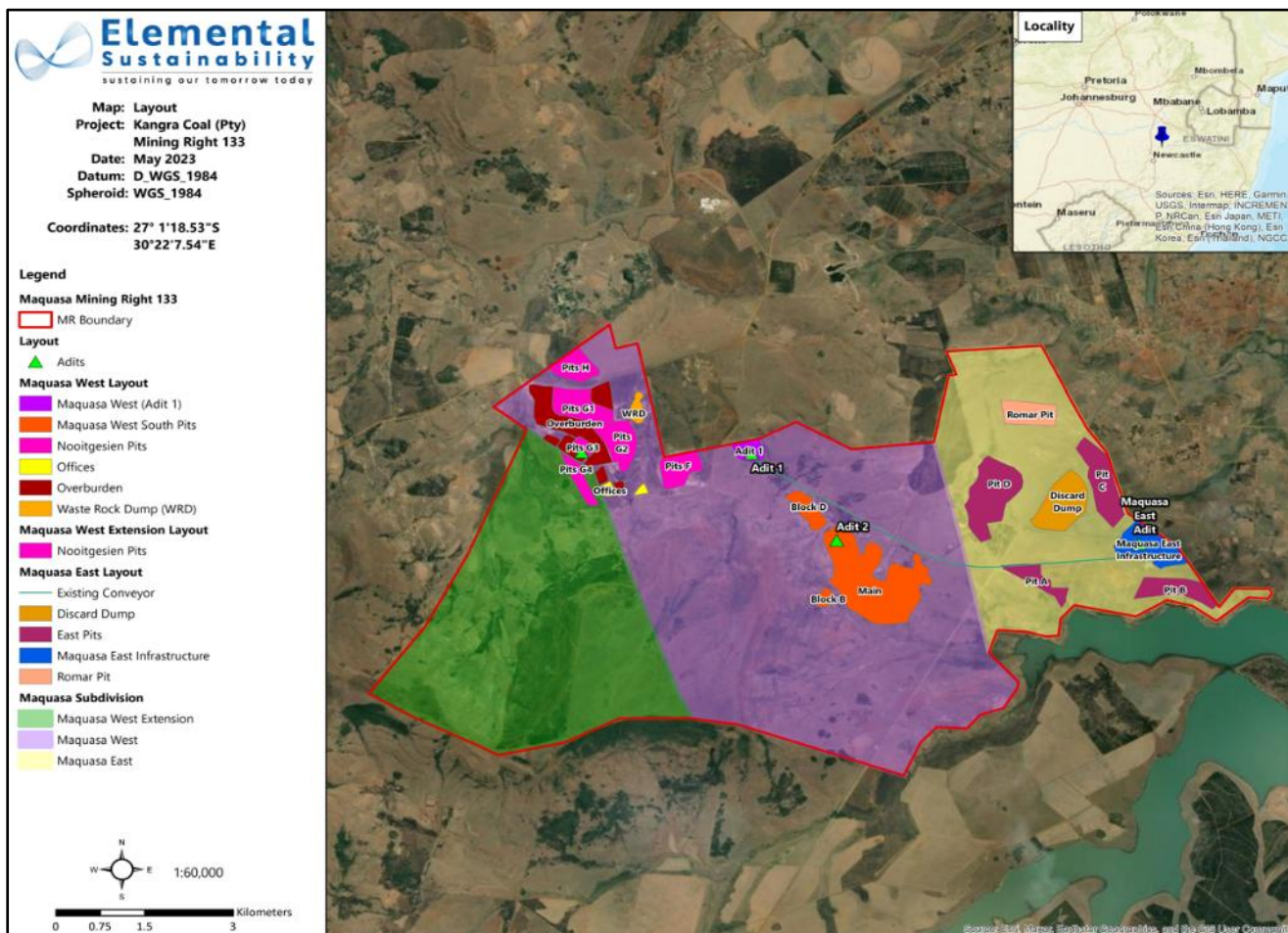
Chapter 1: Review and documentation of relevant project information:

- A description of the mine – material information and issues that have guided the development of the plan.
- A summary of the legal and governance framework and interpretation of these requirements for the closure design principles.

### 4.1. MINE DESCRIPTION – MAQUASA MINING RIGHT

The Savmore Colliery - Maquasa Mining Right Area (MP 133MR) operation falls within the Gert Sibande District Municipality and Dr Pixley Ka Isaka Seme Local Municipality. The nearest town is Piet Retief in Mpumalanga Province, which is approximately 45 km east of the Maquasa Mining Right Area as shown in Figure 5. Driefontein village is located approximately 12km to the east.

The Savmore Colliery current operational sections are Maquasa East, Maquasa West and Maquasa West Extension (such as Nooitgesien opencast mining operation) and East Pit C. All these operations are covered under the Mining Right 133MR and the Consolidated EMPr.



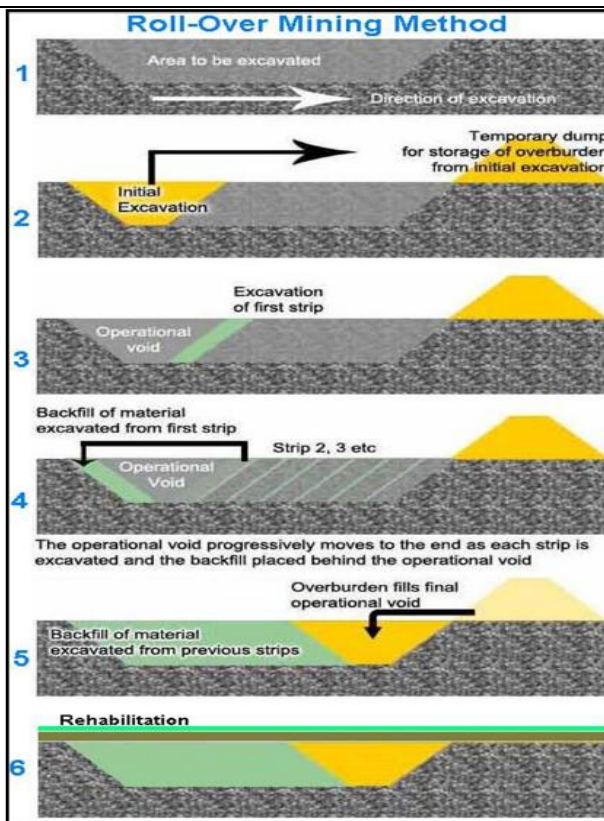
**Figure 5: MR 133 Operational Areas – Maquasa East, West and Maquasa West Extension**

Kangra Coal has been extracting coal from the Maquasa operations, and processing the ore at the washing plant at Maquasa East since the late 1990’s. The Colliery currently operates on the Maquasa East, Maquasa West and Maquasa West Extension as presented in Figure 7. The existing operation, which currently mines the Maquasa West and Maquasa East Pit C opencast is approaching depletion, and the Kusipongo resource is being mined to extend the life of the mine of the Kangra Coal operation. Kangra Coal has an approved Mining Right to mine the underground resource, and the coal is in close proximity to the current Maquasa operations.

The project background, farm portions that fall within the project area including details on the location of the operation is summarised in Table 4.

**Table 4: Project Summary**

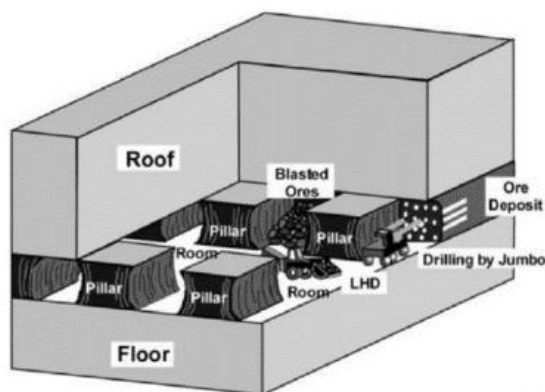
<b>Company Name</b>	Kangra Coal Proprietary Limited – Maquasa Mining Right Area
<b>DMRE No</b>	MP 30/5/1/2/2/133MR
<b>Commodity:</b>	Coal
<b>Life of Mine</b>	Opencast mining will take place over a 2–5-year period, based on running exploration. Underground mining has been completed. The facilities will be used for the processing of coal for the approximately the next 30 years. Application is currently underway to re-process the tailing storage facilities. The LoM for the reprocessing will be established.
<b>Mining Method(s):</b>	<p><b>Opencast Mining</b></p> <p>The development consists of opencast coal mining areas where coal is mined by the opencast truck and shovel roll-over method. Mined coal is moved from the opencast mining pit to a run- of-mine (RoM) stockpile area. The production methods to be used are typical of open pit operations and consist of the following steps daily:</p> <ul style="list-style-type: none"> <li>– Strip the 70 cm of topsoil and stockpile for future rehabilitation work.</li> <li>– Strip overburden until solid rock is encountered and stockpile this for future rehabilitation.</li> <li>– Drill and blast the solid overburden, remove for stockpiling and at a later stage, perform back filling of the pits.</li> <li>– On encountering the ore seams, reduce bench height and drill and blast the ore.</li> <li>– Load the ore into trucks using hydraulic shovels or front-end loaders.</li> <li>– Transport the ore to the processing plant RoM for stockpiling.</li> <li>– Drill and blast the internal solid overburden and remove for stockpiling.</li> </ul>



**Underground Mining**

Mining occurred by underground board-and-pillar methods with chequerboard pillar extraction. Board-and-pillar, or room-and-pillar, is an extensively used underground mining technique. This method uses a grid of tunnels and involves progressively cutting panels into the coal seam whilst leaving behind pillars of coal to support the overburden. This will be done using a horizontal continuous miner.

Mined material is extracted across a horizontal plane and open areas or "rooms" are created underground. "Pillars" of untouched material are left to support the roof overburden. This technique is usually used for relatively flat lying deposits. The key to successful board and pillar mining is in the selection of the optimum pillar size, considering the required safety factors to avoid subsidence on surface. Board and pillar mining is depicted in Figure below.



**Farm Name**

- All farms within the mining right area 133MR:
- Maquasa East
    - o Maquasa 19 HT Remaining Extent

	<ul style="list-style-type: none"> <li>○ Rooikop 18 HT, Portion Re</li> <li>○ Roodekral 21 HT, Remaining Extent</li> <li>– Maquasa West <ul style="list-style-type: none"> <li>○ Rooikop 18 HT, Portion Re</li> <li>○ Maquasa 19 HT Remaining Extent</li> <li>○ Nooitgesien 381 IT</li> </ul> </li> <li>– Maquasa West Extension <ul style="list-style-type: none"> <li>○ Kransbank 15 HT, Portion 1 and 2.</li> </ul> </li> </ul>
<b>Application Area (Ha)</b>	The total mining right area
<b>Magisterial District</b>	Gert Sibande District Municipality and Dr Pixley Ka Isaka Seme Local Municipality
<b>Distance and direction</b>	Piet Retief is located approximately 54 km to the east of the Maquasa mining right area. Ermelo is located approximately 64km north-west of the Maquasa mining right area.

## 4.2. UNSCHEDULE ACTIVITIES

### 4.2.1. Maquasa Mining Right Area

Maquasa East is currently operating the Block C opencast area, as depicted in Figure 6 below, with all underground mining at Maquasa East having ceased. All mining at Maquasa West has ceased, and underground mining is currently in progress at the Nooitgezien area. Most of the mining related surface infrastructure, including the coal beneficiation plant, stockpile, tailing storage facility (TSF) and offices is located at the Maquasa East operational area. All the coal mined at Maquasa West, Maquasa West Extension and Nooitgezien area is processed at Maquasa East beneficiation plant. In addition, there is a primary crushing and screening facility located at Maquasa West. Coal is transported by way of overland conveyor from the mining areas to the beneficiation plant.

Figure 6 indicates all existing operations, infrastructure and activities that are currently authorised, under 133MR, and are currently operational, ceased or still to be undertaken. Existing facilities at Maquasa West and Maquasa East will be utilised for coal processing for current and future mining. The Gus coal seam is mined at Block C as illustrated in Figure 7; the seam is shallowed enough to allow for opencast mining methods. Conventional mining methods are applied which include opencast strip and roll over mining method with continuous rehabilitation.

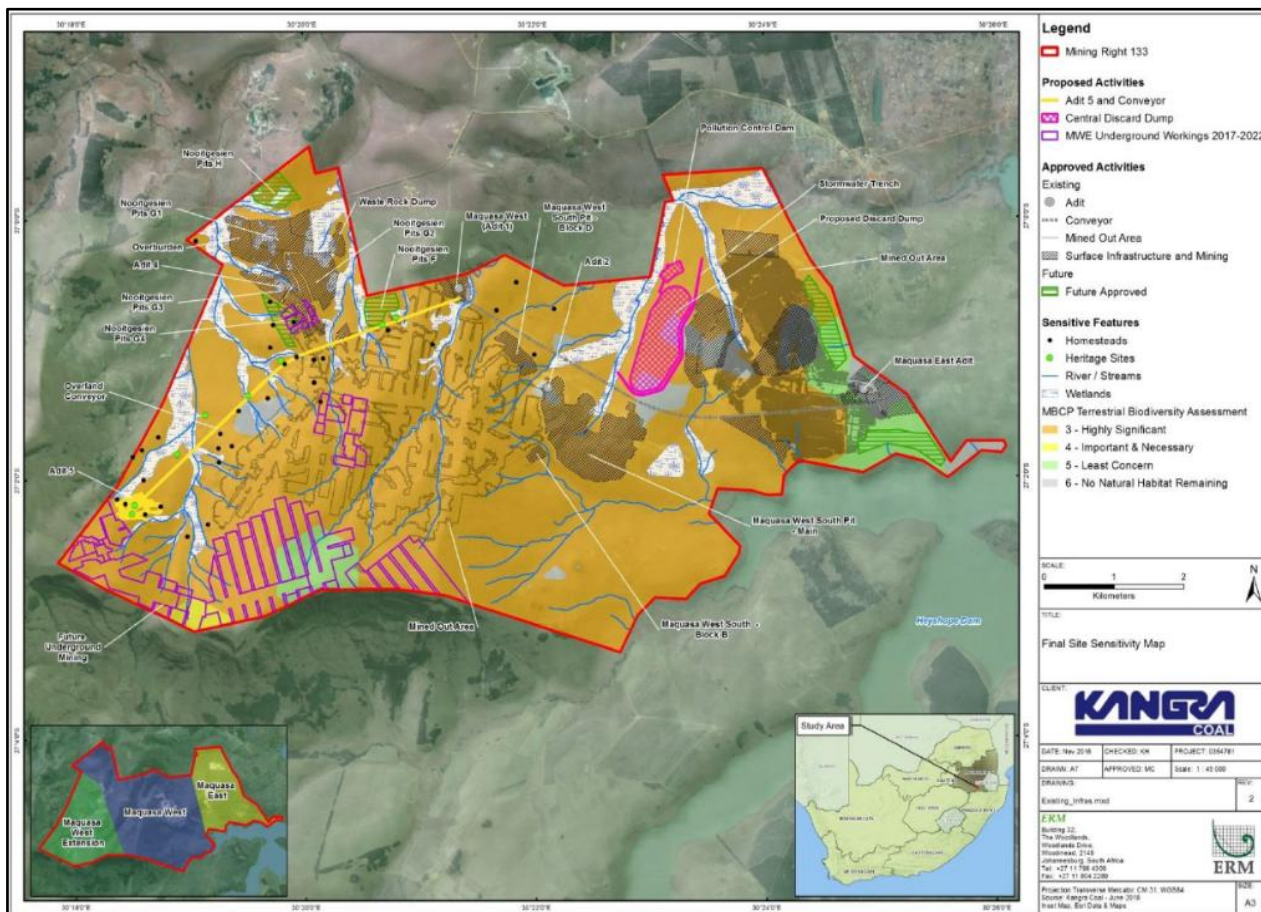


Figure 6: Maquasa Operational Areas and Infrastructure

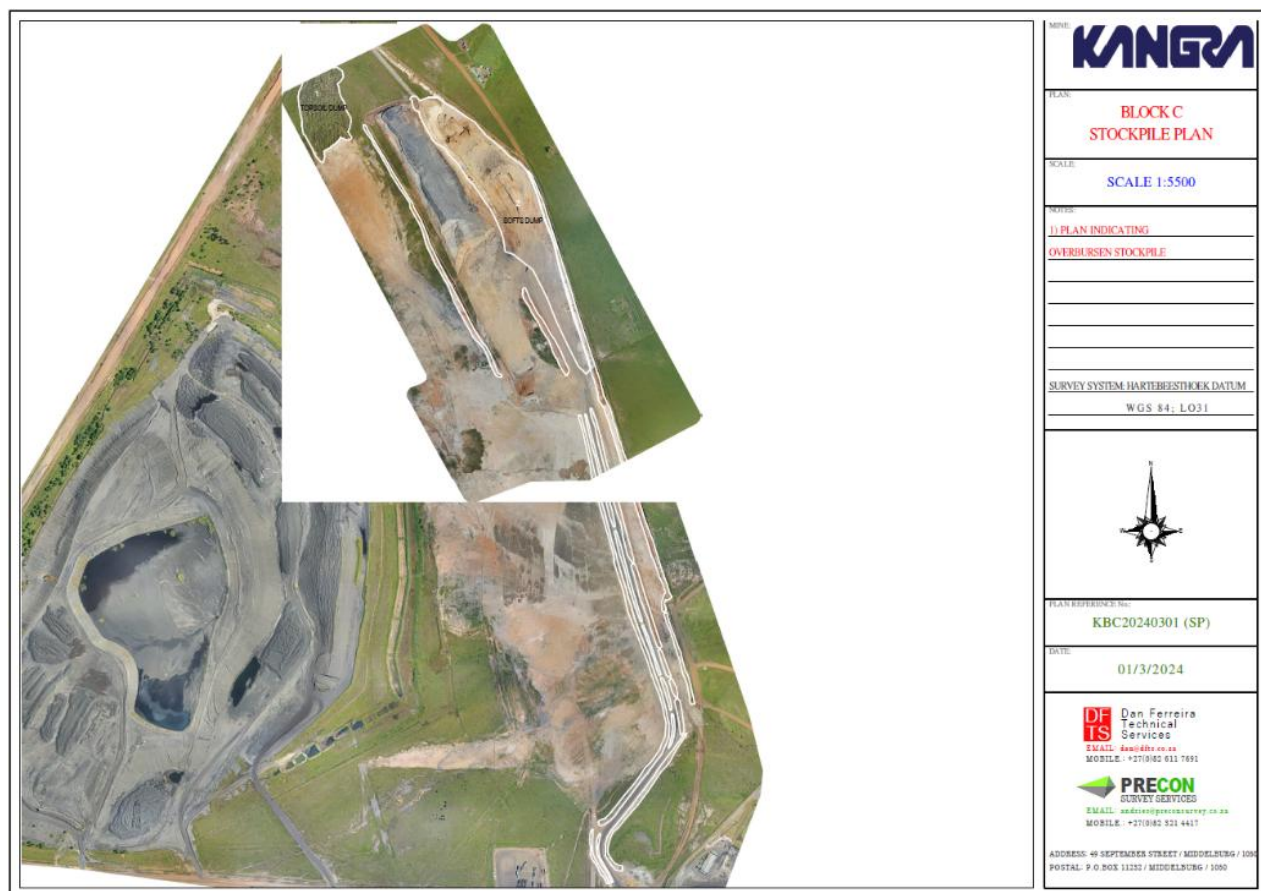


Figure 7: Opencast – Block C

### 4.3. MINE LAYOUT – INFRASTRUCTURE

#### 4.3.1. Maquasa East

The layout of the Maquasa East operation is illustrated in Figure 8, with a description of infrastructure and operational areas presented in Table 5. The underground, and some of the opencast (Pit A, Pit D and Romar Pit), mining activities have ceased. However, the section still hosts the beneficiation plant that serves all Maquasa operations. Opencast Pit C is currently begin mined.

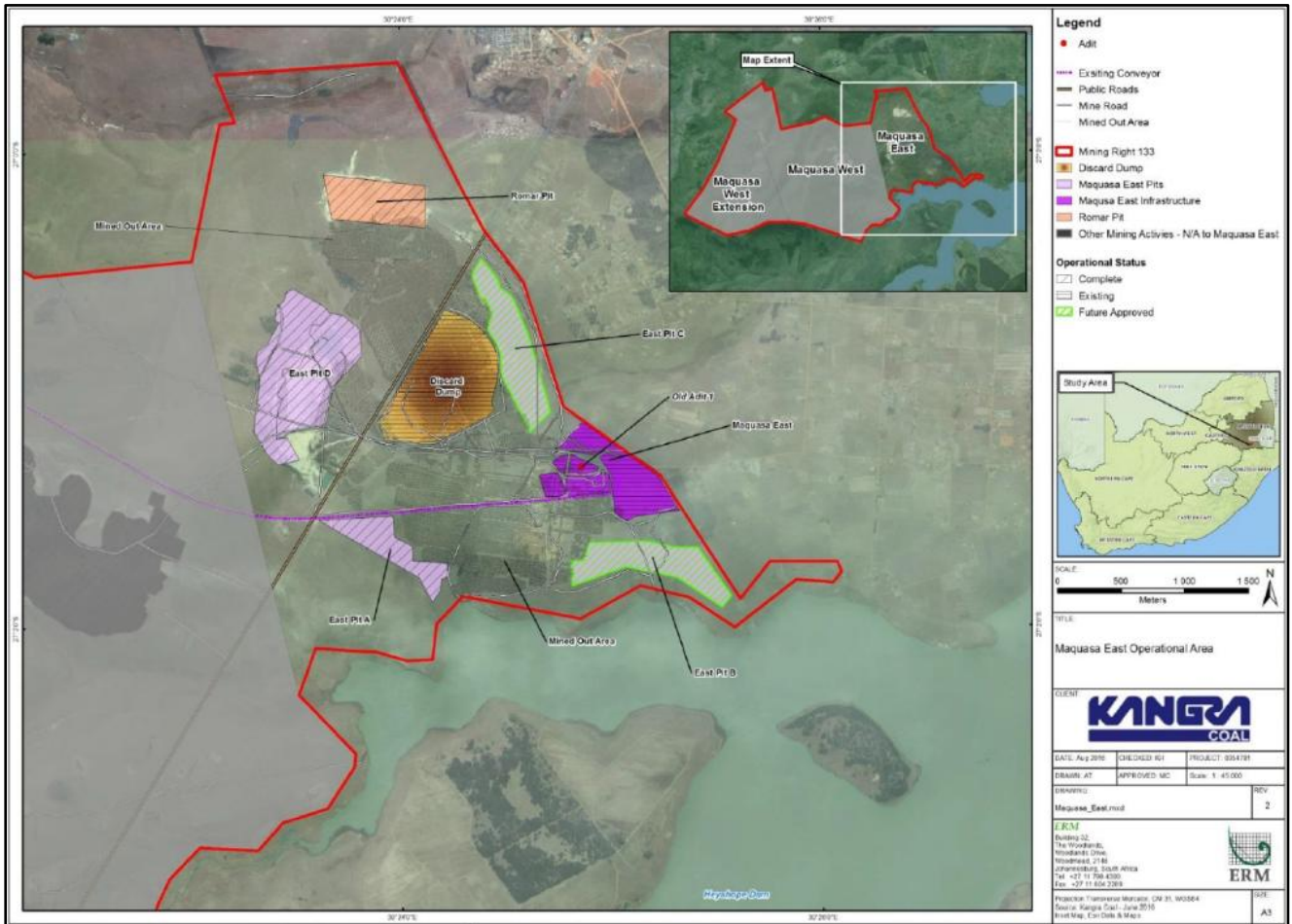


Figure 8: Maquasa East Operational Area

Table 5: Operations and Infrastructure at Maquasa East

Infrastructure/ Operational Component	Description / Notes
<b>Discard Dump</b>	All coal mined under Mining Right 133MR is processed at Maquasa East beneficiation plant. The discard produced is disposed of onto the existing Maquasa East discard dump.
<b>Beneficiation Plant</b>	Located at Maquasa East. The components of the plant include Offices and Workshops, secondary crushing and screening, discard plant, coal stockpiles, and inland plant and export plant.
<b>ENPROTEC Plant</b>	Plant for the treatment of coal slurry in order to obtain a coal product in the form of a filter pressed 'cake'. Water extracted from the slurry during this process is re-used in the beneficiation plant. The slurry plant is currently being expanded.

<b>Infrastructure/ Operational Component</b>	<b>Description / Notes</b>
<b>Diesel storage facilities</b>	Tanks for storage of diesel for the vehicle fleet.
<b>Pit A</b>	Mining at Pit A has been completed. Pit A is located to the southwest of Maquasa East coal beneficiation plant on the farm Roodekraal 21HT (27°0'39.53"S; 30°23'56.59"E) and Maquasa 19HT. This pit has been levelled and topsoil has been applied.
<b>Pit D</b>	Mining at Pit D has been completed. Pit D is located to the northwest of the current Maquasa East coal beneficiation plant on the farm Rooikop 18HT (27°00'51.41"S; 30°23'24.41"E) and Roodekraal 21HT. The pit has been mined out, with the majority of the pit having been levelled and topsoil applied. The final void is used for water storage and management. Evaporators have been installed in the final void for management of excess water.
<b>Romar Pit</b>	Mining at the Romar Pit has been completed. The Romar Pit is located in the north of the Maquasa East operational area on the farm Roodekraal 21HT (27° 0' 12.33" S; 30° 23' 53.38" E). The pit has been mined out. The pit has been levelled and topsoil has been applied.
<b>Maquasa East Adit</b>	Operations at this adit are now complete and there are no further operations planned.
<b>Public Roads</b>	There is one main public road running through the Maquasa East operational area; this is the M22, and it is located on the western side of the Maquasa East operation.
<b>Haul Roads</b>	There are numerous haul roads and tracks linking the various operational components of the Maquasa East operations.
<b>Powerlines</b>	A 22 kV Eskom power line supplies the existing Maquasa East Beneficiation Plant and the associated infrastructure. This line also supplies the Maquasa West operations with power, including all adits and offices.
<b>Pit B</b>	Pit B is located to the southeast of the current Maquasa East coal washing plant on the farm Roodekraal 21HT (27°0'42.43"S; 30°25'09.64"E).
<b>Pit C</b>	Pit C is located in close proximity to the northern boundary of 133MR, northeast of the current Maquasa East coal washing plant on the farm Roodekraal 21HT (27°00'49.66"S; 30°24'32.64"E). The Driefontein settlement is within 500 m radius of the proposed pit.

#### 4.3.2. Maquasa West

The layout of the Maquasa West operation is illustrated in Figure 9, with a description of infrastructure and operational areas presented in Table 6. Maquasa West has both opencast and underground mining operations. The main surface infrastructure includes the Maquasa West offices and workshop, mine adits, primary crushing and screening facilities, and an overland conveyor connecting to Maquasa East.

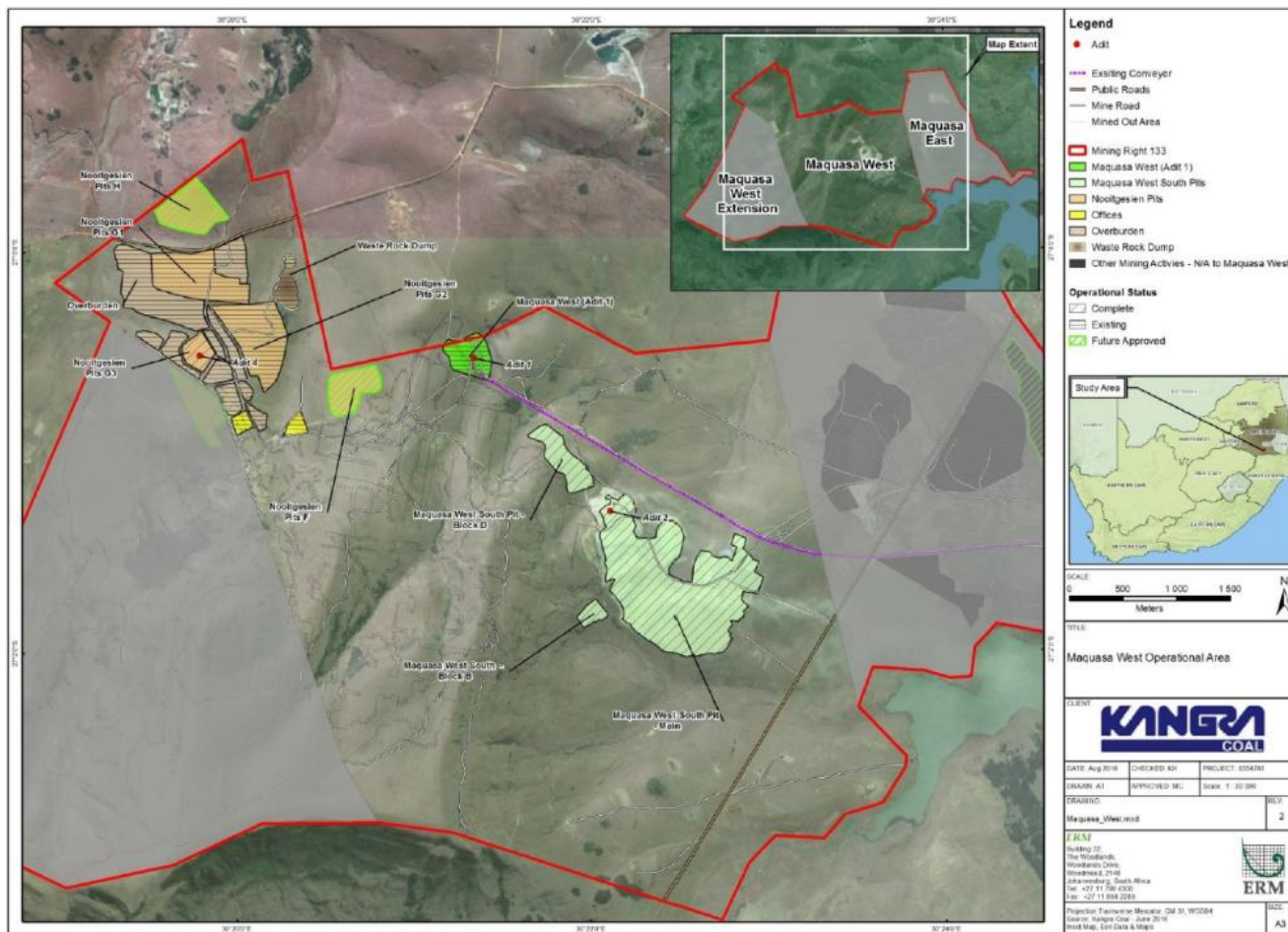


Figure 9: Maquasa West Operational Area

Table 6: Maquasa West Operations and Infrastructure

Infrastructure / Operational Component	Description / Notes
<b>Overburden dumps</b>	There are various overburden dumps servicing the Nooitgesien Pits.
<b>Offices and Workshops</b>	Currently located at Adit 1 but are progressively being moved closer to Adit 4.
<b>Diesel storage facilities</b>	Tanks for storage of diesel for the vehicle fleet.
<b>Nooitgesien Opencast Pits</b>	Nooitgesien Opencast Pits G1 and G2 are currently being mined. Nooitgesien Opencast Pit G3 has been mined out.
<b>Nooitgesien Underground Works</b>	There are two areas of resource underground that are currently being mined.
<b>Nooitgesien Waste Rock Dump</b>	There is one waste rock dump at Nooitgesien
<b>Maquasa West South Opencast Pits</b>	The existing pits are located on the farm Maquasa 19HT (27°01'48.33"S; 30°22'41.04"E). The pits are located adjacent to an existing access road. There are three opencast mining areas associated with the Maquasa West South Opencast Operations: <ul style="list-style-type: none"> <li>- Maquasa West South – Main.</li> <li>- Maquasa West South – Block B; and</li> <li>- Maquasa West South – Block D.</li> </ul> Mining has been completed in these areas and they have been levelled and topsoil has been applied.

Infrastructure / Operational Component	Description / Notes
<b>Adit 1</b>	This adit is currently used for accessing the Maquasa West underground operations. At this location there is also the following infrastructure: <ul style="list-style-type: none"> <li>- Offices and workshop</li> <li>- Stores</li> <li>- Main ventilation fans, and</li> <li>- Lamp house.</li> </ul>
<b>Adit 2</b>	This adit is currently used for accessing the Maquasa West underground operations extended from the opencast operations.
<b>Adit 4</b>	This adit is used to access underground operations at Nooitgesien. At Adit 4 there are also the following facilities: <ul style="list-style-type: none"> <li>- Wastewater treatment works</li> <li>- Water storage facilities, and</li> <li>- A change house</li> </ul>
<b>Overland Conveyor</b>	The overland conveyor, approximately 6 km in length, runs from the Maquasa West Adit to Maquasa East, transporting coal to Maquasa East beneficiation plant. .
<b>Public Roads</b>	An unnamed public road passes through the northern section of the Nooitgesien operational areas and leads to Volkrust.
<b>Haul Roads</b>	There are numerous haul roads and tracks linking the various operational components of the Maquasa West operations.
<b>Powerlines</b>	There is a 22 kV Eskom power line that supplies the existing Maquasa West operations.
<b>Opencast mining</b>	Mining operations through opencast method at Nooitgesien Pit E, F and H.

### 4.3.3. Maquasa West Extension

The Maquasa West Extension operational area is indicated in Figure 10, with a description of infrastructure and operational areas provided in Table 7. Maquasa West Extension underground operations ceased in the year 2020. Operations are approved under the Consolidated EMP (133MR).

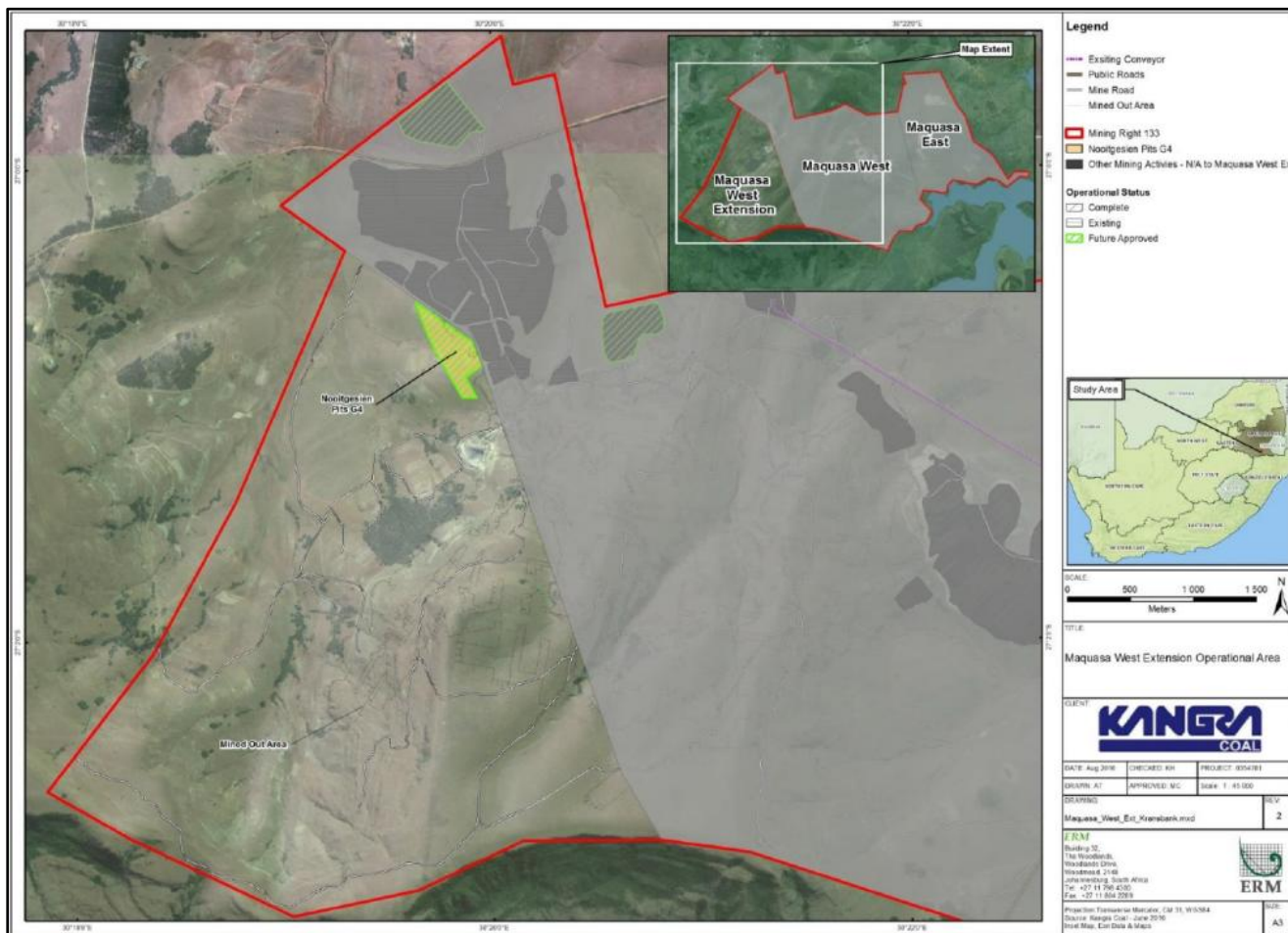


Figure 10: Maquasa West Extension Operations and Infrastructure

Table 7: Maquasa West Extension Permitted Operations and Infrastructure

Infrastructure / Operational Component	Description / Notes
Underground mining operations	Underground mining operations accessed from Adit 1, Adit 2, and Adit 4.
Nooitgesien Opencast Operations	Mining operations through opencast method at Nooitgesien Pit G4.

#### 4.4. SCHEDULE ACTIVITIES

Kangra Coal submitted an Environmental application and Water use license to authorise the following proposed activities (See Figure 11):

- Tailings Storage Facility and associated infrastructure
- Water Treatment plant and associated infrastructure

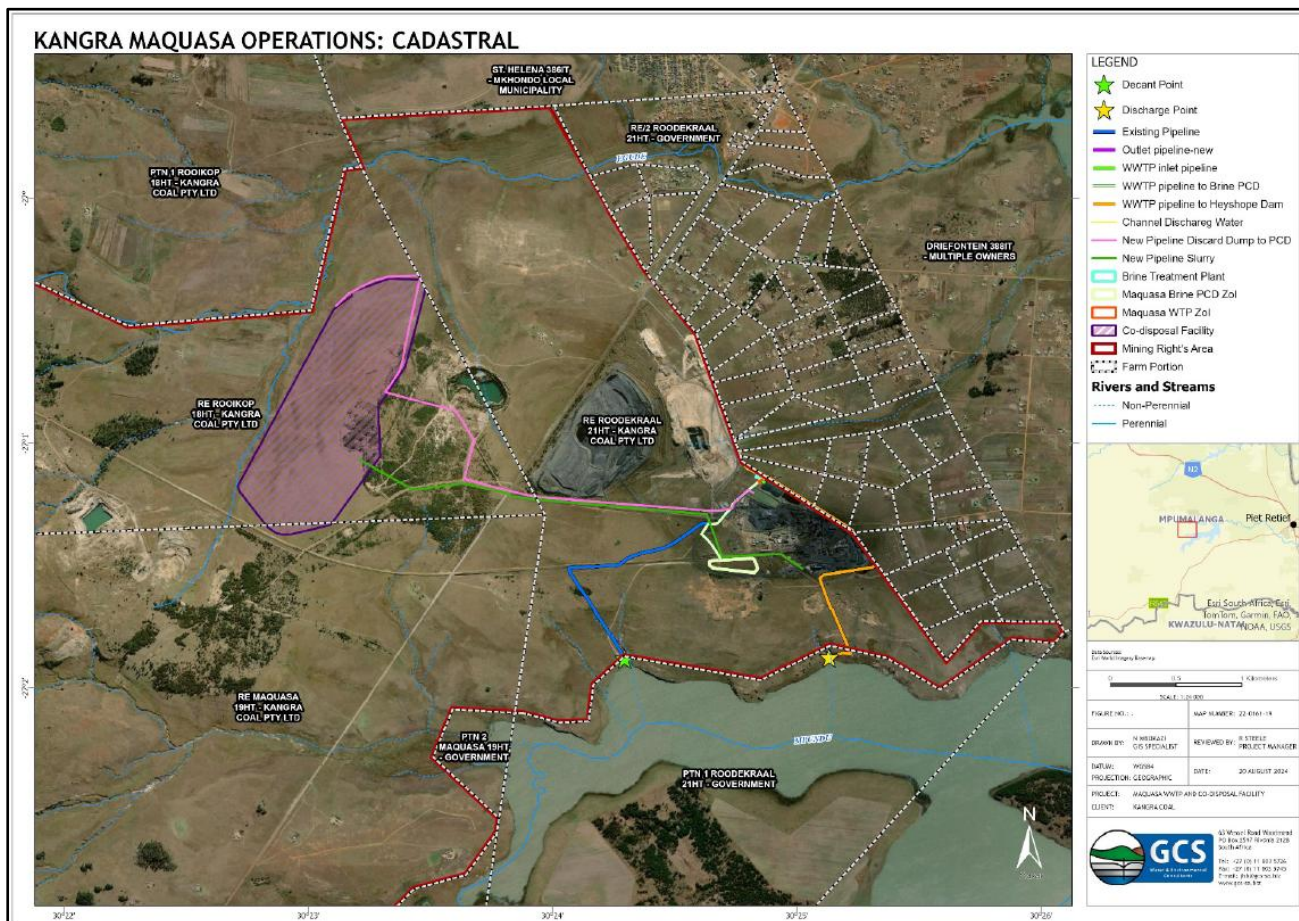


Figure 11: Proposed layout of the CDF and Water Treatment plant

#### 4.4.1. CO-DISPOSAL FACILITY (CDF)

The proposed CDF falls within the exact footprint of the previously authorized (MDARDLEA Ref: 17/2/3/GS-240) MQE CDF. As a result of changing operational requirements, and the lapsing of the previous authorisation, there is now a need to license a new CDF at MQE.

The CDF will accommodate discard produced at the beneficiation plant, slurry/filter cake and potentially brine from the WWTP. The CDF’s design will be like the authorized CDF: a three-compartment side hill-type facility with a footprint of approximately 65ha. A phased development approach, over a period of 20 years, is envisaged: Phase 1 – 7 years; Phase 2 – 7 years and Phase 3 – 6 years capacity. Associated and supporting infrastructure includes haul roads, PCDs, stormwater management measures, various pipelines, etc (See Figure 12 and 13). The following schedule activities are included in the application:

Table 8: Schedule Activities for the CDF

Schedule Activity	Size	Area
1. Co-Disposal Facility	792 000 m <sup>3</sup>	11.25 ha
2. Pollution Control Dam	49 500 m <sup>3</sup>	1.0 ha
3. General Surface Rehabilitation		20 ha
4. Roads	300 m	2 100m <sup>2</sup>

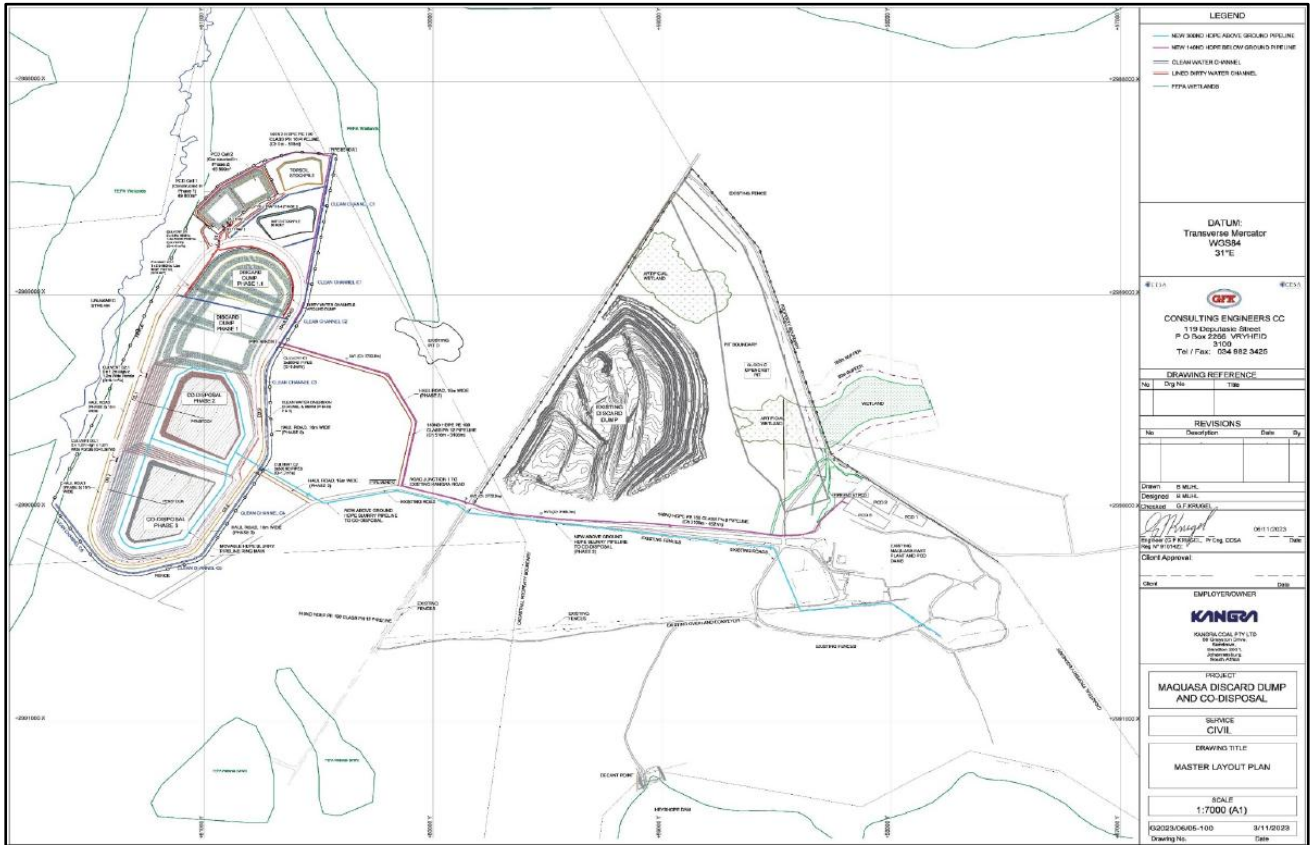


Figure 12: CDF Conceptual Layout

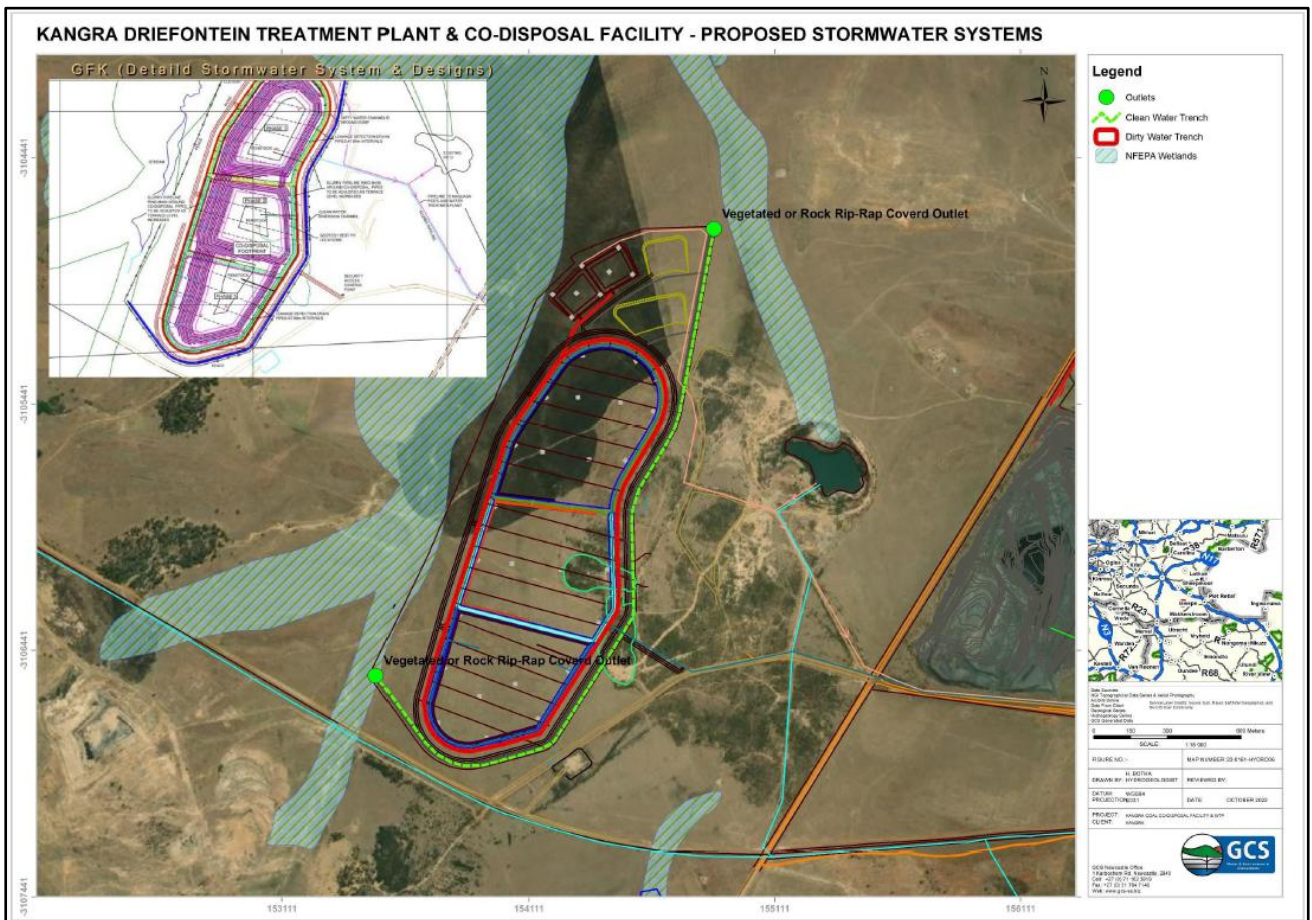


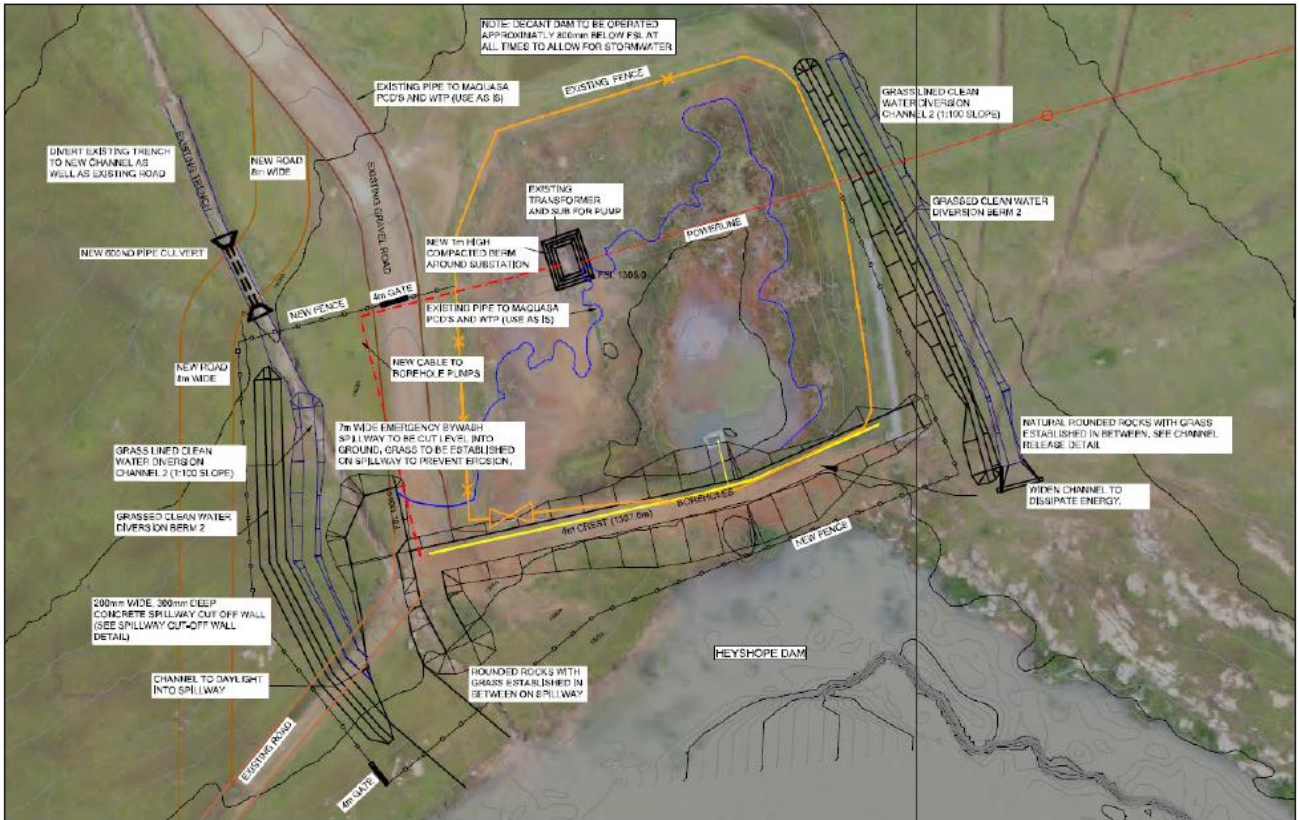
Figure 13: Conceptual Stormwater Systems and Designs

#### 4.4.2. WATER TREATMENT PLANT

The purpose of the proposed WWTP is to treat decant water as well as surplus contaminated water within the mining operations. MQE is currently decanting clear groundwater from old underground workings at an average rate of 1 800m<sup>3</sup>/d. The WWTP will employ 'active' treatment of the wastewater as it was found that passive treatment is not feasible nor possible due to decant point's location, the high flow rates and the discharge quality required. Brine resulting from the WWTP will be piped and stored in a new proposed brine pollution control dam (Brine PCD). Treated effluent from the WWTP will be discharged to the Heyshope Dam via an underground pipeline from the treatment plant to the dam. Access to the WWTP and associated pipelines will be through existing roads. The implementation of the proposed active treatment of decant will entail the following:

- Upgrade of the decant/contamination dam: Formalising the dam wall to increase the storage capacity and lining the dam to prevent seepage;
- Upgrade of the decant point by drilling a row of eight (8) boreholes into the new dam wall at the decant dam in order to create a borehole well curtain (cut off) to cut off ground seepage water potentially entering the Heyshope Dam;
- Constructing a WWTP to treat decant and other mine-contaminated water; and
- Constructing a Brine Pollution Control Dam (Brine PCD) and a Brine Treatment Plant.

Brine produced at the WWTP will initially be pumped to the proposed new Brine PCD. The Brine PCD was initially proposed for the evaporation of brine from the WWTP. However, during the detailed design process currently being undertaken, it became evident that naturally evaporating brine at the site would not be efficient due to the projected inflow rate of brine to the proposed PCD/evaporation dam. It is therefore necessary to construct a Brine Treatment Plant to remove water from the brine, thereby converting it to a dry filter cake that can be disposed of on the proposed CDF. The proposed Brine Treatment Plant will be a modular plant within the proposed development footprint, covering an area of less than 600m<sup>2</sup> (0.06ha) and will be phased in a later stage of the development.



**Figure 14: Decant point and Contamination/Decant Dam layout.**



**Figure 15: Brine PCD and pipeline layout.**

The following schedule activities are included in the application:

**Table 9: Schedule Activities for the water treatment plant**

Schedule Activity	Size	Area
1. Decant Area – General Surface Rehab		2.0 ha
2. Pollution Control Dam – Brine Pond	49500 m <sup>3</sup>	1.0 ha
3. Infrastructure		0.06 ha

## 5. LEGAL AND GOVERNANCE FRAMEWORK

### 5.1. CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA, ACT NO. 108 OF 1996 AS AMENDED

The Constitution is the supreme law of the country and sets the framework within which all other laws are implemented. Section 24 of the Constitution states that:

Everyone has the right to

- (a) an environment that is not harmful to their health or well-being; and
- (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:
  - Prevent pollution and ecological degradation.
  - Promote conservation; and
  - Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

To give effect to Section 24 of the Constitution, several laws have been promulgated to ensure environmental protection and sustainable development.

### 5.2. NEMA REGULATIONS GNR 1147 (as amended)

The purpose of these Regulations is to regulate the determine and making of financial provision as contemplated in the Act for the costs associated with the undertaking of management, rehabilitation, and remediation of environmental impacts from prospecting, exploration, mining, or production operations through the lifespan of such operations and latent or residual environmental impacts that may become known in the future. The Regulations also include detailed descriptions of the wording required in the documentation to support the provisioning for liability using Bank Guarantees and Trust Funds. Finally, the legislation also provides detail on the information to be contained in the following plans: Annual rehabilitation Plan, Final rehabilitation, Decommissioning and Mine Closure Plan and Environmental Risk Assessment Report.

This annual update is presented within the extended transitional period as presented in Government Notice No. R. 4296 of 1 February 2024.

*“ Unless regulation 17A applies, a holder, or holder of a right or permit, who applied for such right or permit prior to 20 November 2015, regardless of when the right or permit was obtained –*

- (a) *must by no later than a date published in the Government Gazette comply with these Regulations; and*
- (b) *shall, until such date published in the Government Gazette contemplated in paragraph (a), be regarded as complying with the provisions of these Regulations, if such holder has compiled with the provisions and arrangements regarding financial provisioning,*

*approved as part of the right or permit issued in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)."*

The legal requirement to financially provide for the rehabilitation or management of the negative environmental impacts resulting from a prospecting right, mining right or mining permit are obtained from both the MPRDA (Act 28 of 2002) and NEMA FPR (the Financial Provisioning Regulations, 2015) (As amended). Although the NEMA FPR regulation repeals the Regulation 53 and 54 of the MPRDA requirements it also extends it to cater for a transitional period as set out above in Government Notice No. R. 4296 of 1 February 2024.

In terms of the Transitional arrangements, as set out in Regulation 17 of the NEMA FPR

- 17(1) *Any actions taken in terms of regulation 53 and 54 of the MPRDA Regulations (2004) which can be undertaken in terms of a provision of the NEMA regulations must be considered to have been undertaken in terms of the NEMA regulations,*
- 17(2) *Financial provision submitted in terms of regulations 53 and 54 of the Mineral and Petroleum Resources Development Regulations, 2004 for which approval is pending when these Regulations take effect, must despite the repeal of regulations 53 and 54 of the Mineral and Petroleum Resources Development Regulations, 2004 be dispensed with in terms of regulations 53 and 54 the Mineral and Petroleum Resources Development Regulations, 2004 as if regulations 53 and 54 of the Mineral and Petroleum Resources Development Regulations, 2004 were not repealed.*

Financial provision that was approved in terms of the MPRDA Regulations must be regarded as approved in terms of the NEMA regulations and the holder must review and align such financial provision with the provisions of the NEMA regulations. For this reason this report is submitted in terms of Regulation 53 and 54, and Section 41(1) of the MPRDA.

### **5.3. MINERALS PETROLEUM AND RESOURCES DEVELOPMENT ACT NO. 28 OF 2002 (MPRDA)(AS AMENDED)**

A holder of a prospecting right, mining right, retention permit or mining permit remains responsible for any environmental liability, pollution or ecological degradation and the management thereof, until the Minister has issued a closure certificate to the holder concerned.

The Mineral and Petroleum Resources Development Act (MPRDA), (Act No. 28 of 2002) (as amended) and its regulations were promulgated on 1 May 2004. In term of the repealed Section 41, an application for a mining right must make a prescribed financial provision for the rehabilitation or management of negative environmental impacts before the Minister would approve the environmental management plan (EMP). Furthermore, the MPRDA Regulations of 2004, Regulations 53 and 54, regulated the making of financial provisions and prescribed a payment method.

*Section 41(1) "an applicant for a prospecting right, mining right or mining permit must, before the Minister approves the environmental management plan or environmental management programme (EMP) in terms of Section 39(4), make the prescribed "financial provision" for the rehabilitation or management of negative environmental impacts",*

#### **5.4. MPRDA, 2002 (Act No 28 of 2002): MINERAL AND PETROLEUM RESOURCES DEVELOPMENT REGULATIONS (AS AMENDED)**

The quantum of the financial provision to be determined under regulations 53 and 54 and the guideline document published by the DMRE (DMR 2005 Guideline Document for the Evaluation of the Quantum of Closure-Related Financial Provision Provided by a Mine) and assessed according to the guideline. Regulation 54(2) (GNR 527, 23 April 2004, MPRDA) that required the holder mining right must annually update and review the quantum of the financial provision.

##### *53. Methods for financial provision*

- (1) *Financial provision required in terms of section 41 of the Act to achieve the total quantum for the rehabilitation, management and remediation of negative environmental impacts must be provided for by one or more of the following methods:*
  - (a) *An approved contribution to a trust fund as required in terms of section 10(1)(cH) of the Income Tax Act, 1962 (Act No. 58 of 1962) and must be in the format as approved by the Director-General from time to time;*
  - (b) *a financial guarantee from a South African registered bank or any other bank or financial institution approved by the Director-General guaranteeing the financial provision relating to the environmental management programme or plan in the format as approved by the Director-General from time to time;*
  - (c) *a deposit into the account specified by the Director-General in the format as approved by the Director-General from time to time; or*
  - (d) *any other method as the Director-General may determine.*
- (2) *In the case of sub regulation (1)(c), proof of payment must be submitted to the office of the relevant Regional Manager prior to the approval of the environmental management plan or environmental management programme, as the case may be*

##### *54. Quantum of financial provision*

- (1) *The quantum of the financial provision as determined in a guideline document published by the Department from time to time, include a detailed itemization of all actual costs required for-*
  - (a) *premature closure regarding-*
    - (i) *the rehabilitation of the surface of the area;*
    - (ii) *the prevention and management of pollution of the atmosphere; and*
    - (iii) *the prevention and management of pollution of water and the soil; and*
    - (iv) *the prevention of leakage of water and minerals between subsurface formations and the surface.*
  - (b) *decommissioning and final closure of the operation; and*
  - (c) *post closure management of residual and latent environmental impacts.*
- (2) *The holder of a prospecting right, mining right or mining permit must annually update and review the quantum of the financial provision -*
  - (a) *in consultation with a competent person;*
  - (b) *as required in terms of the approved environmental management programme or environmental management plan; or*

- (c) *as requested by the Minister.*
- (3) *Any inadequacies with regard to the financial provision must be rectified by the holder of a prospecting right, mining right or mining permit –*
  - (a) *in an amendment of the environmental management programme or environmental management plan, as the case may be;*
  - (b) *within the timeframe provided for; or*
  - (c) *as determined by the Minister.”*

*This assessment must also be undertaken in compliance with Section 24(P) (Financial provision for remediation of environmental damage) of the National Environmental Management Act (NEMA), Act 107 of 1998 as amended. Section 24(P)(3) of NEMA stipulates the following: -*

- (3) *Every holder must annually-*
  - (a) *assess his or her environmental liability in a prescribed manner and must increase his or her financial provision to the satisfaction of the Minister responsible for mineral resources; and*
  - (b) *submit an audit report to the Minister responsible for mineral resources on the adequacy of the financial provision from an independent auditor.*

#### **5.5. NATIONAL ENVIRONMENT MANAGEMENT ACT, NO. 107 OF 1998 (as amended)**

If it is determined that a mine, having regard to its known ore reserves, is likely to cease mining operations within a period of five years, the owner of that mine must promptly notify the Minister in writing –

- of the likely cessation of those mining operations; and
- of any plans that are in place or in contemplation for-
- the rehabilitation of the area where the mining operations were conducted after mining operations have stopped; and
- The prevention of pollution of the atmosphere by dust after those operations have stopped.

Duty of care (Section 28 of NEMA) to take reasonable measures to prevent significant pollution or degradation of the environment from occurring, continuing, or re-occurring or where such pollution or degradation cannot be reasonably stopped or avoided, such person must take reasonable measures to minimize and rectify such pollution or degradation.

Section 28. (1) Every person who causes, has caused, or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing, or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.

In terms of Section 28, the mine is required to obtain authorisation by Law and to provide proof that the degradation can be rehabilitated and or remediated after mining. In terms of the Financial Provision Regulations (GNR 1147) the cost associated with environmental damages should be provided from in some form of a financial guarantee.

## **5.6. ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014 (AS AMENDED)**

Regulation 19 (6): "A closure plan must contain the information set out in Appendix 5 to these Regulations, and, where the application for an environmental authorisation is for prospecting, exploration, or extraction of a mineral or petroleum resource, including primary processing, or activities directly related thereto, the closure plan must address the requirements as set in the regulations, pertaining to the financial provision for the rehabilitation, closure and post closure of prospecting, exploration, mining or production operations, made in terms of the Act".

Regulation 19(7A): "The content of a closure plan may be combined with the relevant plan contemplated in the regulations, pertaining to the financial provision for the rehabilitation, closure and post closure of prospecting, exploration, mining or production operations, made in terms of the Act, on condition that the requirements of both those Regulations and Appendix 5, respectively, are met".

An application for closure must be submitted in terms of –

- A closure certificate in terms of Section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002); and
- Regulations pertaining to the Financial Provision for Prospecting, Exploration, mining, or production operations, GNR 1147, 20 November 2015 (As amended).

## **5.7. NEMA PRINCIPLES**

In terms of Section 38 of the MPRDA, holders of reconnaissance permissions, prospecting rights, mining rights, mining permits or retention permits must promote compliance with the principles set out in section 2 of the NEMA, which provide that –

- the disturbance of ecosystems and loss of biological diversity is avoided, or, wherever it cannot altogether be avoided, is minimised and remedied.
- pollution and degradation of the environment is avoided, or where it cannot be altogether avoided, is minimised and remedied.
- the disturbance of landscapes and sites that constitute a nations cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied.
- a risk-averse and cautious approach is applied, which considers the limits of current knowledge about the consequences of decisions and actions; and
- Negative impacts on the environment and on people's environmental rights be anticipated and prevented, and when they cannot be altogether prevented, are minimised and remedied.

## **5.8. NATIONAL WATER ACT (NWA), ACT NO. 36 OF 1998**

A duty is imposed on the owner of land, a person in control of land or a person who occupies or uses the land to take all reasonable measures to prevent the pollution of a water resource from occurring, continuing, or recurring. Regulations on the Use of Water for Mining and Related Activities Aimed at the Protection of Water Resources, GNR R704. Any person in control of an existing mine must notify the Department of Water and Sanitation (DWS) 14 days before the temporary or permanent cessation of the operation of the mine.

Any person in control of a mine must at temporary or permanent cessation of mining operations, ensure that –

- Any person in control of a mine or activity must at temporary or permanent cessation of operations ensure that all pollution control measures have been designed, modified, constructed, and maintained in accordance with GNR 704; and
- Any person in control of a mine or activity must ensure that the in-stream and riparian habitat of any water resource, which may be affected or altered by the mine or activity, is remedied so as to comply with GNR 704.

Provision is made for, *inter alia* –

- Regulation 4: Restrictions on locality regarding infrastructure.
- Regulation 5: Restrictions on use of material.
- Regulation 6: Capacity requirements of clean and dirty water systems; and
- Regulation 7: Protection of water resources.

### **5.9. REGULATION 7 OF GNR 704**

Every person in control of a mine or activity must take reasonable measures to –

- Prevent water containing waste or any substance which causes or is likely to cause pollution of a water resource from entering any water resource and must retain or collect such substance or water for use, re-use, evaporation or for purification and disposal in terms of the Act.
- Cause effective measures to minimise the flow of any surface water or floodwater into mine workings, opencast workings, other workings, or subterranean caverns, through cracked or fissured formations, subsided ground, sinkholes, outcrop excavations, adits, entrances, or any other openings; and
- Prevent the erosion or leaching of materials from any residue deposit or stockpile from any area and contain such material or substances so eroded and leached in such area by providing effective suitable barrier dams, evaporative dams, or any other effective measures to prevent this material or substance from entering and polluting any water resources.

### **5.10. CONSERVATION OF AGRICULTURAL RESOURCES ACT, ACT NO. 43 OF 1983**

Regulation 15 of the Conservation of Agricultural Resources (CARA), Act No. 43 of 1983 provides a list of Category 1 plants (Weeds) and Category 2 and Category 3 plants (invaders) that must be controlled. Category 1, 2 and 3 plants may not occur on any land or inland water surface other than in biological control reserves and must be controlled by means of the methods prescribed in the regulations (unless exemption granted).

### **5.11. SOUTH AFRICAN GOOD PRACTICE**

The Department of Water and Sanitation (DWS) formerly known as the Department of Water Affairs and Forestry (DWAF) – commissioned a series of Best Practice Guidelines (BPG), in partnership with industry, to assist with aspects of DWAF's water management hierarchy. BPG5: Water Management Aspects for Mine Closure, includes the following principles:

- Management measures at closure should primarily be of a passive nature with minimal long-term maintenance and operating costs.
- The final landform must be sustainable, must be free draining, must minimise erosion and avoid ponding.
- Concurrent rehabilitation must be undertaken in a manner that supports the final closure landform to ensure/avoid that rehabilitation does not need to be redone at a later stage.
- Land use plan which is directly interlinked with water management issues insofar as water is required to support the intended land use and the land use itself may have an impact on the water; and
- Biodiversity plan will address issues that are interrelated with the mine water management plan, particularly regarding the environmental water balance and the effects that mining may have thereon.

The Guidelines for the rehabilitation of mined land developed by the Chamber of Mines (updated 2007) was developed by key industry role players with focus on aspects of opencast mine rehabilitation. Pertinent aspects include:

- Stripping topsoil per a dedicated stripping plan and utilizing the correct equipment to minimise compaction, over stripping and mixing of horizons.
- Implementing concurrent rehabilitation, constructing a post mining landform free of ponding, and prioritizing the live stripping and placement of topsoil where possible.
- Limiting topsoil management activities to dry seasons as increased moisture content can also increase the potential for compaction.
- Implementing effective strategies for topsoil stripping, placement, and stockpiling to limit compaction; and
- Implementing a soil amelioration and revegetation strategy based on dedicated soil sampling and analysis.

#### **5.12. DRAFT NATIONAL MINE CLOSURE STRATEGY 2021 (GN 446, 21 MAY 2021)**

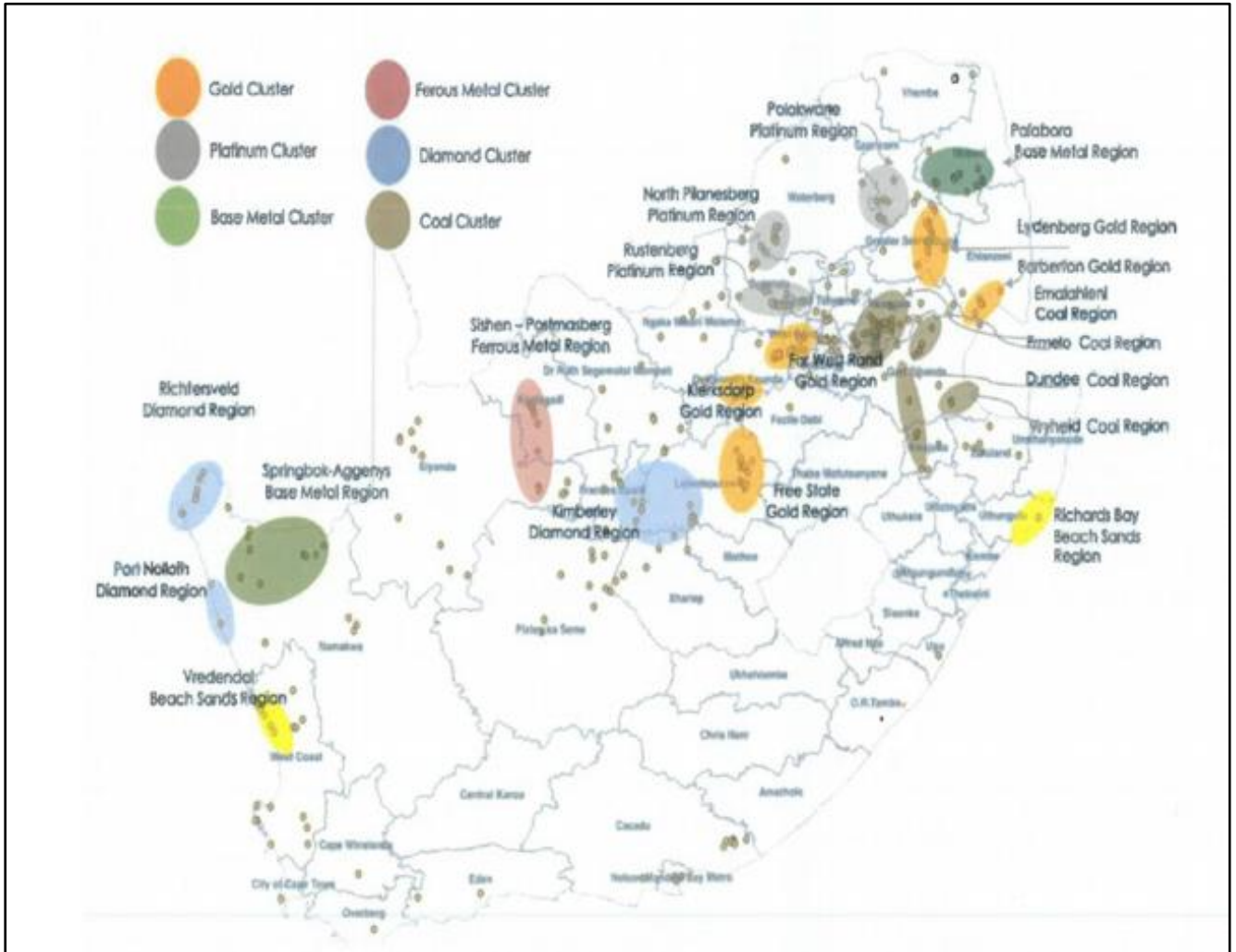
The aim of the strategy is to prevent or minimize adverse long term environmental and social-economic impacts, and to create a self-sustaining natural ecosystem or alternate land use. The Regional closure strategy will therefore set specific standards for all mines and promote the alignment of individual mine closure plans and regional mine closure plans, including the requirements for application for closure, requirements for Environmental Management Programmes/Plans and Financial Provision. A Regional Mine Closure Strategy (RMCS) is different to a Mine Closure Plan. The regional mine closure strategy considers the various issues that are relevant to mine closure on a broader integrated level and develops a strategic framework within which individual mine-closure plans will fit. RMCS therefore do not replace a mine closure plan.

The objectives of National Mine Closure Strategy are:

- To manage the closure of mine in a demarcated area in an integrated and sustainable manner, hence ensuring that these mines work together to achieved self-sustaining ecosystem after closure.
- To ensure that mines do not impact negatively on the livelihood of adjacent/interconnected mines in a demarcate area.
- To promote a strategic approach to managing water at mining and minerals processing sites so that water is more efficiently managed and value and to develop a post closer mine water strategy for an area.
- To make provision for post-closure stewardship and socio-economic sustainability, to continue monitoring the implementation of individual and regional mine closure plans.
- Integrated environmental management and related closure activities with socio-economic interventions and aligning these with development of a post-closure economy, by rationalising current wasteful spending on Environmental Management Programme (EMPr), Social and Labour Plan (SLP) and Corporate Social Investment (CSI) by reducing duplication of efforts and spending and aggregating available funding for coordinated regional projects.

### ***The identification of Mine Closure Regions***

The identification of closure regions is a multi-contextual process and requires consideration of social, environmental, and economic impact geared towards sustainable post closure support for dependent communities. The initiative requires the identification of closure regions suitable for integrated development strategies. The identification of these closure regions should be made within the existing provisions of the MPRDA. The selection of logical mine closure regions will enable the aggregation of development and rehabilitation funds unto common regional economic development programmes underpinned by substantial financial capacity. This, in turn, provides the basis for collaborative regional development between mining companies, local government and other sectors. Examples of these regions are shown in the Figure 16 below.



**Figure 16: Regional Mine Cluster**

## 6. ENVIRONMENTAL AND SOCIAL CONTEXT

An overview of the key biophysical and socio-economic context within which closure will be implemented, is included. The high-level key summary is based on a review of the information made available for this closure plan. The key Biophysical and Socioeconomic Baseline Information is presented in Figure 17 below. Several implications related to the information collected are provided along with linkages with the seven key closure objectives.

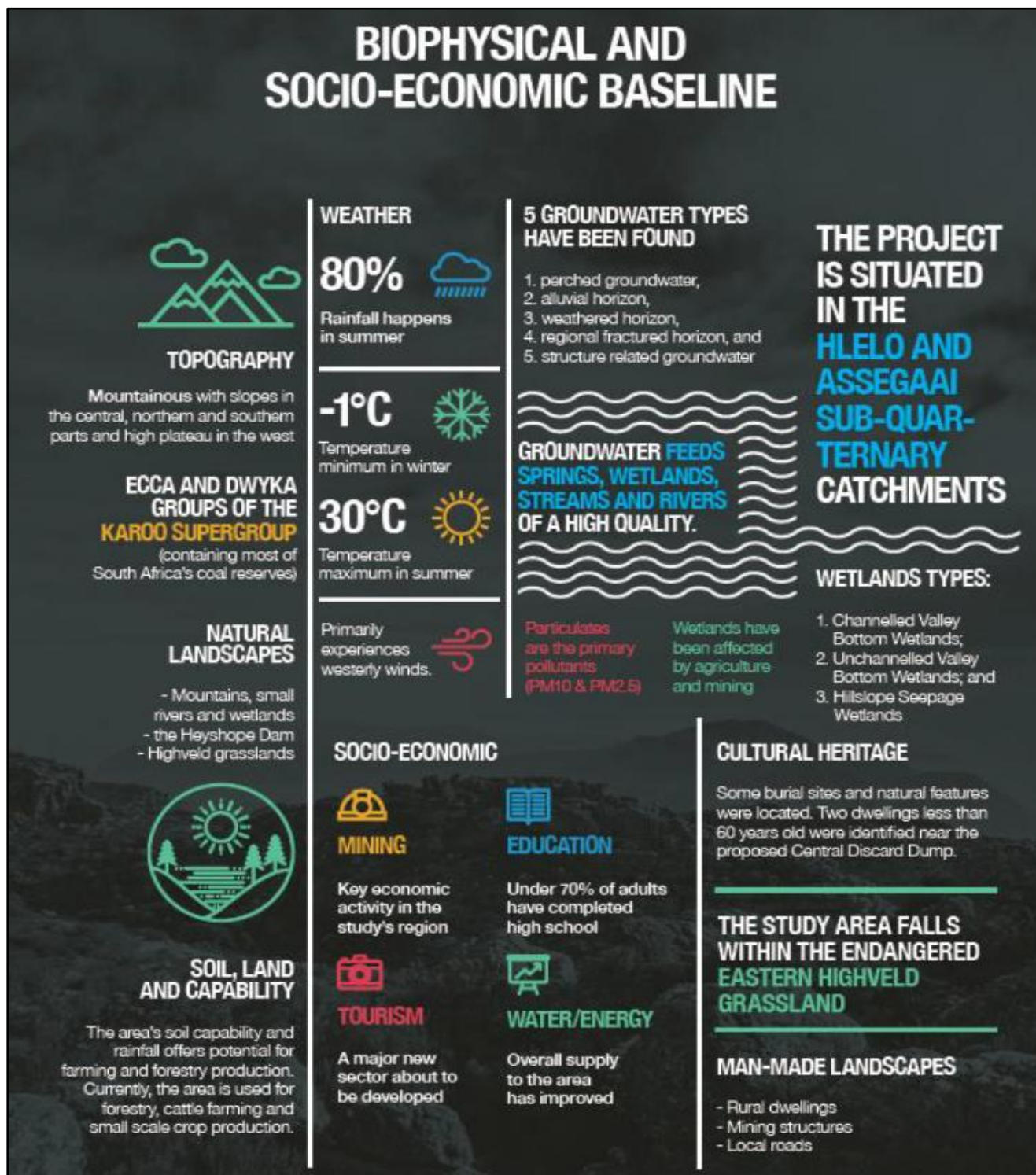


Figure 17: Key Biophysical and Socioeconomic Baseline Information

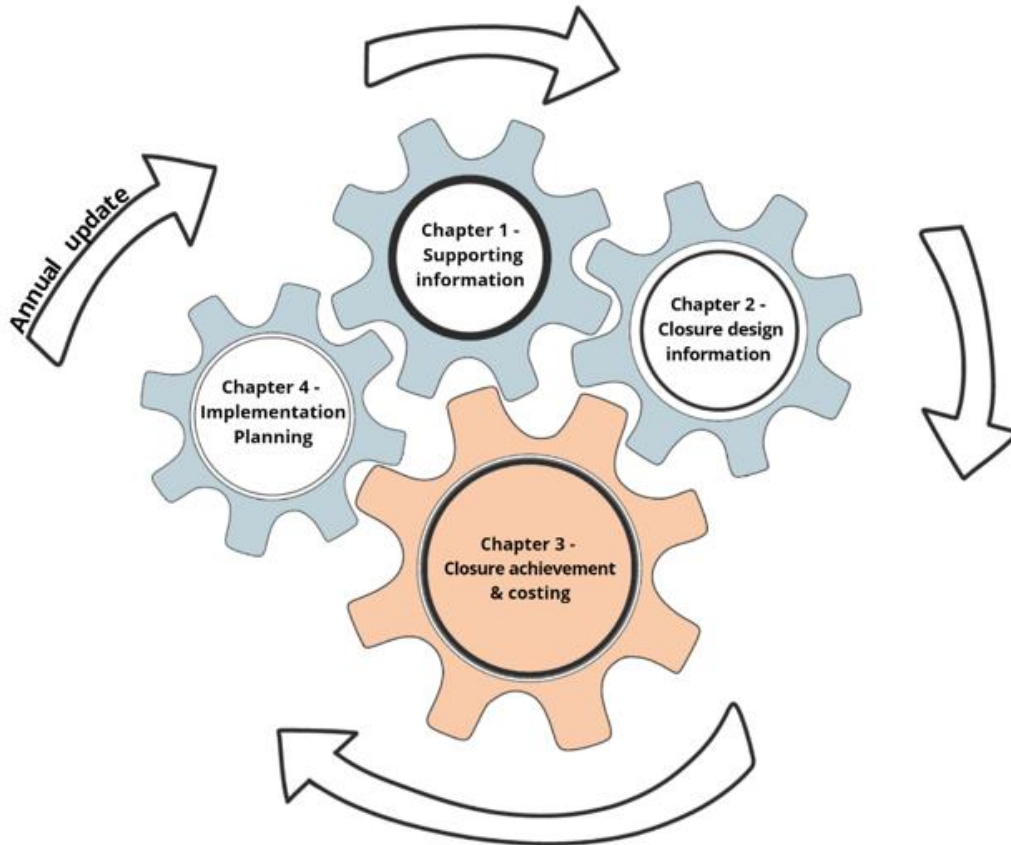
Table 10: Environmental and Social Context

Aspect	Description
Climate	The mining right area falls within the Usutu-Mhlatuze Water Management Area within quaternary catchments W52A and W51B (DWAF, 2006). According to the WR2012 database the mean annual S-pan evaporation for Quaternary Catchment W52A and W51B is 1400 mm per annum. The mining areas are within a summer rainfall region, with more than 80% of the rainfall falling between the months of October and March. Annual rainfall varied between 573mm and 1,314mm over a 30-year record period. The annual average

	rainfall over the record period is 794mm, however, rainfall is highly variable, particularly during the summer months.
<b>Topography</b>	The mining right areas lies within a mountainous region characterised by gentle to steep slopes in the central, northern, and southern parts and a high plateau in the western part. High plateaus are found along the west, south and eastern part of Kransbank property (up to elevations of 1,750 mamsl), as well as on the Western part of the Maquasa and Rooikop (elevations of approximately 1,650 mamsl). The topography slopes from these high points downwards towards the north and northeast to elevations of between 1,400 -1,350 mamsl.
<b>Surface Water</b>	<p>The study area is located within the W51B quaternary catchment of the Usutu to Mhalatuze Water Management Area (WMA), or WMA 6. This quaternary catchment is the second catchment of the Assegai River and the majority of runoff from the study area will eventually drain into this river.</p> <p>The water from the study area flows in a north-easterly direction, towards the Egude River. The Egude River and several of its tributaries flow towards the Heyshope Dam. The point of entry of the Egude River into the Heyshope Dam is to the north-east of the study area.</p> <p>The main hydrological feature in the vicinity of the site is the Heyshope Dam which is situated to the south-east of the site. The Egude River and several of its tributaries flow towards the dam. The proposed Discard Dump is located to the east of the Egude River, outside of the 100m buffer of the river.</p>
<b>Groundwater</b>	<p>According to the 1:500 000 General Hydrogeological Map the main water bearing strata (d3 in map) in the area is an intergranular and fractured aquifer made of predominantly arenaceous rocks (sandstone and conglomerate) and mudstones (shale and siltstone) of the Ecca Group.</p> <p>Groundwater resources are generally limited, with sustainable borehole yields ranging from 0.5 – 2L/s (Parsons, 1995). Three aquifers are typically present in the greater project area. These are:</p> <ul style="list-style-type: none"> <li>- A shallow perched aquifer mainly consisting of alluvium and transported hill wash material on top of a pebble marker and ferricretes in the low-lying areas, valleys, and paleo channels. Depth 0 – 3 m.</li> <li>- A weathered aquifer, which extends to depths of approximately 12 mbgl, depending on the extent of weathering. In the project area, this aquifer has comparatively low aquifer parameters. This aquifer is therefore not considered to be a major aquifer, although it plays a role in recharge to the deeper hard-rock aquifers and baseflow to streams. It also feeds many springs in the study area. Depth 6 – 12 m.</li> <li>- A deeper fractured rock aquifer, which is characterised by fractures, faults, and groundwater. These conduits can also serve as connections between the above-mentioned aquifers. This aquifer in the study area was also low yielding. Depths &gt; 12 m</li> </ul> <p>In general, a good relationship should exist between topography and static groundwater level. This relationship can be used to distinguish between boreholes with water levels at rest, and boreholes with anomalous groundwater levels due to disturbances such as pumping or local hydrogeological heterogeneities.</p>

	<p>However, due to the heterogeneity of the subsurface, these relationships should not be expected to hold everywhere under all circumstances, and deviations could thus be expected.</p>
<p><b>Geology and Soils</b></p>	<p>The coal seams form part of the Vryheid Formation of the Karoo Sequence. Typically, four coal seams are developed and named from top to bottom, namely the Fritz, Alfred, Gus, and Dundas. These seams are interbedded with sandstone sequences with minor siltstone development.</p> <p>The main seams developed in the Kangra Maquasa Operations area are the Alfred, Gus, and Dundas Seams. The Gus Seam is best developed and the most extensive, while the Alfred Seam has the poorest development. It is clear that the Gus Seam in the T4 Project area, likely by extension, the Maquasa area can be divided into two sub-seams:</p> <ul style="list-style-type: none"> <li>• The Lower Gus with mainly bright coal.</li> <li>• The Upper Gus with mainly dull shaly coal and carbonaceous shale.</li> </ul> <p>The contact between the Upper and Lower Gus is a very prominent thin sandstone band. The Alfred Seam in the T4 Project area is on average 0.91 m thick, while the Gus Seam is 1.67 m, and the Dundas Seam is 1.01 m thick. In the study area, there are indications of major faulting as well as dolerite dykes and sills. The dolerite intrusions burnt and devolatilised the coal seams in some areas. Dolerites as well as faulting displaced the coal seams in certain areas. This, in combination with weathering and erosion, caused the coal seams to be absent in certain locations.</p>
<p><b>Biodiversity</b></p>	<p>The study area is comprised entirely of the Eastern Highveld Grassland (GM12) vegetation unit. To the south-west of the study area, a small portion of the mining area is covered by the Wakkerstroom Montane Grassland vegetation unit.</p> <p>The Eastern Highveld Grassland vegetation unit is distributed along slightly, to moderately undulating plains, including some low hills and pan depressions in the Mpumalanga and Gauteng Provinces. The vegetation is short, dense, grassland dominated by the usual Highveld grass composition (<i>Aristida</i>, <i>Digitaria</i>, <i>Eriogrostis</i>, <i>Themeda</i>, <i>Tristachya</i>, etc.) and small, scattered rocky outcrops with wiry, sour grasses and some woody species (<i>Acacia caffra</i>, <i>Celtis Africana</i>, <i>Diospyros lycioides</i> subsp <i>lycioides</i>, <i>Parinari capensis</i>, <i>Protea caffra</i>, <i>P. welwitschii</i> and <i>Rhus magalismsontanum</i>).</p>
<p><b>Socio-Economic</b></p>	<p>Tourism is a major sector from the Provincial level through to the LM level. Amongst others, Wakkerstroom has been identified as a major destination for the development and preservation of tourism.</p>

## 7. CLOSURE COSTING ASSESSMENT



### 7.1. CLOSURE COST – METHODOLOGY

This section provides details on the schedule closure cost. The outlined assumptions and limitations also underpin the basis of this scheduled closure cost determination. It is important to note that the estimation is based on existing information. The closure cost calculation has been performed in accordance with requirements as set out in the transitional arrangement of NEMA GNR 1147 financial provision. The assessment will be performed in accordance with Section 41, Regulation 53 and 54 of the MPRDA Regulations.

The “Guideline Document for the Evaluation of the Quantum of Closure-Related Financial Provision Provided by a Mine” will be used to the scheduled assess closure liability. The DMR Guideline format makes use of a set template for which defined rates and multiplication factors are used. The multiplication and weighting factors which ultimately define the rate to be used are determined by amongst others the topography, the classification of the mine according to mineral mined, the risk class of the mine and its proximity to built-up or urban areas. The methodology described below details how the schedule closure liability was determined for the Kangra Coal (MP 133 MR).

#### 7.1.1. ASSUMPTION AND QUALIFICATIONS

The following qualifications and assumption were made for the assessment:

- Input in this report is based on information obtained from the mine, reference documents.

- It is assumed that all the size and quantities provided by within the design documents are correct and complete and that all the required items are included in the data provided.
- This report is based on prescribed legal methodologies and applications, the report contains interpretations and assumptions documented and contextualized to the best ability of the writer. Particularly, with relation to futuristic and predictive matters associated with scheduled closure.
- No warranty is included with this report, either express or implied, that the actual described conditions will conform exactly to the assessment and results contained in this report.
- This report addresses rehabilitation costs required at closure and the post closure monitoring and maintenance in terms of the Legislative requirements.
- Only general surface rehabilitation provision is made for the plant area.
- A contingency of 10% has been included to allow for unforeseen costs associated with contractors or rate increases.
- It was assumed that 2-3 years is adequate for the monitoring and maintaining of vegetation after rehabilitation. After the 2-3 year period the need for additional morning and maintenance will be established.
- For post-closure monitoring, costs of groundwater and surface water has been assumed to take place for a period of 2-3 years with sampling taking place on a biannual basis.
- In this assessment the current aspects and activities will be considered to determine the environmental liability, excluding planned aspects for the next financial year which were not considered.
- Only schedule cost is included into the closure liability calculations.
- It is assumed that the water treatment plant will be operated as part of operational cost. Closure provision for the treatment of water is already included in the existing closure liability assessment.
- The treatment plant will not be removed after closure and will remain operational.

The following assumption and qualification area applicable to the quantities utilised for the Closure Related Financial Provision calculations:

- The PCD's will be 45 500m<sup>3</sup> with an average depth of 5m. The area will be 1ha per PCD.
- Provision will for the first 3 year of the CDF will be made. The total facility after 20 years will be 75ha. It is estimated that 3.75ha per year will be utilised. Provision for 11.25ha are made in the calculations.
- No provision is made for the removal of the treatment plant and infrastructure as it will remain after closure. Provision is made for general surface rehabilitation.
- Provision for additional roads are based on 300m land and 7m wide. Provision for 2 100m<sup>2</sup> are included.

Based on the Guideline Document for the Evaluation of the Quantum of Closure Related Financial Provision Provided by a Mine (DMR, 2005), the following qualifications and assumption were made for the assessment:

## **PROCESSING PLANT AND STRUCTURES**

- All infrastructure and concrete buildings will be broken down to natural ground level and buried into the plant site
- Foundations, structures and conveyors will be broken down to natural ground level
- The areas are to be covered with 1,0m subsoil, 300mm of topsoil and vegetation must be established, or as noted in the relevant EMP
- The mining infrastructure has no salvage value; no credit was allocated for scrap steel and equipment that can be re-used or sold
- The process of removal and disposal is included in the applied unit rate

## **TOPSOIL AND VEGETATION COVER**

- No cost is allocated for any shortfall in topsoil. A topsoil balance will need to be established, and any shortfall shall be costed for, and provision made
- Top soiling and vegetation for the areas are included under general surface rehabilitation
- All open areas where no vegetative cover is present will require general surface rehabilitation, and the unit rate applied accordingly
- Soil compaction on surface areas requiring general surface rehabilitation is uniform across all mining areas, and
- Overburden and spoils normally have a low pollution potential and hence only need to be shaped to create a stable landform. The Master Rate thus includes shaping and grassing/vegetation of the overburden and spoils.

## **ENGINEERING DESIGN**

- Concrete thickness for all structures is on average 0.5m
- A typical berm size of 2m height, 1.5m top width and 1:1.5 side slopes will be used on areas where final voids are subjected to limited earthworks as closure objectives, and
- The final design of water trenches and cut off drains will be confirmed during closure.

## **FENCING**

- Fencing and gates shall be used only where periodic inspection and maintenance is ensured through a maintenance agreement with a responsible government entity, landowner or organisation
- Fences or gates shall be constructed to keep unauthorised persons out and shall be located where subsidence or caving will not break their integrity
- Fences and or gates will remain after closure to prevent unauthorised access, and
- Fence line breakdown cost is the same per running meter and do not differ between fence specifications. Fence line support poles for diamond mesh, electrified, and palisade fences are equal distances apart and have equal amount of concrete for subsurface support at supporting poles.

## **WATER MANAGEMENT**

- All stormwater management diversion measures, as prescribed under the GN704 and regulated in accordance with the NWA (Act No. 36 of 1998), to remain in place during the decommissioning stage
- The surface and groundwater monitoring programme, as required under the NWA and described within the WUL, to remain in place for the time specified in the License, and
- Water management and aftercare will largely (ultimately) be that of passive treatment i.e., containment and evaporation.

## **MAINTENANCE AND AFTERCARE**

- Annual fertilising of rehabilitated areas
- Monitoring of surface and subsurface water quality as required by the WUL and EMPr
- Alien vegetation management shall take place in accordance with legal requirements and management plan
- General surface maintenance to take place, and
- Maintenance and control of erosion on rehabilitated workings shall continue for a minimum period of 2-3 years following decommissioning.

## **GENERAL SURFACE REHABILITATION**

- The unit cost for general rehabilitation allows for shaping and landscaping of disturbed areas. The Master Rate allows for the shaping of material to a depth/thickness of about 500 mm. This includes the removal and/or destruction of surface infrastructure remnants and/or other undesirable objects such as trees, foundations, concrete slabs, etc.
- Any structures, undesirable objects such as trees, foundations and concrete slabs not included under component 1, 2A and 2B will be removed and rehabilitated under component 10, as provision is made for this in the master rate.

### ***7.2. UNIT RATES***

The DME 2005-unit rates have been updated annually with the average Consumer Price Index (CPI). The unit rates utilised of the assessment is presented in Annexure A.

### ***7.3. CONTINGENCY, PRELIMINARY AND GENERAL***

An allocation of 12% was made for preliminary and general costs, and a 10% provision for contingencies. Both of these provisions were made in accordance with the DMRE guideline.

### ***7.4. DMR GUIDELINE***

The section below is an indication of the process followed in order to determine the quantum for financial provision for closure. The process followed is presented in Table 11 below. The weighting

factors for Nature of Terrain is determined in Section 7.4.1 (Table 12), and the Proximity to Urban Area is determined in Section 7.4.2 (Table 13).

**Table 11: Process followed to determine the Quantum for Financial Provision**

Step No.	Description	MP 133 MR
		Output or Section Reference
<b>1</b>	Determine mineral mined and saleable by-products	Type of Mineral by-product - <b>Coal</b> Primary Risk Class - <b>Class A</b>
<b>2a</b>	Determine primary risk class: <ul style="list-style-type: none"> <li>▪ Class A (High risk),</li> <li>▪ Class B (Medium risk), or</li> <li>▪ Class C (Low risk)</li> </ul>	<b>Class A – High Risk</b>
<b>2b</b>	Revise primary risk class (if applicable) based on saleable by-products	<b>Class A – High Risk</b>
<b>3</b>	Determine environmental sensitivity of the mine <ul style="list-style-type: none"> <li>• Low sensitivity</li> <li>• Medium sensitivity</li> <li>• High sensitivity</li> </ul>	<b>High Sensitivity</b>
<b>4</b>	For Class A or B mining class operations	
<b>4.1</b>	Determine level of information available: <ul style="list-style-type: none"> <li>• Extensive, or</li> <li>• Limited</li> </ul> For extensive information, either <ul style="list-style-type: none"> <li>• Option 1: Accept the quantum determined</li> <li>• Option 2: Commission an independent review by a competent person, or</li> <li>• Option 3: Follow a “rules based” approach and proceed to step No. 4.2</li> </ul> For limited information, follow a “rules-based” approach and proceed to step No. 4.2	<b>Extensive</b> - <b>Rules based</b>
<b>4.2</b>	Identify closure components	<b>Table 8, 9 and 14</b>
<b>4.3</b>	Identify unit rates for closure components	<b>Annexure A</b>
<b>4.4</b>	Identify and apply weighting factors	<b>Table 12 and 13</b>
<b>4.5</b>	Identify areas of disturbance	<b>Table 8, 9 and 14</b>
<b>4.6</b>	Identify closure costs from specialist studies	<b>Table 14</b>
<b>4.7</b>	Calculate closure costs	<b>Table 14</b>

**7.4.1. WEIGHTING FACTORS – NATURAL OF TERRAIN**

Table 12 below depicts the weighting factor applied, based on the nature of the terrain where the mine is located. The weighting factor is applied to each of the closure components as presented below.

**Table 12: Weighting Factor 1 – Nature of terrain**

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

#### **7.4.2. Weighting Factor – Proximity to urban area**

Table 13 below depicts the weighting factor applied, based on the proximity of the mine to an urban centre. The weighting factor is applied to Preliminary and General Items as presented in below.

**Table 13: Weighting Factor 2 – Proximity to urban area**

Weighting Factor 1	Urban	Peri-urban	Remote
Proximity to urban area where goods and services are to be supplied	1.00	1.05	1.10

## **8. CLOSURE COST ASSESSMENT**

### **8.1. CALCULATION OF QUANTUM**

The Schedule closure liability for the proposed activities for the development of the CDF and the water treatment plant and associated infrastructure is presented in Table 14.

The current un-scheduled liability for the Maquasa Mining Right (MP 133 MR) is presented in Table 15.

**Table 14: Schedule Closure Liability - Maquasa Mining Right**

CLOSURE COSTS - MPUMALANGA							
Mine:		Savmore Colliery - Maquasa East (Section 102)		Province		Mpumalanga	
Mining Right No:		MP 133 MR		Town		Piet Retief	
Evaluators:		D Wilken		Date		28-Nov-24	
No	Description	Unit	A	Source Data	Multiplication factor	B	E=A*B
			Quantity			Master rate	Amount (rand) - Scheduled Cost
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m <sup>2</sup>	0,00	Design Report	1,00	R261,56	R0,00
1	Plant Conveyors	m <sup>2</sup>	0,00	Design Report	1,00	R261,56	R0,00
2(A)	Demolition of steel buildings and structures (including floor slabs)	m <sup>2</sup>	0,00	Design Report	1,00	R385,45	R0,00
2(B)	Demolition of reinforced concrete buildings and structures	m <sup>3</sup>	0,00	Design Report	1,00	R46,80	R0,00
3	Rehabilitation of access roads	m <sup>2</sup>	0,00	Design Report	1,00	R454,28	R0,00
4(A)	Demolition and rehabilitation of electrified railway lines	m	2100,00	Design Report	1,00	R247,79	R520 359,00
4(B)	Demolition and rehabilitation of non-electrified railway lines	m	0,00	Design Report	1,00	R523,11	R0,00
5	Demolition of housing and facilities (including floor slabs)	m <sup>2</sup>	0,00	Design Report	1,00	R266 236,51	R0,00
6	Opencast rehabilitation (including final voids and ramps)	ha	0,00	Design Report	0,52	R140,41	R0,00
7	Sealing of shafts, adits and inclines (including concrete cap)	ha	0,00	Design Report	1,00	R182 813,90	R0,00
8(A)	Rehabilitation of overburden and spoils	ha	0,00	Design Report	1,00	R227 691,41	R0,00
8(C)	Evaporation ponds /PCDs	ha	2,00	Design Report	1,00	R661 323,78	R1 322 647,56
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste)	ha	11,25	Design Report	0,76	R661 323,78	R5 654 318,32
9	Rehabilitation of subsided areas	ha	0,00	Design Report	1,00	R144 819,45	R0,00
10	General surface rehabilitation, including grassing of all denuded areas	ha	22,06	Design Report	1,00	R144 819,45	R3 194 717,07
11	River diversions	ha	0,00	Design Report	1,00	R165,19	R0,00
12	Fencing	m	0,00	Design Report	1,00	R55 064,43	R0,00
13	Water management (Separating clean and dirty water, managing polluted water and managing the impact on groundwater, including treatment or containment, when required)	ha	0,00				Water Treatment Cost
13 (A)	Surface and groundwater monitoring for 3-5 years	ha	22,06	Design Report	1,00	R55 064,43	R1 214 721,33
14	2 to 3 years of maintenance and aftercare	ha	22,06	Design Report	1,00	R19 272,55	R425 152,45
15 (A)	Eradication of exotic vegetation	Sum	0,00	Design Report	1,00	R0,00	R0,00
15 (B)	Specialist study - closure EMPR	Sum	0,00	Design Report	1,00	R0,00	R0,00

		Sub Total 1 (Sum of items 1 to 15)	R12 331 915,72
1	Preliminary and General	Add 6% of Subtotal if Subtotal 2 ≥ R 100,000,000.00	
		Add 12% of Subtotal if Subtotal 2 ≤ R 100,000,000.00	R1 479 829,89
2	Contingencies	10.0% of Subtotal	R1 233 191,57
		Sub Total 2 (Subtotal 1 plus Sum of management and contingency)	R15 044 937,18
		VAT (15%)	R2 256 740,58
		<b>GRAND TOTAL (Subtotal 2 plus VAT)</b>	<b>R17 301 677,76</b>

**Table 15: Summary of Closure Liability– Maquasa Mining Right**

<b>CLOSURE COST REVIEW</b>				
<b>Kangra Operation</b>	<b>December 2023</b>	<b>P&amp;G</b>	<b>VAT</b>	<b>Grand Total</b>
	<b>5,90%</b>			
Savmore Colliery - Maquasa East	R81 132 968.50	R17 849 253.07	R14 847 333.23	R113 829 554.80
Savmore Colliery - Maquasa West	R35 689 226.84	R7 851 629.91	R6 531 128.51	R50 071 985.26
Savmore Colliery - Maquasa West Extension (Nooitgesien)	R67 435 289.94	R14 835 763.79	R12 340 658.06	R94 611 711.79
<b>Sub Total</b>	<b>R184 257 485.28</b>	<b>R40 536 646.77</b>	<b>R33 719 119.80</b>	<b>R258 513 251.85</b>
ADD possible water treatment costs	R11 507 712	R2 531 696.64	R2 105 911.30	R16 145 319.94
<b>Sub Total 2 (incl P&amp;G and VAT)</b>				<b>R274 658 571.79</b>

## **9. CONCLUSION**

This scheduled Environmental Financial Closure Liability assessment was compiled in alignment to the NEMA GNR.1147 Regulations. This report is completed in the extended transitional period as presented the Amendment to Financial Provision Regulations, 2015 (as amended). During the transitional arrangements a holder can submit financial provision in terms of the requirements as set out in Regulations 17(1) and (3). During the extended transitional period, the assessment was in accordance with the requirements as set out in Regulation 53 and 54 (MPRDA Regulations).

### **9.1. CONTRIBUTION SCHEDULE**

Additional contribution is required towards the Rehabilitation Trust for the scheduled activities associated with the development of the CDF and the water treatment plant. A schedule contribution of R17 301 677,76 (incl. vat) is required.

## **10. REFERENCES**

DMR. (2005). *Guideline document for the evaluation fo the quantum of closure-related financial provision provided a mine.* DMR.

**ANNEXURE A: UNIT RATES**

NO	Description	Unit	B Master Rate	2022 Master Rate	2023 Master Rate	2024 Master Rate
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	m3	R6,82	R17,55	R18,76	R19,88
2(a)	Demolition of steel buildings and structures	m2	R95,00	R230,82	R246,75	R261,56
2(b)	Demolition of reinforced concrete buildings and structures	m2	R140,00	R340,16	R363,63	R385,45
3	Rehabilitation of access roads	m2	R17,00	R41,31	R44,16	R46,80
4(a)	Demolition and rehabilitation of electrified railway lines	m	R165,00	R400,91	R428,57	R454,28
4(b)	Demolition and rehabilitation of non-electrified railway lines	m	R90,00	R218,68	R233,76	R247,79
5	Demolition of housing and facilities	m2	R190,00	R461,65	R493,50	R523,11
6	Opencast rehabilitation including final voids and ramps	ha	R96 700,00	R234 954,65	R251 166,52	R266 236,51
7	Sealing of shafts, adits and inclines	m3	R51,00	R123,92	R132,47	R140,41
8(a)	Rehabilitation of overburden and spoils	ha	R66 400,00	R161 333,91	R172 465,95	R182 813,90
8(b)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing waste)	ha	R82 700,00	R200 938,46	R214 803,22	R227 691,41
8(c)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste)	ha	R240 200,00	R583 620,55	R623 890,36	R661 323,78
9	Rehabilitation of subsided areas	ha	R55 600,00	R135 092,85	R144 414,26	R153 079,11
10	General surface rehabilitation, including grassing of all denuded areas	ha	R52 600,00	R127 803,67	R136 622,12	R144 819,45
11	River diversions	ha	R52 600,00	R127 803,67	R136 622,12	R144 819,45
12	Fencing	ha	R60,00	R145,78	R155,84	R165,19
13	Water management (Separating clean and dirty water, managing polluted water and managing the impact on groundwater, including treatment, when required)	ha	R20 000,00	R48 594,55	R51 947,57	R55 064,43
14	2 to 3 years of maintenance and aftercare	ha	R7 000,00	R17 008,09	R18 181,65	R19 272,55
15(a)	Specialist study - Eradication of exotic vegetation	sum	R0,00	R0,00	R0,00	R354 738,64

**ANNEXURE B: BQA****BOQ 1. Maquasa - CDF**

Schedule Activity	Size	Area
1. Co-Disposal Facility	792 000 m <sup>3</sup>	11.25 ha
2. Pollution Control Dam	49 500 m <sup>3</sup>	1.0 ha
3. General Surface Rehabilitation		20 ha
4. Roads	300 m	2 100m <sup>2</sup>

**BOQ 2. Maquasa – Water Treatment Plant**

Schedule Activity	Size	Area
1. Decant Area – General Surface Rehab		2.0 ha
2. Pollution Control Dam – Brine Pond	49500 m <sup>3</sup>	1.0 ha
3. Infrastructure		0.06 ha

## ANNEXURE C: CURRICULUM VITAE

### PERSONAL PROFILE

An experienced environmental scientist with more than twelve (12) years' experience in applying the principles of Integrated Environmental Management and environmental legislation to a various development projects and initiatives in Southern Africa. DuToit holds a BSc, BSc Honours and MSc – Environmental Science from the University of Pretoria, is registered as a Pr.Sci.Nat. (SACNASP) and Natural Scientist (Registration number 118911). DuToit is well versed and experienced in the environmental licencing processes spanning environmental authorisations (NEMA and SEMA) and environmental management programmes, water use licence applications, auditing, due diligence assessments, feasibility studies, monitoring, mine closure (closure plans and risk assessments) and environmental management plans including integrated water and wastewater management plans, and rehabilitation strategy and implementation programmes. DuToit has co-ordinated and managed a number of diverse environmental and mining projects and programs, within both the public and private sectors, for national, multi-national and international companies. His interpersonal and organisational skills enables him to efficiently direct these projects from initiation to implementation.

### EDUCATIONAL QUALIFICATIONS

- |  |                        |
|--|------------------------|
| – Bachelor of Science (2008)                         | University of Pretoria |
| – Honours Bachelor of Science (2009)                 | University of Pretoria |
| – Master of Science – Sustainable Development (2015) | University of Pretoria |

### CONTINUED PROFESSIONAL DEVELOPMENT

Institution	Course	Completed
Environmental Law Workshop	MacRobert	2017
Mine Closure and Rehabilitation	South Africa Asset Management Association	2017
Environmental Law Workshop	IMBEWU Sustainability Legal Specialists	2016
ISO 14001 Training SAATCA Registered	Centre for Environmental Management (CEM)	2014
Water Law in South Africa Workshop	IMBEWU Sustainability Legal Specialists	2013
Mining Law in South Africa Workshop	IMBEWU Sustainability Legal Specialists	2013
Post – Decision Environmental Monitoring and Enforcement	Centre for Environmental Management (CEM)	2012
Environmental Law for Environmental Managers	Centre for Environmental Management (CEM)	2011
Environmental Law (EMI)	University of Pretoria	2009
Arc GIS 10	University of Pretoria	2009

### PROFESSIONAL REGISTRATION

South African Council of Natural Scientific Professions – Registered Professional Scientist – Environmental Science (118911)

### PROFESSIONAL WORK EXPERIENCE

<b>Employer</b>	<b>Elemental Sustainability Proprietary Limited – Pretoria, Gauteng</b>
<b>Period</b>	January 2018 – Current
<b>Position</b>	Operations Director
<b>Responsibilities</b>	

	<p>Senior Specialist and Director. Responsible for the management of all operations and projects. Senior specialist for Environmental authorisations projects (EIA, BAR, WULA, WML and AEL's), Mine Closure (Closure Cost and Rehabilitations plans), Audit (Environmental Authorisations), Compliance Monitoring and Specialist divisions (Bio monitoring, Wetlands and Biodiversity). Responsible for the development of Project plans and schedules, implementations of plans and budget planning. Risk identification and management of risk for each of the projects.</p>
<p><b>Employer</b> <b>Period</b> <b>Position</b> <b>Responsibilities</b></p>	<p><b>Environmental Assurance – Pretoria, Gauteng</b> October 201 – January 2018 Senior Operations Manager and Mine Closure Specialist Senior operations manager and mine closure specialist: Responsible for the management of all operations and projects. Senior project manager of the EIA, Mine Closure, Audit, Compliance Monitoring and Specialist divisions. Development of Project plans and schedules, budget planning and review of reports. Day to day tasks include, Compliance audits, reporting, Mine Closures, Closure Plans, Specialist work, tender documents and marketing, risk management, client interaction and development of new products.</p>
<p><b>Employer</b> <b>Period</b> <b>Position</b> <b>Responsibilities</b></p>	<p><b>Bokamoso Proprietary Limited – Pretoria, Gauteng</b> 2009 – 2010 Environmental Consultant Environmental Consultant responsible for the Environmental Authorisation Applications in terms of NEMA and SEMA's. Management of specialist and ensuring timely delivery of specialist reports.</p>
<p><b>Work Experience and Skills</b></p>	<p>Development of Mine closure cost assessments in accordance with MPRDA regulations. Mine closure risk assessments, annual plans and final rehabilitation plans in terms of GNR 1147. Development of project plans, delivery schedules and budget planning. Project risk management. Development of audit protocol, conducting of audits. Environmental due diligences, WUL audits, EMPR PAR's and ROD audits. Specialist studies: Noise &amp; Dust Baselines, EMP Performance Reviews, Air Emission Licenses (AEL), Visual Impact Assessment. Compilation of Scoping EIA, EIA, BAR and Environmental Management Plans for mines, industrial developments, and residential developments. Development of RSIP, IWWMP and Closure Plans. Application for Mining rights and prospecting rights. Development and implementation of various monitoring programs for water quality and air quality monitoring for mining and other industries. The use of fly ash for the rehabilitation of coal mine disturbed areas. Environmental legislation interpretation, recommendations, and implementation. Mentoring of Professional Natural Science in training towards professional registration.</p>

<b>Mine Closure Project Experience</b>	<b>Client</b>	<b>Mining Area</b>	<b>Work Completed and Year</b>
	MCmining	Uitkomst Colliery	Closure Report in terms of GNR 1147 – 2020 to 2024
	MCmining	Vele Colliery	Closure Report in terms of GNR 1147 – 2018 to 2024
	Kangra Coal	MP Operations	Closure Report in terms of GNR 1147 – 2021 to 2024
	Kangra Coal	KZN Operations	Closure Report in terms of GNR 1147 – 2021 to 2024
	Canyon Coal	East Manganese	Closure Report in terms of GNR 1147 – 2021 to 2024
	Canyon Coal	Phalanndwa Colliery	Closure Report in terms of GNR 1147 – 2021 to 2024
	Canyon Coal	Phalanndwa Ext Colliery	Closure Report in terms of GNR 1147 – 2021 to 2024
	Canyon Coal	Singani Colliery	Closure Report in terms of GNR 1147 – 2021 to 2024
	Canyon Coal	Ukufisa Colliery	Closure Report in terms of GNR 1147 – 2021 to 2024
	Canyon Coal	Hakhano Colliery	Closure Report in terms of GNR 1147 – 2021 to 2024
	Canyon Coal	De Wittenkrans	Closure Report in terms of GNR 1147 – 2021 to 2024
	Samancor WCM	WCM	Closure Report in terms of GNR 1147 – 2020
	INSA Coal	Bloemendal Colliery	Closure Report in terms of GNR 1147 – 2020 to 2024
	INSA Coal	Welgedacht Colliery	Closure Report in terms of GNR 1147 – 2020 to 2024
	2 Seam	TNC colliery	Closure Report in terms of GNR 1147 – 2020 to 2024