APPENDIX G

Final Rehabilitation, Decommissioning and Mine Closure Plan
Including Environmental Risk Assesement

Southern African Tantalum Mining (Pty) Ltd (SAFTA)
10150MR

1. **Portion of Portion 3 of the Farm Nababeep No. 134**
2. **Portion of Portion 13 of the Farm Nababeep No. 134**
3. **Portion of Portion 14 of the Farm Nababeep No. 134**
4. **Portion of Portion 21 of the Farm Nababeep No. 134**

CONTENTS

1 INTRODUCTION

This document serves to comply with regulation 6 of the NEMA Financial Regulations (2015) that states that an applicant must determine the financial provision through a detailed itemisation of all activities and costs, calculated based on the actual costs of implementation of the measures required for—

a) annual rehabilitation, as reflected in an annual rehabilitation plan;
b) final rehabilitation, decommissioning and closure of the prospecting, exploration, mining or production operations at the end of the life of operations, as reflected in a final rehabilitation, decommissioning and mine closure plan; and
c) remediation of latent or residual environmental impacts which may become known in the future, as reflected in an environmental risk assessment report.

The costs for rehabilitation included here are considered preliminary, speficially with regard the to the closure and rehabiitation of the Mine Residue Disposal Storage Facility (attached as **Appendix E** to the DEIR), where additional detailed investigations are recommendations to inform the detailed design, and which could have associated costs currently unquantified and of relevance to the Closure Plan.

1.1 The annual rehabilitation plan

The annual rehabilitation plan provides for concurrent or progressive rehabilitation and contains information that defines activities on an annual basis and how these relate to the Final closure vision, as detailed in this final rehabilitation, decommissioning and mine closure plan.

The objective of the annual rehabilitation plan is to–

- review concurrent rehabilitation and remediation activities already implemented;
- establish rehabilitation and remediation goals and outcomes for the forthcoming 12 months, which contribute to the gradual achievement of the post-mining land use, closure vision and objectives identified in the holder's final rehabilitation, decommissioning and mine closure plan;
- establish a plan, schedule and budget for rehabilitation for the forthcoming 12 months;
- identify and address shortcomings experienced in the preceding 12 months of rehabilitation; and
- evaluate and update the cost of rehabilitation for the 12 month period and for closure, for purposes of supplementing the financial provision guarantee or other financial provision instrument.

Taking into acount the objective of the annual rehabilitation plan it is clear that it cannot form part of the environmental management programme to be submitted in terms of section 24N of the Act and the Environmental Impact Assessment Regulations, 2014 but will be submitted on an annual basis as part of the environmental audit report in terms of Regulation 34 (1)(b) of the NEMA EIA Regulations (2014), as amended by GN 326 of 7 April 2017.

1.2 Final rehabilitation, decommissioning and mine closure plan

According to the NEMA Financial Regulations the final rehabilitation, decommissioning and mine closure plan will form a component of the environmental management programme to be submitted in terms of section 24N of the Act and the Environmental Impact Assessment Regulations, 2014 and will be subjected to the same requirements of the environmental management programme regarding opportunities for stakeholder review and comment as well as auditing.

The objectives of this final rehabilitation, decommissioning and mine closure plan is to to identify a post-mining land use that is feasible through-

- providing the vision (goals), objectives, targets and criteria for final rehabilitation, decommissioning and closure of the project;
- outlining the design principles for closure;
- explaining the risk assessment approach and outcomes and link closure activities to risk rehabilitation;
- 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 project at increasing levels of accuracy as the project develops and approaches closure in line with the final land use proposed; and
- outlining monitoring, auditing and reporting requirements.

1.3 Environmental risk assessment report

According to the NEMA Financial Regulations the environmental risk assessment report will also form a component of the environmental management programme to be submitted in terms of section 24N of the Act and the Environmental Impact Assessment Regulations, 2014 and will be subjected to the same requirements of the environmental management programme with regards opportunities for stakeholder review and comment as well as auditing.
The objective of the environmental risk assessment report is to–
- ensure timeous risk reduction through appropriate interventions;
- identify and quantify the potential latent environmental risks related to post closure;
- detail the approach to managing the risks;
- quantify the potential liabilities associated with the management of the risks; and
- outline monitoring, auditing and reporting requirements.

This document then fulfills the requirements of both the Final rehabilitation, decommissioning and mine closure plan and the Environmental risk assessment report

2 CONTEXT OF THE PROJECT

2.1 Issues that have guided the development of the plan

Three approaches were employed to identify the key aims for the closure process that form part of the approved Final Closure Plan submitted and approved in terms of the MPRDA:
- Technical assessments which involved the recording of the project activities over the full life cycle of the mining operation (including closure) and the consequent potential impacts on the environment (including cumulative impacts). This resulted in the compilation of a draft closure plan that facilitated discussions with the authorities as well as Interested and Affected Parties (I&APs).
- Identification and consultation with the relevant authorities as well as I&APs to solicit/record their suggestions/issues/concerns.
- The collection of available/published environmental data, the review thereof for adequacy and hence the identification of the need for more comprehensive environmental studies/investigations and/or further information gathering.

Subsequent to the above activities/processes, an advertisement of the operations was placed in local newspapers to notify I&AP's about the intended project and invitations to register and participate in the consultation process. As a result of the consultation and recommendations from the environmental studies/investigations completed the applicant identified three key closure goals for the final decommissioning and closure of the mining operation that are listed below.
- To create a safe and healthy post-mining environment with no residual environmental impact.
- To create a stable, free draining post mining landform, which is compatible with the surrounding landscape
- To provide optimal post-mining social opportunities

Each goal is supported by a suite of key objectives and activities which are elaborated on in section 4 and 5 of this plan. This plan also describes how these objectives are planned to be met and elaborate on the implementation of certain risk mitigation actions (section 6). With risk assessment and mitigation being integral to the planning and executing of the rehabilitation and closure of the mine. Aftercare and maintenance of rehabilitated sites is often the difference between the ultimate successes or failure of rehabilitation and monitoring of rehabilitation will determine whether rehabilitation objectives and requirements are being achieved.
Several pieces of legislation are applicable to mine closure. Importantly, public participation is an integral part of mine closure and the process followed needs to fulfil the requirements of all relevant legislation. The following government departments have been identified amongst others as playing a key role in the closure process:
- Department of Minerals Resources (DMR): Competent Authority in terms of NEMA and NEM: WA; facilitator of closure inspections and issues the closure certificate;
- Department of Water and Sanitation (DWS): Lead agent for potential water related issues and signs off on the mine closure certificate, and issues the Integrated Water Use license;

- Provincial Department of Environment and Nature Conservation: Gives input into the closure plan and guides and monitors protection of the natural environment;
- The local municipality and district municipality. Gives input into the mine closure plan and interfacing thereof with their integrated development plan (IDP) of the local area.

3 MINE PLAN AND SCHEDULE

3.1 Mine Site Plan

The Mine Site Plan is included as Diagram 2c, and has been referenced from Diagram 5.1.1 (dated 2018) in the DEIR. It is noted that the updated mine layout needs to be corrected (and is included in the DEIR as Diagram 5.1.2). The Final Layout will be included in the FEIR.

3.2 Project Description

<u>This section has been extracted from the DEIR with the same numbering of the Diagrams, photographs and tables, etc. to ensure continuity. The Diagrams have not been inserted here, and can be referenced in the DEIR:</u>

The Mine Layout showing all the development areas and services is included in the Diagram 5.1.1 (2018 layout) and 5.1.2 (2019 layout). Both the original (2018) and the revised (2019) layouts have been included as some infrastructure is shown on the original layout only (for example).

Site Plans overlaid on Google Earth™ are provided in the DEIR for:
- Diagram 5.2.1 and 5.2.2: Flat Mine North
- Diagram 5.3.1 and 5.3.2: Flat Mine South (5.3.2 needs to be corrected to locate FMS to the west of the river)
- Diagram 5.4.1 and 5.4.2: Flat Mine East
- Diagram 5.5.1 and 5.5.2.: Centralised Fine Residue Dam

Plans and process flow diagrams are provided in the DEIR for the mine logistics, processing and associated infrastructure where relevant:
- Diagram 6: Electricity Supply
- Diagram 7: Mining Infrastructure located at FMN
- Diagram 8: Sewage Treatment Plant
- Diagram 9: Perimeter Fencing
- Diagram 10: Access Control
- Diagram 11: Explosives Delivery Bay
- Diagram 12: Mine Logistics
- Diagram 13: Crushing and Screening
- Diagram 14.1: Milling Circuit and 14.2 Diagrammatic Representation of the Process Milling Circuit
- Diagram 15: Reagent Make-Up and Conditioning
- Diagram 16: Flotation Circuit
- Diagram 17: Product Handling
- Diagram 18: Water Supply
- Diagram 19: Services

The Mine Process Flow Diagram is included as Diagram 20.

3.2.1 Access, Roads and Routes

The Project Area will be accessed by a 3.42Km gravel road leading from the town of Nababeep in a northern direction and this road is will have to be upgraded to accommodate heavy equipment (Diagram 5.1.1). A portion of the road will from time to time be carrying loaded haul trucks and, for this reason, the road should be constructed to accommodate two-way traffic. The portion of the access road from FMS will be upgraded to serve as main surface haul road (2.81Km).

This haul road will be constructed to minimize travel of locals into the mining area and inadvertent contact with large earth moving vehicles. The access/haul road length will be 6.23km long with an 8.9 m width to accommodate two-way traffic should allow for a trench and berm on each side of the road. Construction will be conducted by

debushing, topsoil removal, scraping and compacting of the area adjacent to the existing road. Compaction should be to 98% Modified American Association of State Highway and Transportation Officials with California Bearing Ration of 15% (“98% MOD AASHTO with CBR of 15%”).
A new haul road will be constructed between the waste rock dump and the main surface haul road (0.5Km) and another from between FME and the main surface haul road (1.54Km).

3.2.2 Security and access control

A site perimeter fence around the development area and haul road will be required for safety and security purposes. The fence should be able to restrict access of life stock and other animals as well as perturb persons from any unauthorised access. The fence should have a total height of 2.4m. The fully galvanised wire mesh fence should be 2.1 m high with a razor mesh topping of 0.3 m and spacing between stay and intermediate posts of 3 m. The total perimeter fence length has been measured at 5.21 km.
Access to the area will be gained through two dedicated sliding vehicle gates and a single pedestrian gate. A security house will be located at the main entrance to the mining site area. Access to the complex by outside service providers will be strictly controlled, and where possible, limited to delivery at the main stores located at the plant.

3.2.3 Power supply

Currently no power supply exists to the Project Area. In order to establish power to the project site a number of off-site installations will be required, which will include:

- Construction of 1 x 66(132) kV line bay at Nababeep Town (132KV) Substation (refer to Diagram 6); and,
- Construction of a 1 x 5.6 km 11 kV squirrel line from Nababeep Town Substation (110/66KV) to SAFTA Project Intake Yard.

Substation ancillary services, control room building, protection equipment, metering equipment, and power network control and communication systems for the substations will be required.
In addition, back-up generators will be required.
The off-site power supply infrastructure designs have been prepared on a maximum demand of 4.54 MVA to the Project Area during the 35 ktpm option, which will increased to 6.4 MVA once production increases to 70 ktpm as determined by a load summary.

The load summary is listed in Table 4 and Table 5 respectively.

Table 4: Project Power Supply Load Summary for 35 ktpm option

Area Description	Unit	Maximum Demand
Process Plant	kVA	3,033
Tailings Storage Facility	kVA	66
Mine Site	kVA	1,436
Total	**kVA**	**4,536**

Table 5: Project Power Supply Load Summary for 70 ktpm option

Area Description	Unit	Maximum Demand
Process Plant	kVA	4,334
Tailings Storage Facility	kVA	132
Mine Site	kVA	1,956
Total	**kVA**	**6,422**

3.2.4 Water Supply and Management

Water supply and management is an essential service as various steps in the mining and particularly the processing processes are heavily reliant on the usage of water. Apart from the mining and process requirements, water will also be required for use as potable water.

Mining activities often pose significant water pollution risk, it is of utmost importance to properly manage water usage and disposal on a mining operation. For this reason, all dirty rainfall run-off, process plant discharge, treated sewage and grey water will be collected, stored, treated and recycled as far as possible. Should an excess of water exist on the operation, all effluent from the site will be suitably treated and tested to ensure compliance to acceptable standards before being released into the environment. All clean rainfall run-off is to be diverted from dirty and contaminated areas to minimise the risk of environmental and water pollution. Trenches are to be constructed to divert clean run-off, collect dirty run-off and route dirty water to suitable storage dams. A surface collection dam will be constructed to store all dirty water from the mining area and a series of dams will also be constructed within the plant to store run-off and discharged process water.

Refer to the **Water Infrastructure Report** attached as **Appendix H**, which shows the location of the water pipeline from the Nababeep shaft (NEM-MS) to the mining area following the servitude of the 11 kV powerline. The updated diagrams have been included in the Diagram 5 series, showing the original layout (2018) and the revised layout (2019) to provide a holistic overview. The FMS revised layout (2019 in Appendix H) needs to be corrected and the final layouts included in the FEIR.

Hydrogeological Report

Refer to the Specialist Hydrogeological Report prepared to inform the EIA Phase, included as Appendix 2 to the MRDSF Report attached as **Appendix E**:

"SAFTA indicated the water demand to be as follows:

- Water for construction period – 130 KL/day (KL/d) for 12 months;
- Potable water 200 employees x 150 l/person/day – 30 KL/d for 15 year LoM;
- Process water for mine site and dust suppression – 20 KL/d for 35 kt/m option;
- Process water for mine site and dust suppression – 40 KL/d for 70 kt/m option;
- Process water for processing plant – 559 KL/d for 35 kt/m option; and
- Process water for processing plant – 1 151 KL/d for 70 kt/m option.

Therefore, the 35 kt/m option requires a total of 609 KL/d of water, whilst the 70 kt/m option requires 1 221 KL/d. These equates to c.25.4 KL/h (c.7.1 L/s) and c.51.0 KL/h (c.14.2 L/s), respectively. The annual water demand over the LoM is likely to be as follows:

- Year 1 (Construction): 47 500 KL/a
- Year 2 (Production 150 000 kt): 79 600 KL/a
- Years 3 & 4 (Production 420 000 kt/a): 223 000 KL/a
- Year 5 (Production 700 000 kt/a): 371 400 KL/a
- Years 6-10 (Production 840 000 kt/a): 445 700 KL/a
- Years 11-15 (Production 840 000 kt/a): 445 700 KL/a

SAFTA proposes sourcing their water supplies from groundwater abstracted from the old Nababeep East Mine's main shaft (NEM-MS) augmented by dewatering of the new underground mines."

A referenced from the Hydrogeological Report (Appendix 2 in **Appendix E**) confirming a sustainable water supply:

"Based on the test results, analysis and assumptions mentioned above, it can be concluded that, over 15 years LoM, shaft FMS-VS1 should produce c.60 KL of water per day at a pumping rate 0.7 L/s (2.5 KL/h). Similarly, shaft NEM-MS should over 15 years LoM produce 1 363 KL/d at a pumping rate of 16 L/s (56.8 KL/h). Numerical flow modelling (subsection 7) confirmed these pumping rates, therefore, it can be concluded that these sources should be capable of sustainably supplying the demand during construction, operations and closure of the proposed mining operations."

Mass and Water Balance in MRDSF Report

PLANT OPERATION

The initial plant design capacity is 35kt/m with a 90% availability resulting in the plant operating for 27 days each month at an hourly throughput of 54 t/h.

WATER REQUIREMENT

The calculated water recovery from the TSF, the concentrate filter and the tailings thickener totals 116.6 m3/hr representing 80% of the total water requirement. The remaining 20% (30 m^3/hr) make up water required will be pumped from the water shaft near FMS.

The make-up water is split between the plant operation (27.5 m^3/hr) the additional water required by the laboratory, offices, ablutions and showers (2.5 m^3/hr).

Historical operational records indicate that the ratio of the RoM plant feed to make-up raw water was 1:1, that is, 1m^3 of water was required per tonne of ore treated. The raw water requirement for the plant would therefore be 54 m³/hr. Until the requirement calculated in the mass and water balance can be definitively proven the historical water figure will be used.

CONCENTRATE AND TAILINGS MASS

Roughly 10% of mass of the plant feed will be collected as flotation concentrate with the remaining 90% reporting to the tailings. This represents an actual mass of 5.4 t/h for the concentrate and 48.6 t/hr for the tailings.

The moisture in the concentrate from the pressure filter will be around 12% whilst the percent solids in the tailings will be around 60%. The concentrate will further be sun dried in bunkers before being packed into bags for export. The key mass and water figures are listed in Table 4-1 in **Appendix E**.

3.2.5 Mine logistics

The mine logistics will be the area from where the mining contractor and relevant technical services personnel will manage the mine. The site will cover an area of 20,800 m² (130 m x 160 m) (Refer to Diagram 5 series and Photograph Compilation 1). The mine site will be enclosed by a security fence. Access to the site will be controlled by security personnel posted at the access gates to the site.

The mine site will include offices, change houses, control room, first aid station, stores, waste handling area, explosive delivery area, earth moving vehicle and engineering workshops as well as an earth moving vehicle parking area, fuel storage facility and a wash bay. This area will be mainly constructed and established by the appointed mining contractor but services like water supply, power supply, water management and other services will be constructed by contractors appointed for the construction of the balance of infrastructure areas.

Sewage treatment will be managed on site via a Biozone-type Purifier as shown in Diagram 8 below, and will require management of the filters and additives.

3.2.6 Processing plant site

The processing plant site will include the processing plant, a metallurgical and assay laboratory, offices, reagent storage facility and a workshop. The site will be 130 m x 200 m and will be located adjacent to the Mine site.

Refer to Diagram 5 series, Photograph Compilation 1 and Figures 13 – 18 for Process Flow Diagrams of each component, and Figure 20 for the project summary Process Flow Diagram (Plant Flowsheet).

Photograph Compilation 1: View north-east towards FMN on the left and the area earmarked for the processing plant, mine logistics, water reservoir, settling dam and RoM stockpile as shown on Diagram 5.2.1 and 5.2.2.

<u>**Basic Plant design**</u>

Refer to **Appendix E**, Section 4.2 that provides a more detailed process description of the following:

- Ore receiving
- Crushing
- Milling
- Flotation
- Concentrate handling
- Tailings disposal
- Reagent make-up and addition

The Plant Process Flow (Diagram 20) incorporates a conventional two stage crushing circuit with a primary jaw crusher followed by a secondary cone crusher in closed circuit with a vibrating screen. The primary mill discharge is pumped through a cyclone with the underflow passing through a flash flotation cell before gravitating to the secondary milling circuit.

The cyclone overflow streams from the primary and secondary milling circuits form the feed to the flotation circuit (as shown in Diagram 14.2). The flotation circuit comprises rougher, cleaner and re-cleaner tank flotation cells. The rougher concentrate is pumped to the cleaner cells with that concentrate progressing to the re-cleaner stage.

The cyclone overflow from the milling circuit is first conditioned with reagents before entering the rougher flotation cell. The rougher concentrate will be cleaned in a cleaner stage and its concentrate will be further upgraded in a recleaner stage. The recleaner concentrate will be the final flotation concentrate. The grade of the flash flotation concentrate will determine whether it is fed to the recleaner or joins the recleaner concentrate to form the final concentrate.

The recleaner tails will be returned to the cleaner feed stream with the cleaner tailings returned to the rougher feed stream. The rougher tailings will pass through a scavenger flotation cell before being discarded as final flotation tailings. The scavenger concentrate will either be pumped to the rougher feed or the feed to the cleaner flotation stage. There will be an option to bypass the scavenger cell should the copper grade of the tailings be very low, and depending on the mineralogy/mode of the copper losses.

The flotation reagent suite will comprise a frother, a collector and lime for pH adjustment. The lime will require a slaking plant and a holding tank. The frother, which will be in liquid form, and delivered in drums, will require a make-up and an addition tank. The collector will be delivered in powder form in bags and will also require a make-up tank and an addition tank. All the tanks will be agitated. Peristaltic type reagent pumps will be used as dosing pumps to the various reagent addition points. All the reagents will be introduced to the conditioning tank prior to the rougher flotation circuit as well as to various points within the flotation circuit as required.

The tailings from each stage are returned to the previous stage with the rougher tailings passing through a scavenger stage. The re-cleaner concentrate is the final concentrate which is filtered to and stored prior to export. The scavenger tailings will be thickened to 60% solids before being pumped to the Tailings Storage Facility (TSF). After the solids have settled the excess water will be returned to the plant as process water. The concentrate, equating to 10% of the original plant feed mass, will be sold at the mine gate.

For the 35,000 t/m operation the feed to the plant will be a nominal 54t/h with a 1:1 water requirement, i.e. 1m³ of water required per tonne of ore treated.

The design philosophy is that the processing plant would initially be designed to treat 35,000 t/m. This is referred to as Phase 1. At the beginning of Year 4, a parallel stream (Phase 2), treating a further 35kt/m will be commissioned bringing the total design throughput to 70kt/m. The life of the project, based on the current resource, is planned to be 10 years. The plant should have a 90% availability and operate on a 24 hour/day basis with 3 operational shifts and a relief shift. The plant will not be fully automated but there will be sufficient instrumentation to ensure a stable operation and allow for reliable metallurgical accounting.

Efficiency of the process

The copper will be upgraded by means of flotation with the final flotation concentrate representing 10% of the original mass of the plant feed. 90% of the copper will be contained in this fraction. This will be the final product. It will be filtered (dewatered), bagged, and sold at the mine gate. The reclaimed water will be returned to the process water circuit.

The remaining 90% of the original plant feed will be discarded as flotation tailings. This product, grading at 75% passing 106 microns, will be pumped to the Tailings Storage Facility (TSF). Water will be recovered and returned to the plant for re-use, thereby reducing the raw water requirement.

3.2.7 Stockpiles

The RoM stockpile will be sized to ensure sufficient supply to the plant for a minimum of 1 month. With a 35 ktpm production profile this will amount to 1.52 kt per day. The stockpile thus needs to be a minimum size of 35,000 t as shown in Table 6 below.

During the second phase of the project production will be increased to 70 ktpm requiring the stockpile size to double as shown in Table 7 below.

The stockpiles will have the following dimensions:

Table 6: RoM Stockpile – 35 ktpm Design Parameters

Description	Unit	Value
Height	m	5
Length	m	85
Width	m	50
Wall Gradient	h:v (x:1)	1.33
Stockpile Volume	m^3	12,996
Footprint Area	m^2	4,250
RoM stockpile tonnage	**t**	**35,000**

Table 7: RoM Stockpile – 70 ktpm Design Parameters

Description	Unit	Value
Height	m	6
Length	m	120
Width	m	60
Wall Gradient	h:v (x:1)	1.33
Stockpile Volume	m^3	26,422
Footprint Area	m^2	7,200
RoM stockpile tonnage	**t**	**71,336**

3.2.8 Mine Residue Disposal Storage Facility (MRDSF)

Refer to the Conceptual Design of the Mine Residue Disposal Storage Facility Report (MRDSF) (attached at **Appendix E**). Further details specific to the design and management of the MRDSF are included in this Report attached as **Appendix E**.

The MRDSF will consist of:

- A Tailings Storage Facility (TSF) with sufficient storage capacity to contain 4.5 million dry tonnes of tailings over a 10 year LoM;
- A Return Water Dam (RWD);
- A Storm Water Dam (SWD);
- The associated infrastructure for the MRDF (i.e. perimeter slurry deposition pipeline, storm water diversion trenches, perimeter access road etc.)

During a site investigation with representatives from Uhuru and Epoch a single site was identified as a potential suitable location based on the following:

- Location overlies an existing environmentally disturbed location as shown in the Photograph Compilation 2;
- The site is positioned over a wide valley in which it is possible to establish a large depositional basin reducing the volume requirement for a starter embankment; and
- The location does not encroach on nearby settlements.
- It is centrally located within the mining right area, approximately 1.5 km south-east of the processing plant.

Photograph Compilation 2: View north-east of the disturbed area earmarked for the Residue Disposal Facility

A volumetric analysis was conducted of the selected site to confirm that the tailings stream could be contained within the available footprint. Diagram 5.5.1 and 5.5.2 provides an illustration of the selected site location with the LoM tailings footprint area.
In order to optimise the capacity of the selected site a conventional upstream self-raised facility was chosen based on the restricted available footprint area and anticipated lack of available in-situ borrow material and/or waste rock.

MRDF Design:
The Conceptual Design General Arrangement of the proposed MRDF is illustrated in **Diagram 5.5.2** (referenced from Drawing Number 000-224-900, included in Appendix 5 of **Appendix E)**.

The **Tailings Storage Facility (TSF)** will have the following features:

- The starter embankment will be constructed to elevation 777 m.a.m.s.l. to correlate with the safe Rate of Rise of <2.5m/annum and provide the required minimum freeboard;
- Deposition will comprise of tailings deposited behind the starter embankment until the Rate of Rise decreases to <2.5 m/annum and then self-raised to a final elevation of 792 m.a.m.s.l. with a terminal Rate of Rise of 1.64 m/annum;
- The TSF has a total footprint area of 32.81 Ha, with a maximum height of 32m;
  - A slurry spigot pipeline along the crest of the TSF starter embankment;
  - An elevated and a natural ground level (NGL) toe drain and associated drain outlets;
  - A blanket drain and associated outlets;
  - A solution trench;
  - Run-off catchment paddocks;
  - A penstock decant system with an intermediate intake and a final intake;
  - An energy dissipator and a dual chamber silt trap with associated outfall trench;
  - An access road;
  - A perimeter fence; and
  - Storm water diversion trenches and berms.
  - **A class C liner typically comprising of:**
    - A 100 mm sand protection layer, or geosynthetic replacement of equivalent performance;
    - A 1.5 mm HDPE geomembrane;
    - A 300 mm clay liner, or geosynthetic replacement of equivalent performance;
    - A leakage detection and collection system.

The **Return Water Dam (RWD)** will have the following features:

- Compacted earth containment wall raised to elevation 762 m.a.m.s.l.;
- A lined basin with 1.5 mm HDPE with an associated geotextile protection layer;
- A return water collection manhole;
- A storage capacity of 6 000m³ providing approximately 5 days of slurry water; and
- A spillway at elevation 761 m.a.m.s.l.

The **Storm Water Dam (SWD)** will have the following features:

- A compacted earth containment wall raised to elevation 762 m.a.m.s.l.;
- A lined basin with 1.5 mm HDPE with an associated geotextile protection layer;
- A return water collection manhole;
- A storage capacity of 41 000m³ providing adequate storage to prevent spillage of dirty water more than once in a 50 year period;
- An emergency spillway at elevation 761.2 m.a.m.s.l.; and
- A spillway diversion trench and berm.

In summary therefore (and as per the conclusions in Section 17 of Appendix E), the Conceptual Design of the SAFTA MRDF has been undertaken, and the following was concluded:

- A site has been identified within the available survey capable of containing the tailings stream over the 10 year LoM;
- The TSF conceptual design was undertaken on the basis that the geochemical classification of the tailings were determined as a Type 3 waste product and that a Class C liner is required in accordance with South African legislation;

- A hydrogeological study undertaken by SRK indicated a low to very low risk of further contamination of the groundwater reserves in the project location;
- A RWD was sized to contain 5 days of slurry water, or 6 000 m^3;
- A SWD was sized to contain the volume of water that would resulting from a 7 day 1:50 year return period flood over the entire MRDF footprint, or 41000m^3;
- A high level seepage and stability assessment indicate that the TSF will achieve a Factor of Safety (FoS) of 1.5 with a toe drain and blanket drain in place to provide redundancy under static conditions;
- The TSF was assessed under pseudo-static conditions and found to achieve a FoS of 1.1 with active drains;
- A high level water balance yielded returns of:
  - Between 20% – 40% for an unlined facility; and
  - Between 40% - 60% for a lined facility.

3.2.9 Project Services

Owing to the remote nature of the Project Area a number of services will have to be supplied by personnel and infrastructure on site. These services will include the treatment of potable water, the treatment of sewage, basic medical and firefighting services, and waste handling and removal as well as information and communication services.

A potable water treatment plant will be installed to treat water abstracted from the water raise to ensure it is suitable for human consumption. Sewage will be collected in septic tanks across the operation and fed to a sewage treatment plant for treatment. Water from this plant will be recycled and utilised as service and process make up water.

A first aid station will be available at the mine site for first response to any medical emergency on the mine. This facility will be equipped for the treatment of minor to medium severity medical emergency and will serve as a first response / stabilisation facility from major medical emergencies. Patients will be transported from here to the nearest hospital for further treatment should it be required.

A firefighting truck will form part of the project services vehicles and will be utilised to respond to fires on the Project Area. A waste handling and dispatch facility will also from part of the mine site and will allow for the collection of all types of waste generated by the operation and transported to suitable disposal facilities in the area.

Lastly, Information Technology (IT) and communication infrastructure will be installed at the mine site to allow for the effective capture and management of relevant information and ensure clear and effective communication across the Project site and externally off-site.

3.2.10 Rehabilitation, decommissioning and Mine Closure

The final Rehabilitation, Decommissioning and Closure Plan to be developed in the EIA Phase, will address the following measures:

- Removal of all structures and infrastructure not to be retained by the landowner in terms of section 44 of the MPRDA.
- All fixed assets that can be profitably removed will be removed for salvage or resale.
- Any item that has no salvage value to the mine, but could be of value to individuals, will be sold and the remaining treated as waste and removed from site.
- All structures will be demolished and terracing and foundations removed to the lesser of 500 mm below the original ground level.
- Inert waste, which is more than 500 mm underground, such as pipes, will be left in place
- A hazardous disposal site will not be constructed and all hazardous waste will be removed from site and transported to the nearest licensed facility.
- All services related to the mining operation, water supply lines and storage on site will be demolished.
- Existing tracks will be used and no new roads will be developed.
- The MRDF and development areas will not exceed the planned footprint. Recommendations for the decommissioning, closure and rehabilitation of the residue stockpile are to be provided in the Specialist Report to be prepared in accordance with the “Regulations regarding the planning and management of residue stockpiles and residue deposits from a prospecting, mining, exploration or production operation” in GNR 632 of 24 July 2015 (in GG No. 39020)

- It is assumed that the post-mining pit stability and waste dump profile will be addressed as part of the operation and necessary remedial actions implemented prior to closure.
- Diversion of drainage channels due to historic waste dumps or agricultural practices will not be reinstated but mitigation to prevent damming of water will be implemented as part of annual rehabilitation.

Diagram 1: Locality of mining area showing nearby Towns and Major routes

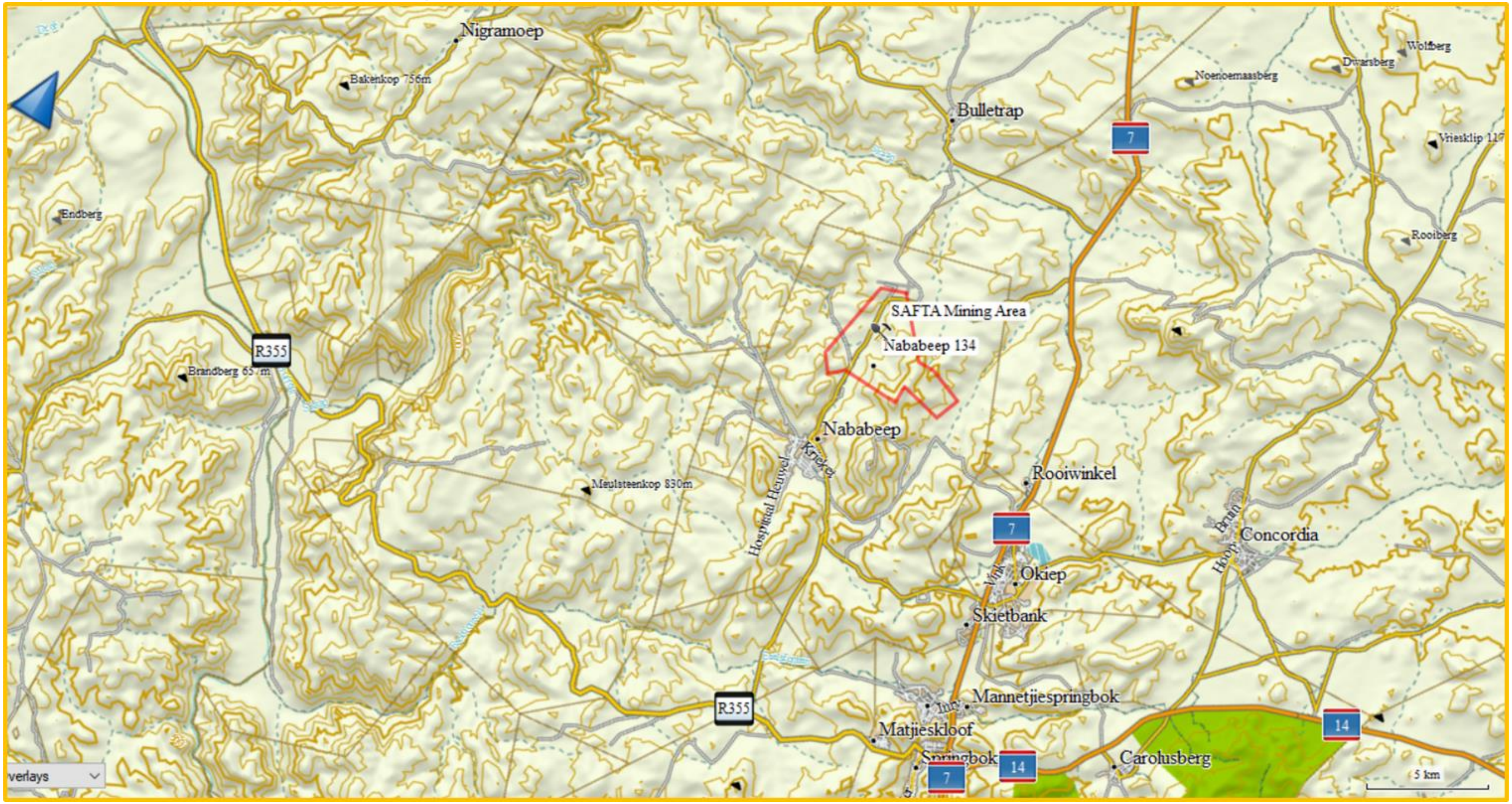


Diagram 2a: Mine Layout showing properties and co-ordinates

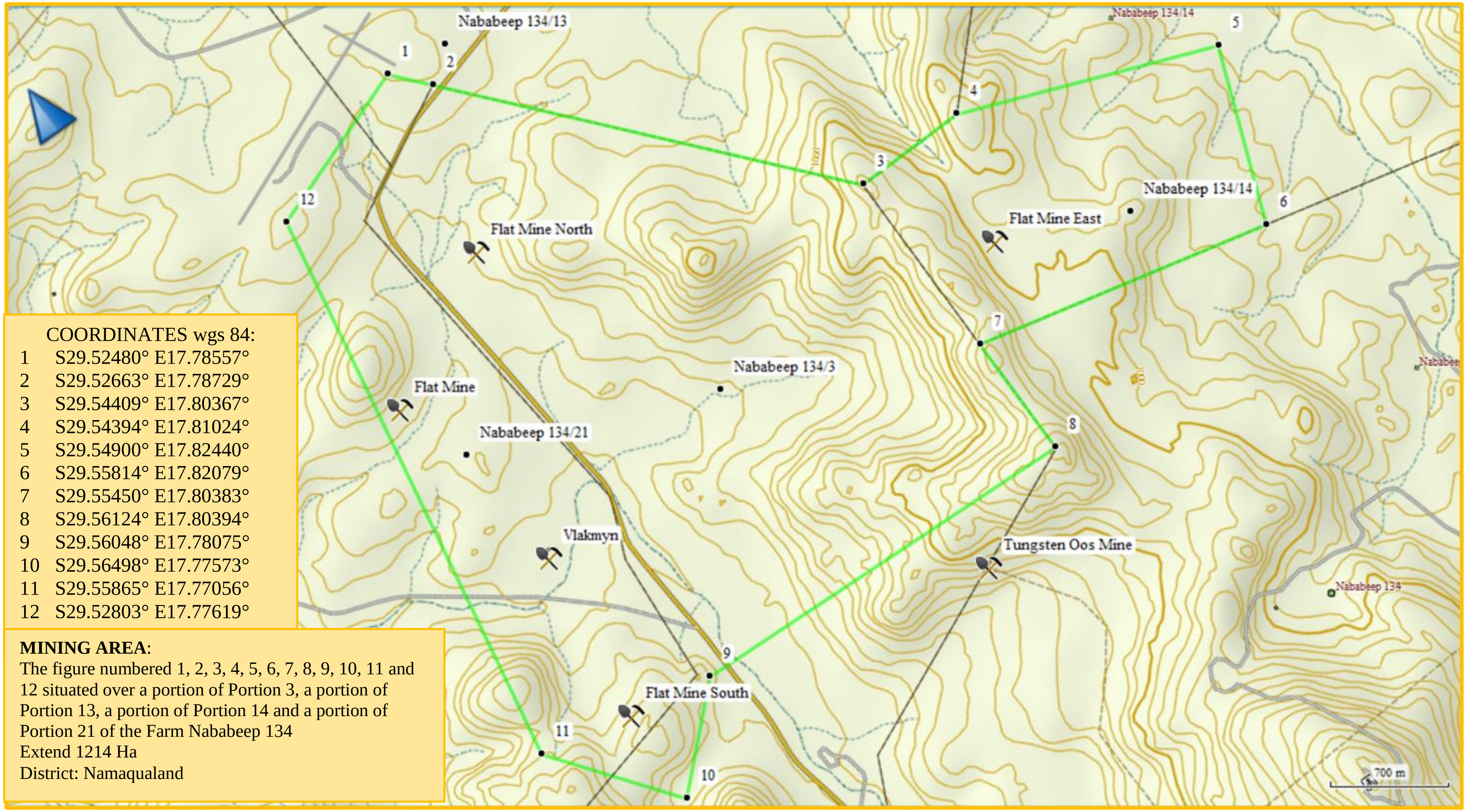


Diagram 2b: Mine Landscape showing mineral resource location

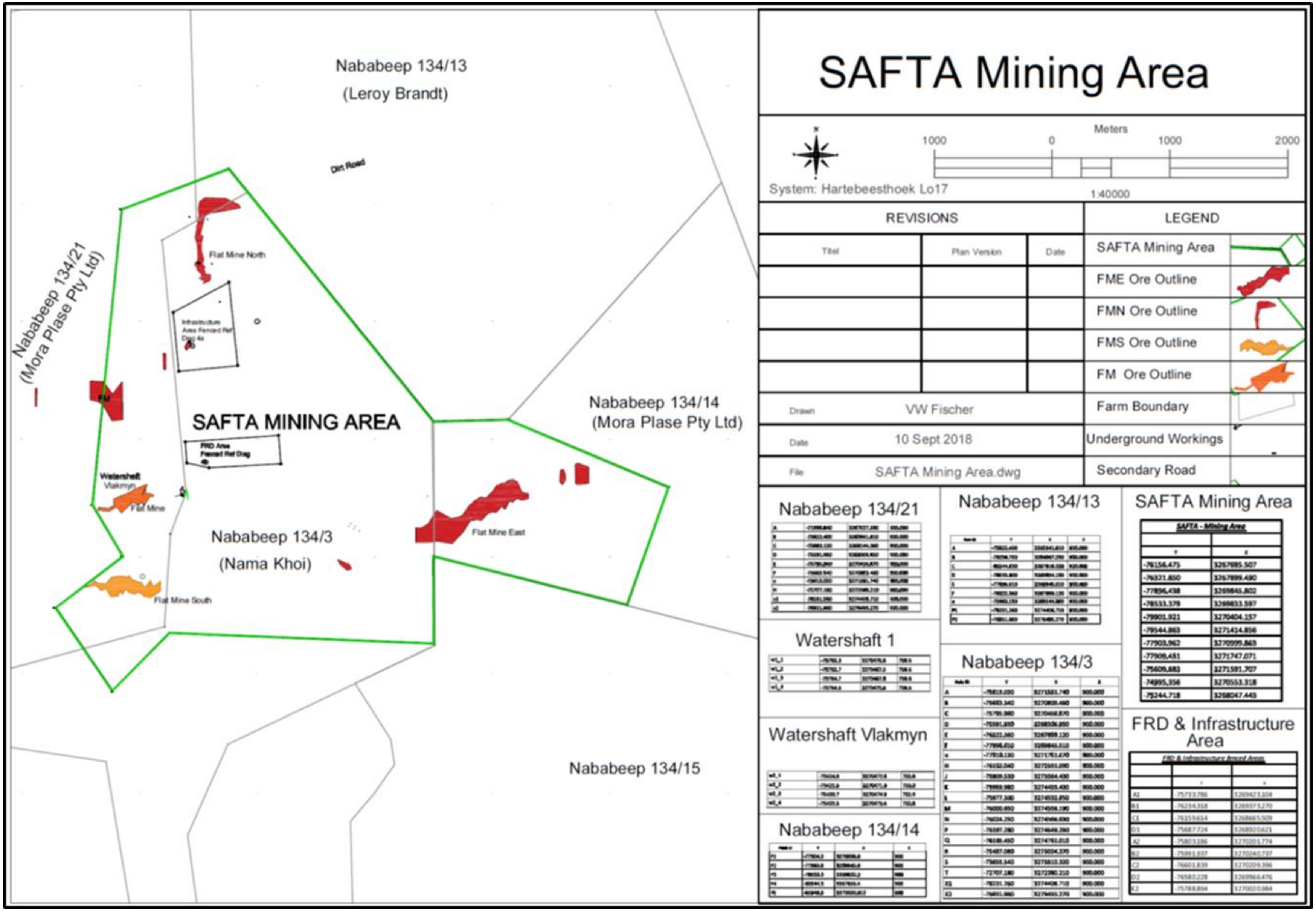
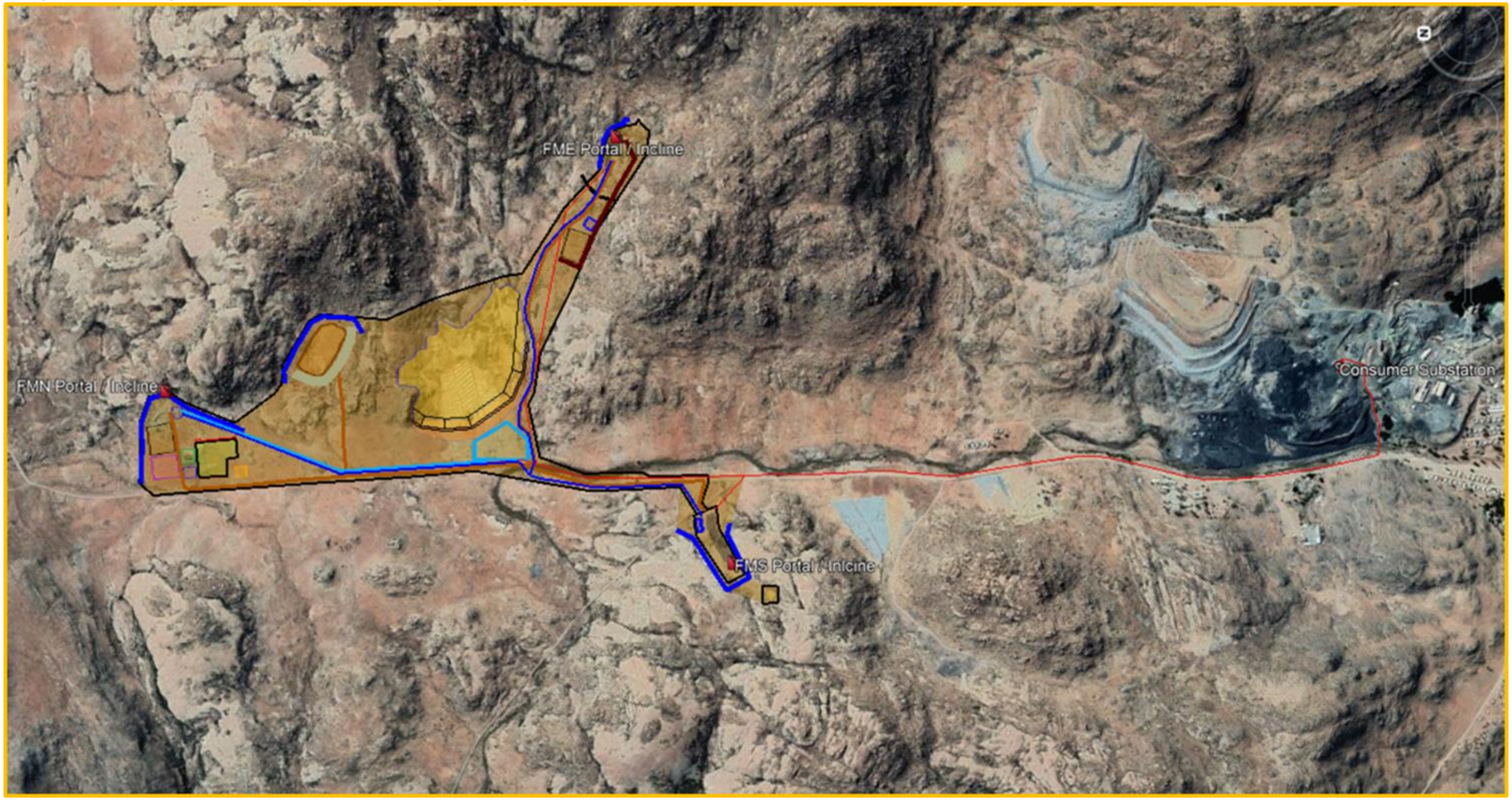


Diagram 2c: Original Mine Layout showing development areas and services (2018)



3.3 Environmental Authorisation (EMP) requirements

The key closure objective described in the plans submitted as part of the EMP is to ensure that the affected environment is maintained in a stable condition that will not be detrimental to the safety and health of humans and animals and that will not pollute the environment or lead to the degradation thereof. The aesthetic value of the area will also be reinstated.

The main closure objective is to leave the site in as safe and self-sustaining a condition as possible and in a situation where no post-closure intervention is required. This key closure objective is divided in three closure objectives as stated below with their supported suite of key mitigating activities.

The objectives to meet the set goals as applied to the final decommissioning and mine closure can be summarised as follow:

- **Objective 1 - To create a safe and healthy post-mining environment**
  - Safe excavations
    - Slope stability of remaining excavation
    - No potentially dangerous areas secured if required
  - Limited residual environmental impact
    - Rehabilitate the MRDSF as per the Recommendations in Appendix E.
    - Develop a landscape that reduces the requirement for long term monitoring and management
    - No surface and/or groundwater contamination
    - Waste management practices not creating or leaving legacies

- Objective 2 - To create a stable, free draining post mining landform, which is compatible with the surrounding landscape
  - Economically viable and sustainable land, as close as possible to its natural state.
    - Prepare area to promote natural re-establishment of vegetation that is self-sustaining, perpetual and provides a sustainable habitat for local fauna and successive flora species
    - Prevent long term changes in land use by implementing prompt rehabilitation and maintenance of disturbances when possible as part of annual rehabilitation plan.
  - Stable, free draining post mining landform
    - Prevent alteration or diverting natural drainage lines and reduced natural runoff.
    - Prevent concentration of runoff, mixing of clean runoff with contaminated runoff and creation of large open water bodies.

- Objective 3 – To provide optimal post-mining social opportunities
  - Optimised benefits for the social environment
    - Positive and transparent relationships with stakeholders and maintaining communication channels, providing stakeholders including government authorities with relevant information as per legislative requirements.
    - Undertaking environmental management according to approved EMP and Closure plans and regular auditing of the environmental management system.
  - Minimal negative aesthetic impact
    - Mitigate the nuisance effects of air emissions (dust), visual intrusion and the cumulative effect of a raise in the ambient noise levels
    - Prevent disturbance of archaeological sites and implement mitigating measures according to the archeological assessment.

Concurrent or progressive rehabilitation of disturbed areas is good practice and should be undertaken as this offers a number of advantages such as limiting the mine's environmental liability and limiting costs at closure as rehabilitation is included in the operational activities of the mine.
Rehabilitation measures to be implemented include improving the visual appearance of the disturbed areas, establishing a cover to provide erosion control, improving runoff water quality by minimising silt loads and controlling dust.

Concurrent rehabilitation and remediation are provided for in the annual rehabilitation plan and contain information that defines activities on an annual basis and how these relate to the Final closure vision, as detailed in this final rehabilitation, decommissioning and mine closure plan.
Annual reviews in terms of regulations 6(a) and 11(1)(a) of the NEMA Financial Regulations, that form part of the Annual Environmental Audit, assesses what closure objectives and criteria are being achieved through the implementation of the plan.

While some disturbed areas can be rehabilitated on a progressive basis during operation, others cannot be rehabilitated until mining is complete. For this reason, some rehabilitation is generally still required during and after closure. Remedial initiatives to minimize environmental impact during and after mining can be divided into three main categories:

- Firstly, the removal of surface infrastructure that cannot be used for other purposes.
- Secondly, the remediation and rehabilitation of old pits to remove the hazard they present to people and animals. Earthworks and contouring the mine area to as close as possible to the pre-mining landscape. This includes filling pits, trenches and small excavations; making pit side's safe and covering the surface area with subsoil and topsoil as necessary; and mitigation or restoration of all surface disturbances and revegetation of the pit slopes and waste rock dumps.
- Lastly, the removal and isolation of potential pollutants from the environment. Containment and treatment of contaminated water and correct storage and removal of hazardous materials. Waste rock present specific problems, as they are unsuitable for other uses. For this reason, all waste rock and even low-grade product produced are destined to remain in the environment.

The aims of rehabilitation should therefore look at limiting the long-term liabilities that will be borne by future generations. Where possible, natural systems will be used to control water pollution and vegetation cover should limit windblown dust pollution. Gradients will be reduced to levels where erosion is minimal, and natural revegetation is possible.

Maintenance of rehabilitated sites is often the difference between the ultimate successes or failure of rehabilitation and monitoring of rehabilitation will determine whether rehabilitation objectives and requirements are being achieved.
As the final phase in the project cycle, decommissioning may present positive environmental opportunities associated with the return of the land for alternative use and the cessation of impacts associated with operational activities.
Depending on the nature of the operational activity, the need to manage risks and potential residual impacts may remain well after operations have ceased. Examples of potential residual impacts and risks include erosion, slow recovery of vegetation, stock that has been abandoned (e.g. oil drums, scrap equipment) and old (unserviceable) structures.
The main closure objective is to hand back the rehabilitated properties in a stable condition that will not be detrimental to the safety and health of humans and animals and that will not pollute the environment or lead to the degradation thereof. The aim therefore is to leave the site in as safe and self-sustaining a condition as possible and in a situation where no post-closure intervention is required. Aftercare and maintenance required can only be identified post decommissioning and depending on success of rehabilitation and mitigating measures.

3.3.1 Infrastructure and Logistics areas

The main post closure objective for the infrastructure areas is to leave the site in as safe and self-sustaining a condition as possible and in a situation where no post-closure intervention is required. The aim is to ensure that the affected environment is maintained in a stable condition that will not be detrimental to the safety and health of humans and animals and that will not pollute the environment or lead to the degradation thereof. The aesthetic value of the area will also be reinstated.
The general approach adopted is the complete removal of all infrastructure and equipment and to reuse all infrastructures and equipment at another location by the company. Redundant structures, buildings and civil foundations (down to one meter below surface for subsurface infrastructure) will be removed for use elsewhere or demolished and discarded. All steel structures and reinforcing will be discarded or sold as scrap. Building rubble will be buried together with any remaining waste blocks. The compacted salvage yard, lay down and movement areas will be screened for petrochemical spills and cleaned before it is ripped and leveled. All redundant water pipes, pumps, power lines and cable associated with raw water and electrical supply will be removed. Service roads needs to be maintained and handed over to the landowner in a good state of repair and

all redundant fences needs to be removed. All temporary waste storage areas need to be cleaned out and waste removed. Waste material of any description, including receptacles, scrap, rubble and tyres, will be removed entirely from the complete area and disposed of at a recognised landfill facility. It will not be buried or burned on the site.

3.3.2 Mine Residue Disposal Storage Facility

Refer to **Appendix E**. For the Definitive Feasibility stage of the project (*applicable on the receipt of a positive EA*), it is recommended that the following be undertaken, which will inform the closure and rehabilitation of the MRDSF (as mentioned in the introductin above):

- Based on the recommendations by Digby Wells, the findings from the hydrogeological study that indicate a low to very low further contamination potential of the local groundwater may be utilised to substantiate any softening of the liner requirements at the MRDF;
- The geotechnical parameters of a representative sample of the tailings must be determined by an accredited laboratory to determine strength and seepage parameters and confirm the assumptions made with regard to the high level assessment;
- A detailed geotechnical investigation must be conducted of the site footprint and include:
  - Depth of soil to bedrock/refusal;
  - Depth of in-situ soil layers;
  - Foundation indicators of the in-situ soils;
  - Shear strength parameters of the in-situ soils;
  - Potential dispersiveness and collapse potential of the in-situ soils;
  - Permeability/hydraulic conductivity of the in-situ soils; and
  - Identification of any natural fault lines.
- A detailed Seep and Stability analysis of the facility be undertaken using the results of the geotechnical investigation;
- Accurate rainfall and evaporation data must be acquired for the site, as well as confirmation of the design flood depths to complete a detailed water balance of the MRDF;
- Proximity of the MRDF to sensitive flora and fauna in accordance with an Environmental Impact Assessment, as well as its impact on local communities *[to confirm the potential hazard posed within the Zone of Influence as the safety classification has been identified as "medium hazard" in section 10.2 of **Appendix E**];*
- An extension to the existing topographical survey would be required to accurately assess the TSF site expandability;
- The tailings mass balance (including the potential of utilising tailings as backfill) must be determined for the next phase of study for further refinement to the design of the TSF.
- The GA *[no definition provided in **Appendix E**]* may be further optimised and the potential of phasing the preparatory works may be assessed in further studies.

3.3.3 Waste Rock Dump

Underground mining operations commonly have a permanent impact on rock masses that influences the geology below round and the topography on the site and can impact post-mining slope stability.

The waste rock is to be dumped away from the processing area at the designated waste rock dump. Post mining topography for most of the area will follow the original landform shape except where changes due to the waste rock dump have occurred.

The main objective is usually to landscape the waste rock dump. The post closure objective will be to restore the land to its pre-mining carrying capacity for stock farming taking into account the altered landform on the mining area due to mining activities and the absence of natural vegetation on the granite domes. Re-vegetation of disturbed areas will follow a process of natural plant succession starting with pioneer plants.

The main closure objective therefore is to leave the site in as safe and self-sustaining a condition as possible and in a situation where no post-closure intervention is required. The aim is to ensure that the affected environment is maintained in a stable condition that will not be detrimental to the safety and health of humans and animals and that will not pollute the environment or lead to the degradation thereof. The aesthetic value of the area will also be reinstated.

The basic rehabilitation methodology will therefore strive to replicate the pre-mining topography, wherever possible, or at least not to increase overall slope gradients without emplacement of adequately designed erosion control or runoff diversion structures.

4 RISK ASSESSMENT

4.1 Risk sources

4.1.1 Infrastructure and Logistics areas

- Access and Haul Roads
  - Access from the HQ to the mine workings is via a duel use public road system and existing farm tracks.
  - Existing tracks will be used as haul roads and will only be upgraded to facilitate haul trucks by applying dust suppression and/or hardening compound such as Macadamite.
  - The service roads will remain as part of farm improvement and the mine is only responsible for the maintenance of the road.
- Services and associated infrastructure
  - Process and potable water is obtained from boreholes on the property.
  - Storage consisting of a 5 000-liter plastic tank that can be re-used on another operation.
  - A collection sump for the recycling of process water used to cool the rock saws.
  - Electrical supply to the logistics area is obtained from an Eskom supply.
  - Electrical supply for the rock saws and logistics are generated by mobile gensets supplied with generator bay and spill prevention measures.
  - Underground water reticulation laid-on to the mine work area to feed water to the logistics.
- Accommodation and Logistics
  - Development and upgrading of infrastructure and waste management facilities are still in progress.
  - No steel or reinforced concrete buildings and structures are present on the mining area that will require demolition.
  - All waste rock structures used as part of accommodation, site office and secure storage needs to be demolish and waste blocks buried together with any remaining cement floors or footings.
  - Structures in the form of pre-fabricated buildings including the fuel tank that can be re-used on another location must be removed from site
  - The cement structures for the fuel supply including service aprons needs to be demolished together with any remaining cement floors or footings.
- Waste management facilities
  - As part of waste management facilities, a salvage yard, laydown area with parking and temporary waste storage facilities will be provided.
  - A small demarcated laydown area for equipment prior to movement to the company HQ.
  - A small salvage yard for temporary storage of scrap steel prior to movement to the company HQ.
  - Domestic waste is collected in plastic containers and transported weekly to the company HQ refuse site.
  - Petrochemical and hazardous waste including contaminated/used spares, filters and used oil are collected and stored in special containers with spill containment measures for disposal at a registered disposal site.
  - The workshop area needs to be upgraded with a temporary waste storage area, bio cell and laydown area
  - Domestic waste is collected in plastic containers and transported weekly to the company HQ.
  - Petrochemical and hazardous waste including contaminated/used spares, filters and used oil are collected and stored in special containers with spill containment measures for disposal at a registered disposal site.
- Oil/grease/diesel management systems
  - The service and wash bay at the company HQ will be used.
  - The fuel supply tank is provided at the company HQ and fuel is trucked onto the site for the generators and equipment.
  - The fuel truck must be provided with a parking area with spill containment measures.
  - The generators must be supplied with generator bays with spill containment measures.

4.2 Risk Identification

The potential risks arising from the SAFTA mining operation are listed below. The impact rating of applicable risks and mitigation actions are addressed in the risk assessment section below.

4.2.1 Potential Risks with regard to safe excavations and changes in topography

- Potentially dangerous areas like deep mine pits or equipment left behind and uncontrolled access to a potentially unsafe post-mining area
- Post mining topography not compatible with original landform.
- Unsafe erosion gullies.

4.2.2 Potential Risk of residual environmental impact/waste

- Post mining landscape that increases the requirement for long term monitoring and management.
- Unwanted ruins, buildings, foundations, footings and waste management practices creating or leaving legacies.
- Sub-surface infrastructure remaining behind, limiting the intended post closure land use including footings and foundations and power supply and water installations including pumps and pipelines.
- Equipment and other items used during the mining operation left behind.
- Incomplete removal of re-usable infrastructure.
- Rubble from demolished infrastructure left behind.
- Waste classes not kept in separate streams and incomplete removal of waste
- Large volumes of large blocks and boulder rubble that requires large dumping areas.
- Creation of waste rock residue deposits or stockpiles with infiltration of leachate due to inadequate basal sealing or leakage from sealed pollution control facilities.
- Stockpiles and leftover product left behind
- Increased erosion, dust generation and potential chemical contaminants reduce surface water quality or result in discharge that exceeds the maximum concentrations permitted.
- Vehicle wash bays and workshop facilities produce petrochemical and solvent contaminated runoff.
- Sanitary conveniences, fuel depots or storage facilities of potentially polluting substances can contaminate surface water.
- Oil fuel leaks onto virgin soil through the earthmoving and transport equipment and machinery or spillage of fuel during transfer from fuel bowser to equipment in the field.
- Inadequate capping or sealing of the boreholes – can lead to infiltration of potentially contaminated surface water leading to chemical or biological contamination of groundwater.
- Drainage of benches and concentration of rainfall leads to creation of large volume open water bodies in worked out pit and can lead to increased groundwater recharge and potential regional impact of low quality water.
- Pumping of process water from the pit sump can discharge poor quality water exceeding minimum standards.

4.2.3 Potential Risks with regard to viable and sustainable land

With mines disruption of the surface occurs, which affects the soil, fauna, flora and surface water, thereby influencing all types of land use. Mining and related infrastructure can be a permanent destruction and rehabilitation cannot restore all pre-mining habitats. Risks associated with economically viable and sustainable land include:

- Uncontrolled expansion of mining footprint by not restricting the area disturbed by mining and the associated activities/infrastructure - loss of land with agricultural potential. Uncontrolled development of roads - existing farm roads not used for mining operations and redundant internal roads left behind. Duel used roads still needed by the landowner and fences not maintained or repaired.
- Post mining landform not compatible with the surrounding landscape and not capable of a productive land use that achieves a land capability equal to that of pre mining conditions
- Long term changes in land use caused by not implementing prompt rehabilitation and maintenance of disturbances when possible as part of annual rehabilitation plan.
- Unsuccessful rehabilitation can reduce the post-mining land use options. Rehabilitated areas could be too unstable to support post-mining land use objectives compatible with surrounding areas.
- Disturbance of agricultural potential and subdivision of high potential arable land into uneconomic farming units. Inadequate planning or loose development can subdivide high potential land or habitats into un-viable small areas.
- Disturbance of ecology due to loss of habitat and cumulative impact of illegal collecting or land use during long-term or life of mine can degrade areas and reduce the viability of adjacent areas. Inadequate control of alien species can result in establishment of populations or seed sources that threaten adjacent areas.

4.2.4 Potential Risks with regard to stable, free draining post mining landform

Increased runoff and altered storm hydrograph impacts on areas downstream or downslope where the flow is concentrated.

- Impact on surface water through modification of infiltration rates by increasing the extent of hardened surfaces.
- Inadequate topsoil restoration or creation of unnatural surface topography or slope form which could impact lower or adjacent slopes due to increased runoff velocity.
- Altered storm water runoff response due to large impervious areas and concentrated runoff in drainage systems. Concentrated storm runoff from infrastructure areas can be erosive, causing sheet, rill and donga erosion features.
- River diversions also change the overall gradient and therefore the flow rates, and impact flood discharge and erosion/sedimentation patterns at the site and downstream.

4.2.5 Potential Risks with regard to benefits for the social environment

- No positive and transparent relationships with stakeholders and not maintaining communication channels – not providing stakeholders including government authorities with relevant information as per legislative requirements.
- Not undertaking environmental management according to approved EMP and plans and no auditing of the environmental management system.
- Disturbance to sensitive environments such as land with historical or conservation value, urban areas, wetlands or rivers, high potential agricultural land, transport infrastructure, power transmission lines. Slow continuous damage to habitat e.g. wood collection is a typical impact on adjacent areas.
- Staff losing their jobs - mine closure can have devastating effects on communities that are reliant on mine-based income Job losses of secondary industries, businesses and contractor's contractual agreements with service providers surpassing mine closure date
- Closure standards not accepted and/or are changing. Mine closure being jeopardised by other land uses.
- Poorly defined transition from mining to farming activities within different legislation.
- Mine closure stalled due to non-compliance with South African legislation (national, provincial and local).
- Insufficient funds for complete rehabilitation.

4.2.6 Potential Risks with regard to aesthetic impact

Terrain morphology plays a critical role in defining the visual envelope of mining developments and can either reduce or enhance visual impact. Apart from visual intrusion there is also the risk of reduced sense of place. Visual intrusion impact of mining activity on nearby roads, homesteads, settlements and tourist sites.

- Visual disturbance from the public road views – excavations or overburden dumps blocking the view. Large buildings, color contrast of disturbed areas against adjacent veld or dust emission plumes
- Nuisance effects of air emissions (dust) no implementation and maintenance of dust monitoring programs accompanied by dust suppression activities if required.
- Accumulation of spoils from rock saws (fines) can expose highly erodible fine sediment to wind transport and lead to dust generation and dispersal. Dust can retard vegetation growth and reduce the palatability of vegetation.
- Dust generated on haul roads reduces visibility in opencast pit, representing a safety hazard.
- The cumulative effect of a raise in the ambient noise levels or high noise levels in specific areas that exceed specified levels. Noise disturbance and light pollution as a result of night activities.

4.2.7 Potential risks with regard to archaeological sites, cultural heritage sites or graves

Disturbance of archaeological sites by not implementing the mitigating measures where relevant according to the archeological assessment. Progressive development can encroach upon or disturb archaeological sites, cultural heritage sites or graves.

5 RISK ASSESSMENT

5.1 Risk impact rating

Each impact or risk is assessed in terms of: nature (character status); extent (spatial scale); duration (time scale); probability (likelihood) of occurring; reversibility of the impact; the degree to which the impact may cause irreplaceable loss of resources; the significance (size or magnitude scale) prior to mitigation; the degree to which the impact can be mitigated; and, the significance (size or magnitude scale) after mitigation as per the criteria in Table 1 below.

Table 1: Impact Assessment Criteria

ASSESSMENT CRITERIA	
NATURE	
Positive	Beneficial to the receiving environment
Negative	Harmful to the receiving environment
Neutral	Neither beneficial or harmful
EXTENT (GEOGRAPHICAL)	
Site	The impact will only affect the site
Local/ district	Will affect the local area or district
Province/region	Will affect the entire province or region
International and National	Will affect the entire country
CONSEQUENCE	
Loss/gain	The impact will result in loss or gain of resource
No loss/gain	The impact will result in no loss or no gain of resource
DURATION	
Construction period / Short term	Up to 3 years
Medium term	Up to 6 years after construction
Long term	More than 6 years after construction
PROBABILITY	
Definite	Impact will certainly occur (>75% probability of occurring)
Probable	Impact likely to occur (50 – 75% probability of occurring)
Possible	Impact may occur (25 – 50% probability of occurring)
Unlikely	Impact unlikely to occur (0 – 25% probability of occurring)
REVERSIBILITY	
Reversible	Impacts can be reversed though the implementation of mitigation measures
Irreversible	Impacts are permanent and can't be reversed by the implementation of mitigation measures
IRREPLACEABLE LOSS OF RESOURCES	
High	The impact is result in a complete loss of all resources
Medium	The impact will result in significant loss of resources
Low	The impact will result in marginal loss of resources
No Loss	The impact will not result in the loss of any resources
CUMULATIVE EFFECTS	
High	The impact would result in significant cumulative effects
Medium	The impact would result in moderate cumulative effects
Low	The impact would result in minor cumulative effects
SIGNIFICANCE RATINGS	
Very High	Major to permanent environmental change with extreme social importance.
High	Long term environmental change with great social importance.
Medium	Medium to long term environmental change with fair social importance.
Low	Short to medium term environmental change with little social importance.
Very low	Short-term environmental change with no social importance
None	No environmental change
Unknown	Due to lack of information
DEGREE TO WHICH IMPACT COULD BE AVOIDED/MANAGED/MITIGATED	
High	The impact could be significantly avoided/managed/mitigated.
Medium	The impact could be fairly avoided/managed/mitigated.
Low	The impact could be avoided/managed/mitigated to a limited degree.
Very Low	The impact could not be avoided/managed/mitigated; there are no mitigation measures that would prevent the impact from occurring.

5.2 Risk Mitigation and Closure objectives

In addition to the goals and objectives for final decommissioning and mine closure the vision for the post closure land form is to leave the site in as safe and self-sustaining a condition as possible and in a situation where no post-closure intervention is required. The vision is to ensure that the affected environment is maintained in a stable condition that will not be detrimental to the safety and health of humans and animals and that will not pollute the environment or lead to the degradation thereof and that the aesthetic value of the area will be reinstated.

For the vision to be realised the objectives and associated risk management strategies and mitigating measures for the operational phase described in Table 1 below needs to implemented, monitored and evaluated.

The aim with risk mitigation actions is to over time manage significant and medium risks to become insignificant, or at least medium and under control with management actions. Once achieved, a risk will continue to be monitored to confirm its insignificance rating as part of aftercare and maintenance.

The closure process involves a series of actions, executed over a number of years as indicated in the annual closure plans, with continual monitoring, review and remedial actions (if required). Identified and assessed risks feed into mitigation actions (or primary tasks) of which successful implementation result in achievement of the mine closure goals and objectives.

Financial provision is made in section 6 to deal with these mitigating measures in case of temporary closure or sudden closure during the normal operation of the project or at final planned closure.

The identified risks and their levels are listed together with their associated mitigating actions for the operational phase in Table 2 below.

Table 2: Risks, risk levels and mitigating actions: Operational Phase

IMPACTS AND ASPECTS	RISK LEVEL AFTER MITIGATION: PREFERRED AND ONLY ALTERNATIVE	MITIGATING ACTIONS
1. IMPACT 1: CHANGE IN TOPOGRAPHY ABOVE GROUND & GEOLOGY BELOW GROUND: Ore removed below ground will leave voids. Mined ore will be stored as Run of Mine rock stockpiles prior to processing; waste rock dump, and a self-raising Mine Residue Disposal Storage Facility impacting on the site's topography.	**Medium-Low** **Medium Risk**	**Impact 1: Change in Topography** • The waste rock dump must be designed to meet minimum slope stability and safety standards and vegetated to reduce erosion and runoff. • The "valley fill" natural angle of repose of 37° for rock waste dumps is compatible with the natural rocky terrain with steep slopes and no terracing will be required. • The ongoing management of the self-raising MRDSF shall be in accordance with the relevant regulations and as per the Conceptual Design Report contained in **Appendix E**. • The basic rehabilitation methodology will therefore strive to replicate the pre-mining topography, wherever possible, or at least not to increase overall slope gradients without emplacement of adequately designed erosion control or runoff diversion structures.
2. IMPACT 2: SOIL EROSION & SOIL COMPACTION The potential for soil erosion by wind and stormwater run-off; soil compaction from repeated use of access tracks inside mining area.	**Low** **Insignificant Risk**	**Impact 2: Soil erosion & soil compaction** • After clearing, the affected area shall be stabilized to prevent any erosion or sediment runoff. Stabilized areas shall be demarcated accordingly. • Incremental clearing of vegetation should take place to avoid unnecessary exposed surfaces. • Reasonable measures must be undertaken to ensure that any exposed areas are adequately protected against the wind and storm water run-off. • Stockpiles should ideally be located to create the least visual impact and must be maintained to avoid erosion of the material. • Reduce drop height of material to a minimum. • Temporarily halt material handling in windy conditions. • A speed limit of 30km/hour will be displayed and enforced through a fining system. All vehicle drivers using the access road and entering the site will be informed of the speed limit. • Compacted areas that are not required for access shall be scarified after use during decommissioning and rehabilitation. • Provision must also be made for efficient storm water control to prevent erosion. • Soil erosion and compaction on the section of public road, should it remain unsurfaced, used by the Applicant is required to be monitored and timeously repaired. Soil erosion on private haul roads is to be regularly monitored and repaired.
3.1 IMPACT 3.1: GROUNDWATER RESOURCES: QUALITY & QUANTITY Process water is to be obtained from the Nababeep shaft (NEM-MS), as per the sustainable yield of the groundwater detailed in Appendix 2 in **Appendix E**. Water is to be recycled from the mining operations.	**Medium-High** **Significant Risk**	**Impact 3.1: Ground Water Resources** **Mitigation Measures during Operational Phase** (see Section 8.2.3 in Appendix 2 of **Appendix E**): **Essential** groundwater mitigation measures during operations are as follows: • Implement and follow water saving procedures and methodologies; • Take care that onsite sanitation facilities are well maintained and serviced regularly; • Draw-up and strictly enforce procedures for the storage, handling and transport of different hazardous materials; • Place oil traps under stationary machinery, only re-fuel machines at fueling station, construct structures to trap fuel spills at fueling station, immediately clean oil and fuel spills and dispose contaminated material (soil, etc.) at licensed sites only; • Draw-up and strictly enforce procedures for the storage, handling and transport of different hazardous materials; • Ensure vehicles and equipment are in good working order and drivers and operators are properly trained;

		• Ensure that good housekeeping rules are applied, and emergency spill clean-up procedures and equipment are in place; • Incorporate adequate lining, under drainage and seepage collection facilities into the TSF design; • Design and construct the RWD and SWD with adequate liners in place; • Draw-up and strictly enforce procedures to handle accidental spillage and leaks at process water producing/using facilities and pipelines; • Slope the WRD and RoM Stockpiles to prevent rainwater ponding and maximises storm water runoff; • Channel dirty stormwater runoff to the SWD; and, • Incorporate adequate leakage detection and spill control measures in the facility's design and construction. **Best practice** groundwater mitigation measures during operation are as follows: • Install a groundwater monitoring system with monitoring boreholes drilled upstream and downstream of facilities where potential groundwater risk is highest, i.e. TSF, RWD, SWD and Treatment Plant. Suggested number of monitoring boreholes are as follows: • TSF and RWD – one upstream and two downstream; and • SWD – one upstream and one downstream. • Install a monitoring borehole upstream of the site on the Nababeep Fault to monitor background groundwater level and chemistry downstream of the old Nababeep mine site; • Install a monitoring borehole downstream of the site on the Nababeep Fault to monitor groundwater level and chemistry downstream of the site; • Monitor groundwater dewatering discharge and water quality at the three SAFTA underground mines, i.e. FMS, FME and FMN; • The groundwater monitoring should include the following: o The water levels at all monitoring boreholes and the NEM-MS must be recorded on at least a monthly basis. Best results are obtained if automatic flow meters and water level recorders set to take hourly readings are installed; o Water samples must be collected at all monitoring boreholes, the NEM-MS and the three SAFTA mines on a three-monthly basis and submitted to a SANAS accredited laboratory for analysis of pH, EC, macro-chemistry (Na, Mg, K, Ca, NH4, Cl, SO4, Total Alkalinity, PO4, F, NO3), COD and trace-metals (Fe, Mn, Al, Se, Cu, Pb, Zn, Cd, As, Sb and U); and, o A SACNASP registered hydrogeologist should evaluate the monitoring data on an annual basis and compile a monitoring report. • Adhere to the recommended abstraction rate for NEM-MS (indicated in subsections 4.6 of in Appendix 2 of **Appendix E)**; and • Minimise storage of hazardous substances onsite during operation. **Generic mitigation measures** • Ensure water abstraction is within allowable limits set by the Department of Water & Sanitation (DWS). Any conditions set by DWS in the license approval process will need to be adhered to. Ensure that an effluent purification and recycling system is installed.
3.2 IMPACT 3.2: SURFACE WATER RESOURCES A watercourse is located to the west of the logistics area. Management of stormwater run-off to keep clean water from entering polluted water systems.	**Low** **Insignificant Risk**	**Impact 3.2: Surface water resources** • Ensure that an effluent purification and recycling system is installed. • Implement an integrated waste management system on site. • Ensure all hazardous substances are stored correctly. • Ensure stormwater berms divert stormwater away from infrastructure in the mine area. • Adhere to the management of the MRDSF contained in the Conceptual Design report (**Appendix E**) to ensure that this

		waste disposal facility does not pollute surface water resources, and ensure the ongoing maintenance of the stormwater diversion trenches associated with this MRDSF. Ensure all pipelines and powerlines located within close proximity to the water course are maintained and erosion of support structures does not occur to compromise the integrity of the infrastructure, resulting in water pollution or river bank erosion.
4. IMPACT 4: LIMITED LOSS OF NATURAL VEGETATION AND ECOLOGICAL FUNCTIONING IN AN ESA The proposed mining area footprint will result in an impact on localised ecological functioning, although limited as much of the site is disturbed from historical mining activities.	**Low** **Insignificant Risk**	**Impact 4: Impact on biodiversity** • The mining area and stockpile areas must be demarcated and the footprint contained within the demarcated areas as shown on Diagram 5.1.1 and 5.1.2 (position of FMS to be corrected). • The annual rehabilitation plan must be implemented. • Rehabilitation of the MRDSF as per the Conceptual Design Report (**Appendix E**) will improve the local biodiversity of this site. • Remove alien invasive vegetation, and ensure ongoing alien vegetation clearing should this be required. • No indigenous plants outside of the demarcated work areas may be damaged. • The noise and vibration caused by the earthmoving equipment will disturb smaller animals. These will move away whilst operations are in progress. Should any animals be encountered these should be moved away by a suitably trained nature conservation officer, if necessary.
5. IMPACT 5: POTENTIAL FOR SOIL CONTAMINATION, AND WASTE GENERATION DURING OPERATIONAL PHASE Waste rock dump; overburden; industrial waste (hazardous wastes, oil & greases); domestic waste; waste water, including effluent & sewage sludge and the MRDSF	**Medium-Low** **Insignificant Risk**	**Impact 5: Contamination & Pollution** • **Waste rock** from the mining process is to be disposed of in the waste rock dump as show in Diagram 5.1.1. • **Industrial waste (i.e. including hazardous wastes and oils and greases)** - Separation of wastes into classes will ensure that waste is disposed of safely and according to the correct procedure. In order to ensure that waste classes are kept in separate streams, training will be undertaken. - Petrochemical spillages to be collected in a drip tray and drum to store; excavate spill affected soil for disposal at a registered hazardous waste facility. - Hazardous waste is to be disposed of at Vissershoek Landfill. • **Domestic waste (i.e. waste that is generated from the offices)** - Domestic waste - separated at source into recyclable products. These must then be removed and recycled by recognised contractors. (Note that the mine is responsible for the waste from cradle to grave). - Disposal at a registered and officially permitted commercial or municipal landfill site is the most cost-effective option for materials that cannot be recycled. - Domestic waste generated by workers needs to be sorted and all biodegradable waste must be stored in separate drums provided for. • **Mine residue Disposal Storage Facility (MRDSF)** - Manage the MRDSF according to the Conceptual Report (**Appendix E**) to ensure that the waste disposal facility complies with relevant legislation. • **Waste water** - Equipment used in the mining process will be adequately maintained so that during operations it does not spill oil, diesel, fuel, or hydraulic fluid. - By keeping contaminated and clean water separate and establishing controlled runoff washing bays, the flow and end destination of decontamination washing water will be controlled. - Slow storm water runoff with contoured, low-gradient drains and channels, as well as retention ponds. A series of ponds may also be used to remove sediment and other contaminants from water before reuse or reintroduction into the mining process. - Ensure that a purification and recycling sewage and effluent management system is installed.
6. IMPACT 6: VISUAL INTRUSION Caused by the machinery, topsoil and rock stockpiles,	**Low** **Insignificant Risk**	**Impact 6: Visual landscape** • The site shall be kept neat and tidy at all times. Equipment must be kept in designated areas and storing/stockpiling shall

cleared areas, and movement of trucks on site.		be kept orderly. • Mitigation of the visual impact of "heaped fill dumps" and "sidehill dumps" will include limited topsoil application to the slope and revegetation on the top of the dump. The visual impact of the MRDSF will be mitigation during rehabilitation when re-vegetation is facilitated.
7. IMPACT 7: EMMISSIONS (DUST, VEHICLES, NOISE & LIGHT) Blasting will generate noise, vibration and dust. Hauling vehicles emit Greenhouse Gases and other fugitive emissions. Dust will be generated on access roads, and in rock dumping. Lighting impacts on surrounding communities and fauna.	**Low** **Insignificant Risk**	**Impact 7: Emissions** • Health and safety equipment is required for workers. • Wetting helps reduce dust generation. • No amplified music should be allowed on site. • Existing tracks will be used as haul roads and will only be upgraded to facilitate haul trucks by applying dust suppression and/or hardening compound such as Macadamite. • On public roads the vehicles shall adhere to municipal and provincial traffic regulations including speed limits. • Vehicles used on site for the construction related activities shall be maintained and in a good working condition so as to reduce emissions. • Engines shall be turned off when the vehicle is temporarily parked or stationery for long periods. • Reduce drop height of material to a minimum. • Temporarily halt material handling in windy conditions. • Provide lighting to ensure safety standards are met, and direct light away from public areas (such as the public access road). • Use energy efficient bulbs that do not attract insects. • Ensure workers are supplied with Health and Safety equipment for noise and dust where applicable. • Apply safety standards for blasting. • Ensure dust suppression on MRDSF if required.
8. IMPACT 8: HERITAGE, PALAEONTOLOGICAL AND CULTURAL IMPACTS Refer to **Appendix C1 and C2**.	**Very-Low** **Insignificant Risk**	**Impact 8: Heritage resources** • Provision for on-going heritage monitoring by an environmental manager acquainted at a basic level with the kinds of heritage resources potentially occurring in the area. • Should unexpected finds be made during development (e.g. precolonial burials; ostrich eggshell container cache; or localised Stone Age sites with stone tools, pottery), the relevant Heritage Authority should be contacted. • Officials from relevant heritage authorities (National, Provincial or Local) to be permitted to inspect the site at any time in relation to the heritage component of the management plan.
9. IMPACT 9: CREATION OF EMPLOYMENT & JOB SECURITY WITH LOCAL AND REGIONAL ECONOMIC SPIN-OFFS	**Medium (+)**	**Impact 9: Socio-economic** • Employment of local previously disadvantaged labour wherever possible, with provision of training (upskilling).

6 ESTIMATED COST FOR REQUIREMENTS TO FULLY DECOMMISSION THE SITE

With the repeal of Section 41 of the MPRDA (Act 28 of 2002) that requires that the owner of a mine must make financial provision for the remediation of environmental damage, regulations pertaining to the financial provision for prospecting, exploration, mining or production operations under section 44, read with sections 24 of the National Environmental Management Act, 1998 (Act No.107 of 1998) were issued in 2015.

According to regulation 6 an applicant must determine the financial provision through a detailed itemisation of all activities and costs, calculated based on the actual costs of implementation of the measures required for— (a) annual rehabilitation, as reflected in an annual rehabilitation plan; (b) final rehabilitation, decommissioning and closure of the prospecting, exploration, mining or production operations at the end of the life of operations, as reflected in a final rehabilitation, decommissioning and mine closure plan; and (c) remediation of latent or residual environmental impacts which may become known in the future, including the pumping and treatment of polluted or extraneous water, as reflected in an environmental risk assessment report.

According to regulation 7 the applicant or holder of a right or permit must ensure that the financial provision is, at any given time, equal to the sum of the actual costs of implementing the plans and report contemplated in regulation 6 and regulation 11(1). In terms of regulation 11(1) the holder of a right or permit must ensure that a review is undertaken of the requirements for (a) annual rehabilitation, as reflected in an annual rehabilitation plan; (b) final rehabilitation, decommissioning and closure of the prospecting, exploration, mining or production operations at the end of the life of operations as reflected in a final rehabilitation, decommissioning and mine closure plan; and (c) remediation of latent or residual environmental impacts which may become known in the future, including the pumping and treatment of polluted or extraneous water, as reflected in an environmental risk assessment report.

In terms of regulation 11(2) the holder of a right or permit must, on completion of the actions contemplated in sub regulation (1), ensure that the adequacy of the financial provision is assessed and any adjustments that need to be made to the financial provision are identified within one year of the commencement of the operations authorised in the right or permit; or where the operations has commenced immediately after its financial year end that follows such commencement.
Financial provision in terms of reg. 6(c) are covered by the requirements for the actual costs of implementation of the measures required for final rehabilitation, decommissioning and closure of the mining operations at the end of the life of operations as reflected in this final rehabilitation, decommissioning and mine closure plan in terms of reg. 6(b).

6.1 Calculation of Closure cost

This calculation is not based on the standard rates provided for calculation of closure cost as the guideline is calculated using assumptions that are far removed from the mining methods or topographical characteristics of the waste (in particular that dimension stone waste is inert and offer no pollution potential, and that waste dumps located on a sound footing are stable at the natural angle of repose 37°).

Additionally the costs of a “sidehill fill” or “heaped fill” waste dumps that requires terracing and landscaping will be vastly different front a “valley fill” which only requires topsoil replacement on the top to allow for natural revegetation. Planting of vegetation and irragation and adding fertilisers is also not an option in semi-arid areas and the specific vegetation units where trees are mostly absent.
Due to the fact that rehabilitation procedures for the different quarries have different closure elements a detailed itemized costing were done for each of the quarries that involved the identification of the specific closure elements.

For each closure element, various possible combinations of required rehabilitation work were identified and costs were calculated for each of these, based on quotations obtained from independent third party suppliers for earthmovmg equipment rental and various other consumables (Table 7). Rates used are from the Contractors Plant Hire Association.

Table 7: Rates and tariffs used for Calculation of Closure cost

Earth Moving Equipment	Rental Rate /hour	Fuel Cost	Total Cost /hour
Front End Loader - 30 Ton	R687.00	R495.00	R1 182.00
Excavator - 45 Ton	R687.00	R495.00	R1 182.00
Excavator - 30 Ton	R392.00	R330.00	R722.00
Excavator - 20 Ton	R322.00	R270.00	R592.00
Cat 14 H Grader	R453.00	R270.00	R723.00
Articulated Dump Truck - 30 Ton	R392.00	R210.00	R602.00
Tipper Truck 6m³	R255.00	R180.00	R435.00
Tipper Truck 10m³	R309.00	R210.00	R519.00
Ferric Chloride 43% /Kg	R3.50		
Manual Labour /hour	R45.00		

6.2 Total estimated cost for requirements to fully decommissioned the mining site at final closure

Cost Category	Year 6	Year 7	Year 8	Year 9	Year 10
Annual rehabilitation, as reflected in an annual rehabilitation plan Reg 6 (a) NEMA Financial Regulation	R 200 000.00	R 200 000.00	R 200 000.00	R 200 000.00	R 200 000.00
Final rehabilitation, decommissioning and closure of the operation at the end of the life of operations, as reflexted in a final rehabilitation, decommissioning and mine closure plan; Reg 6(b) NEMA Financial Regulation **PROGRESSIVE TOTAL**	R 1 000 000.00	R 1 000 000.00	R 1 000 000.00	R 1 500 000.00	R 1 500 000.00
Remediation of latent or residual environmental impacts which may become known in the future, including the pumping and treatment of polluted or extraneous water, as reflected in an environmental risk assessment report. Reg 6(c) NEMA Financial Regulation **PROGRESSIVE TOTAL**	R -	R -	R -	R 500 000.00	R 1 000 000.00

Cost Category	Year 1	Year 2	Year 3	Year 4	Year5
Annual rehabilitation, as reflected in an annual rehabilitation plan Reg 6 (a) NEMA Financial Regulation	R 150 000.00	R 150 000.00	R 150 000.00	R 200 000.00	R 200 000.00
Final rehabilitation, decommissioning and closure of the operation at the end of the life of operations, as reflexted in a final rehabilitation, decommissioning and mine closure plan; Reg 6(b) NEMA Financial Regulation **PROGRESSIVE TOTAL**	R 500 000.00	R 500 000.00	R 1 000 000.00	R 1 000 000.00	R 1 000 000.00
Remediation of latent or residual environmental impacts which may become known in the future, including the pumping and treatment of polluted or extraneous water, as reflected in an environmental risk assessment report. Reg 6(c) NEMA Financial Regulation **PROGRESSIVE TOTAL**	R -	R -	R -	R -	R -

7 THE PUBLIC PARTICIPATION PROCESS

7.1 Principles and Objectives

The Public Participation Process (PPP) was designed to fulfil the requirements of several pieces of legislation applicable to mine closure. It forms an integral component of the mine closure process by affording Interested and Affected Parties (I&AP) the opportunity to identify environmental issues and concerns relating to the proposed closure, which they feel should be addressed. This is consistent with the provisions of the National Environmental Management Act (Act No. 107 of 1998), Section 2(4)(f), which states that "the participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured".

The objective of the mining operation is to develop a working PPP that informs key stakeholders', I&APs and the general public about mine closure objectives and activities during the life of the mine. The PPP was designed to provide sufficient and accessible information to I&APs in an objective manner to assist them to:

- Identify issues of concern, and provide suggestions for enhanced benefits and alternatives associated with mine closure;
- Identify risks not yet identified during the risk assessment exercise;
- Identify risks associated with mine closure and rehabilitation;
- Contribute local knowledge and experience;
- Verify that their issues have been considered;
- Comment on the Risk Assessment and Mine Closure Plan at the time of final decommissioning of the project, including the significance of potential risks that have been identified and associated impacts; and,
- Play an oversight role in the monitoring and evaluation of mine closure.

7.2 Stakeholder Identification and Project Data Base

Existing data bases were used to inform the list of stakeholders. Special consideration was given to ensure that organizations and individuals that had expressed interest in the activities of the operation, and those who are potentially affected by mine closure, were included on the data base. The following are principles which governed the PPP:

- Key stakeholder groups and the general public comprised the target audience in the development of the PPP.
- Providing information to lay people to allow them to contribute to and participate meaningfully in the process.
- Stakeholder participation is most effective when the proponent and the practitioner recognise, acknowledge and validate stakeholder values when designing a PPP (i.e. there should be no underestimation of the technical and professional competence of citizens).
- The recognition that in the current political climate of South Africa, consultation, empowerment and capacity building is particularly important.

The process of involving stakeholders had three main objectives:

- Steps should be taken to ensure that stakeholder input into the project is relevant and representative.
- Stakeholders should be made aware of their objectives and role in the process,
- An efficient communication and feedback mechanism should be developed during the process to ensure that all stakeholders are kept informed of progress.

Stakeholders were drawn from the sectors outlined below:

- National (DWS, DMR), Provincial (DENC, DALR) and Local Government (Local and District Municipalities)
- SAHRA
- Industry (commercial farmers)
- Corporations and businesses (service providers to operation)
- Operations staff

Names of persons and organisations will be added to or deleted from the database where appropriate.

8 WAY FORWARD

This final Rehabilitation, Decommissioning and Mine Closure Plan will be reviewed on an annual basis to align such approved financial provision set out in regulations 9 and 11, of the NEMA Financial Regulations. Concurrent rehabilitation and remediation will be provided for in the annual rehabilitation plan and will contain information that defines activities on an annual basis and how these relate to the closure vision, as detailed in this final rehabilitation, decommissioning and mine closure plan.

When final planned closure is applied for the operation will submit a final environmental performance audit report to DMR as lead agent for final perusal with the objective to issue a closure certificate. At that point, the closure process, and associated public participation program, will close.