

**Renosterkop Mining Company (Pty) Ltd**  
**Background Information Document**

**PUBLIC PARTICIPATION PROCESS**

PUBLIC PARTICIPATION PROCESS FOR AN APPLICATION FOR A MINING RIGHT FOR TIN, ZINC AND TUNGSTEN ORE IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT 28 OF 2002), THE NATIONAL ENVIROMENTAL MANAGEMENT ACT, 1998 (ACT 107 OF 1998); THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS 2014; THE NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT, 2008 (ACT NO. 59 OF 2008) AND THE NATIONAL WATER ACT1998, (ACT 36 OF 1998).

**(NC) 30/5/1/2/2/10172 MR**

**LOT 1288, LOT 1279 AND REMAINDER LOT 1726 (PORTION OF LOT 1177)  
KAKAMAS SOUTH SETTLEMENT SITUATED WITHIN THE ADMINISTRATIVE  
DISTRICT OF KENHARDT, NORTHERN CAPE**

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*Wadala Mining and Consulting (Pty) Ltd*

# **BACKGROUND INFORMATION DOCUMENT**

## **1. INTRODUCTION**

We hereby inform you that Renosterkop Mining Company (Pty) Ltd (“The applicant”) has applied for a Mining Right on Lot 1288, Lot 1279 and Remainder Lot 1726 (Portion of Lot 1177) Kakamas South Settlement, 540.1145 ha situated in the Administrative District of Kenhardt, Northern Cape Province.

The application was submitted to the Regional Manager, Department of Mineral Resources (“DMR”) situated at 41 Schmidtsdrift Road Telkom Building, Kimberley, 8301 with contact number 053-807 1700. The mentioned application was accepted on 3 August 2020 and the prescribed Environmental Management Programme must be submitted within the prescribed time frames.

## **2. PURPOSE OF THE BACKGROUND INFORMATION DOCUMENT**

The purpose of this document is:

- To notify potential stakeholders of the application for a Mining Right for Tin, Zinc and Tungsten Ore which was submitted to the Department of Mineral Resources (DMR) with Reference NC30/5/1/2/2/10172 MR.
- Provide background information regarding the proposed Mining Right application for Renosterkop Mining Company (Pty) Ltd.
- Invite potential stakeholders to register themselves as interested and affected parties and to raise issues of importance, share their input, comments and or concerns which will be incorporated into the Environmental Management Programme.
- To inform the Affected and Interested Parties of the requirements in terms of all Governing Legislation applicable to this process.

Renosterkop Mining seeks to gather comments, suggestions, issues and concerns from all stakeholders.

## **3. A BRIEF OVERVIEW**

Renosterkop Mining Company (Pty) Ltd (“The applicant”) has applied for a Mining Right on the above mentioned area situated in the Administrative District of Kenhardt, Northern Cape Province to mine for Tin, Zinc and Tungsten Ore.

The property is located 25km from Kakamas on the R64 route to Augrabies in Administrative district of Kenhardt, Northern Cape province.

### 3.1 Proposed activity description

Mining in the opencast sections will be carried out by Renosterkop Mining utilising their own plant and equipment. Mining operations make use of drill rigs to drill and then blast overburden and ore separately. Shovels and haul trucks will be used to haul the ore to a crushing and screening plant where it is crushed, screened, and sorted to size.

Renosterkop Mining will acquire a fleet of earthmoving equipment in the form of bulldozers, front-end loaders, dump trucks, excavator, graders, drilling rigs, and other ancillary machinery needed for the mining operation based on calculations.

Total material removed will amount to an estimated 1,000,000 million tonnes per annum.

Where relevant the mining will also be facilitated by considering contractors and rental equipment to reach targets.

### 3.2 Rehabilitation

The cost estimation model considered various closure components related to Renosterkop Mining, such as: dismantling and demolition of infrastructure, rehabilitation of roads, rehabilitating open pits, general surface rehabilitation, etc. The closure costing also adhered to the latest amended NEMA Regulations pertaining to the financial provision for prospecting, exploration, mining, or production operations.

All infrastructures, equipment, plant, and other items used during the operational period will be removed from the site.

On completion of operations, all buildings, structures or objects on the office site will be dealt with in accordance with regulation 44 of the Minerals and Petroleum Resources Development Act, 2002, which states:

Regulation 44:

1. *When a prospecting right, mining right, retention permit or mining permit lapses, is cancelled or is abandoned or when any prospecting or mining operation comes to an end, the holder of such right or permit may not demolish or remove any building, structure or object-*
  - (a) *which may not be demolished or removed in terms of any other law;*
  - (b) *which has been identified in writing by the Minister for purposes of this section; or*
  - (c) *which is to be retained in terms of an agreement between the holder and the owner or occupier of the land, which agreement has been approved by the Minister in writing.*
2. *The provision of subsection (1) does not apply to bona fide mining equipment, which may be removed.*

○ Rehabilitation of the secured storage areas

On completion of the mining operation, the above areas will be cleared of any remaining contaminated soil which will be placed in acceptable containers and

removed with the industrial waste to a recognized disposing facility or by a waste removal company.

All buildings, structures or objects in the secured storage areas shall be dealt with in accordance with regulation 44 of the Minerals and Petroleum Resources Development Act, 2002.

The surface will be ripped or ploughed to a depth of at least 300 mm, where possible, and the topsoil, previously stored adjacent the site, distributed evenly to its original depth over the whole area. The area will then be fertilized if necessary (based on a soil analysis).

The site will be seeded with a vegetation seed mix adapted to reflect the local indigenous flora if necessary.

Any other disturbed areas will be rehabilitated as described under the relevant activities.

- Mine residue deposits
  - Disposal facilities  
Waste material of all description inclusive of receptacles, scrap, rubble and tyres will be removed entirely from the mining area and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site.
  - Ongoing seepage, control of rainwater.  
Monitoring of ground or surface water will take place during the mining phase if so requested by the DWS – Kimberley/Upington.
  - Long term stability and safety  
It will be the objective of mine management to ensure the long-term stability of all rehabilitated areas including the backfilled excavations. This will be done by the monitoring of all areas until a closure certificate has been issued.
  - Final rehabilitation in respect of erosion and dust control  
Self-sustaining vegetation will result in the control of erosion and dust and no further rehabilitation is planned.
- Rehabilitation of dangerous excavations  
Due to the removal of surface material, excavations could be created that can be classified as dangerous. All available material will be used during backfilling to avoid the existence of dangerous excavations.
- Final rehabilitation of opencast mine-haul ramps and roads and final voids  
After rehabilitation has been completed, all roads will be ripped or ploughed, fertilized and seeded, providing the landowner does not want them to remain that way and with written approval from the Director Mineral Development of the Department of Mineral Resources.

- Submission of information  
Reports on rehabilitation and monitoring will be submitted annually to the Department of Mineral Resources - Kimberley, as described in the NEMA regulations published 20 November 2015, Appendix 3.

- Maintenance (Aftercare)  
Maintenance after closure will mainly concern the regular inspection and monitoring and/or completion of the re-vegetation programme.

The aim of this Environmental Management Plan is for rehabilitation to be stable and self-sufficient, so that the least possible aftercare is required.

The aim with the closure of the mine will be to create an acceptable post-mine environment and land-use. Therefore, all agreed commitments will be implemented by Mine Management

- After-effects following closure
  - Acid mine drainage  
No potential for bad quality leachate or acid mine drainage development exist after mine closure.
  - Long term impact on ground water.  
No after effect on the groundwater yield or quality is expected.
  - Long-term stability of rehabilitated land  
One of the main aims of any rehabilitated ground will be to obtain a self-sustaining and stable end result. As the excavations will be mined onto bedrock these areas will have long term stability.

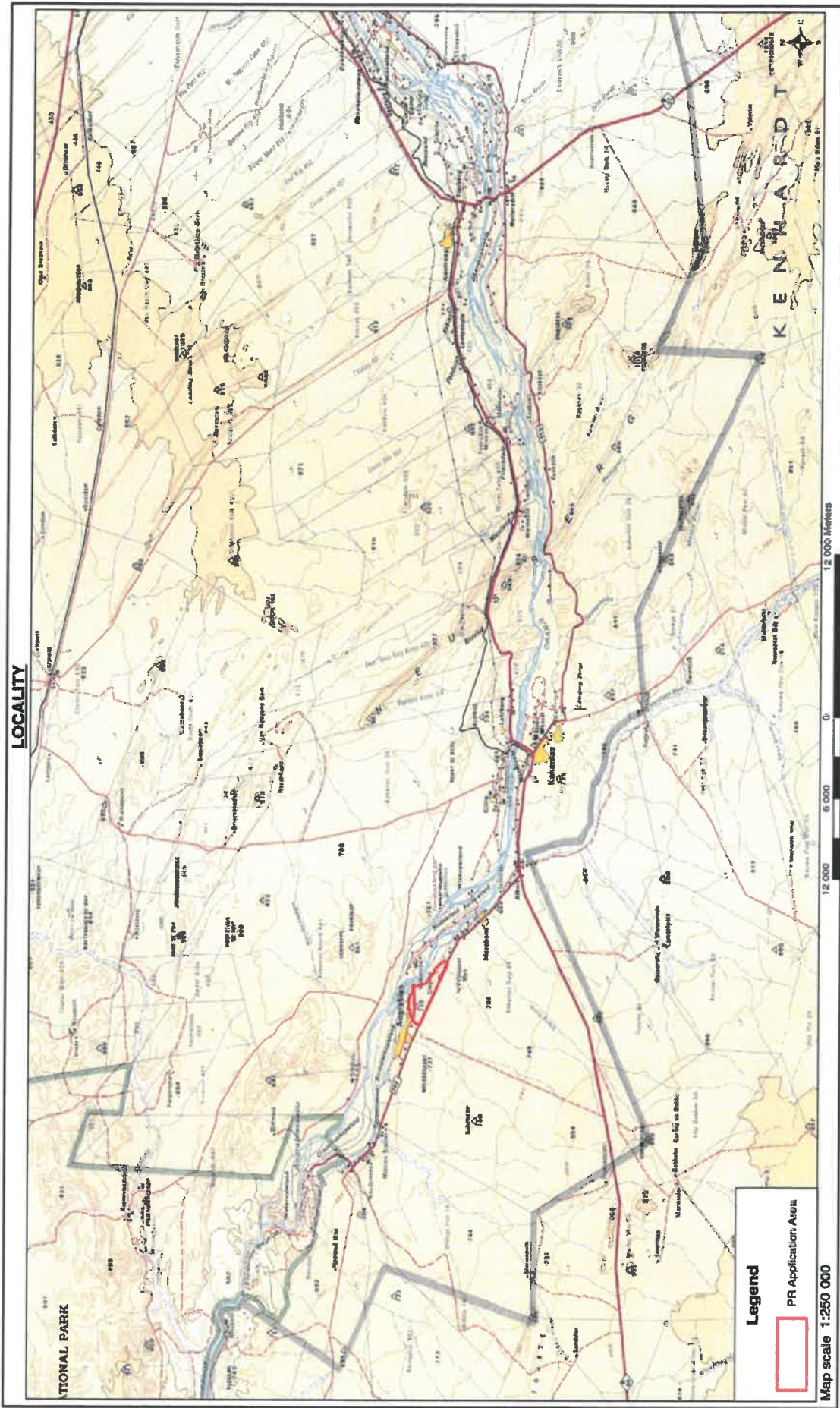


Figure 1. The locality of the proposed Mining Right area. The exact outline of the application area (540.1145ha) is indicated in red in the inserted plan.

### **3.3 Foreseen Environmental Impacts**

#### **3.3.1 Air quality deterioration**

##### ***Source of the impact***

Sources of atmospheric emissions associated with the mining operation are likely to include fugitive dust from materials handling operations if mining takes place, wind erosion of stockpiles, and vehicle entrainment of gravel roads.

##### ***Description of the impact***

During the construction and operation of the mining operation dust can be generated through the use of access roads and haul roads. Air pollution through vehicle entrainment is expected to be moderate due to the scale of the project and dust suppression measures that will be implemented by the mine. Air pollution from exhaust fumes.

#### **3.3.2 Soil pollution**

##### ***Source of the impact***

Spillage of hazardous material; runoff.

##### ***Description of the impact***

During the construction and operation of the mine, there is a possibility that equipment might leak oil, thus causing surface spillages. The hydrocarbon soil contamination will render the soil unusable unless they are decontaminated. The storage of fuels on site might have an impact on soil if the tanks that are available on site are not properly monitored and maintained to avoid leakages. Then there is the potential that contaminated soil can be carried through runoff to contaminate water resources and soil stockpiled for rehabilitation. Soil pollution is therefore possible, but through mitigation it can be minimised. The impact will have moderate severity and slight effect on extent.

#### **3.3.3 Loss of soil fertility**

##### ***Source of the impact***

During the removal of topsoil; stockpiling.

##### ***Description of the impact***

Improper stockpiling and soil compaction can result in soil sterilisation. Leaching can also occur, resulting in the loss of nutrients.

#### **3.3.4 Soil erosion**

##### ***Source of the impact***

Construction of infrastructure; topsoil removal; potential runoff.



### ***Description of the impact***

The construction of infrastructure and facilities in the mining area can result in loss of soil due to erosion. Vegetation will be stripped in preparation for placement of infrastructure and excavations, and therefore the areas will be bare and susceptible to erosion.

The topsoil that is stripped and stockpiled on surrounding areas can be eroded by wind and rain. The soil will be carried away during runoff. The cleared areas will be rehabilitated, but full restoration of soils might only occur over a number of months, subsequent to the re-establishment of vegetation. Therefore, the impact will have a moderate severity, throughout the duration of the mining operation.

### **3.3.5 Broad-scale ecological processes**

#### ***Source of the impact***

The construction of roads, plant site, as well as other necessary infrastructure; and the clearing of vegetation for mining.

#### ***Description of the impact***

Transformation of intact habitat on a cumulative basis would contribute to the fragmentation of the landscape and would potentially disrupt the connectivity of the landscape for fauna and flora and impair their ability to respond to environmental fluctuations. Due to the size of the operation in the area, this impact should be moderate due to the scale of the project.

### **3.3.6 Changes to surface topography**

#### ***Source of the impact***

Development of infrastructure and excavations.

#### ***Description of the impact***

The infrastructure and residue deposits will alter the topography by adding features to the landscape. Topsoil removal and mining will unearth the natural topography. The impact will be definite if mining is approved and the operation continues.

### **3.3.7 Visual impacts**

#### ***Source of the impact***

The construction of mining infrastructure, excavations and dust.

#### ***Description of the impact***

Visual impact of the mining infrastructure, excavations and visibility of dust.



### **3.3.8 Traffic**

#### ***Source of the impact***

The number of vehicles will increase with the mining in the area.

#### ***Description of the impact***

Potential negative impacts on traffic safety and deterioration of the existing road networks.

### **3.3.9 Heritage resources**

#### ***Source of the impact***

The mining operations can mine through or destroy sites of cultural and heritage importance

#### ***Description of the impact***

The deterioration or destruction of sites of cultural and heritage importance

### **3.3.10 Socio-economic**

#### ***Source of the impact***

The mining operation can create various job opportunities for local people. The mine can also destroy the land capability and land use while mining.

#### ***Description of the impact***

Loss of potential for the area; influx of workers to the area increases health risks and loitering (resulting in lack of security and safety); negative impact of employment loss during closure.

### **3.3.11 Interested and affected parties**

#### ***Source of the impact***

The setting up of a Mining operation for Tin, Zinc and Tungsten Ore “A surveyed portion 540.1145 Ha, Remainder of Lot 1726” in the Administrative District of Kenhardt

#### ***Description of the impact***

Loss of trust and a good standing relationship between the IAPs and the mining company.

### **3.3.12 Land capability**

#### ***Source of the impact***

Tin, Zinc and Tungsten Ore mining operation.

***Description of the impact***

Loss of land capability through topsoil removal, disturbances and loss of soil fertility if the mining operation starts.

**3.3.13 Land use**

***Source of the impact***

Tin, Zinc and Tungsten Ore mining operation.

***Description of the impact***

Loss of land use due to poor placement of surface infrastructure and ineffective rehabilitation.

**3.3.14 Ground water**

***Source of the impact***

Potential chemical spills if the mining operation continues to mine.

Yellow fleet servicing and tire replacement workshop – Potential diesel and lubricant spills.

Operating of the Wash bay as well as silt trap and oil separator – Potential contaminated water and chemical spills.

Yellow fleet parking area – Potential diesel and lubricant spills.

Septic tank and soak-away systems – Potential infiltration of contaminants through substrata.

***Description of the impact***

Possible pollution of underground water sources. Construction of measures to prevent seepage into the groundwater by biological and engineering means. Implementation of the necessary management programs to ensure the integrity of ground water resources.

**3.3.15 Surface water**

***Source of the impact***

Potential chemical spills due to mining operations.

Yellow fleet servicing and tire replacement workshop – Potential diesel and lubricant spills.

Operating of the Wash bay as well as silt trap and oil separator – Potential contaminated water and chemical spills.

Yellow fleet parking area – Potential diesel and lubricant spills.

***Description of the impact***

During the construction and operation of the mining operation, there is a possibility that equipment might leak oil, thus causing surface spillages. The storage of fuels on site

might have an impact on surface water if the tanks that are available on site are not properly monitored and maintained to avoid leakages. Then there is the potential that contaminated soil can be carried through runoff to contaminate water resources and soil stockpiled for rehabilitation. Surface water pollution is therefore possible, but through mitigation it can be minimised. The impact will have moderate severity and slight effect on extent.

### **3.3.16 Disturbance, displacement and killing of fauna**

#### ***Source of the impact***

Vegetation clearing; increase in noise and vibration; human and vehicular movement on site resulting from the mining activities.

#### ***Description of the impact***

The transformation of natural habitats due to mining and associated infrastructure will result in the loss of habitat affected individual species, and ecological processes. In turn this will result in the displacement of faunal species dependent upon such habitat. Increased noise and vibration due to mining activities will disturb and possibly displace birds and other wildlife. Fast moving vehicles take a heavy toll in the form of road kills of small mammals, birds, reptiles, amphibians and a large number of invertebrates.

### **3.3.17 Fauna Loss, damage and fragmentation of natural habitats**

#### ***Source of the impact***

Clearance of vegetation; mining activities.

#### ***Description of the impact***

The construction of the mining and associated infrastructure will result in the loss of connectivity and fragmentation of natural habitat. Fragmentation of habitat will lead to the loss of migration corridors, in turn resulting in degeneration of the affected population's genetic make-up. This results in a subsequent loss of genetic variability between meta-populations occurring within the study site. Pockets of fragmented natural habitats hinder the growth and development of populations.

### **3.3.18 Encouragement of bush encroachment**

#### ***Source of the impact***

Clearing of vegetation; disturbances through mining activities.

#### ***Description of the impact***

The possibility exists that bush encroaching species can multiply as a result of the disturbance interference in the natural ecosystem. While general clearing of the area and mining activities destroy natural vegetation, bush encroaching plants can increase due to their opportunistic nature in disturbed areas. If encroaching plants establish in

disturbed areas, it may lower potential for future land use and decrease biodiversity. With proper mitigation, the impacts can be substantially reduced.

### **3.3.19 Proliferation of alien vegetation**

#### ***Source of the impact***

Clearing of vegetation; mining activities.

#### ***Description of the impact***

The extent of alien invasive species in the area can increase as a result of the mining in the natural ecosystem. While general clearing of the area and mining activities destroy natural vegetation, invasive plants can increase due to their opportunistic nature in disturbed areas. If invasive plants establish in disturbed areas, it may cause an impact beyond the boundaries of the mining site. These alien invasive species are thus a threat to surrounding natural vegetation and can result in the decrease of biodiversity and ecological value of the area. Therefore, if alien invasive species are not controlled and managed, their propagation into new areas could have a high impact on the surrounding natural vegetation in the long term. With proper mitigation, the impacts can be substantially reduced.

### **3.3.20 Loss of flora with conservation concern**

#### ***Source of the impact***

Removal of listed or protected plant species; during the construction of roads, plant site, as well as other necessary infrastructure; the placement of stockpiles; and the clearing of vegetation for mining.

#### ***Description of the impact***

It is possible that protected species will be destroyed during the mining operation.

### **3.3.21 Loss of, and disturbance to indigenous vegetation**

#### ***Source of the impact***

The construction of roads, plant site, as well as other necessary infrastructure; the placement of stockpiles; and the clearing of vegetation for mining, materials storage and topsoil stockpiles; vehicular movement.

#### ***Description of the impact***

Construction and mining activities on site will reduce the natural habitat for ecological systems to continue their operation. It is not expected that the areas of high ecological function will rehabilitate following disturbance events. Vehicle traffic generates lots of dust which can reduce the growth success and seed dispersal of many small plant species.

### **3.3.22 Noise and vibration:**

#### ***Source of the impact***

Noise generated by the vehicles and mining equipment.

#### ***Description of the impact***

Mining for Tin, Zinc and Tungsten Ore mining operation which increase continuous noise levels; the disruption of current ambient noise levels; and the disruption of sensitive receptors by means of increased noise and vibration. This is particularly relevant to IAPs that reside in close proximity to the Mining site and mining location.

### **3.3.23 Land use:**

#### ***Source of the impact***

Mining for Tin, Zinc and Tungsten Ore mining operation.

#### ***Description of the impact***

Loss of economic function of disturbed area during mining activities and potential loss of land capability post mining (limited to the mining areas and crushing plant).

### **3.4 Listed Activities applied for in terms of the National Environmental Management Act, 1998 Act 107 of 1998 (NEMA)**

**Table 1: Listed and Specified Activities**

<p>(e.g. Excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablation, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc... etc... etc.)</p>	<p>Name of activity</p>	<p>Aerial extent of the activity (Ha or m<sup>2</sup>)</p>	<p>Listed Activity (mark with an X where applicable or affected)</p>	<p>Applicable Listing Notice (GNR544, GNR545 or GNR546 / Not listed GNR983, GNR984, GNR985/ Not listed)</p>
<p>1 Blasting: The mine will blast blocks to lubricate the ore.</p>	<p>The size of the blasts will be determined by the practical blast block design and the production rate required from the mine.</p>	<p>X</p>	<p>GNR325<sup>1</sup>: Activity 15: "The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for- (i) The undertaking of a linear activity; or (ii) Maintenance purposes undertaken in accordance with a maintenance management plan."  GNR325: Activity 17: "Any activity including the operation of that activity which requires a mining right [section 22 of MPRDA], including</p>	

			<p>a) <i>Associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource ...</i>"</p> <p>or</p> <p>b) <i>The primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing;</i></p> <p>But excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.</p> <p>GNR 327: Activity 30: "Any process or activity identified in terms of section 53(1) of</p>
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				<p>the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).”</p>
<p>2</p>	<p><b>Explosive Magazine:</b></p> <p>The mine will need two magazines to store the different explosive products namely</p> <ul style="list-style-type: none"> <li>• 200 case detonator ad accessories magazine (3 meter x 6 meter)</li> <li>• 200 case explosives magazine (3 meter x 6 meter)</li> </ul> <p>The magazine area will be fenced to comply with the guidelines set out by the Chief inspector of Explosives (CIE). The fence must be further than 10 meter away from the magazine.</p> <p>The CIE determines the safety radius necessary, but the typical approved radiuses have been</p> <ul style="list-style-type: none"> <li>• 90 meter for the inner radius</li> <li>• 180 for the outer radius</li> </ul> <p>No structures are allowed in the area contained by the inner radius and only structures approved by the CIE, for example a guard house, will be allowed in the area contained in by the outer radius.</p>	<p>50m x 40m = 2000m<sup>2</sup></p> <p>Inner radius area = 3.14 x (radius squared) = 25 434 m<sup>2</sup></p> <p>Outer radius area = 3.14 x (radius squared) = 101 736 m<sup>2</sup> (10.1736ha)</p>	<p>X</p>	<p>GNR 325: Activity 15 “The clearance of an area of 20 hectare or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for—</p> <p>(i) the undertaking of a linear activity; or</p> <p>(ii) maintenance purposes undertaken in accordance with a maintenance management plan.”</p> <p>GNR325: Activity 17 (Keep in consideration Mine Health and Safety Act, 29 of 1996 and regulations specifically Section 23.4(o) and Regulation 4, as well as Explosives Act 15 of 2003).</p>

	<p>The construction of the magazines and the safety and security measures for the magazines and the magazine area are regulated by the Explosives Act.</p>			
3	<p>Sewage facilities.</p>	<p>5000m<sup>2</sup> or 0.5ha</p>	<p>X</p>	<p>GNR 327: Activity 25: “The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of more than 2000 cubic metres but less than 15000 cubic metres.”</p>
4	<p>Clean &amp; Dirty water system: Stormwater dam It is anticipated that the operation will establish stormwater control berms and trenches to separate clean and dirty water on the mine site.</p>	<p>The size and length of the berms, trenches and stormwater dam will be directly affected by the topography of the area and the locality of the infrastructure.</p> <p>During the development of the infrastructure plan provision was made for an area of 45m x 35m as part of the plant area to create different dams for fresh water, process water and water from</p>	<p>X</p>	<p>GNR 327: Activity 12: “ The development of— (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or (ii) infrastructure or structures with a physical footprint of 100 square metres or more;</p>

		<p>sewage plants and oil separator (specific capacities for these dams have not been calculated).</p>	<p>where such development occurs—</p> <p>(a) within a watercourse;</p> <p>(b) in front of a development setback; or</p> <p>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse”</p> <p>Regulation GN R704, published on 4 June 1999 in terms of the National Water Act (Use of water for mining and related activities)</p> <p>GNR325: Activity 17 Consideration of GN704 – MPRDA</p>
5	<p>Fuel Storage facility (Diesel tanks): It is anticipated that the operation will utilize 3 x 23 000 litre diesel tanks. These tanks must be placed in bund walls, with a capacity of 1.5 times the</p>	<p>2775m<sup>2</sup> Concrete, bricks, and steel</p>	<p>X</p> <p>GNR325: Activity 17</p>

	<p>volume of the diesel tanks. A concrete floor must be established where the re-fuelling will take place.</p> <p>Re-fuel and lube station</p>	<p>4196m<sup>2</sup> Pipes, concrete, bricks and steel</p>	<p>GNR324: Activity 10: "The development and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic meters."</p> <p>GNR 325: Activity 15 "The clearance of an area of 20 hectare or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan."</p>
6	<p>Mining Area: The mining process will be initiated by drilling of blast holes. These holes will then be blasted where after the ore will be</p>	<p>Provision is made for a maximum footprint (at full production) of 500000m<sup>2</sup> or 50 hectares of open cast mining at any one time.</p>	<p>X</p> <p>GNR325: Activity 15 GNR325: Activity 17</p>

	loaded from Renosterkop and hauled to the crushing and screening plant.			
7	Generator: ((2X 2000 KW) The mine infrastructure plan made provision for a brick building that will house the generators for power generation on site. Electricity will be distributed on site per overhead powerlines as indicated on the infrastructure plan.	10m x 20m = 200m <sup>2</sup> Generator, Electric wires/powerlines, building of concrete, bricks and steel	X	GNR325: Activity 17
8	Office	4000m <sup>2</sup> Bricks, concrete, doors, windows or pre-fabricated office blocks on concrete	X	GNR325: Activity 17
9	Parking Bay: It is anticipated that vegetation will be cleared in this area and superfine material will be used as groundcover.	100m x 100m = 1Ha	X	GNR325: Activity 15 GNR325: Activity 17 GNR327: Activity 30
10	Crushing and Screening plant: The processing of ore will be a dry process, with the option to convert to a 'wet' process after full production has been reached.	30 000m <sup>2</sup> Steel, concrete, electric wires	X	GNR325: Activity 15 GNR325: Activity 17
11	Roads (both access and haulage road on the mine site): Although it is recommended that the operation utilize existing roads as far as possible, it is anticipated that the mining operation will create an additional 7-8 km of roads, with a width of 20 meter. The width of the road is based on an operating width of the haul trucks of 5 meter. Best practice and the guideline from the DMR are to allow for 4 x Operating width of haul truck, in this case 20-meter-wide roads. The current access road next to the deposit is deemed adequate for a service road into the mine	Additional mine haul road = 8000-meter x 20 meter wide = 160 000m <sup>2</sup>	X	GNR327 <sup>3</sup> : Activity 24(ii): "The development of a road – (ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 meters."  GNR327: Activity 56(ii): "The widening of a road by more than 6 meters, or the

				lengthening of a road by more than 1 kilometer – (ii) where no reserve exists, where the existing road is wider than 8 meters...”	GNR325: Activity 17 GNR325: Activity 27(iv): “The development of a road— (iv) catering for more than one lane of traffic in both directions;”
12	Salvage yard (Storage and laydown area)		5000m <sup>2</sup> or 0.5 ha No construction material, area to be levelled with a grader and fenced with a gate and access control		X GNR325: Activity 17
13	Security Gate and guard house at access control point		8000m <sup>2</sup> or 0.8ha Concrete, bricks, steel and levelled parking area.		X GNR325: Activity 17
14	Product Stockpile area		Provision is made for a maximum footprint (at full production) of 100000 m <sup>2</sup> or 10 hectares for the stockpile area at any one time.		X GNR984: Activity 15 GNR984: Activity 17

15	Ore Stockpile dumps	50 000m <sup>2</sup> Run of Mine dumps	X	GNR325: Activity 15 GNR325: Activity 17
16	Storage facility: Drill Cores	4000m <sup>2</sup> Concrete and Steel	X	GNR325: Activity 17
17	Stormwater dam It is anticipated that the operation will construct a stormwater dam.	20m x 50m = 0.1 Ha	X	GNR325: Activity 17
18	Subgrade stockpile area	Provision is made for a maximum footprint (at full production) of 1 hectare for this stockpile area at any one time.	X	GNR325: Activity 15 GNR325: Activity 17
19	Topsoil storage area (temporary) Topsoil dumps X3	Provision is made for a maximum footprint (at full production) of 30000 m <sup>2</sup> or 3 hectare for this area at any one time.	X	GNR325: Activity 15 GNR325: Activity 17
20	Waste disposal site (domestic and industrial waste): It is anticipated that the operation will establish a dedicated, fenced waste disposal site with a concrete floor and bund wall. The following types of waste will be disposed of in this area: <ul style="list-style-type: none"> <li>• Small amounts of low-level hazardous waste in suitable receptacles.</li> <li>• Domestic waste.</li> <li>• Industrial waste.</li> </ul>	15m x 30m = 450m <sup>2</sup>	X	GNR325: Activity 17
21	The waste rock dump will be rehabilitated by sloping it to an angle of 18 degrees and revegetate it by the end of life of mine.	Provision is made for a maximum footprint (at full production) of	X	GNR325: Activity 15 GNR325: Activity 17



	<p>The mine will include the concurrent rehabilitation in future mine planning.</p>	<p>20000 m<sup>2</sup> or 20 hectares for waste rock dumps at any one time.</p>	<p>NEMWA:Category B GNR 632: Activity 11: "The establishment or reclamation of a residue stockpile or residue deposit resulting from activities which require a mining right in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) "</p>
22	Workshop and Wash bay	5000m <sup>2</sup> Concrete and Steel	X GNR325: Activity 17
23	Water distribution Pipeline	HDPE Pipes	X (GNR327): Activity 9 " ... "
24	Water tanks: It is anticipated that the operation will establish 2 x 10 000 litre water tanks with purifiers for potable water.	3m x 3m = 9m <sup>2</sup> each	X GNR325: Activity 17
25	Weighbridge	2500m <sup>2</sup> Concrete platforms/ramps, steel	X GNR325: Activity 17
26	Weighbridge control room – Mobile container	3m x 6m = 18m <sup>2</sup> (included on mine lay-out plan)	X GNR325: Activity 17

### 3.5 Decommissioning phase/ Closure Period:

The decommissioning phase will only commence once all the mining is completed. During decommissioning all erected structures, e.g. chemical toilets, fences on demarcated areas, equipment and access roads on permission of the surface owners will be rehabilitated to their previous state. Rehabilitation will be done concurrently with the mining and only limited outstanding work will be necessary when mining is ceased.

## 4 CONCLUSION

It is clear that the destruction of the natural habitat in the mining area is inevitable and that there would be both positive and negative impacts related to the mining activities. The significance of these impacts will however be determined by the success of the mitigation measures that will be implemented by mine management in line with the Approved Environmental Management Programme.



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