

SILVER SOLUTIONS 851 CC

Background Information Document

Public participation process

PUBLIC PARTICIPATION PROCESS FOR A MINING RIGHT FOR DIAMONDS (ALLUVIAL); SAND (GENERAL AND MANUFACTURED FROM WASTE DUMP) IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT 28 OF 2002), THE NATIONAL ENVIRONMENTAL 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 ACT 1998, (ACT 36 OF 1998).

NC30/5/1/2/2/10134 MR

UNSURVEYED STATE LAND BETWEEN THE INNER BANK BOUNDARY OF FARM 248 AND THE MIDDLE OF THE VAAL RIVER BOUNDARY OF ROOIPOORT FARM WITHIN THE ADMINISTRATIVE DISTRICT OF HERBERT, NORTHERN CAPE

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BACKGROUND INFORMATION DOCUMENT

1. INTRODUCTION

We must inform you that Silver Solutions 851 CC (“The applicant”) has applied for a Mining Right on Unsurveyed State Land between the inner bank boundary of Farm 248 and the middle of the Vaal river boundary of Rooipoort Farm in the administrative district of Herbert, Northern Cape (35.1275 hectares).

The application was submitted to the Regional Manager, Department of Mineral Resources (“DMR”) situated at 65 Phakamile Mabija Street, Kimberley, 8301 with contact number 053 – 80 71700. The mentioned application was accepted on 04 April 2018 and the prescribed Scoping Report must be submitted on or before 18 May 2018.

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 diamonds (alluvial); Sand (General and Manufactured from waste dump) which was submitted to the Department of Mineral Resources (DMR) with Reference **NC30/5/1/2/2/10134 MR**
- Provide background information regarding the proposed Mining Right application for **Silver Solutions 851 CC**.
- 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 Impact Assessment and Environmental Management Programme.
- To inform the Affected and Interested Parties of the requirements in terms of all Governing Legislation applicable to this process.

Silver Solutions 851 CC seeks to gather comments, suggestions, issues and concerns from all stakeholders.

3. A BRIEF OVERVIEW

Silver Solutions 851 CC (“The applicant”) has applied for a Mining Right on Unsurveyed State Land between the inner bank boundary of Farm 248 and the middle of the Vaal river boundary of Rooipoort Farm situated in the Magisterial

District of Herbert, Northern Cape Province to mine for diamonds (alluvial); Sand (General and Manufactured from waste dump).

The Silver Solutions Project Area is situated:

Douglas	South-west	±40
Griquatown	West	±80
Kimberley	North-west	±75

On the left-hand-bank of the Vaal River about 75km west of Kimberley in the Herbert District. The property is accessible via good roads from different directions.

3.1 Proposed activity description

The Mining area consists of 35.1275 ha between the inner bank boundary of Farm 248 and the middle of the Vaal river boundary of Rooipoort Farm. The area consists of the border pillar along the river which has been excluded from other rights issued.

The area will be mined in blocks of 100m X 100m which consist of 1ha. There will never be more than one block open.

The following is a description of a typical South African alluvial diamond mining operation, which is also being utilized at Schmidtsdrift. The mining method being employed is a strip mining process with oversize material from the gravel scalping and the tailings from the plant, being used as backfill material prior to final rehabilitation. Gravels are excavated, loaded and transported to the nearby treatment facility using articulated dump trucks. Gravels are then loaded onto a vibrating grizzly and the +32 mm oversize material is discarded back into the open pit (about 55% reduction). The remaining -32 mm fraction is loaded into a series of 2 sixteen foot rotary pans, each with a treatment capacity of 20 tph. Tracer tests are done regularly to ensure that the pans are operating at the correct density. Concentrate is tapped continuously from each of the pans every three hours into three ton holding bins and transported with trucks to totally enclosed final recovery unit which is situated on Holpan near Windsorton, which is designed to use both X-ray and grease diamond recovery methods.

The operational phase of the mining operation will include the mining of alluvial diamonds by means of open cast mining with machinery in approximately 100 m x 100 m blocks.

Soil will be removed from the first block, where after it will be stored separately on the high ground of the proposed mining area. Stored soil will be kept separate from overburden and will not be used for the building or maintenance of access roads.

Exposed diamondiferous gravel of Block 1 will then be removed by means of a back actor and loaded onto a tipper truck, which will transport it to the central mineral processing plant. At the plant the diamondiferous gravel will be sorted by means of a grizzly screen grid and all material larger than 100 mm will be separated from the rest. This material will be used in the backfilling stage.

Screened material smaller than 100 mm will be transported to a stockpiling area via front-end loader. From here it will be transported to a conveyor belt, which will feed it onto a wet rotary screen and then directly onto 2 X 16 feet washing pans.

3.2 Rehabilitation

The following procedure will be followed in terms of backfilling and rehabilitation:

- The coarse gravel sifted at the grizzly screen, tailing from the pans and fine concentrate will be transported back to and dumped into open Block 1. During this process of backfilling, variation in the dumping sequence of different sized materials will be followed to ensure better compaction and stability of the reclaimed gravel. This will ensure that the voids surrounding the coarse gravel will be filled up with finer sediments. Compaction will be achieved through the movement of heavy vehicles over the area during the backfilling stage.
- The mining sequence will be followed until the last block is reached. Topsoil/ Soil stored at the beginning of the mining operation will now be utilized for the final rehabilitation of the last block

Access road rehabilitation is carried out when all mining phases are completed at the end of the mining activities. Rehabilitated sites will be monitored after work has been completed to ensure vegetation growth re-occurs.

On completion of the mining operation, the various surfaces, including the access road, will finally be rehabilitated as follows: Any compacted area will be ripped to a depth of 300mm, where possible, the topsoil or growth medium returned and landscaped.

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

- 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.

- 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.

- Maintenance (Aftercare)

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

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

The aim with the closure of the mining operation will be to create an acceptable post-mine environment and land-use.

- 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. The mining site will be closed as prescribed and will have long term stability. Riverbanks will be stabilized as prescribed by the Department of Water and Sanitation.

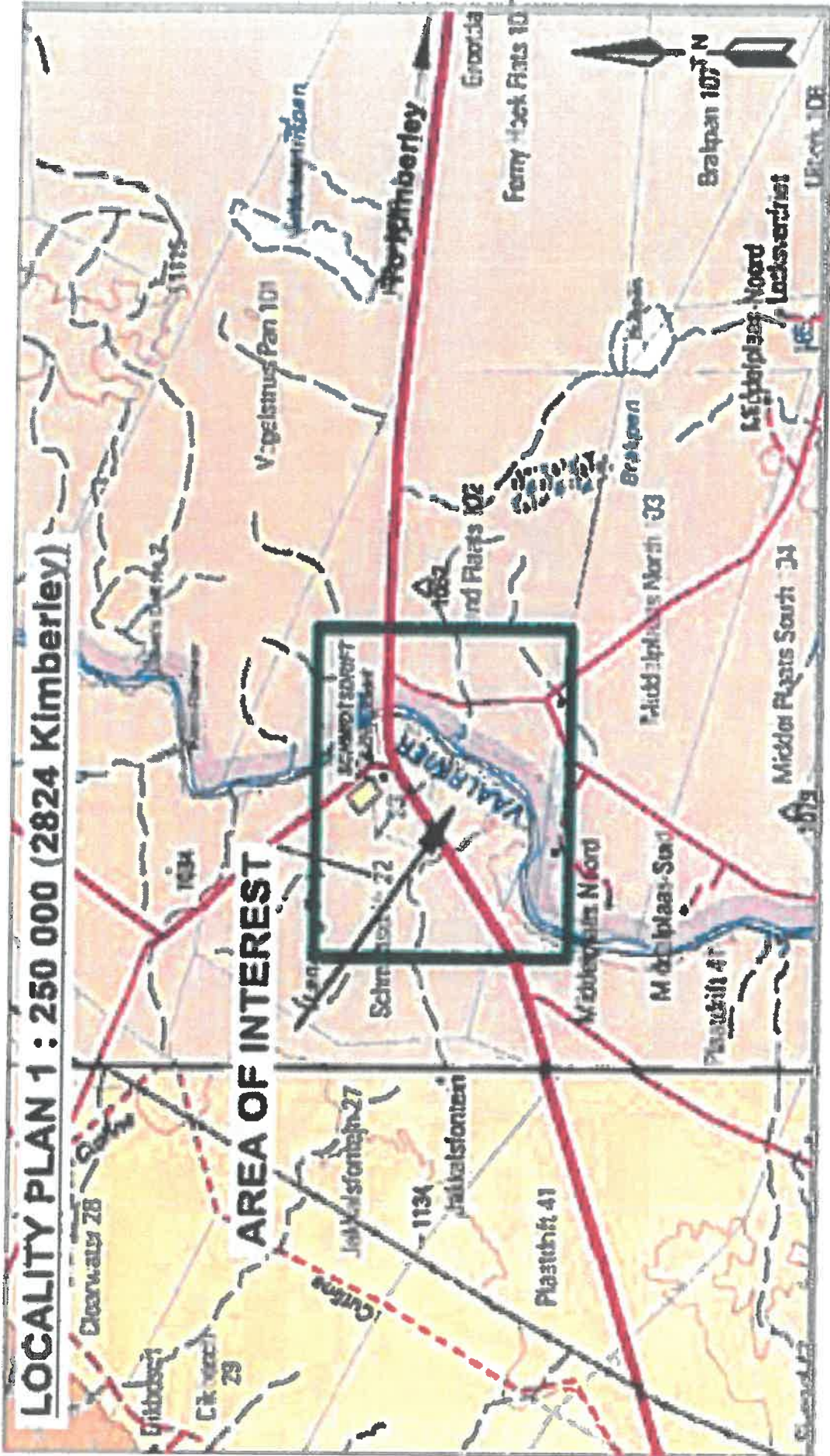


Figure 1: UNSURVEYED STATE LAND BETWEEN THE INNER BANK BOUNDARY OF FARM 248 AND THE MIDDLE OF THE VAAL RIVER BOUNDARY OF ROOIPOORT within the administrative district of Herbert, Northern Cape (35,1275 hectares).

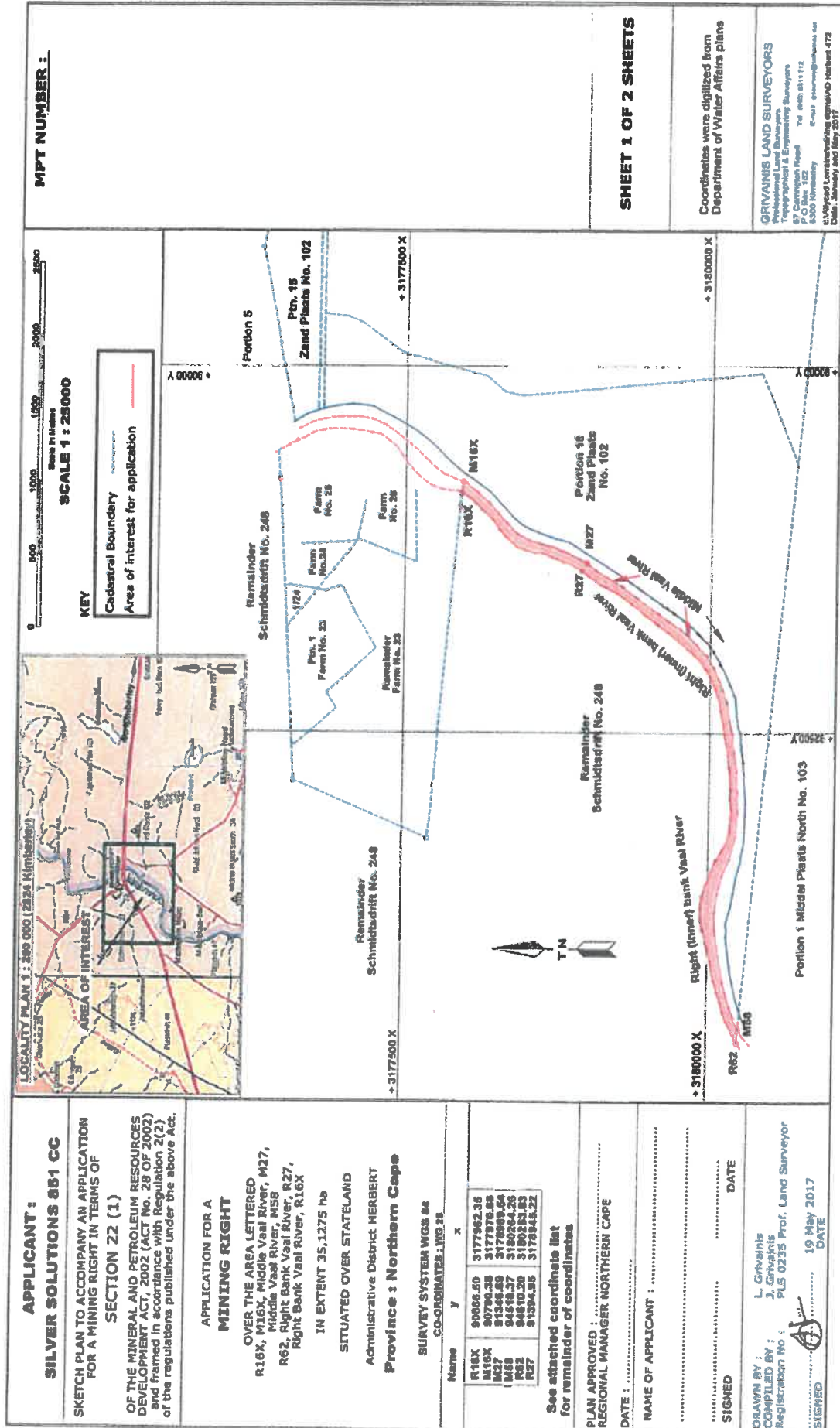


Figure 2: UNSURVEYED STATE LAND BETWEEN THE INNER BANK BOUNDARY OF FARM 248 AND THE MIDDLE OF THE VAAL RIVER BOUNDARY OF ROOIPOORT within the administrative district of Herbert, Northern Cape (35, 1275 hectares).

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 negligible due to the small 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 minimal 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 prospecting.

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 small size of the operation in the area, this impact should be negligible due to the small 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 amount 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 Diamonds (alluvial); Sand (General and Manufactured from waste dump) on 35.1275 ha between the inner bank boundary of Farm 248 and the middle of the Vaal river boundary of Rooipoort Farm, in the Magisterial District of Herbert.

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

Diamonds (alluvial); Sand (General and Manufactured from waste dump) 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

Diamonds (alluvial); Sand (General and Manufactured from waste dump) 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 minimal 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 prospecting.

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 prospecting, 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 Diamonds (alluvial); Sand (General and Manufactured from waste dump) 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 Diamonds (alluvial); Sand (General and Manufactured from waste dump).

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 processing 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

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m ²	LISTED ACTIVITY (Mark with an X where applicable or affected).	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)	WASTE MANAGEMENT AUTHORISATION (Indicate whether an authorisation is required in terms of the Waste Management Act). (Mark with an X)
<p>(E.g. for prospecting – drill site, site camp, ablation facility, accommodation, equipment storage, sample storage, site office, access route, etc. ... etc. ... etc.</p> <p>E.g. for mining – 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>	35,1275 ha	X	GNR 984	
<p>Activity 17 of NEMA Listing Notice 2 "Any activity including the operation of that activity which requires a mining right [section 22 of MPRDA], including infrastructure, structures and earthworks, directly related to the extraction of a mineral resource ..."</p> <p>Activity 12 of NEMA Listing notice 1 "The development of—</p> <p>(i) canals exceeding 100 square metres in size;</p> <p>(ii) channels exceeding 100 square metres in size;</p> <p>(iii) bridges exceeding 100 square metres in size;</p> <p>(iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size;</p> <p>(v) weirs, where the weir, including infrastructure and water surface area, exceeds 100 square metres in size;</p> <p>(vi) bulk storm water outlet structures exceeding 100</p>	5000m ²	X	GNR 983	

<p>square metres in size;</p> <p>(x) buildings exceeding 100 square metres in size;</p> <p>or</p> <p>(xii) infrastructure or structures with a physical footprint of 100 square metres or more;</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>GNR984: Activity 17 Consideration of GN704 – Water Act Activity 21 of NEMA Listing Notice 2</p> <p>Any activity including the operation of that activity associated with the primary processing of a mineral resource including winning, reduction, extraction, classifying, concentrating, crushing, screening and washing but excluding the smelting, beneficiation, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.</p>		X	0.5 ha will be used for the processing and associated infrastructure.	GNR 984
<p>Activity 24(ii) of NEMA Listing Notice 1</p> <p>The development of haul roads 15m wide with no reserve</p>		X	±5 000m ² on the Area.	GNR983

<p>Activity 56(ii) of NEMA Listing Notice 1</p> <p>The continuous lengthening (and rehabilitation) of haul roads 15m wide with no reserve</p>	<p>±5 000m² on the Area.</p>	<p>X</p>	<p>GNR983</p>	
<p>Activity 19 of NEMA Listing Notice 1</p> <p>The infilling or depositing of any material more than 5 cubic metres into, or dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock or more than 5 cubic metres from-</p> <p>(i) a watercourse</p>	<p>The infilling or depositing of any material more than 5 cubic metres</p>	<p>X</p>	<p>GNR983</p>	
<p>Activity 15 of NEMA Listing Notice 2</p> <p>"The clearance of an area of 20 hectares 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>A total of 35 hectares will be physically disturbed where the alluvial diamond material will be removed and washed.</p>	<p>X</p>	<p>GNR984</p>	
<p>Activity 10 of NEMA Listing Notice 3: "The development of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic meters."</p>	<p>250m²</p>	<p>X</p>	<p>GNR985</p>	
<p>Activity 9 of Category A under the National Environmental Management: Waste Act 59 of 2008</p>	<p>The disposal of inert waste of 10 000 tons, excluding the disposal of such waste for the purposes of levelling and building which has been authorised by</p>		<p>GNR 633</p>	<p>X</p>

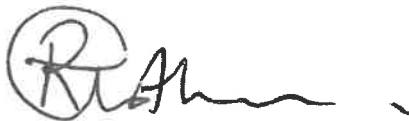
<p>Activity 15 of Category A under the National Environmental Management: Waste Act 59 of 2008 The continuous establishment and reclamation of temporary stockpiles resulting from activities which require a mining right.</p> <p>OTHER ACTIVITIES (Associated infrastructure not considered to be listed activities)</p> <p>Temporary Workshop Facilities Storage Facilities</p> <p>Concrete Bund walls and diesel Depots Ablution Facilities</p> <p>Topsoil Stockpiles</p> <p>Overburden Stockpiles</p>	<p>other legislation.</p> <p>20 000m²</p> <p>±300m²</p> <p>±3000m²</p> <p>±250m²</p> <p>±25m²</p> <p>±2 000m²</p> <p>±2 000m²</p>	<p>GNR 633</p> <p>NOT LISTED</p>	<p>X</p>
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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.

A handwritten signature in black ink, consisting of a circled 'R' followed by 'H' and a long, wavy line.

R.H. Oosthuizen
Environmental Assessment Practitioner
Wadala Mining and Consulting (Pty) Ltd