# Kimswa Mining (PTY) LTD (2018/299268/07)

## **Background Information Document**

## **Public participation process**

PUBLIC PARTICIPATION PROCESS FOR A PROSPECTING RIGHT FOR DIAMONDS (ALLUVIAL); DIAMONDS (IN KIMBERLITES); DIAMONDS (GENERAL) 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 ACT 1998, (ACT 36 OF 1998).

## NC30/5/1/1/2/12200PR

REMAINING EXTENT OF PORTION 9 and PORTION 13 OF THE FARM RIETFONTEIN 11 WITHIN THE ADMINISTRATIVE DISTRICT OF PRIESKA, NORTHERN CAPE

Compiled by Ms. R.H. Oosthuizen Wadala Mining and Consulting (Pty) Ltd

## **BACKGROUND INFORMATION DOCUMENT**

#### 1. INTRODUCTION

We must inform you that Kimswa Mining (Pty) Ltd ("The applicant") has applied for a Prospecting Right on Remaining Extent of Portion 9 and Portion 13 of the Farm Rietfontein 11 within the Administrative District of Prieska, Northern Cape (6613.2836 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 on 04 July 2018.

## 2. PURPOSE OF THE BACKGROUND INFORMATION DOCUMENT

The purpose of this document is:

- To notify potential stakeholders of the application for a Prospecting Right for diamonds (alluvial); diamonds (in kimberlites); diamonds (general) which was submitted to the Department of Mineral Resources (DMR) with Reference NC30/5/1/1/2/12200PR
- Provide background information regarding the proposed Prospecting Right application for Kimswa Mining (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.

Kimswa Mining (Pty) Ltd seeks to gather comments, suggestions, issues and concerns from all stakeholders.

#### 3. A BRIEF OVERVIEW

Kimswa Mining (Pty) Ltd ("The applicant") has applied for a Prospecting Right on 04 July 2018 on the above mentioned farms situated in the Magisterial District of Prieska, Northern Cape Province to mine for diamonds (alluvial); diamonds (in kimberlites); diamonds (general).

Prieska is a town on the south bank of the Orange River, in the province of the Northern Cape, in South Africa. The application area is about 60 km northwest

from Prieska and about 25km east from Maryvale on the south bank of the Orange River, Northern Cape, South Africa.

#### 3.1 Proposed activity description

Prospecting activities described in the Prospecting Work Programme ("PWP") are designed for determining the gravel resource potential of the proposed application area. The prospecting activities will be a combination of both non-invasive and invasive methods. A suitable level of feasibility study (technical and economic evaluation) will also be undertaken.

The initial prospecting activities will be non-invasive and restricted to a desktop study which included a literature survey, plus aerial photograph and satellite image interpretation, and ground validation of targets in the first year. Subsequent phases will be of the invasive-type, typically pitting, or trenching aimed at recovering suitably representative samples to determine grade and quality.

Bulk sample test work will be undertaken to test the grade and quality and ultimately the economic viability of the potential deposit.

A standard phased approach to all prospecting activities will be implemented. Each prospecting activity will be undertaken on a scheduled timeline, with some activities being run concurrently, while others sequentially. Specific milestones will be determined and used as a basis for decisions regarding further activities related to the Prospecting Work Programme. The total duration of the prospecting and evaluation activities is planned for five (5) years.

#### **Non-Invasive Activities**

#### PHASE 1

#### **Review of Past Exploration Results**

In order to direct the exploration programme in an efficient manner, there will be a review of all information and data gathered during previous exploration. A site investigation of the target areas will be undertaken to identify infrastructure and determine any potential problems that may need to be addressed.

#### **Imagery Analysis & Geological Mapping**

High-resolution satellite images will be studied and used to geologically map the application area. Contacts between various lithologies will be mapped and

specific attention will be given to delineate and define areas underlain by alluvial gravels.

#### **Invasive Activities**

#### PHASE 2

RC-drilling – Drilling is done in phases, over anomalous target areas, using reconnaissance lines or a grid of 200m X 200m or 100m X 50m depending on the level of confidence in the targets and the level of information required. The holes will be approximately 5 metres deep depending on local depth to bedrock (It is envisaged that at least 300 holes will be drilled). If initial drilling proves that only Rooikoppie gravels exist on the property and gravels only go 1m or less deep, drilling will cease and pitting will continue.

#### PHASE 3

**Invasive Prospecting Pits** 

Invasive Prospecting Pits will be positioned also on a grid of 200m X 200m or 100m X 50 m.

#### PHASE 4

**Bulk Sampling** 

#### PHASE 5

Analytical Desktop Study

The project geologist monitors the programme, consolidates and processes the data and amends the programme depending on the results. This is a continuous process throughout the programme and continues even when no prospecting is done on the ground.

Each physical phase of prospecting is followed by desktop studies involving interpretation and modelling of all data gathered. These studies will determine the manner in which the work programme is to proceed in terms of activity, quantity, resources, expenditure and duration.

A GIS based database will be constructed capturing all exploration data.

#### 3.2 Rehabilitation

Rehabilitation of drill-sites and bulk sampling sites will be done concurrently as each hole or trench is completed. Access road rehabilitation is carried out when all prospecting phases are completed at the end of the prospecting activities. Rehabilitated sites will be monitored after work has been completed to ensure vegetation growth re-occurs.

On completion of the prospecting 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 prospecting 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.

#### o 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 prospecting operation will be to create an acceptable post-mine environment and land-use.

#### o 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 selfsustaining and stable end result. The drill holes and bulk sampling sites will be closed as prescribed and will have long term stability.

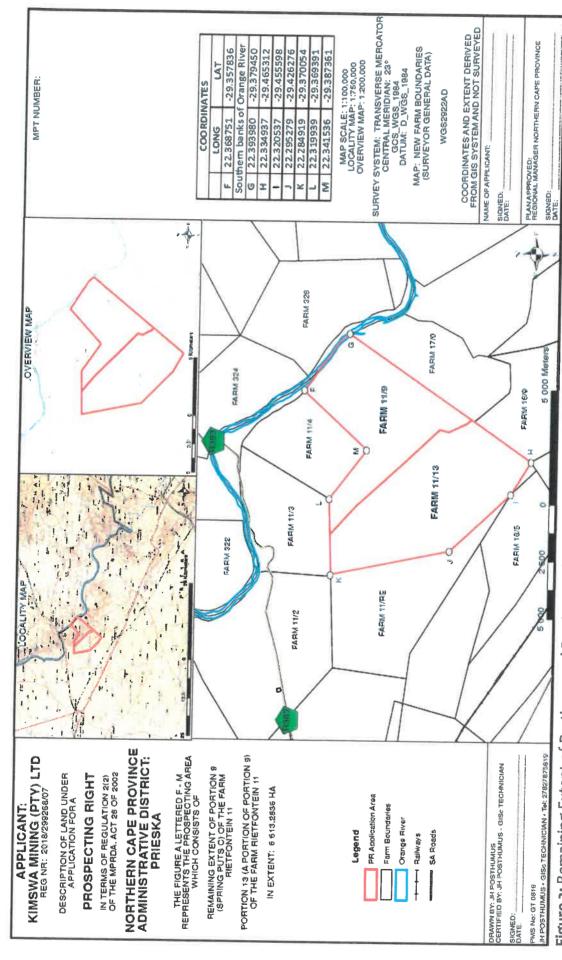


Figure 2: Remaining Extent of Portion 9 and Portion 13 of the Farm Rietfontein 11 within the Administrative District of Prieska, Northern Cape (6613.2836 hectares) locality indicated in red.

#### 3-3 Foreseen Environmental Impacts

#### 3.3.1 Air quality deterioration

#### Source of the impact

Sources of atmospheric emissions associated with the prospecting operations are likely to include fugitive dust from drilling, bulk sampling and vehicle entrainment of gravel roads.

#### Description of the impact

During the construction and operation of the prospecting operation dust can be generated through the use of the drill rig, yellow gear and access 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 from the drill rig and yellow gear.

#### 3.3.2 Soil pollution

#### Source of the impact

Spillage of hazardous material; runoff.

#### Description of the impact

During the prospecting, 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 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.

#### 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

Establishment of the drill rig on drill sites; topsoil removal; trenches and potential runoff.

#### Description of the impact

The establishment of the drill rig, trenches and facilities in the prospecting area can result in loss of soil due to erosion. Vegetation will be stripped in preparation for placement of the drill rig and trenches although very limited, 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.

#### 3-3-5 Broad-scale ecological processes

#### Source of the impact

The construction of roads (tracks), the drill rig on various drill sites, trenches 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, trenches and drill rig.

#### Description of the impact

The infrastructure, trenches and drill rig will alter the topography by adding features to the landscape. Topsoil removal, trenches and drill holes will disturb the natural topography.

#### 3-3-7 Visual impacts

#### Source of the impact

The construction of Prospecting infrastructure, trenches, drilling and dust.

#### Description of the impact

Visual impact of the prospecting infrastructure, trenches, drilling and visibility of dust.

#### 3.3.8 Traffic

#### Source of the impact

The amount of vehicles will increase with the prospecting 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 prospecting operations can prospect 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 prospecting operation can create various job opportunities for local people. The mine can also destroy the land capability and land use while prospecting.

## 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 Prospecting operation for diamonds (alluvial); diamonds (in kimberlites); diamonds (general) on Portion 3 (A Portion of Portion 2- Asbestos Hills), Portion 4, Remaining Extent of Portion 9, Portion 13 of the Farm Rietfontein 11 within the Administrative District of Prieska, Northern Cape (10 057-3388 hectares).

## Description of the impact

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

#### 3.3.12 Land capability

#### Source of the impact

Diamonds (alluvial); diamonds (in kimberlites); diamonds (general) prospecting operation.

#### Description of the impact

Loss of land capability through topsoil removal, disturbances and loss of soil fertility if the prospecting operation continues to bulk sampling.

#### 3-3-13 Land use

#### Source of the impact

Diamonds (alluvial); diamonds (in kimberlites); diamonds (general) prospecting operation.

#### Description of the impact

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

#### 3.3.14 Ground water

#### Source of the impact

Potential chemical spills if the prospecting operation continues to bulk sampling. Equipment servicing—Potential diesel and lubricant spills. Equipment parking area – Potential diesel and lubricant spills.

## 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 if the prospecting operation continues to bulk sampling. Equipment servicing—Potential diesel and lubricant spills. Equipment parking area — Potential diesel and lubricant spills.

#### Description of the impact

During the prospecting, 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 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 prospecting activities.

#### Description of the impact

The transformation of natural habitats due to prospecting 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 prospecting 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; prospecting activities.

#### Description of the impact

The construction of the prospecting 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 prospecting 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 prospecting 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; prospecting activities.

#### Description of the impact

The extent of alien invasive species in the area can increase as a result of the prospecting in the natural ecosystem. While general clearing of the area and prospecting 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 prospecting 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, trenches and drill sites, as well as other necessary infrastructure; and the clearing of vegetation for prospecting.

#### Description of the impact

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

## 3.3.21 Loss of, and disturbance to indigenous vegetation

## Source of the impact

The construction of roads, trenches, drill rig, as well as other necessary infrastructure; and the clearing of vegetation for prospecting, materials storage and topsoil stockpiles; vehicular movement.

#### Description of the impact

Construction and prospecting activities on site will reduce the natural habitat for ecological systems to continue their operation. The drill rig and 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 drill rig, vehicles and prospecting equipment.

#### Description of the impact

Diamonds (alluvial); diamonds (in kimberlites); diamonds (general) prospecting 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 prospecting site and drilling locations as well as trenches.

#### 3.3.23 Land use:

#### Source of the impact

Diamonds (alluvial); diamonds (in kimberlites); diamonds (general) prospecting operation.

#### Description of the impact

Loss of economic function of disturbed area during prospecting activities and potential loss of land capability post prospecting (limited to the drilling areas and trenches).

# 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

Listed Applicable Listing Notice (GNR544, GNR545 or GNR546 / Not listed GNR983, GNR984, GNR985/ Not max where spolicable listed)	X NEMA: LN1 (GNR983)	X NEMA: LN1 (GNR983)
Activity Act	Water distribution Pipelines	Clean and dirty water systems on the site.  It is anticipated that the operations will establish storm water control berms and trenches to separate clean and dirty water on the mine site.
Name of activity  (e.g. Excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing:plant, storm water cortrol, berms, roads, pipelines, power lines, conveyors, etcetcetc)	Activity 9: "The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water or storm water- (vii) with an internal diameter of 0.36 metres or more; or (viii) with a peak throughput of 120 litres per second or more;	Activity 12: "The development of— (i) canals exceeding 100 square metres in size; (ii) channels exceeding 100 square metres in size; (iii) bridges exceeding 100 square metres in size; (iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size; (v) weirs, where the weir, including infrastructure and water surface area, exceeds 100 square metres in size; (vi) bulk storm water outlet structures exceeding 100 square metres in size; (vi) buildings exceeding 100 square metres in size; or (xii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs— (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse.

NEMA: LN1 (GNR983)	NEMA: LN1 (GNR983)	NEMA: LN1 (GNR983)	NEMA: LN1 (GNR983)	NEMA: LN2 (GNR984)	NEMA: LN2 (GNR 984)
×			×		×
5km	Chemical toilets for the site Wash bays for the site	To be confirmed after specialist studies have been conducted.	5km	40ha	6613.2836 hectares Although the
Activity 24(iii): The development of haul roads 15 m wide with no reserve.  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 5 km of roads, with a width of 15 meter.	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."	Act, 2004 (Act No. 10 of 2004)."	haul roads 15 m wide with no reserve.  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 5 km of roads, with a width of 15 meter.	indigenous vegetation, excluding where such clearance 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."	Activity 19: The Kimswa Mining operation directly relates to

total area will never be prospected and the footprint with the bulk sampling is	±0.4 per site X NEMA: LN2 (GNR 984)	5km X NEMA: LN2 (GNR 984)	To be confirmed X NEMA: LN3 (GNR985)	5km X NEMA: LN3 (GNR985)	0.5ha NEMWA: Category A (GNR 633)
prospecting of a mineral resource (diamonds) and requires  permission in terms of <b>Section 20</b> (MPRDA), <b>for the removal and</b> with the with the least of bulk samples of any minerals.	Activity 21: The Kimswa Mining operation directly relates to activities associated with the primary processing of a mineral resource.	Activity 27(iv): "The development of— (iv) a road catering for more than one lane of traffic in both directions;" Roads (both access and haulage road on the mine site):	Activity 2: A reservoir with a capacity of more than 250 m3 for bulk water supply.	Activity 4: The development of access roads 6 m in width with no reserve. 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 5 km of roads, with a width of 6 meter.	Activity 15: The continuous establishment and reclamation of temporary stockpiles resulting from activities which require a prospecting right. Product stockpiles

Activity 15: The establishment of residue deposits (slimes dams) resulting from activities which require a prospecting right.	o.5ha	NEMWA: Category A (GNR 633)
Pipelines for the bulk transportation of water with a diameter of < $0.36\mathrm{m}$ and a peak throughput of < $120L/s$ .	To be confirmed	
Pipelines for the bulk transportation of slimes with a diameter of < 0.36 m and a peak throughput of < 120 L/s.		
Pipelines for the bulk transportation of return water with a diameter of < 0.36 m and a peak throughput of < 120 L/s.		
Temporary workshop facilities Temporary workshop facilities Storage facilities Storage facilities Concrete bund walls and diesel depots Ablution facilities Topsoil stockpiles Overburden stockpiles Water tanks Water tanks 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:  The following types of low level hazardous waste in suitable receptacles.  Domestic waste.	± 200 m2 ± 300 m2 ± 3 000 m2 ± 30 m2 ± 500 m2 5 000	Not Listed

#### 3.5 Decommissioning phase/ Closure Period:

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

#### 4. CONCLUSION

It is clear that the destruction of the natural habitat in the prospecting area is inevitable and that there would be both positive and negative impacts related to the prospecting 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 report.

R.H. Oosthuizen

Environmental Assessment Practitioner Wadala Mining and Consulting (Pty) Ltd