

PROPOSED STOCKPILE AREA ON A PORTION OF REMAINING EXTENT OF FARM 89, INGQUZA HILL LOCAL MUNICIPALITY, EASTERN CAPE PROVINCE.

DRAFT BASIC ASSESSMENT REPORT



JUNE 2024

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BASIC ASSESSMENT REPORT

(For official use only)

File Reference Number:

NEAS Number:

Date Received:

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014 as amended, promulgated in terms of the National Environmental Management Act, 1998(Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 as amended and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for. This report is current as of **1 OCTOBER 2022**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable **tick** the boxes that are applicable or **black out** the boxes that are not applicable in the report.
4. An incomplete report may be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
6. This report must be handed in at offices of the relevant competent authority as determined by each authority **unless indicated otherwise by the Department**.
7. No faxed or e-mailed reports will be accepted **unless indicated otherwise by the Department**.
8. The report must be compiled by an independent environmental assessment practitioner (EAP). The EAP must satisfy conditions 11 below.
9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.

10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

11.1 The Environmental Assessment Practitioner (EAP) must be registered in terms of S24H Regulations with the Registration Authority EAPASA as from 8 August 2022.

11.2. S24H (14) states that “only a person registered as an Environmental Assessment practitioner may perform tasks in connection with an application for an environmental authorisation contemplated in

(a) Chapter 5 of the Act read with the Environmental Impact Assessment Regulations.

(b) Section 24G of the Act

(c) Chapter 5 of the National Environmental Management Waste Act 2008 (Act No 59 of 2008) read with the Environmental Impact Assessment Regulations

11.3. Tasks in regulation 14 may only be conducted by an EAP that is registered

11.4. Regulations 20 of S24H indicates the offences and penalties as indicated below:

“20. Offences and penalties

(1) A person is guilty of an offence if that person-

(a) contravenes regulation 14 of the Regulations; or

(b) pretends to be a registered environmental assessment practitioner or registered candidate environmental assessment practitioner.

(2) A person convicted of an offence in terms of subregulation (1) is liable to the penalties contemplated in section 49B(3) of the Act.”

Section 49B(3) of the Act states:

“A person convicted of an offence in terms of section 49A(1)(h), (l), (m), (n), (o) or (p) is liable to a fine or to imprisonment for a period not exceeding one year, or to both a fine and such imprisonment.”

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LIST OF ABBREVIATIONS

ABSA	Aquatic Biodiversity Specialist Assessment
BGIS	Biodiversity GIS
CARA	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)
CBA	Critical Biodiversity Area
DBAR	Draft Basic Assessment Report
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism
DoT	Department of Transport
DWAF	Department of Water Affairs and Forestry
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECP	Eastern Cape Province
ECBCP	Eastern Cape Biodiversity Conservation Plan
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIA Regulations	Environmental Impact Assessment Regulations, 2014 (as amended 2017)
EMPR	Environmental Management Programme
FBAR	Final Basic Assessment Report
FEL	Front-end-loader
GDP	Gross Domestic Product
GNR	Government Notice
I&AP's	Interested and Affected Parties
MHSA	Mine Health and Safety Act, 1996 (Act No. 29 of 1996)
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEM:AQA	National Environmental Management: Air Quality Control Act, 2004 (Act No. 39 of 2004)
NEM:BA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEM:WA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
NFEPA	National Freshwater Ecosystem Priority Areas
NHRA	National Heritage Resources Act, 1999 (Act No 25 of 1999)
NRTA	National Road Traffic Act, 1996 (Act No. 93 of 1996)
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PCO	Pest Control Officer
PAOI	Project Area of Influence
PPE	Personal Protective Equipment
PSM	Palaeontological Sensitivity Map
RA	Risk Assessment
REC	Recommended Ecological Category
S1	Site Alternative 1

S2	Site Alternative 2
S3	Site Alternative 3
SAIIAE	South African Inventory of Inland Aquatic Ecosystems
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
SAMBF	South African Mining and Biodiversity Forum
WMA	Water Management Area
WULA	Water Use Licence Application

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?	YES	
If YES, please complete form XX for each specialist thus appointed:		

Any specialist reports must be contained in Appendix D.

1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail.

The following activities is described for all site alternatives.

Henred Trading (Pty) Ltd (hereafter referred to as the applicant) proposes to establish an area for stockpiling and crushing/screening (if needed) of mined material, on 19.9 hectares on a portion of the Remaining Extent of Farm 89, Ingquza Hill Local Municipality, Eastern Cape Province.

The infrastructure to be used on site will all be of temporary and mobile nature. Containers will be used for office and storage purposes and a weigh bridge will be established (temporary). The storage of fuel (if any) will be below the threshold of the NEMA EIA listed activities. The proposed activity is situated upslope within 200m from a water resource which necessitates a Water Use License Application (WULA) that must be submitted to the Department of Water and Sanitation. The proposed stockpile area, and the plant will be powered with generators. The ablution facilities will be chemical toilets that will be serviced by registered suppliers. The office and storage containers, weigh bridge and ablution facilities will most likely be placed at the entrance to the site, while the crushing equipment will be of mobile nature, moving around the site as needed.

During the site establishment phase the applicant will clear the topsoil from the stockpiling area to allow the stockpiling of the material. Upon stripping, the topsoil will be stockpiled along the boundaries of the area to be used during the rehabilitation phase. The material will be screened/crushed if needed and stockpiled until removed from site.

Should this application be successful, the Applicant intends to:

1. demarcate the boundaries of the stockpile area;
2. strip the topsoil off the earmarked area and stockpile it for later use in rehabilitation;
3. stockpile the processed material (dolerite product) in various size categories within the boundaries of the approved area;
4. process the material through crushing and screening;

5. load and transport the material from the stockpiles onto trucks

Considering this, the Applicant intends to establish the following infrastructure within the boundaries of the proposed area:

- Mobile crushing and screening infrastructure;
- Mobile containers that will be used for offices and storage purposes; and
- Ablution facilities to be used by all employees.

Should the EA be issued, and the proposed activity be allowed, the project will comprise of activities that can be divided into three key phases (discussed in more detail below) namely the:

- (1) *Site establishment/construction phase* which will involve the demarcation of the authorised area. Site establishment will also necessitate the clearing of vegetation, the stripping and stockpiling of topsoil, and the introduction of machinery and equipment.
- (2) *Operational phase* that will entail the stockpiling and crushing (when needed) of the material mined from the quarry on the property until it is transported from site.
- (3) *Decommissioning phase* which entails the rehabilitation of the affected environment. The EA holder will further be responsible for the seeding of all rehabilitated areas.

PHASES OF THE PROJECT

1. Site Establishment Phase:

Site establishment entails the demarcation of the boundaries, clearance of vegetation, and stripping and stockpiling of topsoil as detailed below:

- **Demarcation of Boundaries:**

Pursuant to receipt of the Environmental Authorisation (EA) and prior to site establishment, the boundaries of the approved area will be demarcated with visible beacons.

- **Access Road:**

The proposed stockpile area will be reached via the existing dirt road (Ghanja road) turning from the R61 Engen Garage turnoff. The Applicant proposes to develop a dirt road ± 700 m to allow comfortable movement of project related equipment and vehicles.

- **Clearing of Vegetation:**

(Also refer to Part A(1)(h)(iv)(c) Description of specific environmental features and infrastructures on the site – Site Specific Terrestrial Biodiversity, Conservation Areas, and Groundcover)

According to Mucina and Rutherford (2012) the whole area extends over a vegetation type known as the Pondoland-Ugu Sandstone Coastal Sourveld. According to the Eastern Cape Biodiversity Conservation Plan (ECBCP) – the area is classified as Critical Biodiversity Area (CBA). However, only S1 and S2 can be considered as not being indigenous vegetation as these areas has been previously disturbed by the community. The clearing of vegetation must be contained to the approved footprint, and no vegetation/bush clearance, outside the approved area, may be allowed. Please see mitigation measures as described in Appendix F.

- **Topsoil Stripping:**

It is proposed that topsoil removal will be restricted to the exact footprint of areas required during the operational phase of the activity. The topsoil will be stockpiled at a designated signposted area within the approved boundary to be replaced during the rehabilitation of the area. It will be part of the obligations of site management to prevent the mixing of topsoil heaps with other soil heaps. The complete A-horizon (the top 100 – 200 mm of soil which is generally darker coloured due to high organic matter content) will be removed. If it is unclear where the topsoil layer ends the top 300 mm of soil will be stripped. The topsoil berm will measure a maximum of 2 m in height to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen.

- **Introduction of Machinery and Site Equipment:**

The infrastructure to be used on site will all be of temporary and mobile nature. Containers will be used for office and storage purposes, and a weigh bridge will be established (temporary). The storage of fuel (if any) will be below the threshold of the NEMA EIA listed activities. No water will be abstracted from the proposed stockpile area, and the plant will be powered with generators. The ablution facilities will be chemical toilets that will be serviced by registered suppliers. The office and storage containers, weigh bridge and ablution facilities will most likely be placed at the entrance to the site, while the crushing plant will be of mobile nature, moving around the site as needed.

Presently, the infrastructure/equipment is expected to consist of at least:

- A temporary wash bay;
- ADT trucks;

- Chemical ablution facilities;
- Containers used as site office, workshop, and storage room;
- Crushing and screening plant (mobile);
- Earthmoving- and excavating equipment;
- Weighbridge with control room;
- Generators; and a
- Water truck.

2. *Operational Phase:*

The Applicant submitted this application for environmental authorisation in anticipation of a SANRAL road works tender to construct the Wildcoast Toll Route (N2) between Mthatha and Port Shepstone, including the construction of two bridges. Presently it is proposed that the material from various mining operations will be stockpiled and then used, by the Applicant, as fill material for the intended road works project.

Aggregate will be transported from quarries within the vicinity of the area or from other commercial sites. The rock will then be delivered to the crushing and screening plant where it will be reduced to various sized gravels. The screened material will be delivered to various size category stockpiles. Transportation of the final product will be from the stockpile area to the end point by means of trucks.

Should this application be successful, the Applicant intends to:

1. demarcate the boundaries of the stockpile area;
2. strip the topsoil off the earmarked area and stockpile it for later use in rehabilitation;
3. stockpile the processed material in various size categories within the boundaries of the approved area;
4. process the material through crushing and screening;
5. load and transport the material from the stockpiles onto trucks that will transport it to clients or the Wildcoast Toll Route (N2) road project;

- **Water Use:**

Any water required for the implementation of the project will be bought and transported to the stockpile area (in a truck) where it will be stored in tanks until used. Presently, no washing of material is proposed, and the Applicant will therefore mainly use water for dust suppression purposes on denuded areas, the processing plant, and access road (when needed).

Dust generation will, as far as possible, be managed through alternative dust suppression methods to restrict water use to the absolute minimum. These measures will include a combination of the following:

- The speed of all equipment/vehicles will be restricted to 40 km/h on the internal farm road to minimize dust generation;
- Site management will attempt to lessen denuded areas (dust source) to the absolute minimum;
- Strips of used conveyor belts can be attached to the drop end of the crusher plant where crushed material falls onto the stockpiles. This lessens the blowing of fines from the minerals;
- Compacted dust will weekly be cleaned of the crusher plant to eliminate it as a dust source.

Under very windy/dusty conditions the EA holder might have to substitute the above-mentioned dust suppression methods with the spraying of water, in which case a water truck will moisten the problem areas, and sprayers at the processing plant will moisten the material to alleviate dust generation at the conveyor belts. The water truck driver will receive proper training to ensure effective use of the water on problem areas preventing water wastage. It is proposed that approximately 30 000 litres of water will be needed per day during the dry months (amount to decrease during the rainy season). At present no water is proposed to be drawn from dams or other surface water sources/courses.

- **Electricity Use:**

The proposed project will make use of diesel generators to power the infrastructure. All generators will have secondary containment in the form of a bund wall/drip tray that can contain 110% of the generator's maximum capacity.

- **Servicing and Maintenance:**

A temporary workshop and wash bay will be established on site where minor servicing and emergency repairs of project related equipment/machinery will take place. The wash bay will have an impermeable floor and drain into an oil sump that will be serviced by a qualified contractor. No wash water will be allowed to drain into the surrounding environment. No bulk storing of fuel (>60 000 l) will take place on site, and any chemicals needed at the workshop will be stored in accordance with the product specific safety data sheet in temporary containers/secured cages.

- **Waste Handling:**

Solid (general) waste, generated during the operational phase, will be contained in sealable refuse bins that will be placed at the office area until the waste is transported to a registered general waste landfill site. A registered contractor will service the chemical toilets that will serve as ablution facilities to the employees.

Due to the nature of the project very little generation of hazardous waste is expected and will mainly be the result of accidental spillages or breakdowns. Such contaminated areas will be cleaned up immediately (within two hours of the occurrence) and the contaminated soil will be contained in designated hazardous waste containers that will be kept in a bunded area with impermeable surface until it is removed from site by a registered hazardous waste handling contractor to an approved facility.

Decommissioning Phase:

The decommissioning phase will entail the reinstatement of the stockpile area by removing the stockpiled material, and site infrastructure/equipment and landscaping the disturbed footprints. The reinstated area will be seeded with an appropriate grass mix.

The decommissioning activities will therefore consist of the following:

- Removing all stockpiled material;
- Removing all machinery and equipment from site;
- Landscaping all disturbed areas and replacing the topsoil;
- Vegetating the reinstated area; and
- Controlling/monitoring the invasive plant species.

The future land use of the proposed area will be agriculture. Upon replacement of the topsoil, the area will once again be available for grazing purposes, and the planting of the cover crop (to protect the topsoil) will tie in with the proposed land use.

2. FEASIBLE AND REASONABLE ALTERNATIVES

“alternatives”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;*
- (b) the type of activity to be undertaken;*
- (c) the design or layout of the activity;*
- (d) the technology to be used in the activity;*
- (e) the operational aspects of the activity; and*
- (f) the option of not implementing the activity.*

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Hendred Trading (Pty) Ltd appointed Greenmined Environmental (Pty) Ltd as the environmental impact assessment practitioner (EAP) to undertake the EIA associated with the stockpile (EA) application. The following site alternatives were assessed during the screening phase of this project.

Site alternative 1 (S1)

Henred Trading (Pty) Ltd (hereafter referred to as the applicant) proposes to establish an area for stockpiling and crushing/screening (if needed) of mined material, on 19.9 hectares on a portion of the Remaining Extent of Farm 89, Ingquza Hill Local Municipality, Eastern Cape Province. The proposed area (Figure 1) is over a disturbed area of the farm occasionally used for grazing and agricultural purposes. This area was recommended by the ecologist due to the area being previously disturbed.



Figure 1: Satellite view showing the position of Site Alternative 1 (green polygon) within the surrounding landscape.

Site alternative 2 (S2)

Site Alternative 2 (S2) presented in Figure 2 was also assessed by the ecologist for the proposed stockpile area due to its disturbed conditions. However, it is in Greenmined' s opinion that this area is not practically suitable, as its location within the community could pose a health and safety risk.



Figure 2: Satellite view showing the position of Site Alternative 1 (purple polygon) within the surrounding landscape.

Site Alternative 3 (Initial Site)

The initial site (Figure 3) was assessed for the proposed stockpile area but was found by the ecologist to be environmentally unsuitable due to the pristine conditions of the area. Site alternative 1, was recommended by the specialist as a site alternative as this is the only area that will be viable for the applicant due to the area being previously disturbed.



Figure 3: Satellite view showing the position of Site Alternative 1 (red polygon) within the surrounding landscape.

No-go Alternative:

The no-go alternative entails no change to the *status quo* and is therefore a real alternative that needs to be considered. The aggregate to be stockpiled will be utilized for the building, road rehabilitation/maintenance and associated construction industry, if however, the no-go alternative is implemented the Applicant could not utilise the stored mineral resource on this property and the construction industry of Lusikisiki will not benefit from diversification of gravel sources which will escalating product costs.

Paragraphs 3 – 13 below should be completed for each alternative.

3. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

List alternative sites if applicable.

Alternative:	Latitude (S):		Longitude (E):	
	Alternative S1 ¹ (preferred or only site alternative)	31°	20.621'	29°
Alternative S2 (if any)	31°	20.226'	29°	45.261'
Alternative S3 (if any)	31°	21.074'	29°	47.421'

In the case of linear activities:

Alternative:	Latitude (S):	Longitude (E):
Alternative S1 (preferred or only route alternative)		
• Starting point of the activity		
• Middle point of the activity		
• End point of the activity		
Alternative S2 (if any)		
• Starting point of the activity		
• Middle point of the activity		
• End point of the activity		
Alternative S3 (if any)		
• Starting point of the activity		
• Middle point of the activity		
• End point of the activity		

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

¹ "Alternative S.." refer to site alternatives.

4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:		Size of the activity:
Alternative A1 ² (preferred activity alternative)		19.9 m ²
Alternative A2 (if any)		19 m ²
Alternative A3 (if any)		19 m ²

or, for linear activities:

Alternative:		Length of the activity:
Alternative A1 (preferred activity alternative)		
Alternative A2 (if any)		
Alternative A3 (if any)		

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:		Size of the site/servitude:
Alternative A1 (preferred activity alternative)		19.9 m ²
Alternative A2 (if any)		19 m ²
Alternative A3 (if any)		19 m ²

5. SITE ACCESS

Does ready access to the site exist?	YES
If NO, what is the distance over which a new access road will be built	
Describe the type of access road planned:	

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

6. SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all trees and shrubs taller than 1.8 metres;

² "Alternative A.." refer to activity, process, technology or other alternatives.

- 6.7 walls and fencing including details of the height and construction material;
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
 - rivers;
 - the 1:100 year flood line (where available or where it is required by DWA);
 - ridges;
 - cultural and historical features;
 - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 6.9 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 6.10 the positions from where photographs of the site were taken.

7. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this form. It must be supplemented with additional photographs of relevant features on the site, if applicable.

8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

9. ACTIVITY MOTIVATION

9(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	±R66 600 000
What is the expected yearly income that will be generated by or as a result of the activity?	±R 33 300 000
Will the activity contribute to service infrastructure?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Is the activity a public amenity?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
How many new employment opportunities will be created in the development phase of the activity?	±4
What is the expected value of the employment opportunities during the development phase?	R1 700 000
What percentage of this will accrue to previously disadvantaged individuals?	50%
How many permanent new employment opportunities will be created during the operational phase of the activity?	±8

What is the expected current value of the employment opportunities during the first 10 years?	R12 000 000
What percentage of this will accrue to previously disadvantaged individuals?	100%

9(b) Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

The main objective of the stockpile area is to store mined material from nearby mines, which will be used for constructing the Wildcoast Toll Route (N2) between Mthatha and Port Shepstone, including the construction of two bridges.

Constructing a stockpile area is essential to provide ample space for the large quantities of aggregate needed for road construction activities and to ensure a steady supply of materials, which is crucial for uninterrupted development. This helps in maintaining project schedules and avoiding delays.

Indicate any benefits that the activity will have for society in general:

The stockpile area will contribute to the Road infrastructure development which plays a vital role in the well-being and growth of communities such as:

Economic Growth

- Improves Accessibility: Better roads enhance access to markets, jobs, education, and health services, boosting economic activities and opportunities.
- Stimulates Investment: Improved infrastructure attracts businesses and investors, leading to job creation and economic diversification.
- Reduces Transportation Costs: Efficient road networks lower the cost of transporting goods and services, benefiting businesses and consumers alike.

Social Benefits

- Enhances Mobility: Good roads provide people with greater freedom to travel, improving access to social activities and services.
- Promotes Safety: Well-designed roads with proper signage and maintenance reduce the likelihood of accidents, improving overall safety.
- Improves Health Access: Easier and faster access to healthcare facilities can lead to better health outcomes for the community.

Emergency Response

- Facilitates Quick Response: Good roads enable faster response times for emergency services, such as ambulances, fire trucks, and police, during emergencies.
- Supports Disaster Management: Robust infrastructure aids in efficient evacuation and delivery of aid during natural disasters.

Educational Opportunities

- Facilitates School Access: Children can travel to schools more safely and easily, increasing attendance and educational attainment.

- Supports Educational Infrastructure: Easier transport of educational materials and resources enhances the quality of education.
- Indicate any benefits that the activity will have for the local communities where the activity will be located:

Considering the above-mentioned benefits, by establishing and maintaining stockpile areas, it will result in job creation for local workers, providing employment opportunities in the community. It will also increase the demand for services such as transportation, equipment rentals, and maintenance which supports local businesses. The activity will overall improve the economic growth of the area.

10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline:	Administering authority:	Date:
<p>National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2014 (as amended by GNR 326 effective 7 April 2017)</p> <ul style="list-style-type: none"> • <u>GNR 983 Listing Notice 1 Activity 27 as amended:</u> The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation. • <u>GNR 985 Listing Notice 1 Activity 28 as amended:</u> Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: <ul style="list-style-type: none"> ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare. <ul style="list-style-type: none"> o excluding where such land has already been developed for residential, mixed, retail, 	<p>Eastern Cape Department of Economic Development, Environmental Affairs and Tourism</p>	<p>2014 as amended</p>

<p>commercial, industrial or institutional purposes.</p> <ul style="list-style-type: none"> • <u>GNR 985 Listing Notice 3 Activity 12 as amended:</u> <p>The clearance of an area of 300 square metres or more of indigenous vegetation.</p> <p>Eastern Cape</p> <p>i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;</p> <p>ii. Within critical biodiversity areas identified in bioregional plans;</p>		
<p>Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).</p>	<p>Department Of Rural Development and Agrarian Reform</p>	<p>1983 as amended</p>
<p>National Environmental Management: Air Quality Control Act, 2004 (Act No 39 of 2004) read together with applicable amendments and regulations thereto specifically the National Dust Control Regulations, GN No R827.</p>	<p>Eastern Cape Department of Economic Development, Environmental Affairs and Tourism</p>	<p>2004 as amended</p>
<p>National Environmental Management Act: Biodiversity Act, 2004 (Act No. 10 of 2004) read together with applicable amendments and regulations thereto.</p>	<p>Eastern Cape Department of Economic Development, Environmental Affairs and Tourism</p>	<p>2004 as amended</p>
<p>National Heritage Resources Act. 1999 (Act No 25 of 1999).</p>	<p>South African Heritage Resources Agency</p>	<p>1999 as amended</p>
<p>National Water Act, 1998 (Act No 36 of 1998) read together with applicable amendments and regulations thereto.</p>	<p>Department of Water and Sanitation</p>	<p>1998 as amended</p>

Public Participation Guideline in terms of the NEMA EIA Regulations	Eastern Cape Department of Economic Development, Environmental Affairs and Tourism	2004 as amended
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11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

11(a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?		NO
If yes, what estimated quantity will be produced per month?		
How will the construction solid waste be disposed of (describe)?		
Where will the construction solid waste be disposed of (describe)?		
Will the activity produce solid waste during its operational phase?	YES	
If yes, what estimated quantity will be produced per month?	5m ³	
How will the solid waste be disposed of (describe)?		
<p>Due to the nature of the project, the small scale of the proposed operation, and the fact that no permanent infrastructure will be established, very little to no general waste will be generated. Numerous general waste bins will be situated around the stockpile area and will be disposed of in a waste skip, which will be emptied once a month at the waste landfill site in Lusikisiki.</p> <p>Should any emergency vehicle repairs be done all spills must be disposed of in a 200-litre closed container/bin found inside the emergency service area.</p>		
Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?		
Not applicable, since general/ domestic waste will be generated.		
If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.		
Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?		NO
If yes, inform the competent authority and request a change to an application for scoping and EIA.		

Is the activity that is being applied for a solid waste handling or treatment facility?		NO
If yes, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.		

11(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?		NO	
If yes, what estimated quantity will be produced per month?	m ³		
Will the activity produce any effluent that will be treated and/or disposed of on site?		NO	
If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.			
Will the activity produce effluent that will be treated and/or disposed of at another facility?		NO	
If yes, provide the particulars of the facility:			
Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:			Cell:
E-mail:			Fax:
Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:			

11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?		NO
If yes, is it controlled by any legislation of any sphere of government?		NO
If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.		
If no, describe the emissions in terms of type and concentration:		

Emission into the atmosphere is controlled by the National Environmental Management: Air Quality Act, 2004. The proposed activity does not trigger an application in terms of the said act, and emissions to be generated is expected to mainly entail dust due to the displacement of soil, crushing and screening of hard rock, and the transport of material on gravel roads. Should the Applicant implement the mitigation measures proposed in this document and the EMPR the impact on the air quality of the surrounding environment is deemed to be of low significance

11(d) Generation of noise

Will the activity generate noise?	YES	
If yes, is it controlled by any legislation of any sphere of government?		NO
If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.		
If no, describe the noise in terms of type and level:		
<p>The noise to be generated at the proposed stockpile area will increase daily noise levels as noise will be generated because of crushing and screening as well as transporting of material.</p> <p>Although the proposed activity will have an impact on the ambient noise levels, the development will not take place in a pristine environment and will only be of temporary nature. The impact is therefore deemed acceptable with the provision that the mitigation measures and monitoring programmes (specified in Appendix F - EMPPr) are implemented.</p>		

12. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es)

	other	
If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate		
the volume that will be extracted per month:		liters
Does the activity require a water use permit from the Department of Water Affairs?	YES	
If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.		
Attached as Appendix G1		

13. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:
N/A
Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:
N/A

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No.
(e.g. A):

1. Paragraphs 1 - 6 below must be completed for each alternative.

2. Has a specialist been consulted to assist with the completion of this section?	YES	
If YES, please complete form XX for each specialist thus appointed:		
All specialist reports must be contained in Appendix D.		

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50	–	1:20	–	1:15	–	1:10	–	1:7,5	–	Steeper than
	1:20		1:15		1:10		1:7,5		1:5		1:5

Alternative S2 (if any):

Flat	1:50	–	1:20	–	1:15	–	1:10	–	1:7,5	–	Steeper than
	1:20		1:15		1:10		1:7,5		1:5		1:5

Alternative S3 (if any):

Flat	1:50	–	1:20	–	1:15	–	1:10	–	1:7,5	–	Steeper than
	1:20		1:15		1:10		1:7,5		1:5		1:5

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

Site Alternatives	Landform type
Site Alternative 1	Undulating plain / low hills
Site Alternative 2	Undulating plain / low hills
Site Alternative 3	Undulating plain / low hills

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following (tick the appropriate boxes)?

	Alternative S1:		Alternative S2 (if any):		Alternative S3 (if any):	
	YES	NO	YES	NO	YES	NO
Shallow water table (less than 1.5m deep)	YES	NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO	YES	NO	YES	NO
An area sensitive to erosion	YES	NO	YES	NO	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

FINDINGS OF THE SOIL AND AGRICULTURAL POTENTIAL ASSESSMENT (APPENDIX D)

➤ SITE ALTERNATIVE 3 (INITIAL SITE)

According to the Soil and Agricultural Assessment (Appendix D), the most sensitive soil form found in the proposed project area includes Avalon form with a land potential “L4” and ultimately a “Moderate” sensitivity due to the climatic conditions. The Tshiombo, Oakleaf and Fernwood soil forms were also identified within the project area and have “Medium” sensitivity. Moreover, the less sensitive soil forms including Glenrosa and Mispah forms are categorised as “Low” sensitive due to their very restrictive permeability and inundated properties. The agricultural theme also indicates the presence of very high and high sensitive land capability soils within the project buffer development footprint. The baseline soil findings dispute the agricultural screening theme to an extent.

It is the specialist’s opinion that the proposed development will have an overall low residual impact on the agricultural production ability of the land. There it is the specialist’s opinion that, the proposed development may be favourably considered and the implementation of mitigation measures to ensure low residual expected significant impacts occurrence.

Management Measures

An impact assessment is not required to be included in the Agricultural compliance statement, but where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMP must be provided. The following measures are provided:

- Vegetation clearance must be restricted to areas authorised for development;
- Land clearing and preparation may only be undertaken immediately prior to construction activities and within authorised areas;
- A stormwater management plan must be developed and implemented for the project; and
- If soil erosion is detected, the area must be stabilised using geo-textiles and facilitated re-vegetation.

Statement Conditions

Authorisation of the project is subject to the availability of a concurrent rehabilitation plan, in consideration of closure objectives.

Layout Approval

It is the opinion of the specialist that the layout is acceptable and may be considered favourably for approval by the Competent Authority.

➤ SITE ALTERNATIVE 1 AND SITE ALTERNATIVE 2

Based on the assessment undertaken in this report it was found that the Initial Stockpile Area is not a viable site for development purposes and as such alternative sites had to be considered. Following this, two site alternatives site for the stockpile area were provided by Greenmined (2024) and has been assessed on a desktop basis.

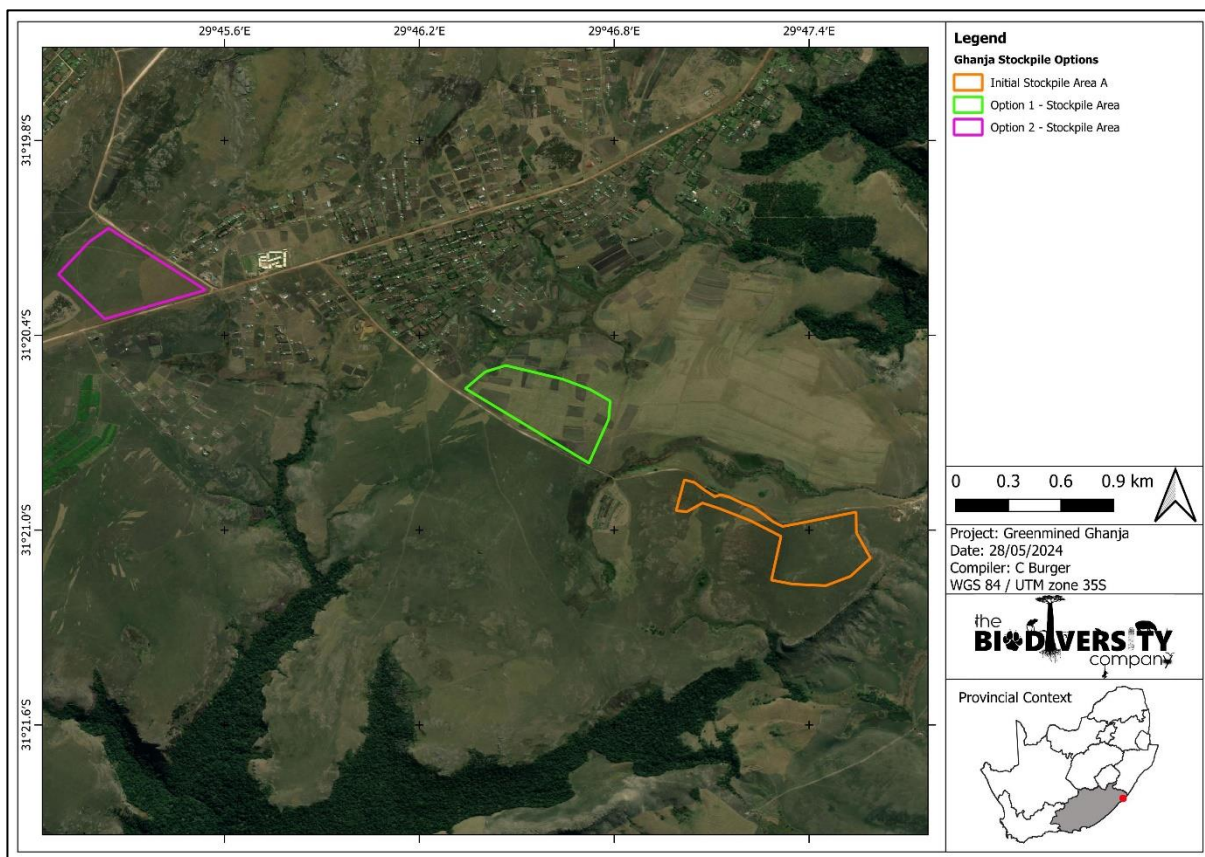


Figure 4: Map illustrating the Stockpile Alternatives

Desktop Assessment

- **Climate**

The options fall within the Pondoland-Ugu Sandstone Coastal Sourveld vegetation. It is characterised with strong summer rainfall with some rain in winter and no or very infrequent incidence of frost. The area has a MAP ranging is approximately 1075 mm (Mucina & Rutherford, 2006). This is similar to what has been presented for the Initial Stockpile Area.

- **Geology & Soils**

The geology of the Initial Stockpile Area and Option 1 is described as quartzite sandstone of the Natal Group. The total extent of these two options is characterised by the Ad land type. The geology of Option 2 is described as sandstone of the Natal Group. The extent of this options is characterised by the Aa and Ad land type.

The Ad 47 land type mainly consists of Clovelly and Oakleaf soil forms according to the Soil classification working group (1991), with the occurrence of other soils within the landscape. The Ad land type is also characterised by red-yellow apedal, freely drained soils; yellow, dystrophic and/or mesotrophic. The land terrain units for the featured Ad 47 land type are illustrated in the figure below with the expected soils listed in the table below.

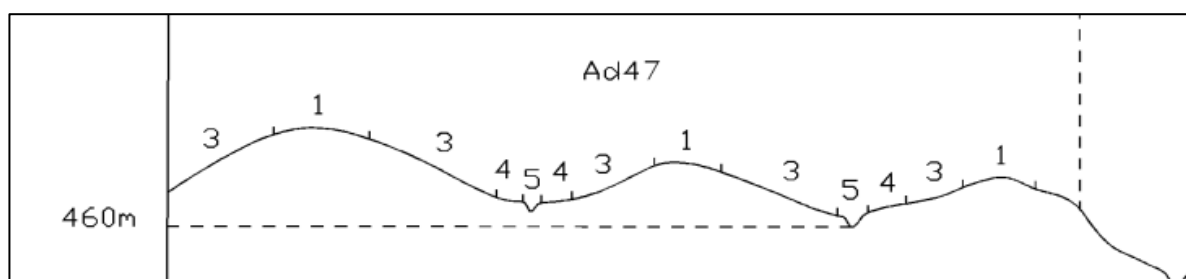


Figure 5: Illustration of land type Ad 47 terrain units (Land Type Survey Staff, 1972 – 2006)

Table 1: Soils expected at the respective terrain units within Ad 47 land type (Land Type Survey Staff, 1972 – 2006)

Terrain units							
1 (25%)		3 (70%)		4 (3%)		5 (2%)	
Clovelly	35%	Clovelly	20%	Clovelly	70%	Oakleaf	55%
Mispah	20%	Mispah	20%	Cartref	10%	Stream Beds	40%
Magwa	20%	Magwa	20%	Oakleaf	10%	Bare Rocks	5%
Cartref	10%	Bare Rocks	20%	Mispah	5%		
Bare Rocks	10%	Cartref	10%	Bare Rocks	5%		
Glenrosa	5%	Glenrosa	5%				
		Inanda, Hutton	5%				

The Aa 27 land type mainly consists of the Kranskop soil form according to the Soil classification working group (1991), with the occurrence of other soils within the landscape. The Aa land type is also characterised by red-yellow apedal, freely drained soils; a humic horizon. The land terrain units for the featured Ad 47 land type are illustrated in the figure below with the expected soils listed in the table below.

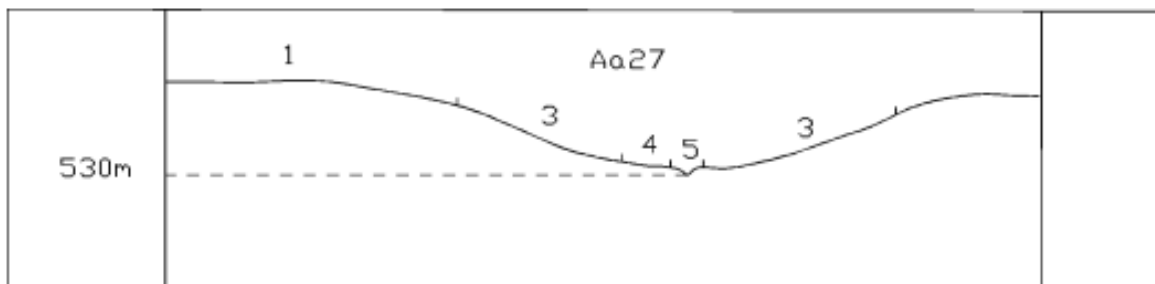


Figure 6: Illustration of land type Aa 27 terrain units (Land Type Survey Staff, 1972 – 2006)

Table 2: Soils expected at the respective terrain units within Aa 47 land type (Land Type Survey Staff, 1972 – 2006)

Terrain units							
1 (50%)		3 (40%)		4 (5%)		5 (5%)	
Kranskop	73%	Kranskop	84%	Kranskop	20%	Katspruit	40%
Mispah	12%	Mispah	2%	Katspruit	30%	Champagne	30%
Mayo	4%	Mayo	5%	Nomanci	20%	Stream Beds	30%
Nomanci	7%	Nomanci	5%	Champagne	30%		
Hutton	4%	Hutton	4%				

Conclusion

It is the specialist’s opinion that either option is feasible, and no fatal flaws are expected for the project. In the event either option, notably Option 1 is developed and there is a loss of crop or livestock agriculture, landowner compensation is likely to be required for the loss of agricultural activities.

The Agriculture Theme Sensitivity for all three options is similar and falls within the “Medium to Very High” agricultural sensitivity range.

4. GROUNDCOVER

Indicate the types of groundcover present on the site:

- 4.1 Natural veld – good condition^E
- 4.2 Natural veld – scattered aliens^E
- 4.3 Natural veld with heavy alien infestation^E
- 4.4 Veld dominated by alien species^E
- 4.5 Gardens
- 4.6 Sport field
- 4.7 Cultivated land
- 4.8 Paved surface
- 4.9 Building or other structure
- 4.10 Bare soil

Site Alternatives	Groundcover
Site Alternative 1	Cultivated land
Site Alternative 2	Bare soil
Site Alternative 3	Natural veld – good condition

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

	Alternative S1:		Alternative S2 (if any):		Alternative S3 (if any):	
Natural veld - good condition ^E		NO		NO	YES	
Natural veld with scattered aliens ^E	YES		YES		YES	NO
Natural veld with heavy alien infestation ^E		NO		NO		NO
Veld dominated by alien species ^E		NO		NO		NO
Gardens		NO		NO		NO
Sport field		NO		NO		NO
Cultivated land	YES			NO		NO
Paved surface		NO		NO		NO
Building or other structure		NO		NO		NO
Paved surface		NO		NO		NO
Bare soil		NO	YES			NO

If any of the boxes marked with an “^E” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

FINDINGS OF THE TERRESTRIAL BIODIVERSITY IMPACT ASSESSMENT (APPENDIX D2)

➤ SITE ALTERNATIVE 3 (INITIAL SITE)

As per the Terrestrial Biodiversity Impact Assessment (Appendix D2), the project area of influence (PAOI) has been altered, albeit limited, both currently and historically. Historically, grazing from livestock and mismanagement has led to (limited) deterioration of the area. The area can be regarded as important, not only within the local landscape, but also regionally; as it is used for habitat, foraging and movement corridors for fauna within a landscape fragmented.

Completion of the terrestrial biodiversity assessment led to a corroboration of the 'Very High' classification for the terrestrial biodiversity theme sensitivity as allocated by the National Environmental Screening Tool and the following aspects support this corroboration:

- Intact CBA 1 areas;
- Natural state of the area;
- Supports flora SCC; and
- Provides suitable habitat for fauna SCC.

The ecological integrity, importance and functioning of these terrestrial biodiversity areas provide a variety of ecological services considered beneficial, with one key service being the maintenance of biodiversity. The preservation of these systems is an important aspect to consider for the proposed project.

Layout Amendment and Way forward

Based on the finding of the assessment the PAOI is categorised as 'Very High' SEI.

It is the specialist recommendation that only the Mining Permit Area as illustrate in the figure below be considered for the proposed project (5 ha). Furthermore, the Stockpile area (19 ha) should be designated as an area to be conserved by the applicant. This will reduce the size of the project substantially and may reduce the SEI of the Mining Permit Area to a 'High' SEI (As per the SEI guidelines the FI will be Medium (> 5 ha but < 20 ha) semi-intact area for any conservation status of ecosystem type).

It is imperative that the following be implemented:

- A site walkdown must be conducted during the correct flowering season prior to the commencement of construction activities and all protected flora species and flora SCC must be avoided or the relevant permits obtained to carry out a plant search and rescue;

- A Strict Closure Plan must be developed and implemented for the Mining Right Area;
- A Biodiversity Offset must be considered;
- The managing of edge affects will be imperative, and all mitigation measures mention in this report must be implemented; and
- An alternative site must be identified for the stockpile area such as nearby modified areas (cultivated lands).

Please refer to the assessments below for the alternative sites identified for the Stockpile area.

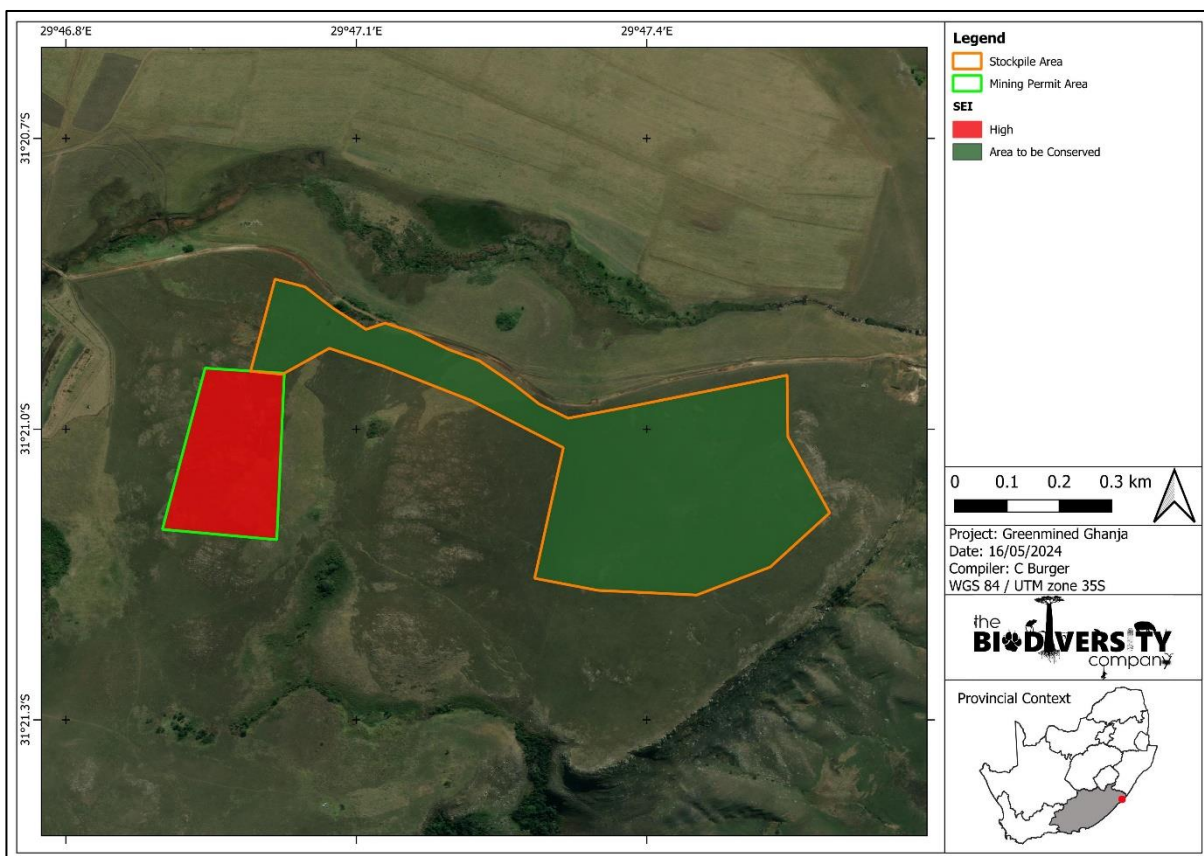


Figure 7: Site Ecological Importance of the PAOI based on the amended layout and way forward

➤ **SITE ALTERNATIVE 1 AND SITE ALTERNATIVE 2**

As mentioned previously, the Terrestrial Biodiversity Specialist (Appendix D1) found that the Initial Stockpile Area (Site Alternative 3) is not a viable site for development purposes and as such alternative sites had to be considered. Following this, two site alternatives site for the stockpile area were provided by Greenmined (2024) and has been assessed on a desktop basis (Figure 8).

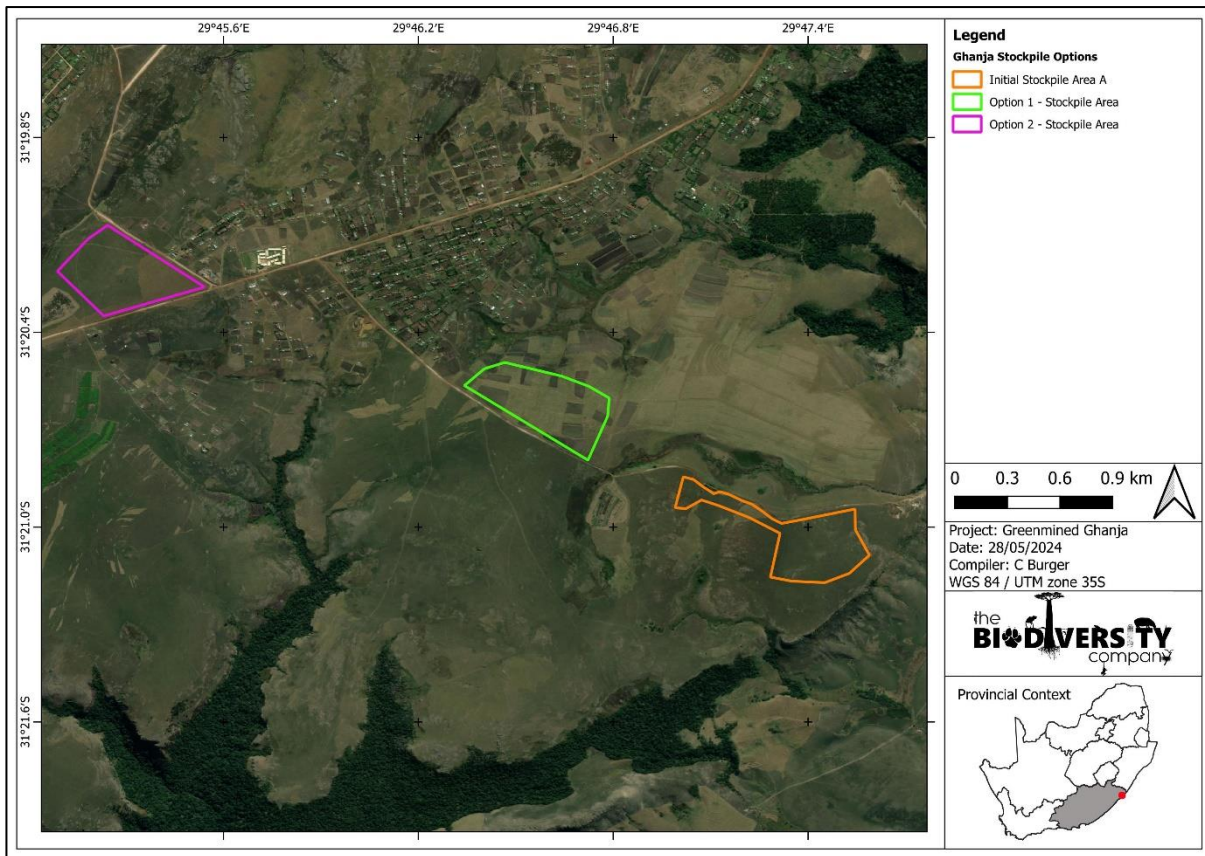


Figure 8: Map illustrating the Stockpile Alternatives

Desktop Assessment

Ecologically Important Landscape Features

The relevance of the proposed development to ecologically important landscape features are summarised in the table below.

Table 3: Summary of relevance of the proposed project to ecologically important landscape features

Desktop Information Considered	Stockpile Option 1	Stockpile Option 2
Ecosystem Threat Status (RLE 2021)	Overlaps with a 'Vulnerable' ecosystem	Overlaps with a 'Vulnerable' ecosystem
Ecosystem Protection Level	Overlaps with a 'Poorly Protected' Ecosystem	Overlaps with a 'Poorly Protected' Ecosystem
Provincial Conservation Plan	Overlaps with CBA 1	Overlaps with CBA 1
SAPAD & SACAD	Is not located within 5 km of a Protected or Conservation area.	Is not located within 5 km of a Protected or Conservation area.
National Protected Areas Expansion Strategy	Does not overlap with a NPAES area	Overlaps with a NPAES Priority Focus Areas
Important Bird & Biodiversity Areas (IBA)	Is located 15 km from the nearest IBA	Is located 14 km from the nearest IBA
South African Inventory of Inland Aquatic Ecosystems (SAIIAE)	500 m Regulated Area does not overlap with any wetlands or rivers	500 m Regulated Area overlaps with 'Critically Endangered' Wetland

Desktop Information Considered	Stockpile Option 1	Stockpile Option 2
National Freshwater Priority Area	Does not overlap with any NFEPA wetlands or rivers	Does not overlap with any NFEPA wetlands or rivers
Strategic Water Source Areas (SWSA)	Does not overlap with any SWSAs	Does not overlap with any SWSAs
Mining and Biodiversity Guidelines	Does not overlap with areas at risk for mining	According to the Mining and Biodiversity Guidelines spatial dataset (2013), the Stockpile Option 2 is of highest BI and there is therefore a correlating highest risk for mining

The Ecosystem Threat Status is an indicator of an ecosystem’s wellbeing, based on the level of change in structure, function or composition. Ecosystem types are categorised as Critically Endangered (CR), Endangered (EN), Vulnerable (VU) or Least Concern (LC), based on the proportion of the original extent of each ecosystem type that remains in good ecological condition. According to the Red List of Ecosystems dataset (Skowno & Monyeki, 2021) both Stockpile options overlap with a VU ecosystem (Figure 9).

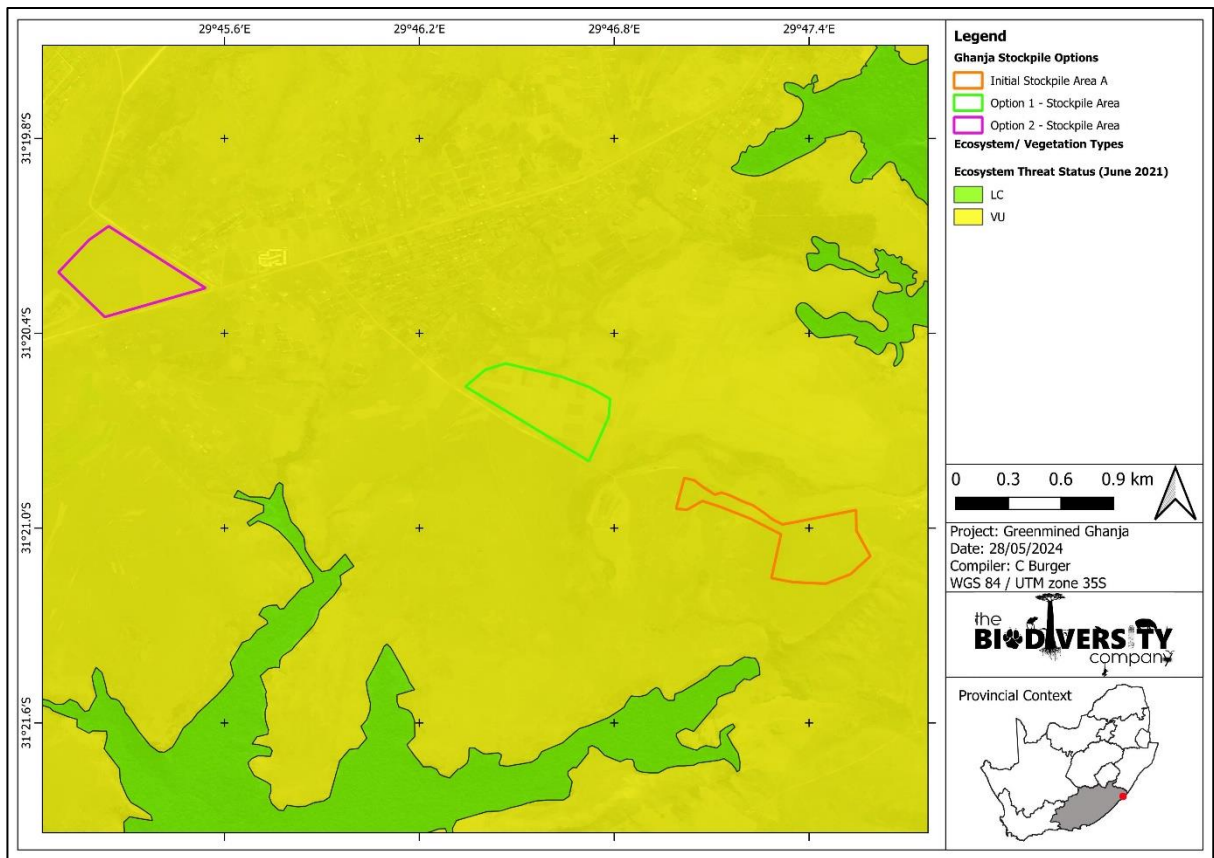


Figure 9: Map illustrating the ecosystem threat status associated with the PAOI.

Ecosystem Protection Level

Indicator of the extent to which ecosystems are adequately protected or under-protected. Ecosystem types are categorised as Well Protected (WP), Moderately Protected (MP), Poorly Protected (PP), or

Not Protected (NP), based on the proportion of the biodiversity target for each ecosystem type that is included within one or more protected areas. Not Protected, PP or MP ecosystem types are collectively referred to as under-protected ecosystems. Both Stockpile options overlaps with a PP ecosystem (Figure 10).

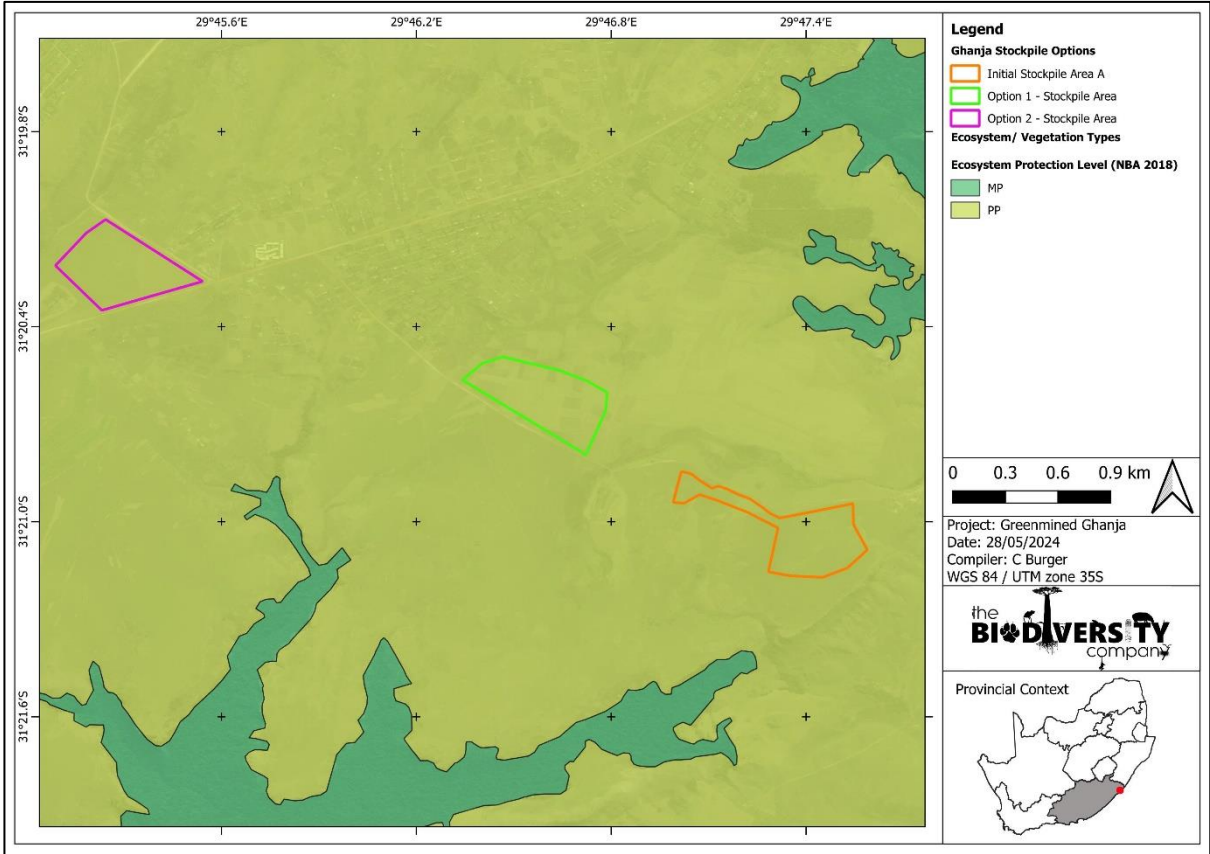


Figure 10: Map illustrating the ecosystem protection level associated with the PAOI.

Provincial Conservation Plan

The Eastern Cape’s Biodiversity Conservation Plan (Berliner et al 2007) addresses the urgent need to identify and map critical biodiversity areas and priorities for conservation in the province.

Both Stockpile options overlaps with a CBA 1 area (Figure 11).

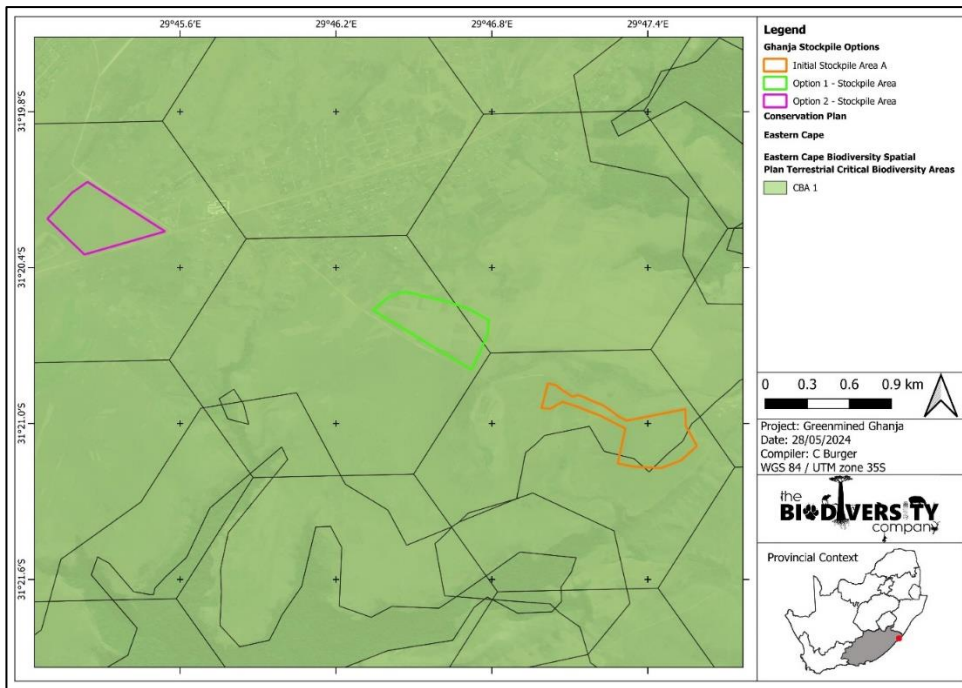


Figure 11: Map illustrating the PAOI in relation to the Northern Cape CBA Map.

National Protected Areas Expansion Strategy

According to the latest NPAES dataset Stockpile Option 1 does not overlap with a NPAES area, while Stockpile Option 2 overlaps with a NPAES Priority Focus Areas.

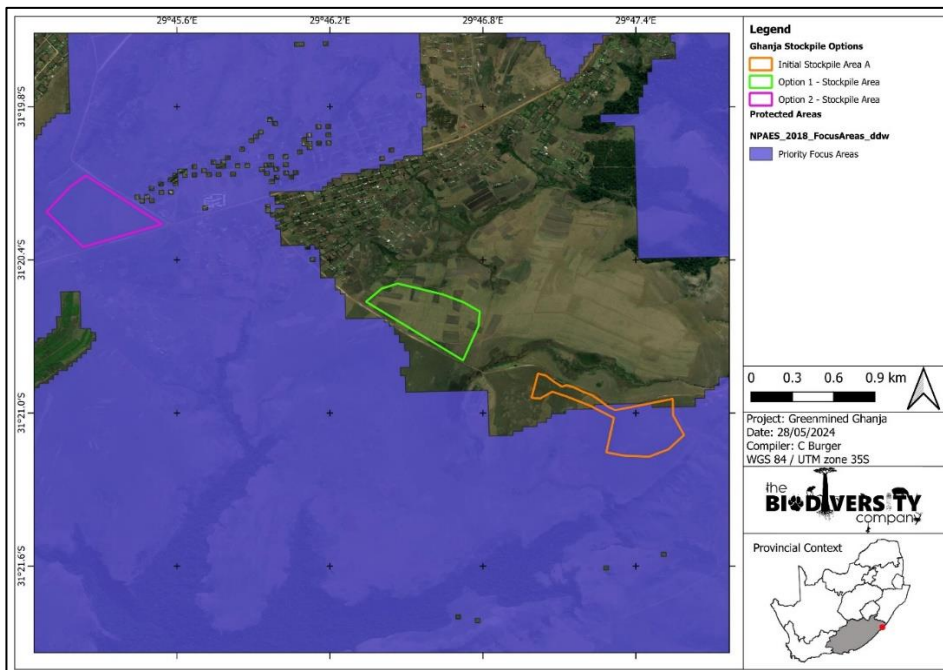


Figure 12: Map illustrating the PAOI location in relation to the latest NPAES dataset.

Important Bird and Biodiversity Areas

The Stockpile options are located 14 km and 15 km from the nearest IBA, respectively.

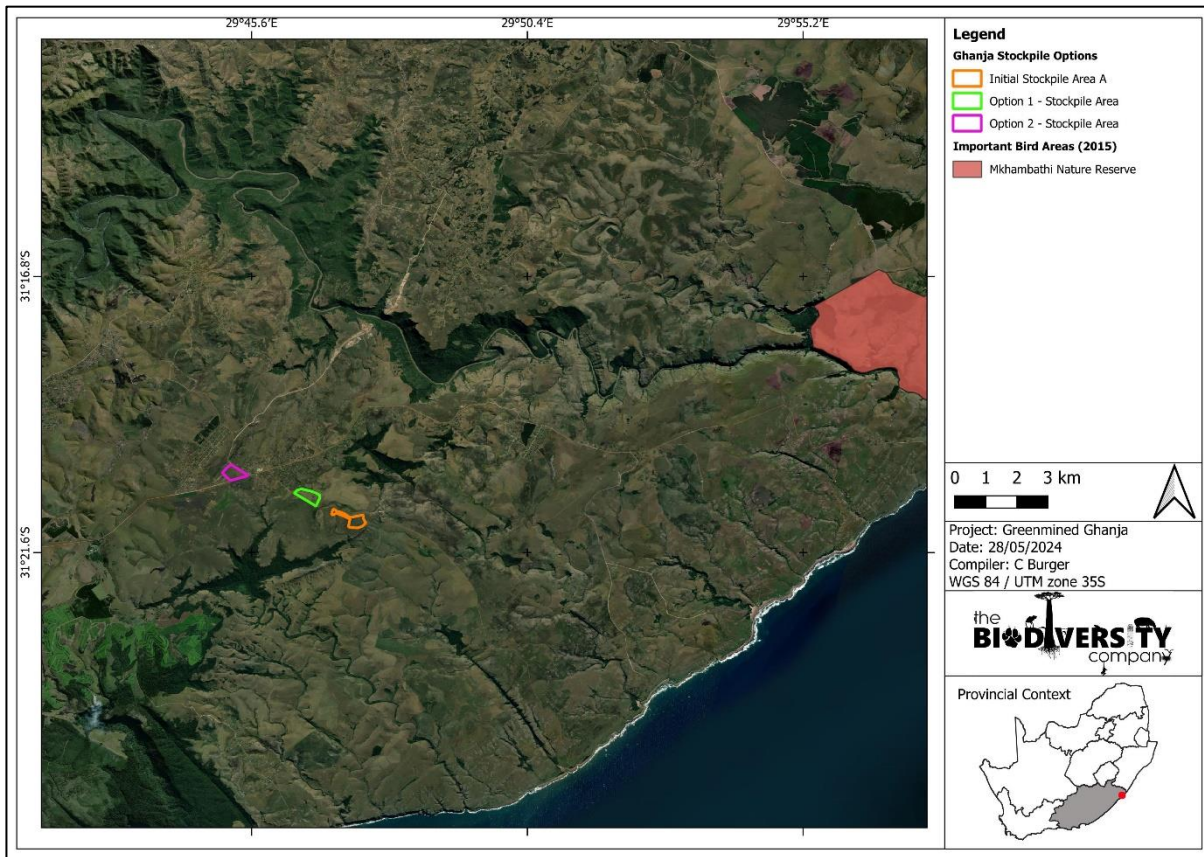


Figure 13: Map illustrating the PAOI in relation to the 2015 IBA dataset.

South African Inventory of Inland Aquatic Ecosystems

The South African Inventory of Inland Aquatic Ecosystems (SAIIAE) was released with the NBA in 2018. Ecosystem threat status (ETS) of river and wetland ecosystem types are based on the extent to which each river ecosystem type had been altered from its natural condition. Ecosystem types are categorised as CR, EN, VU or LT, with CR, EN and VU ecosystem types collectively referred to as 'threatened' (Van Deventer *et al.*, 2019; Skowno *et al.*, 2019). Stockpile Option 1's 500 m Regulated Area does not overlap with any wetlands or rivers, while Stockpile Option 2's 500 m Regulated Area overlaps with a 'Critically Endangered' Wetland (Figure 14).

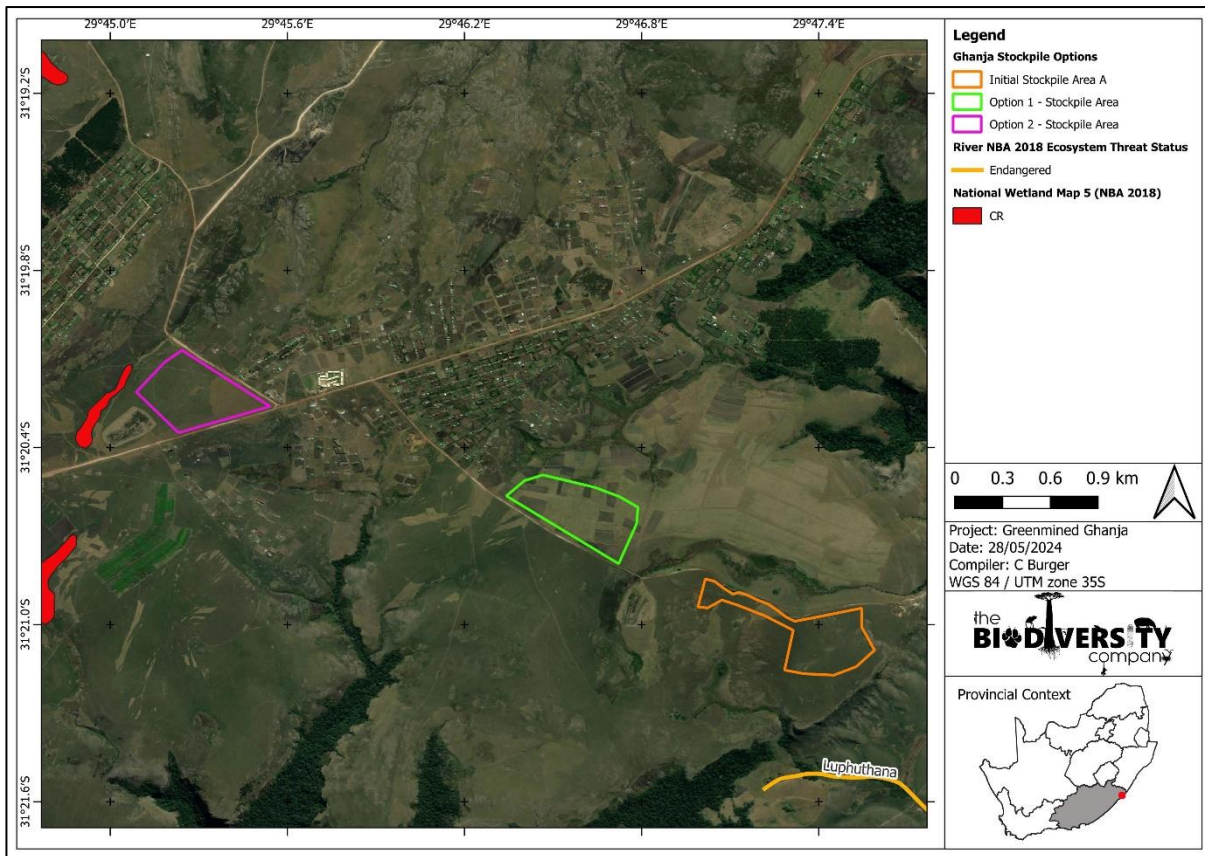


Figure 14: Map illustrating the PAOI in relation to the South African Inventory of Inland Aquatic Ecosystems dataset.

National Freshwater Ecosystem Priority Area Status

In an attempt to better conserve aquatic ecosystems, South Africa has categorised its river systems according to set ecological criteria (i.e., ecosystem representation, water yield, connectivity, unique features, and threatened taxa) to identify Freshwater Ecosystem Priority Areas (FEPAs) (Driver *et al.*, 2011). The FEPAs are intended to be conservation support tools and envisioned to guide the effective implementation of measures to achieve the National Environment Management Biodiversity Act’s (NEM:BA) biodiversity goals (Nel *et al.*, 2011). Both stockpile options 500 m Regulated Area does not overlap with any NFEPA wetlands or rivers (Figure 15).

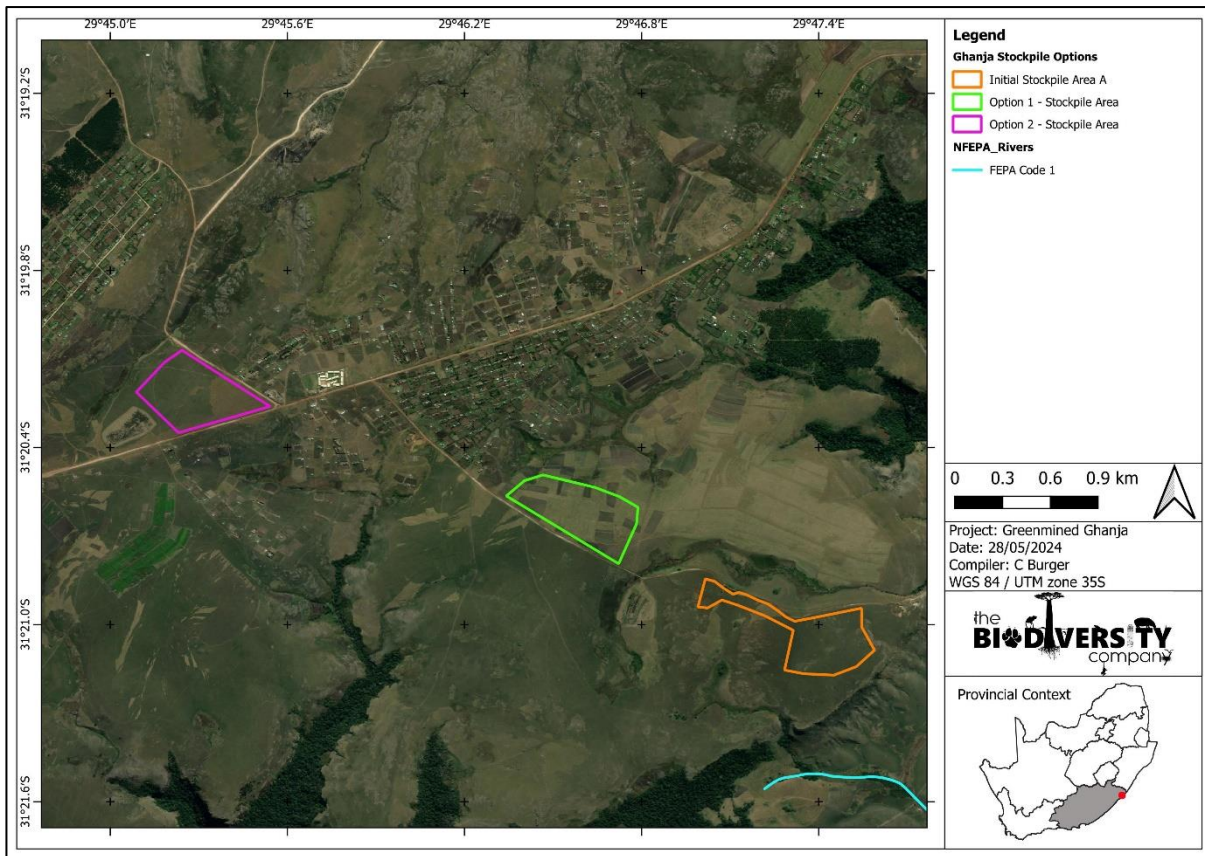


Figure 15: Map illustrating the PAOI in relation to the National Freshwater Ecosystem Priority Area dataset.

Mining and Biodiversity Guidelines

According to the Mining and Biodiversity Guidelines spatial dataset (2013), Stockpile Option 1 does not overlap with areas at risk for mining, while Stockpile Option 2 is of highest BI and there is therefore a correlating highest risk for mining (Figure 16).

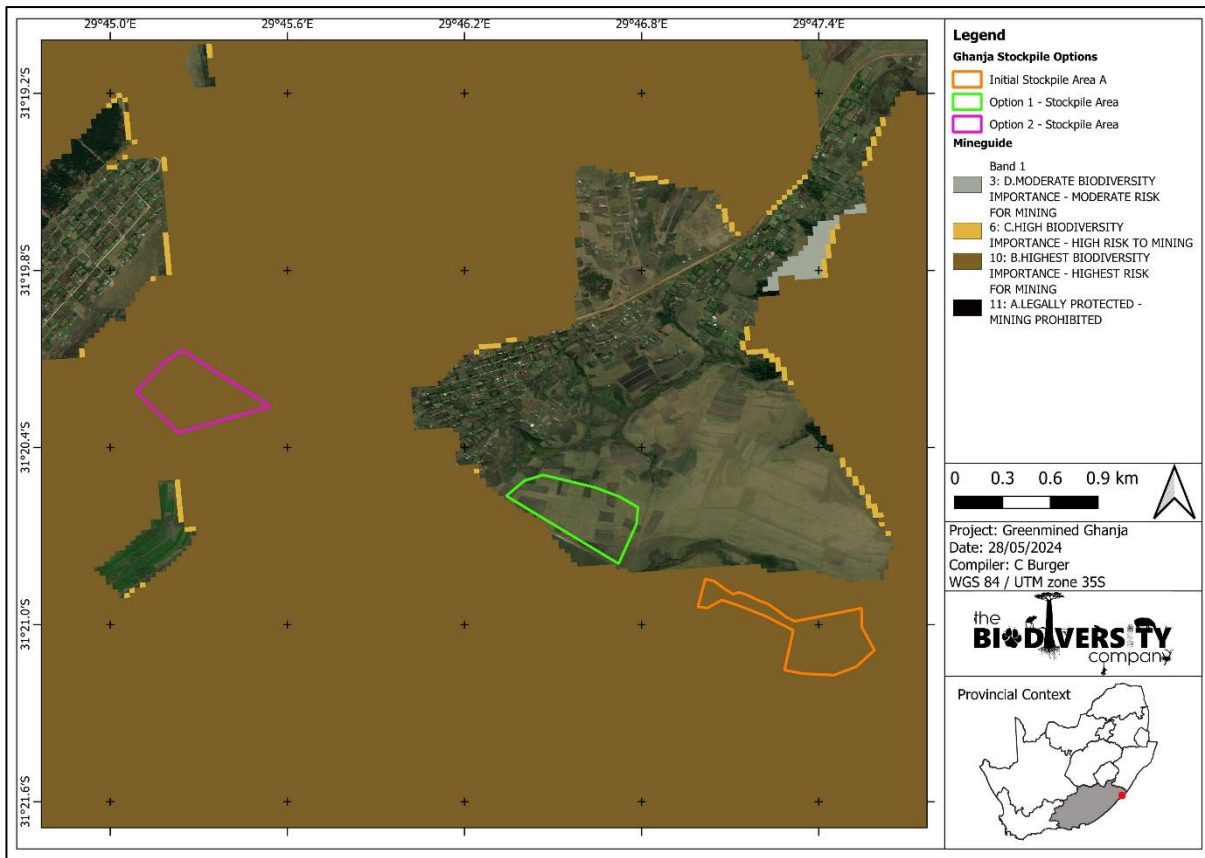


Figure 16: The PAOI in relation to the Mining and Biodiversity Guidelines

Historical Imagery

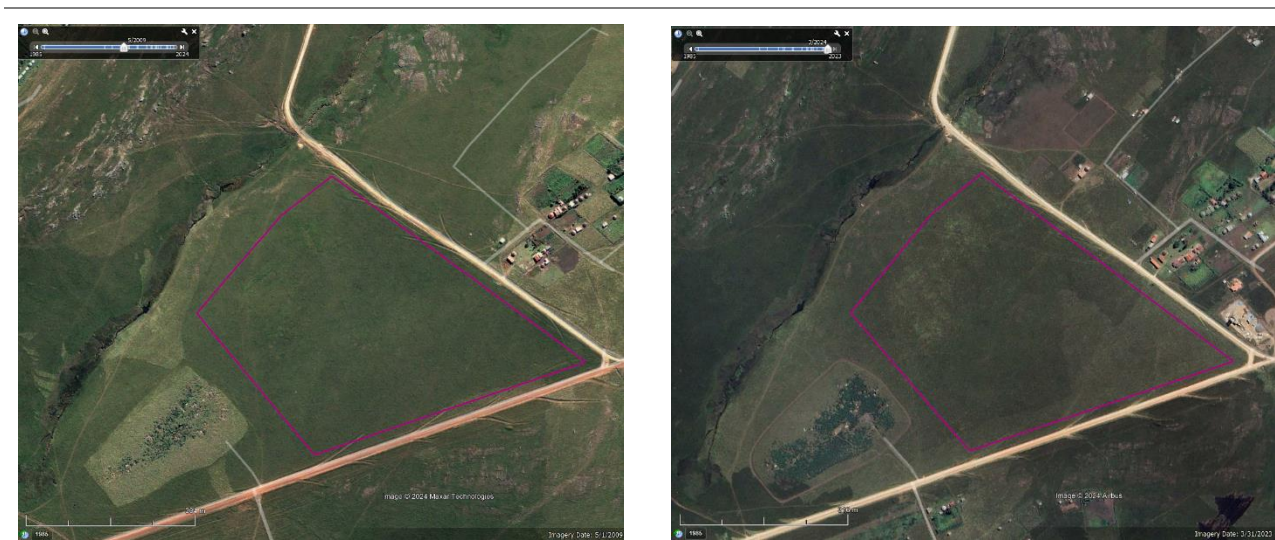
Stockpile 1 - 2009

Stockpile 1 - 2024



Stockpile 2 - 2009

Stockpile 2 - 2024



From the historical imagery (Google Earth) it can be seen that Stockpile Option 1 has been utilised for agricultural purposes since 2009 and is still being used for agriculture in 2024. This has rendered the area in a modified state and no longer representative of the vegetation type or of a CBA1 area (Based on Desktop data only).

From the imagery (Google Earth) it can also be seen that Stockpile Option 2 has been left in a relatively natural state, from 2009, with the only prevalent impacts seen from a desktop perspective being burning. As such the area seems to still be in a relatively natural state in 2024 and could still be representative of the vegetation type as well as CBA 1 areas. This must be confirmed by a site visit.

Conclusion

Based on the desktop assessment undertaken it was found that the Stockpile Option 1 area is considered to be the most viable option for the stockpile area from a terrestrial ecological perspective. From google earth imagery it is evident that this area is associated with areas utilised for agricultural purposes, currently and historically, and as such is considered to be in a modified state. This is however based on a desktop data and must be verified by a site inspection.

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Table 4: Land uses and/or prominent features that occur within 500 m radius of all site alternatives.

LAND USE CHARACTER	SITE ALTERNATIVE 1		SITE ALTERNATIVE 2		SITE ALTERNATIVE 3	
	YES	NO	YES	NO	YES	NO
Natural area		NO		NO	YES	NO
Low density residential	YES	NO	YES	NO		NO
Medium density residential		NO		NO		NO
High density residential		NO		NO		NO
Informal residential		NO		NO		NO
Retail commercial & warehousing		NO		NO		NO
Light industrial		NO		NO		NO
Medium industrial ^{AN}		NO		NO		NO
Heavy industrial ^{AN}		NO		NO		NO
Power station		NO		NO		NO
High voltage power line		NO		NO		NO
Office/consulting room		NO		NO		NO
Military or police base / station / compound		NO		NO		NO
Spoil heap or slimes dam		NO		NO		NO
Quarry, gravel or borrow pit		NO		NO		NO
Dam or reservoir		NO		NO		NO
Hospital/medical centre		NO		NO		NO
School/ crèche		NO		NO		NO
Tertiary education facility		NO		NO		NO
Church		NO		NO		NO
Old age home		NO		NO		NO
Sewage treatment plant ^A		NO		NO		NO
Train station or shunting yard ^N		NO		NO		NO
Railway line ^N		NO		NO		NO
Major road (4 lanes or more) ^N		NO		NO		NO
Airport ^N		NO		NO		NO
Harbour		NO		NO		NO
Sport facilities		NO		NO		NO
Golf course		NO		NO		NO
Polo fields		NO		NO		NO
Filling station ^N		NO		NO		NO
Landfill or waste treatment site		NO		NO		NO
Plantation		NO		NO		NO
Agriculture	YES	NO		NO	YES	NO
River, stream or wetland	YES		YES		YES	
Nature conservation area		NO		NO		NO
Mountain, hill or ridge		NO		NO		NO
Museum		NO		NO		NO
Historical building		NO		NO		NO
Protected Area		NO		NO		NO
Graveyard		NO		NO		NO
Archaeological site		NO		NO		NO

If any of the boxes marked with an “N” are ticked, how will this impact / be impacted upon by the proposed activity.

N/A

FINDINGS OF THE WETLAND FUNCTIONAL AND IMPACT ASSESSMENT (APPENDIX D1)

➤ **SITE ALTERNATIVE 3 (INITIAL SITE)**

As per the Wetland Functional and Impact Assessment (Appendix M1), four HydroGeoMorphic (HGM) units have been identified in relation to the proposed project, which have been classified as; two channelled valley-bottom (HGM 1 & HGM 2), multiple unchannelled valley-bottom wetlands (HGM 3) and a single hillslope seep (HGM 4). Along with these natural wetlands, a few drainage features were identified and delineated. The health and integrity of the wetland systems ranged from “B – Largely Natural” to “D – Largely Modified” class with ecosystem service provision ranging from “Intermediate” to “High”. The Ecological Importance and Sensitivity of the wetlands are presented within the “Moderate” range.

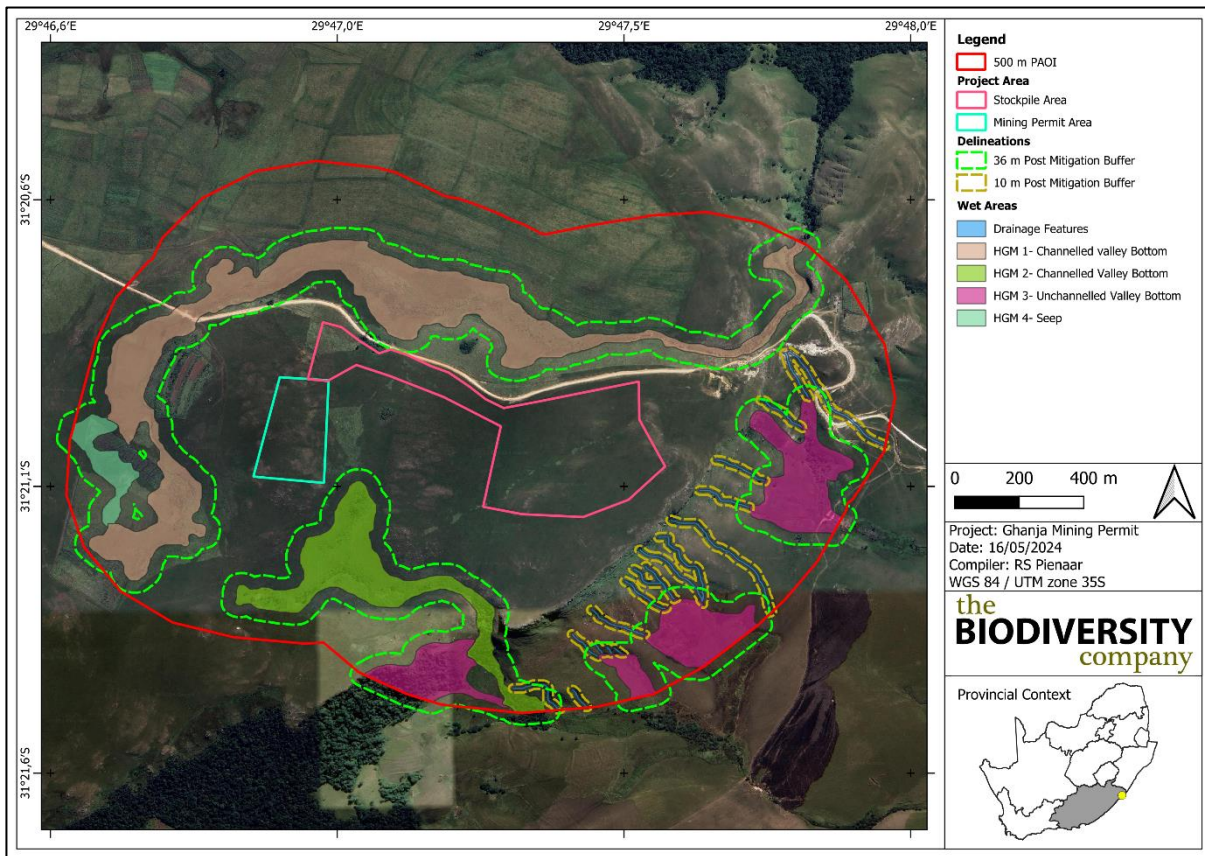


Figure 17: Recommended Buffers for the identified wetlands in relation to the proposed development

Table 5: Summary of the system functionality assessment results

HGM	Present Ecological Status (PES)	Ecological Importance and Sensitivity (EIS)	Ecological services class	Recommended ecological category and management Objective (REC-RMO)
HGM 1	D - Largely Modified	C-Moderate	High	D - Maintain
HGM 2	B – Largely Natural	C- Moderate	Intermediate	B - Maintain

Considering the assessment findings, no fatal flaws are evident for the proposed project at this stage in relation to freshwater resources. It is the opinion of the specialists that the project may be favourably considered for authorisation, on condition that all prescribed mitigation measures are implemented. This includes the avoidance of sensitive freshwater habitats and, the minimisation of development within these areas in the case of linear infrastructure such as the access roads. With being said, a water use application in terms of the National Water Act, 1998 (Act No 36 of 1998) is currently underway.

➤ **SITE ALTERNATIVE 3 (INITIAL SITE)**

Based on the assessment undertaken in this report it was found that the Initial Stockpile Area is not a viable site for development purposes and as such alternative sites had to be considered. Following this, two site alternatives site for the stockpile area were provided by Greenmined (2024) and has been assessed on a desktop basis.

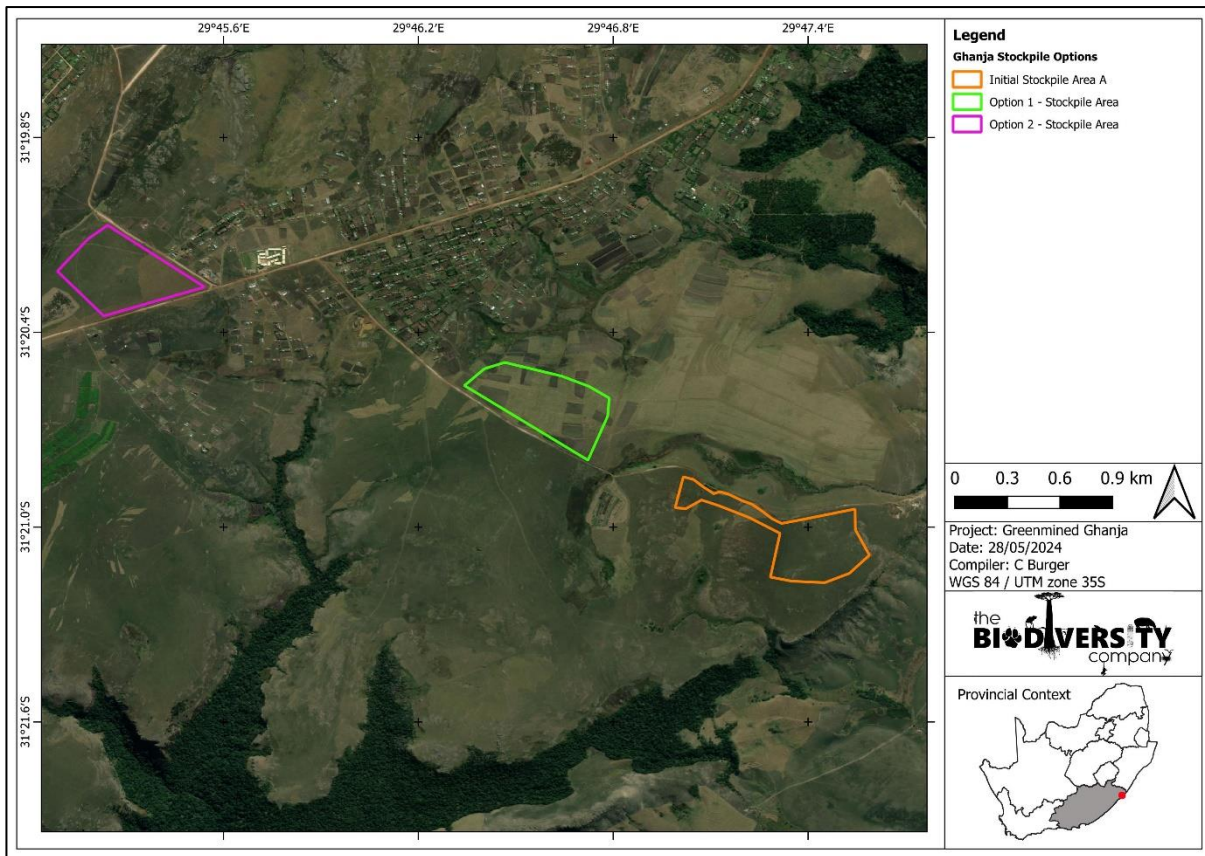


Figure 18: Map illustrating the Stockpile Alternatives

Hydrological Characteristics

The PAOI falls within the North Eastern Coastal Belt Ecoregion, within the Mzimvubu-Tsitsikamma Water Management Area (WMA). At a finer scale, within the T60H and T60G quaternary catchment. The fine scale hydrological features are presented in the following section.

Topographical River Lines and Inland Water Areas

Only one inland water area has been identified within the proposed project site and its respective PAOI by means of the “3129” quarter degree square topographical river line data set (Figure 19). Multiple non-perennial features as well as multiple single perennial features were identified within the proposed site and PAOI, all these features are located outside the development footprint except for one non-perennial feature located within the Initial Stockpile Area.

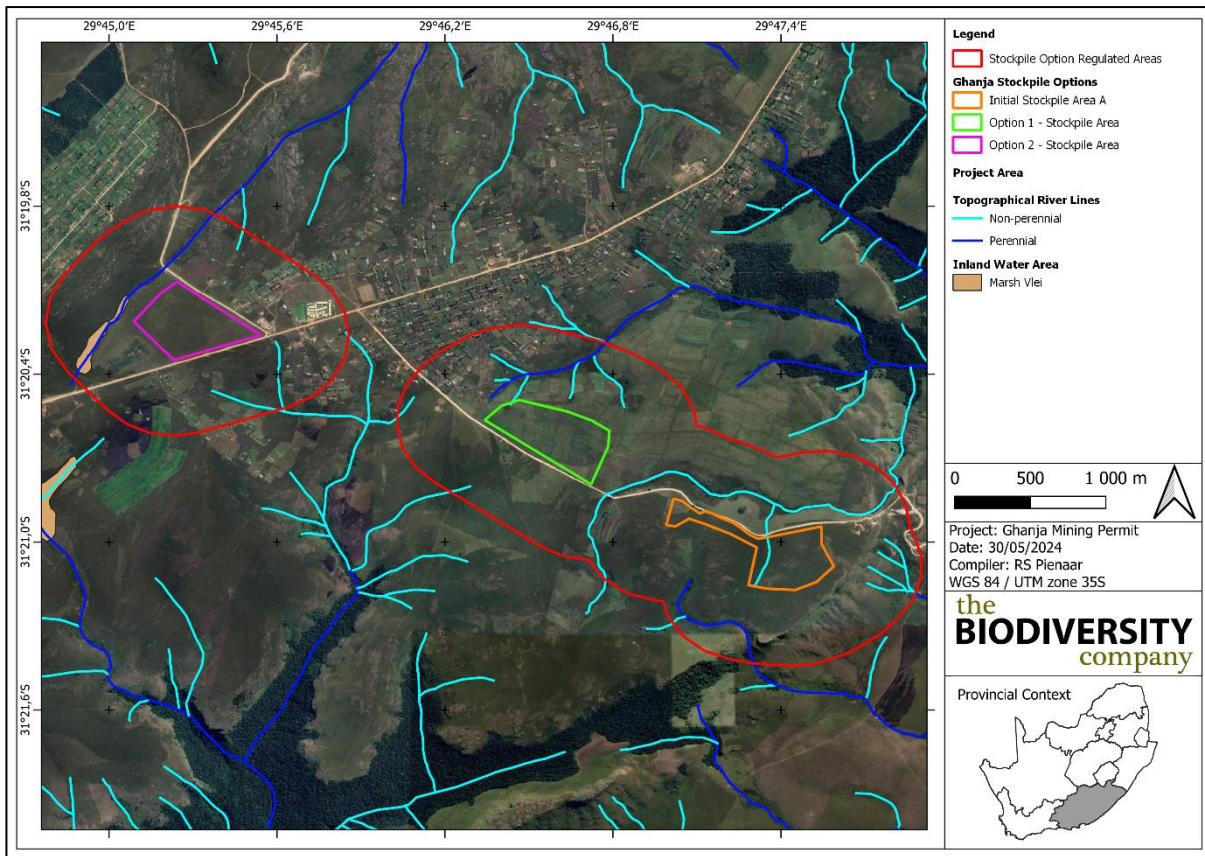


Figure 19: Topographical Drainage and Inland Water Areas relevant to the project

Ecologically Important Landscape Features

The GIS analysis pertaining to the relevance of the proposed project to ecologically important landscape features is summarised in the table below.

Table 6: Summary of relevance of the proposed project to ecologically important landscape features

Desktop Information Considered	Relevant/Irrelevant
South African Inventory of Inland Aquatic Ecosystems (SAIIAE)	Relevant – PAOI overlaps with NBA water resources at Option 2
National Freshwater Priority Area	Irrelevant – PAOI does not overlap with NFEPA wetlands.
Strategic Water Source Areas	Irrelevant – PAOI does not overlap with SWSA.
Provincial Conservation Plan	Relevant – POAI does overlaps with Critical Biodiversity Areas and Ecological Support Areas of the Limpopo Conservation Plan.

South African Inventory of Inland Aquatic Ecosystems

A single wetland was identified within regulated area around the proposed stockpile areas by means of the SAIIE database. The wetland is classified as a channelled valley bottom wetland characterised as being critically threatened and poorly protected (Figure 20).

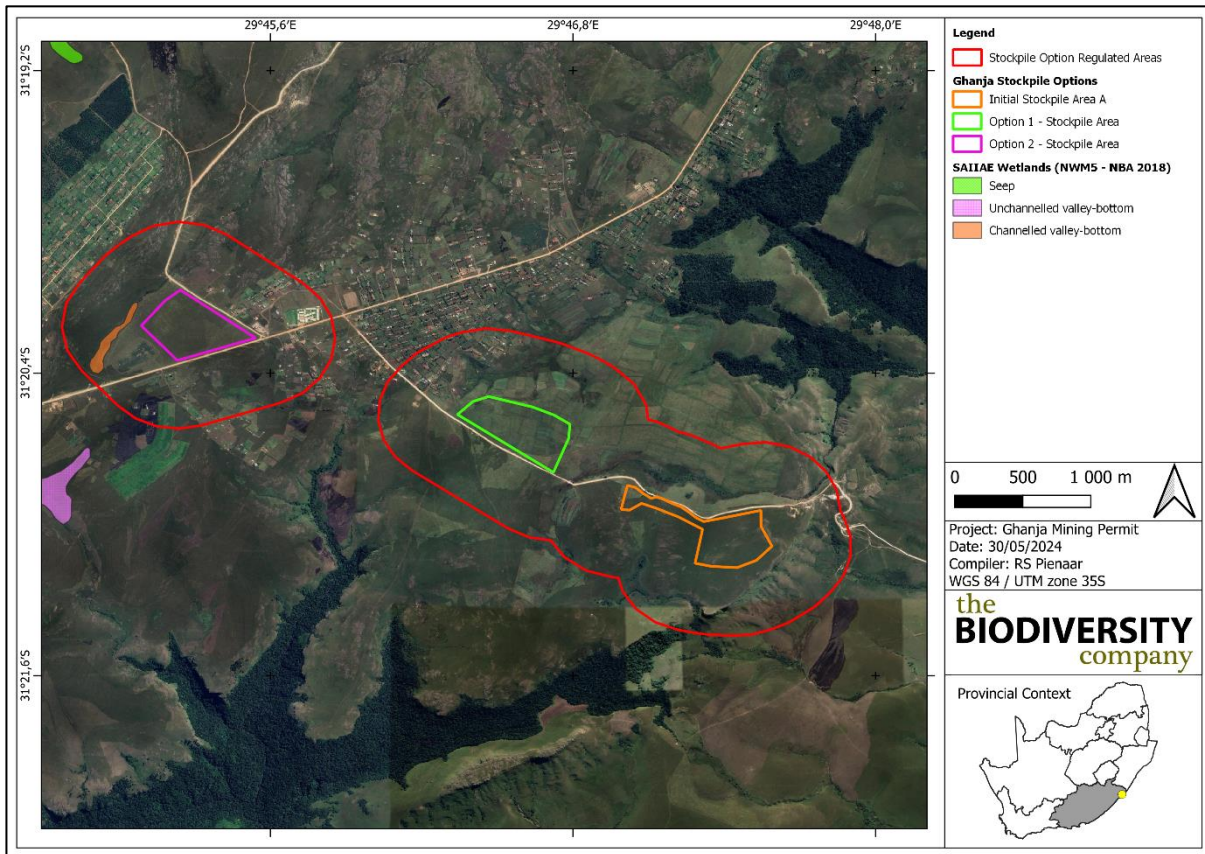


Figure 20: South African Inventory of Inland Aquatic Ecosystems in relevant to the project

National Freshwater Ecosystem Priority Areas

No wetlands by means of the NFEPA database were identified within the Proposed Site and PAOI. The closest wetland is approximately 4.6 km away from the Proposed Site. A single NFEPA river is located south of the proposed Initial Stockpile Area (Figure 21).

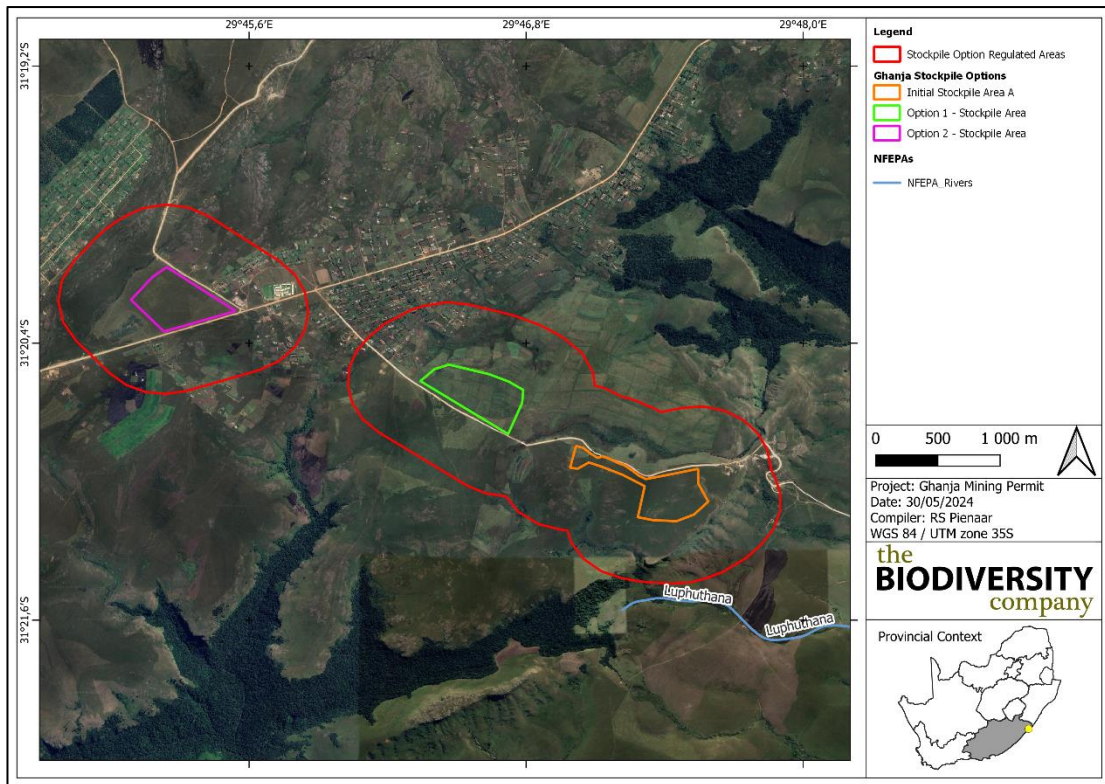


Figure 21: NFEPA Wetlands in relevant to the project

Eastern Cape Conservation Plan

The Eastern Cape’s Biodiversity Conservation Plan (Berliner et al 2007) addresses the urgent need to identify and map critical biodiversity areas and priorities for conservation in the province.

All Stockpile options overlap with a CBA 1 area.

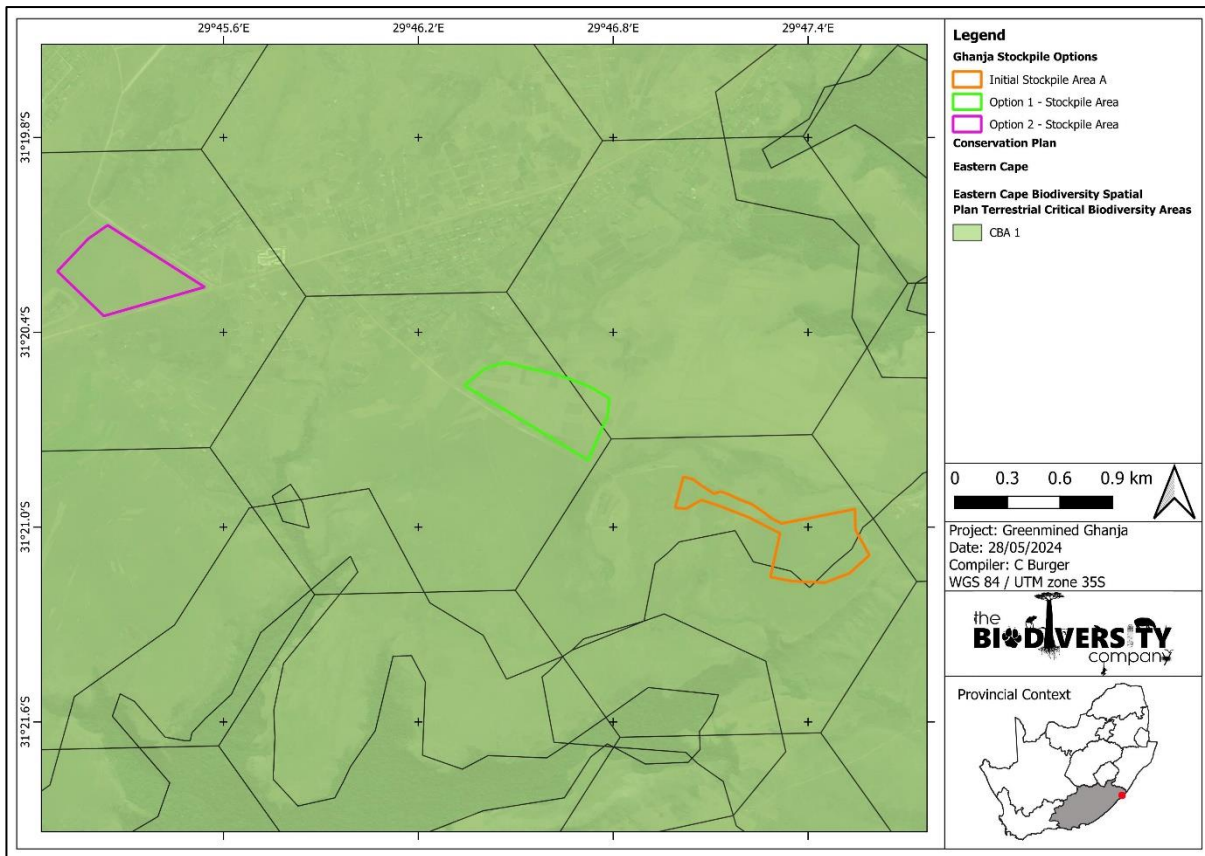


Figure 22: Map illustrating the PAOI in relation to the Northern Cape CBA Map.

Conclusion

Based on the desktop assessment undertaken it was found that the Stockpile Option 1 area is considered to be the most viable option for the stockpile area from a wetland ecological perspective. It is evident that from a desktop study Option 1 is the furthest away from any NFEPA or SAIIE wetlands. This is however based on a desktop data and must be verified by a site inspection.

FINDINGS OF THE SOCIO-ECONOMIC IMPACT ASSESSMENT (APPENDIX D3)

The Ghanja Stockpile project represents a import development for the Eastern Cape, particularly within the Ingquza Hill Local Municipality, showcasing a balanced approach to economic development and environmental management. This initiative is positioned to play a crucial role in the socio-economic advancement of the region by providing substantial employment opportunities, stimulating local economic activity, and enhancing infrastructure development.

The project is poised to offer a potential boost to the local economy by creating direct and indirect job opportunities, predominantly sourced from nearby communities. This is particularly vital in an area characterized by high unemployment and economic underdevelopment. The initiative can revitalize the local economy but also aims to instil a sustainable development model that can be replicated in similar contexts across the country.

Furthermore, the project is aligned with national policies that support sustainable mining practices and economic empowerment, ensuring that its implementation partially contributes to broader developmental goals. The strategic location of the project and its integration with local socio-economic structures are designed to optimise both environmental sustainability and economic viability.

However, the realisation of these benefits is contingent upon the project's adherence to rigorous environmental standards and its ability to effectively implement the recommended mitigation measures. Effective stakeholder engagement and transparency in operations are essential to foster community support and ensure the long-term success of the project. This engagement includes addressing any concerns related to environmental impacts, such as noise, dust, and traffic, which are common challenges in construction and mining projects.

Based on the findings of this report, the development of the Ghanja Stockpile project is supported, provided that the recommended mitigation measures are implemented. Effective stakeholder engagement, transparency, and responsiveness to community concerns are crucial to maintaining public trust and acceptance of the project.

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain:
 If YES, specify:

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain:
 If YES, specify:

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including	NO
Archaeological or palaeontological sites, on or close (within 20m) to the site?	
If YES, explain:	
If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.	
Briefly explain the findings of the specialist:	
Will any building or structure older than 60 years be affected in any way?	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	NO
If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.	

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
 - (i) the site where the activity to which the application relates is or is to be undertaken; and
 - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
 - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
 - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
 - (v) the municipality which has jurisdiction in the area;
 - (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
 - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
 - (i) one local newspaper; or
 - (ii) any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official Gazette referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
 - (i) illiteracy;
 - (ii) disability; or
 - (iii) any other disadvantage.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
 - (i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
 - (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental

- authorisation;
- (iii) the nature and location of the activity to which the application relates;
- (iv) where further information on the application or activity can be obtained; and
- (iv) the manner in which and the person to whom representations in respect of the application may be made.

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any Gazette that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to this application. The comments and response report must be attached under Appendix E.

6. AUTHORITY PARTICIPATION

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least 30 (thirty) calendar days before the submission of the application.

List of authorities informed:

STAKEHOLDERS
<ul style="list-style-type: none"> • O.R.Tambo District Municipality • Ngquza/Ingquza Hill Local Municipality Department of Social Development • Department of Social Development Eastern Cape

STAKEHOLDERS

- Department of Economic Development, Environmental Affairs and Tourism, Queenstown
- Department of Economic Development, Environmental Affairs and Tourism, East London
- Department of Labour
- Department Of Rural Development and Agrarian Reform, Eastern Cape
- Department Of Rural Development and Land Reform, Eastern Cape
- Department of Transport
- Department of Water and Sanitation
- Department of Public Works
- ESKOM
- South African Heritage Resources Agency
- South African National Roads Agency
- Eastern Cape Provincial Heritage Resources Authority
- Eastern Cape Parks and Tourism Agency

List of authorities from whom comments have been received:

Not yet applicable - Any comments received on the draft BAR will be incorporated into the final BAR.

7. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that subregulation to the extent and in the manner as may be agreed to by the competent authority.

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application at least 30 (thirty) calendar days before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?	NO
If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):	

DETAILS OF THE PUBLIC PARTICIPATION PROCESS FOLLOWED

During this public participation process the relevant stakeholders and I&AP's was informed of the project by means of an advertisement in Pondoland Times on 17 May 2024 and three on-site notices were placed at visible locations, one on the farm boundary fence at the entrance, one at the local spaza shop and another at the Ingquza Hill Municipality in Lusikisiki.

A notification letter inviting comments on the DBAR over a 30-days commenting period (3 June 2024 – 3 July 2024) was sent to the landowner, neighboring landowners, stakeholders and other I&AP that may be interested in the project. The comments received on the DBAR will be incorporated into the final Basic Assessment Report (FBAR) to be submitted to the DEDEAT for consideration.

A 30-days commenting period will be allowed which expires on 3 July 2024. In accordance with the timeframes stipulated in the EIA Regulations, 2014 (as amended by GNR 326 effective 7 April 2017) the Draft Basic Assessment Report was compiled and will be distributed for comment and perusal to the I&AP's and stakeholders. The comments received on the DBAR will be incorporated into the Final Basic Assessment Report (FBAR) to be submitted for decision making to DEDEAT.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 as amended, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

Not yet applicable. Any comments received on the draft BAR will be incorporated into the final BAR.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report):

Not yet applicable. Any comments received on the draft BAR will be incorporated into the final BAR.

2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

IMPACTS AND RISKS IDENTIFIED PRE-MITIGATION MEASURES.

SITE ESTABLISHMENT:

Loss of agricultural land

							Significance				
			Consequence	Probability		Likelihood	Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent					1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Medium			Site Layout Alternative 1			Degree of Mitigation: None					
4	3	1	2.6	5	5	5	13.3				
Rating: Low - Medium			Site Layout Alternative 2			Degree of Mitigation: None					
2	3	1	1.6	5	5	5	8				
Rating: Low - Medium			Site Layout Alternative 3			Degree of Mitigation: None					
2	3	1	1.6	5	5	5	8				

Visual intrusion as a result of site establishment

						Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Medium			Site Layout Alternative 1			Degree of Mitigation: None					
2	4	1	2.3	5	5	5	11.6				
Rating: Medium			Site Layout Alternative 2			Degree of Mitigation: None					
2	4	1	2.3	5	5	5	11.6				
Rating: Medium			Site Layout Alternative 3			Degree of Mitigation: None					
2	4	1	2.3	5	5	5	11.6				

Potential impact on fauna within the footprint area

						Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low - Medium			Site Layout Alternative 1			Degree of Mitigation: None					
2	4	1	1.6	4	3	3.5	5.6				
Rating: Low - Medium			Site Layout Alternative 2			Degree of Mitigation: None					
2	4	1	1.6	4	3	3.5	5.6				
Rating: Low - Medium			Site Layout Alternative 3			Degree of Mitigation: None					
2	4	1	1.6	4	3	3.5	5.6				

Potential impact on vegetation and listed and/or protected plant species.

						Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low - Medium			Site Layout Alternative 1			Degree of Mitigation: None					
2	4	1	1.6	4	3	3.5	5.6				
Rating: Low - Medium			Site Layout Alternative 2			Degree of Mitigation: None					
2	4	1	1.6	4	3	3.5	5.6				
Rating: Low - Medium			Site Layout Alternative 3			Degree of Mitigation: None					
5	4	1	3.3	4	3	3.5	11.6				

Dust nuisance due to site establishment.

						Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low - Medium			Site Layout Alternative 1			Degree of Mitigation: None					
3	4	1	2.6	4	3	3.5	9.1				
Rating: Low - Medium			Site Layout Alternative 2			Degree of Mitigation: None					
3	4	1	2.6	4	3	3.5	9.1				
Rating: Low - Medium			Site Layout Alternative 3			Degree of Mitigation: None					
3	4	1	2.6	4	3	3.5	9.1				

Potential impact on archaeological artefacts

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low			Site Layout Alternative 1			Degree of Mitigation: None					
2	5	5	4	1	1	1	4				
Rating: Low			Site Layout Alternative 2			Degree of Mitigation: None					
2	5	5	4	1	1	1	4				
Rating: Low			Site Layout Alternative 3			Degree of Mitigation: None					
2	5	5	4	1	1	1	4				

New job opportunities as a result of the mining operation (Positive Impact)

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: High			Site Layout Alternative 1			Degree of Mitigation: N/A					
4	4	5	4.6	5	5	5	23				
Rating: High			Site Layout Alternative 2			Degree of Mitigation: N/A					
4	4	5	4.6	5	5	5	23				
Rating: High			Site Layout Alternative 3			Degree of Mitigation: N/A					
4	4	5	4.6	5	5	5	23				

STRIPPING AND STOCKPILING OF TOPSOIL AND/OR OVERBURDEN:

Visual intrusion caused by stockpile activities.

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Medium			Site Layout Alternative 1			Degree of Mitigation: None					
2	4	1	2.3	5	5	5	11.6				
Rating: Medium			Site Layout Alternative 2			Degree of Mitigation: None					
2	4	1	2.3	5	5	5	11.6				
Rating: Medium			Site Layout Alternative 3			Degree of Mitigation: None					
2	4	1	2.3	5	5	5	11.6				

Loss of stockpiled topsoil during stockpiling activities.

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low - Medium			Site Layout Alternative 1			Degree of Mitigation: None					
3	4	1	2.6	4	3	3.5	9.1				
Rating: Low - Medium			Site Layout Alternative 2			Degree of Mitigation: None					
3	4	1	2.6	4	3	3.5	9.1				
Rating: Low - Medium			Site Layout Alternative 3			Degree of Mitigation: None					
3	4	1	2.6	4	3	3.5	9.1				

Dust nuisance as a result of the disturbance of soil.

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low - Medium			Site Layout Alternative 1			Degree of Mitigation: None					
2	3	2	2.3	4	4	4	9.2				
Rating: Low - Medium			Site Layout Alternative 2			Degree of Mitigation: None					
2	3	2	2.3	4	4	4	9.2				
Rating: Low - Medium			Site Layout Alternative 3			Degree of Mitigation: None					
2	3	2	2.3	4	4	4	9.2				

Noise nuisance generated by crushing and screening machinery.

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Medium			Site Layout Alternative 1			Degree of Mitigation: None					
2	4	1	2.3	5	5	5	11.6				
Rating: Medium			Site Layout Alternative 2			Degree of Mitigation: None					
2	4	1	2.3	5	5	5	11.6				
Rating: Medium			Site Layout Alternative 3			Degree of Mitigation: None					
2	4	1	2.3	5	5	5	11.6				

Infestation of the topsoil heaps and stockpile area with weeds or invader plant species.

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low - Medium			Site Layout Alternative 1			Degree of Mitigation: None					
3	3	1	2.3	4	2	3	6.9				
Rating: Low - Medium			Site Layout Alternative 2			Degree of Mitigation: None					
3	3	1	2.3	4	2	3	6.9				
Rating: Low - Medium			Site Layout Alternative 3			Degree of Mitigation: None					
3	3	1	2.3	4	2	3	6.9				

Potential impact on local fauna due to disturbance and loss of available habitat.

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low - Medium			Site Layout Alternative 1			Degree of Mitigation: None					
3	3	1	2.3	4	2	3	6.9				
Rating: Medium			Site Layout Alternative 2			Degree of Mitigation: None					
2	4	1	2.3	5	5	5	11.6				
Rating: Medium			Site Layout Alternative 3			Degree of Mitigation: None					

2	4	1	2.3	5	5	5	11.6
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Potential erosion of denuded areas.

			Consequence			Likelihood	Significance				
Severity	Duration	Extent					Probability	Frequency	Low	Low-Medium	Medium
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low - Medium			Site Layout Alternative 1			Degree of Mitigation: None					
3	3	1	2.3	4	2	3	6.9				
Rating Low - Medium			Site Layout Alternative 2			Degree of Mitigation: None					
3	3	1	2.3	4	2	3	6.9				
Rating: Low - Medium			Site Layout Alternative 3			Degree of Mitigation: None					
3	3	1	2.3	4	2	3	6.9				

Loss of stockpiled material due to ineffective storm water control.

			Consequence			Likelihood	Significance				
Severity	Duration	Extent					Probability	Frequency	Low	Low-Medium	Medium
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Medium			Site Layout Alternative 1			Degree of Mitigation: None					
2	4	1	2.3	5	5	5	11.6				
Rating: Medium			Site Layout Alternative 2			Degree of Mitigation: None					
2	4	1	2.3	5	5	5	11.6				
Rating: Medium			Site Layout Alternative 3			Degree of Mitigation: None					
2	4	1	2.3	5	5	5	11.6				

Potential contamination of footprint area and surface runoff as a result of hydrocarbon spillages

			Consequence			Likelihood	Significance				
Severity	Duration	Extent					Probability	Frequency	Low	Low-Medium	Medium
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Medium			Site Layout Alternative 1			Degree of Mitigation: None					
2	4	1	2.3	5	5	5	11.6				
Rating: Medium			Site Layout Alternative 2			Degree of Mitigation: None					
2	4	1	2.3	5	5	5	11.6				
Rating: Medium			Site Layout Alternative 3			Degree of Mitigation: None					
2	4	1	2.3	5	5	5	11.6				

PROCESSING, STOCKPILING AND TRANSPORTING OF MATERIAL:

Dust nuisance generated at the processing plant.

			Consequence			Likelihood	Significance
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							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Probability		Frequency		1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low - Medium			Site Layout Alternative 1				Degree of Mitigation: None				
3	3	1	2.3	4	2	3	6.9				
Rating Low - Medium			Site Layout Alternative 2				Degree of Mitigation: None				
3	3	1	2.3	4	2	3	6.9				
Rating: Low - Medium			Site Layout Alternative 3				Degree of Mitigation: None				
3	3	1	2.3	4	2	3	6.9				

Noise nuisance stemming from operation of the processing plant.

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
Rating: Low - Medium			Site Layout Alternative 1				Degree of Mitigation: None				
3	3	1	2.3	4	2	3	6.9				
Rating Low - Medium			Site Layout Alternative 2				Degree of Mitigation: None				
3	3	1	2.3	4	2	3	6.9				
Rating: Low - Medium			Site Layout Alternative 3				Degree of Mitigation: None				
3	3	1	2.3	4	2	3	6.9				

Visual intrusion as a result of operation of the processing plant.

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
Rating: Low - Medium			Site Layout Alternative 1				Degree of Mitigation: None				
3	3	1	2.3	4	2	3	6.9				
Rating Low - Medium			Site Layout Alternative 2				Degree of Mitigation: None				
3	3	1	2.3	4	2	3	6.9				
Rating: Low - Medium			Site Layout Alternative 3				Degree of Mitigation: None				
3	3	1	2.3	4	2	3	6.9				

Potential contamination of environment due to improper waste management.

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
Rating: Low - Medium			Site Layout Alternative 1				Degree of Mitigation: None				
3	3	1	2.3	4	4	4	9.2				
Rating Low - Medium			Site Layout Alternative 2				Degree of Mitigation: None				
3	3	1	2.3	4	4	4	9.2				
Rating: Low - Medium			Site Layout Alternative 3				Degree of Mitigation: None				
3	3	1	2.3	4	4	4	9.2				

Overloading of trucks impacting road infrastructure

			Consequence			Likelihood	Significance				
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							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent		Probability	Frequency		1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Medium			Site Layout Alternative 1				Degree of Mitigation: None				
3	4	1	2.6	4	4	4	10.4				
Rating Medium			Site Layout Alternative 2				Degree of Mitigation: None				
3	4	1	2.6	4	4	4	10.4				
Rating: Medium			Site Layout Alternative 3				Degree of Mitigation: None				
3	4	1	2.6	4	4	4	10.4				

CUMULATIVE IMPACTS:

Impact the broad-scale ecological processes - The loss of unprotected vegetation types on a cumulative basis from the broad area may impact the country's ability to meet its conservation targets.

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
								1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9
Rating: Low			Site Layout Alternative 1			Degree of Mitigation: None					
2	5	5	4	1	1	1	4				
Rating Low			Site Layout Alternative 2			Degree of Mitigation: None					
2	5	5	4	1	1	1	4				
Rating Medium - high			Site Layout Alternative 3			Degree of Mitigation: None					
5	4	1	3.3	5	5	5	16.6				

Transformation of intact habitat would contribute to the fragmentation of the landscape and would potentially disrupt the connectivity of the landscape for fauna, avifauna, and flora and impair their ability to respond to environmental fluctuations.

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
								1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9
Rating: Low			Site Layout Alternative 1			Degree of Mitigation: None					
2	5	5	4	1	1	1	4				
Rating Low			Site Layout Alternative 2			Degree of Mitigation: None					
2	5	5	4	1	1	1	4				
Rating Medium - high			Site Layout Alternative 3			Degree of Mitigation: None					
5	4	1	3.3	5	5	5	16.6				

SLOPING AND LANDSCAPING DURING REHABILITATION:

Erosion of returned topsoil after rehabilitation

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
								1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9
Rating: Medium			Site Layout Alternative 1			Degree of Mitigation: None					
3	5	1	3	4	3	3.5	10.5				
Rating: Medium			Site Layout Alternative 2			Degree of Mitigation: None					
3	5	1	3	4	3	3.5	10.5				
Rating: Medium			Site Layout Alternative 3			Degree of Mitigation: None					
3	5	1	3	4	3	3.5	10.5				

Infestation of the reinstated areas by weeds and invader plant species

						Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Medium			Site Layout Alternative 1			Degree of Mitigation: None					
3	5	1	3	4	3	3.5	10.5				
Rating: Medium			Site Layout Alternative 2			Degree of Mitigation: None					
3	5	1	3	4	3	3.5	10.5				
Rating: Medium			Site Layout Alternative 3			Degree of Mitigation: None					
3	5	1	3	4	3	3.5	10.5				

Potential impact associated with litter/waste left at the stockpile area

						Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Medium			Site Layout Alternative 1			Degree of Mitigation: None					
3	5	1	3	4	3	3.5	10.5				
Rating: Medium			Site Layout Alternative 2			Degree of Mitigation: None					
3	5	1	3	4	3	3.5	10.5				
Rating: Medium			Site Layout Alternative 3			Degree of Mitigation: None					
3	5	1	3	4	3	3.5	10.5				

Return of the stockpile area to landscape feature upon closure (Positive Impact)

						Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Medium-High			Site Layout Alternative 1			Degree of Mitigation: N/A					
3	5	1	3	5	5	5	15				
Rating: Medium-High			Site Layout Alternative 2			Degree of Mitigation: N/A					
3	5	1	3	5	5	5	15				
Rating: Medium-High			Site Layout Alternative 3			Degree of Mitigation: N/A					
3	5	1	3	5	5	5	15				

METHODOLOGY FOR THE ASSESSMENT OF THE POTENTIAL ENVIRONMENTAL, SOCIAL AND CULTURAL IMPACTS

DEFINITIONS AND CONCEPTS:

Environmental significance:

The concept of significance is at the core of impact identification, evaluation and decision-making. The concept remains largely undefined and there is no international consensus on a single definition. The following common elements are recognised from the various interpretations:

- Environmental significance is a value judgement.
- The degree of environmental significance depends on the nature of the impact
- The importance is rated in terms of both biophysical and socio-economic values
- Determining significance involves the amount of change to the environment perceived to be acceptable to affected communities.

Significance can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of acceptability) (DEAT (2002) Impact Significance, Integrated Environmental Management, Information Series 5).

The concept of risk has two dimensions, namely the consequence of an event or set of circumstances, and the likelihood of particular consequences being realised (Environment Australia (1999) Environmental Risk Management).

Impact

The positive or negative effects on human well-being and / or the environment.

Consequence

The intermediate or final outcome of an event or situation OR it is the result, on the environment, of an event.

Likelihood

A qualitative term covering both probability and frequency.

Frequency

The number of occurrences of a defined event in a given time or rate.

Probability

The likelihood of a specific outcome measured by the ratio of a specific outcome to the total number of possible outcomes.

Environment

Surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans and their interrelation (ISO 14004, 1996).

Methodology that will be used

The environmental significance assessment methodology is based on the following determination:

$$\text{Environmental Significance} = \text{Overall Consequence} \times \text{Overall Likelihood}$$

Determination of Overall Consequence

Consequence analysis is a mixture of quantitative and qualitative information and the outcome can be positive or negative. Several factors can be used to determine consequence. For the purpose of determining the environmental significance in terms of consequence, the following factors were chosen: **Severity/Intensity, Duration and Extent/Spatial Scale**. Each factor is assigned a rating of 1 to 5, as described in the tables below.

Determination of Severity / Intensity

Severity relates to the nature of the event, aspect or impact to the environment and describes how severe the aspects impact on the biophysical and socio-economic environment.

The table below will be used to obtain an overall rating for severity, taking into consideration the various criteria.

Table 7: Table to be used to obtain an overall rating of severity, taking into consideration the various criteria.

Type of criteria	Rating				
	1	2	3	4	5
Quantitative	0-20%	21-40%	41-60%	61-80%	81-100%
Qualitative	Insignificant / Non-harmful	Small / Potentially harmful	Significant/ Harmful	Great/ Very harmful	Disastrous Extremely harmful
Social/ Community response	Acceptable / I&AP satisfied	Slightly tolerable / Possible objections	Intolerable/ Sporadic complaints	Unacceptable / Widespread complaints	Totally unacceptable / Possible legal action
Irreversibility	Very low cost to mitigate/ High potential to mitigate impacts to level of insignificance/ Easily reversible	Low cost to mitigate	Substantial cost to mitigate/ Potential to mitigate impacts/ Potential to reverse impact	High cost to mitigate	Prohibitive cost to mitigate/ Little or no mechanism to mitigate impact Irreversible
Biophysical (Air quality, water quantity and quality, waste production, fauna and flora)	Insignificant change / deterioration or disturbance	Moderate change / deterioration or disturbance	Significant change / deterioration or disturbance	Very significant change / deterioration or disturbance	Disastrous change / deterioration or disturbance

Determination of Duration

Duration refers to the amount of time that the environment will be affected by the event, risk or impact, if no intervention e.g. remedial action takes place.

Table 8: Criteria for the rating of duration.

Rating	Description
1	Up to ONE MONTH
2	ONE MONTH to THREE MONTHS (QUARTER)
3	THREE MONTHS to ONE YEAR
4	ONE to TEN YEARS
5	Beyond TEN YEARS

Determination of Extent/Spatial Scale

Extent or spatial scale is the area affected by the event, aspect or impact.

Table 9: Criteria for the rating of extent / spatial scale.

Rating	Description
1	Immediate, fully contained area
2	Surrounding area
3	Within Business Unit area of responsibility
4	Within the farm/neighbouring farm area
5	Regional, National, International

Determination of Overall Consequence

Overall consequence is determined by adding the factors determined above and summarized below, and then dividing the sum by 3.

Table 10: Example of calculating overall consequence.

Consequence	Rating
Severity	Example 4
Duration	Example 2
Extent	Example 4
SUBTOTAL	10
TOTAL CONSEQUENCE: (Subtotal divided by 3)	3.3

Determination of Likelihood:

The determination of likelihood is a combination of Frequency and Probability. Each factor is assigned a rating of 1 to 5, as described below and in tables 6 and 7.

Determination of Frequency

Frequency refers to how often the specific activity, related to the event, aspect or impact, is undertaken.

Table 11: Criteria for the rating of frequency.

Rating	Description
1	Once a year or once/more during operation
2	Once/more in 6 Months
3	Once/more a Month
4	Once/more a Week
5	Daily

Determination of Probability

Probability refers to how often the activity or aspect has an impact on the environment.

Table 12: Criteria for the rating of probability.

Rating	Description
1	Almost never / almost impossible
2	Very seldom / highly unlikely
3	Infrequent / unlikely / seldom
4	Often / regularly / likely / possible
5	Daily / highly likely / definitely

Overall Likelihood

Overall likelihood is calculated by adding the factors determined above and summarised below, and then dividing the sum by 2.

Table 13: Example of calculating overall likelihood.

Consequence	Rating
Frequency	Example 4
Probability	Example 2
SUBTOTAL	6
TOTAL LIKELIHOOD (Subtotal divided by 2)	3

Determination of Overall Environmental Significance:

The multiplication of overall consequence with overall likelihood will provide the environmental significance, which is a number that will then fall into a range of **LOW**, **LOW-MEDIUM**, **MEDIUM**, **MEDIUM-HIGH** or **HIGH**, as shown in the table below.

Table 14: Determination of overall environmental significance.

Significance or Risk	Low	Low-Medium	Medium	Medium-High	High
Overall Consequence X Overall Likelihood	1 – 4.9	5 – 9.9	10 – 14.9	15 – 19.9	20 – 25

Qualitative description or magnitude of Environmental Significance

This description is qualitative and is an indication of the nature or magnitude of the Environmental Significance. It also guides the prioritisations and decision making process associated with this event, aspect or impact.

Table 15: Description of environmental significance and related action required.

(a) Significance	Low	Low-Medium	Medium	Medium-High	High
Impact Magnitude	Impact is of very low order and therefore likely to have very little real effect. Acceptable.	Impact is of low order and therefore likely to have little real effect. Acceptable.	Impact is real, and potentially substantial in relation to other impacts. Can pose a risk to company	Impact is real and substantial in relation to other impacts. Pose a risk to the company. Unacceptable	Impact is of the highest order possible. Unacceptable. Fatal flaw.
Action Required	Maintain current management measures. Where possible improve.	Maintain current management measures. Implement monitoring and evaluate to determine potential increase in risk. Where possible improve	Implement monitoring. Investigate mitigation measures and improve management measures to reduce risk, where possible.	Improve management measures to reduce risk.	Implement significant mitigation measures or implement alternatives.

Based on the above, the significance rating scale has been determined as follows:

- High** Of the highest order possible within the bounds of impacts which could occur. In the case of negative impacts, there would be no possible mitigation and / or remedial activity to offset the impact at the spatial or time scale for which it was predicted. In the case of positive impacts, there is no real alternative to achieving the benefit.
- Medium-High** Impacts of a substantial order. In the case of negative impacts, mitigation and / or remedial activity would be feasible but difficult, expensive, time-consuming or some combination of these. In the case of positive impacts, other means of achieving this benefit would be feasible, but these would be more difficult, expensive, time-consuming or some combination of these.
- Medium** Impact would be real but not substantial within the bounds of those, which could occur. In the case of negative impacts, mitigation and / or remedial activity would be both feasible and fairly easily possible, In case of positive impacts; other means of achieving these benefits would be about equal in time, cost and effort.
- Low-Medium** Impact would be of a low order and with little real effect. In the case of negative impacts, mitigation and / or remedial activity would be either easily achieved or little would be required, or both. In case of positive impacts alternative means for

achieving this benefit would likely be easier, cheaper, more effective, less time-consuming, or some combination of these.

- Low Impact would be negligible. In the case of negative impacts, almost no mitigation and or remedial activity would be needed, and any minor steps, which might be needed, would be easy, cheap and simple. In the case of positive impacts, alternative means would almost all likely be better, in one or a number of ways, than this means of achieving the benefit.
- Insignificant There would be a no impact at all – not even a very low impact on the system or any of its parts.

IMPACTS AND RISKS IDENTIFIED PRE-MITIGATION MEASURES.

SITE ESTABLISHMENT:

Loss of agricultural land

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
								1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9
Rating: Medium			Site Layout Alternative 1			Degree of Mitigation: None					
4	3	1	2.6	5	5	5	13.3				
Rating: Low - Medium			Site Layout Alternative 2			Degree of Mitigation: None					
2	3	1	1.6	5	5	5	8				
Rating: Low - Medium			Site Layout Alternative 3			Degree of Mitigation: None					
2	3	1	1.6	5	5	5	8				

Visual intrusion as a result of site establishment

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
								1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9
Rating: Low - Medium			Site Layout Alternative 1			Degree of Mitigation: Full					
3	4	1	2.6	4	3	3.5	9.1				
Rating: Low - Medium			Site Layout Alternative 2			Degree of Mitigation: Full					
3	4	1	2.6	4	3	3.5	9.1				
Rating: Low - Medium			Site Layout Alternative 3			Degree of Mitigation: Full					
3	4	1	2.6	4	3	3.5	9.1				

Potential impact on fauna within the footprint area

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
								1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9
Rating: Low			Site Layout Alternative 1			Degree of Mitigation: Full					
2	4	1	2.3	2	2	2	4.6				
Rating: Low			Site Layout Alternative 2			Degree of Mitigation: Full					
2	4	1	2.3	2	2	2	4.6				
Rating: Low			Site Layout Alternative 3			Degree of Mitigation: Full					
2	4	1	2.3	2	2	2	4.6				

Potential impact on vegetation and listed and/or protected plant species.

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
								1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9
Rating: Low - Medium			Site Layout Alternative 1			Degree of Mitigation: None					
2	4	1	1.6	4	3	3.5	5.6				

Rating: Low - Medium			Site Layout Alternative 2			Degree of Mitigation: None	
2	4	1	1.6	4	3	3.5	5.6
Rating: Low-Medium			Site Layout Alternative 3			Degree of Mitigation: Full	
2	4	1	1.6	4	3	3.5	5.6

Dust nuisance due to site establishment.

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
								1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9
Rating: Low			Site Layout Alternative 1			Degree of Mitigation: Full					
2	2	1	1.6	3	2	2.5	4				
Rating: Low			Site Layout Alternative 2			Degree of Mitigation: Full					
2	2	1	1.6	3	2	2.5	4				
Rating: Low			Site Layout Alternative 3			Degree of Mitigation: None					
2	2	1	1.6	3	2	2.5	4				

Potential impact on archaeological artefacts

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
								1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9
Rating: Low			Site Layout Alternative 1			Degree of Mitigation: Full					
2	5	5	4	1	1	1	4				
Rating: Low			Site Layout Alternative 2			Degree of Mitigation: Full					
2	5	5	4	1	1	1	4				
Rating: Low			Site Layout Alternative 3			Degree of Mitigation: Full					
2	5	5	4	1	1	1	4				

New job opportunities as a result of the mining operation (Positive Impact)

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
								1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9
Rating: High			Site Layout Alternative 1			Degree of Mitigation: N/A					
4	4	5	4.6	5	5	5	23				
Rating: High			Site Layout Alternative 2			Degree of Mitigation: N/A					
4	4	5	4.6	5	5	5	23				
Rating: High			Site Layout Alternative 3			Degree of Mitigation: N/A					
4	4	5	4.6	5	5	5	23				

STRIPPING AND STOCKPILING OF TOPSOIL:

Visual intrusion caused by stockpile activities.

						Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low-Medium			Site Layout Alternative 1			Degree of Mitigation: Partial					
2	4	1	2.3	4	4	4	9.2				
Rating: Low-Medium			Site Layout Alternative 2			Degree of Mitigation: Partial					
2	4	1	2.3	4	4	4	9.2				
Rating: Low-Medium			Site Layout Alternative 3			Degree of Mitigation: Partial					
2	4	1	2.3	4	4	4	9.2				

Loss of stockpiled topsoil during stockpiling activities.

						Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low			Site Layout Alternative 1			Degree of Mitigation: Full					
2	4	1	2.3	2	2	2	4.6				
Rating: Low			Site Layout Alternative 2			Degree of Mitigation: Full					
2	4	1	2.3	2	2	2	4.6				
Rating: Low			Site Layout Alternative 3			Degree of Mitigation: Full					
2	4	1	2.3	2	2	2	4.6				

Dust nuisance as a result of the disturbance of soil.

						Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low - Medium			Site Layout Alternative 1			Degree of Mitigation: Full					
2	4	1	1.6	4	3	3.5	5.6				
Rating: Low - Medium			Site Layout Alternative 2			Degree of Mitigation: Full					
2	4	1	1.6	4	3	3.5	5.6				
Rating: Low - Medium			Site Layout Alternative 3			Degree of Mitigation: Full					
2	4	1	1.6	4	3	3.5	5.6				

Noise nuisance generated by crushing and screening machinery.

						Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low - Medium			Site Layout Alternative 1			Degree of Mitigation: Full					
2	4	2	2.6	3	3	3	8				
Rating: Low - Medium			Site Layout Alternative 2			Degree of Mitigation: Full					
2	4	2	2.6	3	3	3	8				

Rating: Low - Medium			Site Layout Alternative 3			Degree of Mitigation: Full	
2	4	2	2.6	3	3	3	8

Infestation of the topsoil heaps and stockpile area with weeds or invader plant species.

						Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low			Site Layout Alternative 1			Degree of Mitigation: Full					
2	2	2	2	2	2	2	4				
Rating: Low			Site Layout Alternative 2			Degree of Mitigation: Full					
2	2	2	2	2	2	2	4				
Rating: Low			Site Layout Alternative 3			Degree of Mitigation: Full					
2	2	2	2	2	2	2	4				

Potential impact on local fauna due to disturbance and loss of available habitat.

						Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low			Site Layout Alternative 1			Degree of Mitigation: Full					
2	4	1	2.3	2	2	2	4.6				
Rating: Low - Medium			Site Layout Alternative 2			Degree of Mitigation: Full					
3	3	1	2.3	4	2	3	6.9				
Rating: Low - Medium			Site Layout Alternative 3			Degree of Mitigation: Full					
3	3	1	2.3	4	2	3	6.9				

Potential erosion of denuded areas.

						Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low			Site Layout Alternative 1			Degree of Mitigation: Full					
2	4	1	2.3	2	2	2	4.6				
Rating Low			Site Layout Alternative 2			Degree of Mitigation: Full					
2	4	1	2.3	2	2	2	4.6				
Rating: Low			Site Layout Alternative 3			Degree of Mitigation: Full					
2	4	1	2.3	2	2	2	4.6				

Loss of stockpiled material due to ineffective storm water control.

						Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low-Medium			Site Layout Alternative 1			Degree of Mitigation: Full					
2	4	1	2.3	2	3	2.5	5.7				

Rating: Low-Medium			Site Layout Alternative 2			Degree of Mitigation: Full	
2	4	1	2.3	2	3	2.5	5.7
Rating: Low-Medium			Site Layout Alternative 3			Degree of Mitigation: Full	
2	4	1	2.3	2	3	2.5	5.7

Potential contamination of footprint area and surface runoff as a result of hydrocarbon spillages

							Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High	
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25	
Rating: Low-Medium			Site Layout Alternative 1			Degree of Mitigation: Full						
2	4	1	2.3	2	3	2.5	5.7					
Rating: Low-Medium			Site Layout Alternative 2			Degree of Mitigation: Full						
2	4	1	2.3	2	3	2.5	5.7					
Rating: Low-Medium			Site Layout Alternative 3			Degree of Mitigation: Full						
2	4	1	2.3	2	3	2.5	5.7					

PROCESSING, STOCKPILING AND TRANSPORTING OF MATERIAL:

Dust nuisance generated at the processing plant.

							Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High	
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25	
Rating: Low			Site Layout Alternative 1			Degree of Mitigation: Full						
2	2	1	1.6	2	2	2	3.2					
Rating Low			Site Layout Alternative 2			Degree of Mitigation: Full						
2	2	1	1.6	2	2	2	3.2					
Rating: Low			Site Layout Alternative 3			Degree of Mitigation: Full						
2	2	1	1.6	2	2	2	3.2					

Noise nuisance stemming from operation of the processing plant.

							Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High	
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25	
Rating: Low			Site Layout Alternative 1			Degree of Mitigation: Full						
2	2	1	1.6	2	2	2	3.2					
Rating Low			Site Layout Alternative 2			Degree of Mitigation: Full						
2	2	1	1.6	2	2	2	3.2					
Rating: Low			Site Layout Alternative 3			Degree of Mitigation: Full						
2	2	1	1.6	2	2	2	3.2					

Visual intrusion as a result of operation of the processing plant.

						Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low - Medium			Site Layout Alternative 1			Degree of Mitigation: Full					
3	3	1	2.3	4	2	3	6.9				
Rating Low - Medium			Site Layout Alternative 2			Degree of Mitigation: Full					
3	3	1	2.3	4	2	3	6.9				
Rating: Low - Medium			Site Layout Alternative 3			Degree of Mitigation: Full					
3	3	1	2.3	4	2	3	6.9				

Potential contamination of environment due to improper waste management.

						Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low			Site Layout Alternative 1			Degree of Mitigation: Full					
2	4	1	2.3	2	2	2	4.6				
Rating Low			Site Layout Alternative 2			Degree of Mitigation: Full					
2	4	1	2.3	2	2	2	4.6				
Rating: Low			Site Layout Alternative 3			Degree of Mitigation: Full					
2	4	1	2.3	2	2	2	4.6				

Overloading of trucks impacting road infrastructure

						Significance					
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low - Medium			Site Layout Alternative 1			Degree of Mitigation: Full					
3	3	1	2.3	4	4	4	9.2				
Rating: Low - Medium			Site Layout Alternative 2			Degree of Mitigation: Full					
3	3	1	2.3	4	4	4	9.2				
Rating: Low - Medium			Site Layout Alternative 3			Degree of Mitigation: Full					
3	3	1	2.3	4	4	4	9.2				

CUMULATIVE IMPACTS:

Impact the broad-scale ecological processes - The loss of unprotected vegetation types on a cumulative basis from the broad area may impact the country's ability to meet its conservation targets.

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
								1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9
Rating: Low			Site Layout Alternative 1			Degree of Mitigation: None					
2	5	5	4	1	1	1	4				
Rating Low			Site Layout Alternative 2			Degree of Mitigation: None					
2	5	5	4	1	1	1	4				
Rating Medium - high			Site Layout Alternative 3			Degree of Mitigation: None					
5	4	1	3.3	5	5	5	16.6				

Transformation of intact habitat would contribute to the fragmentation of the landscape and would potentially disrupt the connectivity of the landscape for fauna, avifauna, and flora and impair their ability to respond to environmental fluctuations.

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
								1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9
Rating: Low			Site Layout Alternative 1			Degree of Mitigation: None					
2	5	5	4	1	1	1	4				
Rating Low			Site Layout Alternative 2			Degree of Mitigation: None					
2	5	5	4	1	1	1	4				
Rating Medium - high			Site Layout Alternative 3			Degree of Mitigation: None					
5	4	1	3.3	5	5	5	16.6				

SLOPING AND LANDSCAPING DURING REHABILITATION:

Erosion of returned topsoil after rehabilitation

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
								1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9
Rating: Low-Medium			Site Layout Alternative 1			Degree of Mitigation: Full					
3	3	1	2.3	4	4	4	9.2				
Rating: Low-Medium			Site Layout Alternative 2			Degree of Mitigation: Full					
3	3	1	2.3	4	4	4	9.2				
Rating: Low-Medium			Site Layout Alternative 3			Degree of Mitigation: Full					
3	3	1	2.3	4	4	4	9.2				

Infestation of the reinstated areas by weeds and invader plant species

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low-Medium			Site Layout Alternative 1			Degree of Mitigation: Full					
3	5	1	3	2	2	2	5				
Rating: Low-Medium			Site Layout Alternative 2			Degree of Mitigation: Full					
3	5	1	3	2	2	2	5				
Rating: Low-Medium			Site Layout Alternative 3			Degree of Mitigation: Full					
3	5	1	3	2	2	2	5				

Potential impact associated with litter/waste left at the stockpile area

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Low-Medium			Site Layout Alternative 1			Degree of Mitigation: Full					
3	3	1	2.3	4	4	4	9.2				
Rating: Medium			Site Layout Alternative 2			Degree of Mitigation: Full					
3	3	1	2.3	4	4	4	9.2				
Rating: Medium			Site Layout Alternative 3			Degree of Mitigation: Full					
3	3	1	2.3	4	4	4	9.2				

Return of the stockpile area to landscape feature upon closure (Positive Impact)

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25
Rating: Medium-High			Site Layout Alternative 1			Degree of Mitigation: N/A					
3	5	1	3	5	5	5	15				
Rating: Medium-High			Site Layout Alternative 2			Degree of Mitigation: N/A					
3	5	1	3	5	5	5	15				
Rating: Medium-High			Site Layout Alternative 3			Degree of Mitigation: N/A					
3	5	1	3	5	5	5	15				

3. CLIMATE CHANGE ASSESSMENT

Climate change issues must be considered as part of the EIA process Please consider the Climate Change guideline. EAP must determine:

- a)The potential impact of climate change on society and the economy, whether the impact is negative or positive, considering that society needs to be at the centre of the proposed development;*
- b)The potential alternatives of the proposed development, alternatives that will have less impact on climate change (environment and generation of waste included), the society and economy;*
- c)whether, and to what extent, the proposed development will result in the release of greenhouse gas (GHG) emissions;*
- d)whether the proposed development is necessary to achieve long term decarbonisation goals;*
- e)the impact of the development on social, economic, natural and built environment that are crucial for climate change, adaptation and resilience;*
- f) the projected impact of climate change on proposed development; and surrounding environment, and implications for the development.*
- g)Explanation of how the impacts is likely to be exacerbated or minimised as result of climate change and what measures are likely to be implemented to accommodate and manage (adapt to) the anticipated worst scenario where applicable*
- h) whether, and to what extent, the impacts identified in (a) -(g) can be mitigated.*

CLIMATE CHANGE IMPACTS ASSESSMENT

Question	Response
<p>(a) The potential impact of climate change on society and the economy, whether the impact is negative or positive, considering that society needs to be at the centre of the proposed development</p>	<p>The potential impact of climate change on society and the economy is multifaceted and can have both negative and positive aspects. When considering the development of an aggregate stockpile area, it is crucial to center society in the planning process to maximize benefits and minimize harms. Here's a detailed analysis:</p> <p>Negative Impacts</p>
<p>(e) The impact of the development on social, economic, natural and built environment that are crucial for climate change, adaptation and resilience;</p> <p>(f) The projected impact of climate change on proposed development; and surrounding environment, and implications for the development</p>	<p>1. Environmental Degradation</p> <ul style="list-style-type: none"> • <u>Increased Carbon Emissions</u> The conversion of natural land to aggregate stockpiles releases stored carbon, contributing to global warming. Increased carbon emissions exacerbate climate change, leading to more severe weather events, sea level rise, and other environmental changes. • <u>Loss of Biodiversity</u> Habitat destruction can lead to a loss of biodiversity, disrupting ecosystems and reducing the availability of ecosystem services such as pollination, water purification, and climate regulation. <p>2. Economic Consequences</p> <ul style="list-style-type: none"> • <u>Agricultural Productivity</u> Changes in local climate and soil degradation can negatively impact agricultural productivity, leading to food insecurity and increased prices. This can have a ripple effect on local economies, particularly in communities dependent on agriculture. • <u>Infrastructure Damage</u> Extreme weather events exacerbated by climate change can damage infrastructure, including roads, bridges, and buildings, leading to costly repairs and disruptions in economic activities. <p>3. Social Consequences</p> <ul style="list-style-type: none"> • <u>Displacement and Inequality</u>

CLIMATE CHANGE IMPACTS ASSESSMENT	
Question	Response
	<p>Communities, particularly vulnerable and marginalized groups, may face displacement due to land conversion and increased risk of natural disasters. This can exacerbate social inequalities and lead to loss of cultural heritage and community cohesion.</p> <ul style="list-style-type: none"> • <u>Reduced Quality of Life</u> Loss of natural spaces for recreation and cultural activities can reduce the quality of life for local residents. Increased heat and pollution can also affect daily living conditions. <p>Positive Impacts</p> <ol style="list-style-type: none"> 1. Economic Opportunities <ul style="list-style-type: none"> • <u>Job Creation</u> Development projects, including the establishment of aggregate stockpile areas, can create jobs in construction, maintenance, and related industries, boosting local employment and economic activity. 2. Economic Growth <ul style="list-style-type: none"> • Increased infrastructure development can stimulate economic growth by improving transportation networks, facilitating trade, and attracting investment. 3. Societal Benefits <ul style="list-style-type: none"> • <u>Improved Infrastructure</u> Properly planned development can lead to improved infrastructure, such as roads and facilities, enhancing connectivity and accessibility for local communities. • <u>Community Development</u> Investment in local communities, including education, health care, and social services, as part of development projects can enhance overall community well-being and resilience.

CLIMATE CHANGE IMPACTS ASSESSMENT	
Question	Response
(b) The potential alternatives of the proposed development, alternatives that will have less impact on climate change (environment and generation of waste included), the society and economy	The site alternatives that will have less climate change impacts are Site Alternative 1 and Site Alternative 2 due to the area being previously disturbed by the local community.
(c) Whether, and to what extent, the proposed development will result in the release of greenhouse gas (GHG) emissions;	Due to the nature of the project, the small scale of the proposed operation, and the fact that no permanent infrastructure, the proposed stockpile activities will not will result in the release of greenhouse gas (GHG) emissions.
(d) Whether the proposed development is necessary to achieve long term decarbonisation goals;	Not applicable, due to the nature of the project, the small scale of the proposed operation, and the fact that no permanent infrastructure
(g) Explanation of how the impacts is likely to be exacerbated or minimised as result of climate change and what measures are likely to be implemented to accommodate and manage (adapt to) the anticipated worst scenario where applicable	<p>Mitigation and Adaptation Strategies (Please see Appendix F for more detailed mitigation measures)</p> <p>To maximize positive impacts and mitigate negative ones, the following strategies should be considered:</p> <ol style="list-style-type: none"> 1. Sustainable Development Practices <ul style="list-style-type: none"> • Implement environmentally sustainable practices in the development of aggregate stockpile areas, including minimizing land disturbance, using green construction techniques, and restoring land post-use. 2. Community Engagement <ul style="list-style-type: none"> • Engage local communities in the planning and decision-making processes to ensure their needs and concerns are addressed. This can help in gaining community support and enhancing the social license to operate. 3. Carbon Offset Programs
(h) Whether, and to what extent, the impacts identified in (a) -(g) can be mitigated.	

CLIMATE CHANGE IMPACTS ASSESSMENT

Question	Response
	<ul style="list-style-type: none">• Invest in carbon offset programs, such as reforestation and renewable energy projects, to compensate for the carbon emissions associated with land conversion and aggregate stockpiling. <p>4. Adaptive Infrastructure</p> <ul style="list-style-type: none">• Design infrastructure to be resilient to climate change impacts, such as extreme weather events and sea level rise, to reduce future costs and ensure long-term viability. <p>5. Health and Safety Measures</p> <ul style="list-style-type: none">• Implement measures to protect public health and safety, including dust control, water management, and emergency preparedness plans.

4.ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

ENVIRONMENTAL IMPACT STATEMENT			
SITE ALTERNATIVE 1			
<u>TYPE OF IMPACT</u>	<u>DURATION</u>	<u>LIKELIHOOD</u>	<u>SIGNIFICANCE</u>
Site establishment <ul style="list-style-type: none"> • Loss of agricultural land; • Visual intrusion as a result of site establishment; • Potential impact on fauna within the footprint area; • Potential impact on vegetation and listed and/or protected plant species • Dust nuisance due to site establishment • Potential impact on archaeological artefacts; • Work opportunities to local residents (Positive Impact) 	Duration of site establishment phase (<1 month)	Possible Low Possibility Low Possibility Low Possibility Low Possibility Low Possibility Definite	Medium Concern Low-Medium Concern Low Concern Low-Medium Concern Low Concern Low Concern Medium-High (+)
<u>Stripping and stockpiling of topsoil:</u> <ul style="list-style-type: none"> • Visual intrusion caused by stockpile activities; • Loss of stockpiled topsoil during stockpile activities; • Dust nuisance as a result of the disturbance of soil; • Noise nuisance generated by crushing and screening machinery; • Infestation of the topsoil heaps and stockpile area with weeds or invader plant species; • Potential impact on local fauna due to disturbance and loss of available habitat; 	Duration of site establishment phase (<1 month)	Low Possibility Low Possibility Low Possibility Low Possibility Low Possibility Low Possibility	Low Medium Concern Low Concern Low Medium Concern Low Medium Concern Low Concern Low Concern

<ul style="list-style-type: none"> • Potential erosion of denuded areas; • Loss of stockpiled material due to ineffective storm water control • Potential contamination of footprint area and surface runoff as a result of hydrocarbon spillages; 		<p>Low Possibility</p> <p>Low Possibility</p> <p>Possible</p>	<p>Low Concern</p> <p>Low Medium Concern</p> <p>Low Medium Concern</p>
<p><u>Processing, stockpiling and transporting of material</u></p> <ul style="list-style-type: none"> • Dust nuisance generated at the processing plant; • Noise nuisance stemming from operation of the processing plant; • Visual intrusion as a result of operation of the processing plant • Potential contamination of environment due to improper waste management; • Overloading of trucks impacting road infrastructure; 	<p>Duration of operational phase (10 years maximum)</p>	<p>Low Possibility</p> <p>Low Possibility</p> <p>Low Possibility</p> <p>Low Possibility</p> <p>Low Possibility</p>	<p>Low Concern</p> <p>Low Concern</p> <p>Low Medium Concern</p> <p>Low Concern</p> <p>Low Medium Concern</p>
<p><u>Cumulative impacts :</u></p> <ul style="list-style-type: none"> • Impact the broad-scale ecological processes; • Transformation of intact habitat would contribute to the fragmentation of the landscape and would potentially disrupt the connectivity of the landscape for fauna, avifauna, and flora and impair their ability to respond to environmental fluctuations. 	<p>Duration of all phases</p>	<p><u>LIKELIHOOD</u></p> <p>Low Possibility</p> <p>Low Possibility</p>	<p><u>SIGNIFICANCE</u></p> <p>Low Concern</p> <p>Low Concern</p>
<p><u>Sloping and landscaping upon closure of the mining area:</u></p> <ul style="list-style-type: none"> • Erosion of returned topsoil after rehabilitation; • Infestation of the reinstated areas by weeds and invader plant species; • Potential impact associated with litter/waste left at the mining area. • Return of the stockpile area to landscape feature upon closure (Positive Impact). 	<p>Duration of decommissioning phase (±2 months)</p>	<p><u>LIKELIHOOD</u></p> <p>Low Possibility</p> <p>Low Possibility</p> <p>Low Possibility</p> <p>Definite</p>	<p><u>SIGNIFICANCE</u></p> <p>Low Medium Concern</p> <p>Low Medium Concern</p> <p>Low Medium Concern</p> <p>Medium-High (+)</p>
SITE ALTERNATIVE 2			
<u>TYPE OF IMPACT</u>	<u>DURATION</u>	<u>LIKELIHOOD</u>	<u>SIGNIFICANCE</u>

<p>Site establishment</p> <ul style="list-style-type: none"> • Loss of agricultural land; • Visual intrusion as a result of site establishment; • Potential impact on fauna within the footprint area; • Potential impact on vegetation and listed and/or protected plant species • Dust nuisance due to site establishment • Potential impact on archaeological artefacts; • Work opportunities to local residents (Positive Impact) 	<p>Duration of site establishment phase (<1 month)</p>	<p>Possible Low Possibility</p> <p>Low Possibility</p> <p>Low Possibility</p> <p>Low Possibility Low Possibility</p> <p>Definite</p>	<p>Medium Concern Low-Medium Concern</p> <p>Low Concern</p> <p>Low-Medium Concern</p> <p>Low Concern Low Concern</p> <p>Medium-High (+)</p>
<p><u>Stripping and stockpiling of topsoil:</u></p> <ul style="list-style-type: none"> • Visual intrusion caused by stockpile activities; • Loss of stockpiled topsoil during stockpile activities; • Dust nuisance as a result of the disturbance of soil; • Noise nuisance generated by crushing and screening machinery; • Infestation of the topsoil heaps and stockpile area with weeds or invader plant species; • Potential impact on local fauna due to disturbance and loss of available habitat; • Potential erosion of denuded areas; • Loss of stockpiled material due to ineffective storm water control • Potential contamination of footprint area and surface runoff as a result of hydrocarbon spillages; 	<p>Duration of site establishment phase (<1 month)</p>	<p>Low Possibility Low Possibility</p> <p>Low Possibility</p> <p>Low Possibility</p> <p>Low Possibility</p> <p>Low Possibility</p> <p>Low Possibility</p> <p>Low Possibility</p> <p>Possible</p>	<p>Low Medium Concern Low Concern</p> <p>Low Medium Concern</p> <p>Low Medium Concern</p> <p>Low Concern</p> <p>Low Concern</p> <p>Low Concern</p> <p>Low Medium Concern</p> <p>Low Medium Concern</p>
<p><u>Processing, stockpiling and transporting of material</u></p> <ul style="list-style-type: none"> • Dust nuisance generated at the processing plant; • Noise nuisance stemming from operation of the processing plant; • Visual intrusion as a result of operation of the processing plant • Potential contamination of environment due to improper waste management; 	<p>Duration of operational phase (10 years maximum)</p>	<p>Low Possibility</p> <p>Low Possibility</p> <p>Low Possibility</p> <p>Low Possibility</p>	<p>Low Concern</p> <p>Low Concern</p> <p>Low Medium Concern</p> <p>Low Concern</p>

<ul style="list-style-type: none"> Overloading of trucks impacting road infrastructure; 		Low Possibility	Low Medium Concern
<p><u>Cumulative impacts :</u></p> <ul style="list-style-type: none"> Impact the broad-scale ecological processes; Transformation of intact habitat would contribute to the fragmentation of the landscape and would potentially disrupt the connectivity of the landscape for fauna, avifauna, and flora and impair their ability to respond to environmental fluctuations. 	Duration of all phases	<p><u>LIKELIHOOD</u></p> <p>Low Possibility</p> <p>Low Possibility</p>	<p><u>SIGNIFICANCE</u></p> <p>Low Concern</p> <p>Low Concern</p>
<p><u>Sloping and landscaping upon closure of the mining area:</u></p> <ul style="list-style-type: none"> Erosion of returned topsoil after rehabilitation; Infestation of the reinstated areas by weeds and invader plant species; Potential impact associated with litter/waste left at the mining area. Return of the stockpile area to landscape feature upon closure (Positive Impact). 	Duration of decommissioning phase (±2 months)	<p><u>LIKELIHOOD</u></p> <p>Low Possibility</p> <p>Low Possibility</p> <p>Low Possibility</p> <p>Definite</p>	<p><u>SIGNIFICANCE</u></p> <p>Low Medium Concern</p> <p>Low Medium Concern</p> <p>Low Medium Concern</p> <p>Medium-High (+)</p>
SITE ALTERNATIVE 3			
<p style="text-align: center;"><u>TYPE OF IMPACT</u></p> <p>Site establishment</p> <ul style="list-style-type: none"> Loss of agricultural land; Visual intrusion as a result of site establishment; Potential impact on fauna within the footprint area; Potential impact on vegetation and listed and/or protected plant species Dust nuisance due to site establishment Potential impact on archaeological artefacts; Work opportunities to local residents (Positive Impact) 	<p style="text-align: center;"><u>DURATION</u></p> <p>Duration of site establishment phase (<1 month)</p>	<p style="text-align: center;"><u>LIKELIHOOD</u></p> <p>Possible</p> <p>Low Possibility</p> <p>Low Possibility</p> <p>Low Possibility</p> <p>Low Possibility</p> <p>Low Possibility</p> <p>Definite</p>	<p style="text-align: center;"><u>SIGNIFICANCE</u></p> <p>Medium Concern</p> <p>Low-Medium Concern</p> <p>Low Concern</p> <p>Low-Medium Concern</p> <p>Low Concern</p> <p>Low Concern</p> <p>Medium-High (+)</p>

<p><u>Stripping and stockpiling of topsoil:</u></p> <ul style="list-style-type: none"> • Visual intrusion caused by stockpile activities; • Loss of stockpiled topsoil during stockpile activities; • Dust nuisance as a result of the disturbance of soil; • Noise nuisance generated by crushing and screening machinery; • Infestation of the topsoil heaps and stockpile area with weeds or invader plant species; • Potential impact on local fauna due to disturbance and loss of available habitat; • Potential erosion of denuded areas; • Loss of stockpiled material due to ineffective storm water control • Potential contamination of footprint area and surface runoff as a result of hydrocarbon spillages; 	<p>Duration of site establishment phase (<1 month)</p>	<p>Low Possibility Low Possibility Low Possibility Low Possibility Low Possibility Low Possibility Low Possibility Low Possibility Possible</p>	<p>Low Medium Concern Low Concern Low Medium Concern Low Medium Concern Low Concern Low Concern Low Concern Low Medium Concern Low Medium Concern</p>
<p><u>Processing, stockpiling and transporting of material :</u></p> <ul style="list-style-type: none"> • Dust nuisance generated at the processing plant; • Noise nuisance stemming from operation of the processing plant; • Visual intrusion as a result of operation of the processing plant • Potential contamination of environment due to improper waste management; • Overloading of trucks impacting road infrastructure; 	<p>Duration of operational phase (10 years maximum)</p>	<p>Low Possibility Low Possibility Low Possibility Low Possibility Low Possibility</p>	<p>Low Concern Low Concern Low Medium Concern Low Concern Low Medium Concern</p>
<p><u>Cumulative impacts :</u></p> <ul style="list-style-type: none"> • Impact the broad-scale ecological processes; • Transformation of intact habitat would contribute to the fragmentation of the landscape and would potentially disrupt the connectivity of the landscape for fauna, avifauna, and flora and impair their ability to respond to environmental fluctuations. 	<p>Duration of all phases</p>	<p><u>LIKELIHOOD</u> High Possibility High Possibility</p>	<p><u>SIGNIFICANCE</u> Medium-High Concern Medium-High Concern</p>

<p><u>Sloping and landscaping upon closure of the mining area:</u></p> <ul style="list-style-type: none"> • Erosion of returned topsoil after rehabilitation; • Infestation of the reinstated areas by weeds and invader plant species; • Potential impact associated with litter/waste left at the mining area. • Return of the stockpile area to landscape feature upon closure (Positive Impact). 	<p>Duration of decommissioning phase (±2 months)</p>	<p><u>LIKELIHOOD</u></p> <p>Low Possibility Low Possibility</p> <p>Low Possibility</p> <p>Definite</p>	<p><u>SIGNIFICANCE</u></p> <p>Low Medium Concern Low Medium Concern</p> <p>Low Medium Concern</p> <p>Medium-High (+)</p>

SECTION E. RECOMMENDATIONS OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	YES
Is an EMPr attached?	YES

The EMPr must be attached as Appendix F.

If “NO”, indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

If “YES”, please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

Please refer to Appendix F for all general mitigation measures.

Mitigation measures as per the Terrestrial Biodiversity Impact Assessment (Appendix D2):

- Do not clear areas of indigenous vegetation outside of the authorised development footprint within the PAOI.
- Vegetation clearing commences only after the necessary permits for SCCs or protected plants have been obtained. Any individual of the SSC or protected plants that were observed needs a relocation or destruction permit in order for any individual to be removed or destroyed due to the development. High visibility flags must be placed near any protected plants in order to avoid any damage or destruction of the species. If left undisturbed the sensitivity and importance of these species needs to be part of the environmental awareness program.
- It is recommended that areas to be developed/disturbed be specifically demarcated so that during the construction/activity phase, only the demarcated areas be impacted upon.
- Areas of indigenous vegetation, even secondary communities outside of the direct project footprint, should not be fragmented or disturbed further.
- All vehicles and personnel must make use of existing roads and walking paths where possible, especially construction/operational vehicles.
- The clearing of vegetation must be minimised where possible. All activities must be restricted to within the authorised areas.
- Consult a fire expert and compile and implement a fire management plan to minimise the risk of veld fires around the PAOI.
- Compile and implement a rehabilitation plan from the onset of the Project;
 - Areas that are denuded during construction need to be re-vegetated with indigenous vegetation according to a habitat rehabilitation plan, to prevent erosion during flood and wind events and to promote the regeneration of functional habitat. This will also reduce the likelihood of encroachment by invasive alien plant species. All grazing mammals must be kept out of the areas that have recently been re-planted

- Progressive rehabilitation will enable topsoil to be returned more rapidly, thus ensuring more recruitment from the existing seedbank. Surplus rehabilitation material can be applied to other others in need of stabilisation and vegetation cover.
- Dust-reducing mitigation measures must be put in place and must be strictly adhered to, for all roads and bare (unvegetated) areas.
- No non-environmentally friendly suppressants may be used as this could result in pollution of water sources.
- Environmental Officer (EO) to provide supervision and oversight of vegetation clearing activities.
- Any materials may not be stored for extended periods of time and must be removed from the PAOI once the construction phase has been concluded. No permanent construction phase structures should be permitted. Construction buildings should preferably be prefabricated or constructed of re-usable/recyclable materials. No storage of vehicles or equipment will be allowed outside of the designated laydown areas.
- A hydrocarbon spill management plan must be put in place to ensure that should there be any chemical spill out or over that it does not run into the surrounding areas. The Contractor shall be in possession of an emergency spill kit that must always be complete and available on site.
 - Drip trays or any form of oil absorbent material must be placed underneath vehicles/machinery and equipment when not in use.
 - No servicing of equipment on site unless necessary.
 - All contaminated soil / yard stone shall be treated in situ or removed and be placed in containers.
 - Appropriately contain any generator diesel storage tanks, machinery spills (e.g., accidental spills of hydrocarbons oils, diesel etc.) in such a way as to prevent them from leaking and entering the environment.
 - Construction activities and vehicles could cause spillages of lubricants, fuels and waste material negatively affecting the functioning of the ecosystem.
 - All vehicles and equipment must be maintained, and all re-fuelling and servicing of equipment is to take place in demarcated areas outside of the PAOI.
- It must be made an offence for any staff member to take any indigenous plant species out of any portion of the Project area, or to bring any alien plant species into any portion of the Project area except for rehabilitation purposes. This is to prevent the spread of exotic or invasive species or the illegal collection of plants.
- Compile and implement an alien vegetation management plan from the onset of construction. The plan must identify areas for action (if any) and prescribe the necessary removal methods and frequencies to be applied. This plan must be also prescribing a monitoring plan and be updated as/when new data is collated;
- Implementation of a waste management plan.
- Temporary storage of domestic waste shall be in covered waste skips.
- Removal of domestic waste on a regular basis, no overspill is permitted.
- Demarcate work areas during the construction phase to avoid affecting outside areas. Use physical barriers e.g., safety tape, not painted lines, and use signage.
- Prior to vegetation clearing activities, the area to be cleared should be walked on foot by 1-2 individuals to create a disturbance in order for fauna to move off. Sites should be disturbed only prior to the area having to be cleared.

- Any fauna threatened by the construction activities should be removed safely by an appropriately qualified environmental officer or removal specialist.
- All construction vehicles should adhere to a speed limit of maximum 30 km/h to avoid collisions. All construction and maintenance motor vehicle operators should undergo an environmental induction that includes instruction on the need to comply with speed limits, to respect all forms of wildlife. Speed limits must still be enforced to ensure that road killings, dust and erosion is limited. Appropriate speed control measures and signs must be erected.
- Schedule activities and operations during least sensitive period;
 - Construction and driving on roads at night should be restricted in order to reduce or prevent wildlife road mortalities which occur more frequently during this period
- Outside lighting should be designed and limited to minimise impacts on fauna. All outside lighting should be directed away from any sensitive areas. Fluorescent and mercury vapor lighting should be avoided, and sodium vapor (green/red) lights should be used wherever possible.
- Minimise vegetation clearing to the minimum required. Areas should be cleared and disturbed on a needs basis only, as opposed to clearing and disturbing a number of sites simultaneously.
- Provide all personnel and contractors to undergo Environmental Awareness Training to all personnel and contractors. A signed register of attendance must be kept for proof. Discussions The training must include.
- The timing between clearing of an area and subsequent development must be minimized to avoid fauna from re-entering the site to be disturbed.
- Any holes/deep excavations must be done in a progressive manner on a needs basis only. No holes/excavations may be left open overnight. In the event holes/excavations are required to remain open overnight, these areas must be covered to prevent fauna falling into these areas and subsequently inspected prior to backfilling
- Where possible, work should be restricted to one area at a time and be systematic. This is to reduce the number and extent of on-site activities, allowing fauna to move off as the Project progresses. This will give the smaller birds, mammals and reptiles a chance to weather the disturbance in an undisturbed zone close to their natural territories.
- No construction activity is to occur at night.
- Wildlife-permeable fencing with holes large enough for mongoose and other smaller mammals should be installed, the holes must not be placed in the fence where it is next to a major road as this will increase road killings in the area

Mitigation measures as per the Wetland Functional and Impact Assessment (Appendix D1)

- All 'High' sensitivity and wetland habitats must be avoided (unless authorised), all laydown and staff areas must be restricted to the 'Low' and 'Very Low' sensitivity areas;
- Adhere to the prescribed wetland buffers. Restrict all non-essential activities (e.g. cement mixing and equipment wetland machinery storage) to outside of wetlands and their prescribed buffers;
- Demarcate the avoidance areas;
- Dust suppression should be implemented. The residual and sediment laden water from the suppression activities should not be directly released into the wetland in order to prevent higher inputs of sediment into the systems;

- Areas other than the footprint areas and existing surface infrastructure areas must be declared as 'no-go' areas;
- Try to reduce the disturbance footprint and the unnecessary clearing of vegetation;
- Construct as far as possible during winter when runoff from storms are lowest, prioritise this for crossing sites. This will reduce impacts to wetlands due to soil poaching and vegetation trampling under peak saturation levels. Additionally, the risk of vehicles getting stuck and further degrading the vegetation integrity is lowest during this time;
- Prevent run-off by subsurface drainage channels. Any signs of erosion and scouring must be immediately addressed;
- Mixing of concrete must under no circumstances take place in any wetland or their buffers. Scrape the area where mixing and storage of sand and concrete occurred to clean once finished;
- Do not situate any of the construction material laydown areas within any wetland;
- No machinery should be allowed to be parked in any wetlands;
- Flatten and lightly till (no deeper than 30 cm) excavated / cleared areas to encourage vegetation establishment as soon as possible;
- Promptly remove all alien and invasive plant species that may emerge during construction (i.e. weedy annuals and other alien forbs) must be removed;
- The use of herbicides is not recommended in or near wetlands (opt for mechanical removal);
- Appropriately stockpile topsoil cleared from the project area. This can be used for rehabilitation of the impacted wetlands;
- Clearly demarcate construction footprint, and limit all activities to within this area;
- Minimize unnecessary clearing of vegetation;
- Landscape and re-vegetate all denuded areas as soon as possible with indigenous vegetation;
- Re-instate topsoil and lightly till disturbance footprint;
- Install sandbags on downstream side of the footprint, where necessary, to trap sediment until the site has been constructed and vegetation has re-established;
- Make sure all excess consumables and building materials / rubble is removed from site and deposited at an appropriate waste facility;
- Appropriately contain any generator diesel storage tanks, machinery spills (e.g. accidental spills of hydrocarbons oils, diesel etc.) or construction materials on site (e.g. concrete) in such a way as to prevent them leaking and entering the north-western seep;
- Regularly maintain stormwater infrastructure, pipes, pumps and machinery to minimise the potential for leaks. Check for oil leaks, keep a tidy operation, install bins and promptly clean up any spills or litter;
- Maintain storm water run-off & Discharge Water Quality monitoring;
- No servicing of machines, vehicles and equipment on site and Storage of potential contaminants in bunded areas;
- Provide appropriate sanitation facilities during construction and service them regularly;
- Ensure that topsoil is appropriately stored and re-applied during trench backfilling;
- Make sure that the soil is backfilled and compacted to accepted geotechnical standards to avoid conduit formation along the trench;
- Conduct regular inspections along the stockpile to ensure the integrity of the facility;

- Speed limits must be put in place to reduce erosion. Soil surfaces must be wetted as necessary to reduce the dust generated by the project activities. Speed bumps and signs must be erected to enforce slow speed; and
- Waste management must be a priority and all waste must be collected and stored adequately. It is recommended that all waste be removed from site on a weekly basis to prevent rodents and pests entering the site.

SECTION F: APPENDICES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Soil and Agricultural Potential Assessment

Appendix D1: Wetland Functional and Impact Assessment

Appendix D2: Terrestrial Biodiversity Impact Assessment

Appendix D3: Socio-Economic Study

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: EAP CVs

Appendix G1: WULA proof of submission

